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A q-methodology evaluation of visions of sustainable development

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USE OF THESIS

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

FOREWORD

"As early as 1868 William Morris, in *The Earthly Paradise*, had written:

Forget six counties overhung with smoke,

Forget the snorting steam and piston smoke,

Forget the spreading of the hideous town;

Think rather of the pack-horse on the down,

And dream of London, small, white and clean,

The clear Thames bordered by its gardens green.

But there was no going back, except in imagination" (Trevelyan, 1944, p. 580).

ABSTRACT

The concept of the "triple bottom line" has recently become central to sustainable development (SD) and it emerged to be internationally regarded as integrating economic, environmental and social considerations into planning for the future. While numerous authors have contended that successful delivery of SD requires a consensus and shared vision about implementation, objectives, and outcomes, others have argued that the lack of consensus about SD is not necessarily problematical. Whether or not a consensus is required for the successful deployment of SD is debatable, but that pluralities of views about SD exist is now widely acknowledged.

Involved in the contestation about SD are competing views regarding the human relationship to nature and the form that future development should take. A review of the relevant literature indicated that concepts of SD have been classified in various ways. For example, some writers have distinguished between "very strong", "strong", "weak" and "very weak" conditions required for sustainability. Other writers have devised alternative schema based on various answers to questions such as: what is to be sustained? What is to be developed? How? Why? Whilst such schema may provide useful frameworks, they do not necessarily provide empirical data on how SD is understood by persons responsible for developing and implementing policy at one or another level of government.

In addressing that issue, this dissertation aimed to examine the beliefs about SD that were held by a group of 170 people associated with the implementation of SD at the level of local government and community in Western Australia. This examination was undertaken to establish if, and how, the views of these people in the community matched the propositions about SD that have previously been made by academics and other commentators. Local government provided a context for the study because of the Commonwealth of Australia's endorsement of the United Nations Agenda 21 Program. With the endorsement of Agenda 21, local government was recognised by the Commonwealth and the UN as having a major role to play in SD promotion efforts.

The issues outlined above led the dissertation to two purposes. The first purpose was to establish if SD was actually understood to have meaning within the context of previous propositions regarding a spectrum of views on sustainability. The second, and more important, purpose was to establish the characteristics of visions of SD as understood by a sample of people involved with local government decision-making in Perth, Western Australia. The objective was to discover whether a shared vision of SD based on a consensus of opinion was available, or whether a plurality of views would emerge corresponding to one or more of the previous classifications of very strong, strong, weak and very weak SD available in the related literature. To deliver those two outcomes, Q-Methodology was used to enable classification of the visions that people held about SD.

Although all 170 of the collected Q-sorts were unique in some ways, Q-Methodology factor analysis indicated that a five factor solution was available but that only the first two factors were statistically significant, as evaluated by eigenvalue and scree-plot tests. Of the 170 participants, 140 represented factor 1, while another 11 people represented factor 2. These two factors accounted for almost 60 per cent of the variance in viewpoints held. The viewpoints of the remaining 19 participants were too disparate to be readily classified into statistically significant sub-types. In other words, there was a bipolar distribution of the overwhelming majority of participants, with most endorsing a relatively strong version of SD (factor 1). A small minority of participants endorsed a viewpoint closer to what has been previously called a weak version of SD (factor 2).

Proponents of the relatively stronger version of SD advocated a reorientation of personal values toward environmentalism. The reasons for the environmental focus of their vision of SD was said to be the pending ecological crisis involving loss of species diversity, over-population, global warming, pollution and resource consumption. For these reasons, the stronger SD vision could also be labelled as environmentally pessimistic. Accordingly, the key objective of SD was seen to be ecological well being, involving a reduction of human demands on the ecosystem. People with this vision emphasised the importance of involving the public in the SD policy-making process. The group was not optimistic about the capacity of science and technology to solve environmental problems. Salient positively endorsed statements that defined the stronger SD vision included:

- The environmental practices of current generations are harming the interests of future generations;

- All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake; and
- Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the resources consumed.

Q-statements emphatically opposed by people holding the stronger SD vision also revealed the group's lack of technological optimism and their focus on environmental concerns. Examples of these strongly rejected statements included:

- Humans and humans alone have rights. Nature is valueless except insofar as it can be used as a resource for human benefit.
- Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources; and
- Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.

According to proponents of what has been previously called the weaker version of SD, the primary objective of SD was the promotion of human welfare, an improvement in living standards and a more equitable distribution of wealth, education and health care. These people were more ambiguous about the actual need for SD but they were not hostile to the concept. They were, however, dismissive about the potential for an environmental crisis. Accordingly, people holding the weaker SD vision could also be labelled as technological optimists. They strongly rejected the "deep green" values associated with environmentalism of the stronger SD vision. The group did not see the need to restrict or limit economic growth, or reduce the use of natural resources. The group had a deep faith in the ability of people to solve problems using science and technology, and in the beneficial contribution of multinational corporations to SD. Salient and positively endorsed Q-statements that defined the weaker SD vision included:

- Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development;
- The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental stewardship;

- Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about;
- The best and only route for countries to overcome environmental problems and promote human wellbeing is to become richer and more technologically advanced; and
- While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern world is becoming more, not less sustainable.

Q-statements that were strongly rejected by people holding the weaker SD vision also revealed the group's overwhelming technological optimism and lack of concern about the potential outcomes of environmental problems. Such emphatically rejected statements included:

- We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions;
- The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of human kind; and
- The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the environment.

In conclusion, the empirical data derived from this Q-Methodology study partially supported previous propositions regarding the occurrence of strong and weak versions of the conditions required for SD. The dissertation also showed that holders of these divergent perspectives held different views on the relative priority to be given to environmental, economic and social considerations when implementing SD. Individuals tended to see SD primarily as a solution to environmental problems or primarily as a solution to economic and social problems. Results from the study suggested that the environmental bottom line had largely "captured" the definition of SD within local government and that LA21 was seen as an environmental management program. The dissertation included a detailed description of the two distinctly different visions of SD.

DECLARATION

"I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text".

Signature. 

11th September 2003

ACKNOWLEDGMENT

For my friend Louise Codd, who died on Sunday 26th January 2003.

It is a pleasure to acknowledge the help of many people and organisations that have assisted me during the course of researching and writing this dissertation. I would first of all like to express my sincere thanks to my Edith Cowan University academic supervisors Professor Alan Black and Dr. John Duff who provided critical assistance at key moments. I am also grateful for the continual interest and support of my industry supervisor, Mr Greg Allen from the Western Australian Department of Environmental Protection. My colleagues at An Meá have also been very helpful to me when working on practical sustainable development solutions in remote corners of the Planet. I'd also like to pay particular thanks to Dr Moira O'Connor and Dr Alison Garton for agreeing to read and comment on the final draft of my work.

I could not have even started this work without the prior intellectual and scientific contributions of two authors. Those academics were Professor William Stephenson who inspired in me an interest in Q-Methodology, and Professor Julian Simon who led me to question everything I previously believed about environmental problems. I'm very grateful to have been able to couple the power of Q-Methodology with my personal interest in environmental protection and sustainability and together, these two aspects of my professional life have led me to exciting project work in Canada, Qatar, Sakhalin Island (Russian Federation), Singapore, the United Kingdom, Holland, and all States of Australia. It has been a good fun journey so far!

It is also important to acknowledge the commitment and time provided to my study by the 170 people who agreed to participate in this research. Their contribution was invaluable. Lastly, I'd like to thank Emma for allowing me to forego a decent income for all these years. I'll now do my best to make up for lost time.

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LIST OF ABBREVIATIONS

ABS	Australian Bureau of Statistics
AIDS	Aquired Immune Deficiency Syndrome
ALGA	Australian Local Government Association
ARC	Australian Research Council
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEP	Department of Environmental Protection
DSP	Dominant Social Paradigm
DWW	Dominant Western Worldview
EMRC	Eastern Metrolpolitan Regional Council
ESD	Ecologically Sustainable Development
ESI	Environmentally Sustainable Index
ESP	Environment Strategic Plans
FoE	Friends of the Earth
GDP	Gross Domestic Product
GPI	Genuine Progress Indicator
HEP	Human Exhemptionalism Paradigm
HMSO	Her Majesty's Stationary Office
HWE	Human Welfare Ecology
ICLEI	International Council for Local Environmental Initiatives
IGCESD	Inter-Government Committee on Ecologically Sustainable Development
ILAP	Integrated Local Area Planning
IMF	International Monetary Fund
ISD	Indicators of Sustainable Development
ISEW	Indicators of Sustainable Economic Welfare
IUCN	International Union for the Conservation of Nature
IULA	International Union of Local Authorities

LA21	Local Agenda 21
LGMB	Local Government Management Board
LGSRAC	Local Government Structural Reform Advisory Committee
LGSRAC	Local Government Structural Reform Advisory Committee
LULU	Locally Unwanted Landuse
NEP	New Environmental Paradigm
NEPS	New Environmental Paradigm Scale
NIMBY	"Not in my backyard" effect
NSESD	National Strategy for Ecologically Sustainable Development
RC	Resource Conservationism
RES	Regional Environment Strategy
SD	Sustainable Development
SoE	State of the Environment Report
TBL	Triple bottom line
UNCSD	United Nations Commission on Sustainable Development
UNCED	United Nations Commission on Environment and Development
WA	Western Australia
WAMA	Western Australian Municipal Association
WCED	World Commission on Environment and Development
WCU	World Conservation Union
WSSD	World Summit on Sustainable Development

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Overview

The Centre for Social Research at Edith Cowan University, in partnership with the Western Australian Department of Environmental Protection (DEP), promoted the research leading to this dissertation with about $100,000 of financial assistance from the Australian Research Council (ARC). The DEP was concerned with the introduction of sustainable development (SD) into the Western Australian (WA) community and was particularly interested in the implementation of SD or, rather, the lack of implementation at the level of local government.

That interest stemmed from the Australian Commonwealth Government's endorsement of Chapter 28 of Agenda 21 – the report of the United Nations Commission on Environment and Development (UNCED, 1992). The UNCED report stated: "By 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on a 'Local Agenda 21' for the community" (1992, p. 40). Rightly or wrongly, consensus building is central to the commitment by various levels of government in Australia to the implementation of sustainable development. Despite the commitment of the Federal Government, Addison (2001) noted that just 61 from 720 local councils Australia-wide had adopted LA21 by the target date of 1996. Furthermore, by 1999, only nine from 144 Western Australia local governments had begun a Local Agenda 21 (LA21) consultative process with their community (Price, 2001) and a "consensus" regarding a SD vision in Western Australia was noted to be absent by the Australian Government's Commonwealth Scientific and Industrial Research Organisation (CSIRO) (Heij, and Heinze, 2001).

Due to the lack of endorsement of LA21 and the prior assumptions about a lack of consensus about a common vision of SD, this thesis sought to identify, for the first time, just how a group of Western Australians working with the concept considered the definitional characteristics of SD. This function was important because the legitimacy of the SD concept steadily increased (Addison, 2002); yet the use of the term in the Australian local government context relied on a foundation that SD held specifiable properties with reference to the triple bottom line (TBL) issues of economy, society and environment (Addison, 2002; and Elkington, 1997) and that it played an important role as an indicator of things that people valued (Eckersley, 2000; Malouf, 2002; and Sarre & Treuren, 2001). The triple bottom line concept became central to this study for two important reasons.

Firstly, the TBL approach to the implementation of SD is State Government policy in Western Australia, and the approach is also endorsed by local government (Gallop,

2002). As far back as 1992, Agenda 21 (UNCED, 1992) spoke of SD as involving the three "interdependent and mutually reinforcing pillars" – economic development, social development and environmental protection. The term "triple bottom line" had not, however, been coined in 1992. That did not happen until 1997 (Elkington, 1997). But the TBL played an important role within this dissertation because it became a central defining characteristic of local government's response to Agenda 21, and the State of Western Australia and Commonwealth of Australia's response to SD generally. Furthermore, it was suggested by many authors (e.g., Howard, 1988; Jones, 1989; Kerr, 1987; Leach, et al., 1998; March, 1998; and Wright, 1995) that local government had a critical role to play in implementing SD and that local governments had the potential to act as agents of positive change for social, environmental and economic management.

Supporting the claim that the TBL is now centrally important to the implementation of SD within the Australian context are several key Australian and international commitments. In Britain, for example, the Local Government Management Board (LGMB, 1994) clearly stated that LA21 plans of local government should involve the development of clearly articulated goals in terms of economic, environmental, and social objectives. This early focus on what later became known as the triple bottom line is also characteristic of much of the response to Agenda 21 in Australia. For instance, local governments in Australia committed themselves to the implementation of LA21 with the adoption of the *Newcastle Declaration* (Anonymous author, 1997a). The TBL focus of the *Newcastle Declaration* was indicated in the statement that: "We declare our commitment, as local governments and communities, to enhancing global sustainability, by developing processes at the local level based on simultaneously achieving economic, social, cultural and ecological goals by integrating them in the design and implementation of all local policies, programs and projects" (Anonymous author, 1997a, p.3). That statement clearly illustrated how local governments in Australia have embraced the TBL concept in their SD implementation efforts. The *Newcastle Declaration* was signed on behalf of all Australian local governments by the Australian Local Government Association (ALGA) and on behalf of overseas local governments by the International Union of Local Authorities (IULA) (Addison, 2002). The *Newcastle Declaration*, with its emphasis on SD as a TBL concern was also endorsed by Environs Australia (the Local Government Environment Network) and the Western Australian Municipal Association (WAMA) – the WA umbrella local government organisation.

As noted, even though not named as such at the time, the TBL focus of LA21 in Australia was also endorsed by the Australian Commonwealth Government through the Department of Environment and Heritage and the Inter-Government Committee on

Ecologically Sustainable Development (IGCESD, 1995; Environment Australia, 2002; and Commonwealth Government of Australia, 2002). The Western Australian State Government likewise endorsed the TBL approach to sustainable development (e.g., Gallop, 2002; Government of Western Australia, 2001 and 2002). For example, the State Government's draft *WA Sustainability Strategy*, launched in September 2002, clearly articulated a TBL focus when offering the following definition for SD in WA: "Sustainability is meeting the needs of current and future generations through simultaneous environment, social and economic improvement" (Government of Western Australia, 2002, p. 8). The *foundation principles* of SD that are promoted by that document also articulate the TBL with a focus on:

1. the economic requirements to create long-term economic health and deliver net-benefit from development and planning;

2. the social requirements to deliver equity and protect human rights, create a positive sense of place and sense of community, and create settlement efficiency and a positive quality of life; and

3. the environmental requirements to preserve and promote biological diversity and ecological integrity.

Alongside accountability and transparency in government, precaution, and creation of hope, the integration of the TBL is said by the draft *WA Sustainability Strategy* to be a guiding principle for SD.

Furthermore, the TBL is central to the wider response to sustainable development in Australia, and elsewhere. For example, leading non-government environmental groups have endorsed the TBL as an appropriate response for SD (e.g., Christoff, 2002; Environmental Alliance, 2001; and International Union for the Conservation of Nature, 2002). Many Australian businesses such as An Meá, Orica, Robe River Iron, and BP Australia have also attempted to address sustainability through a TBL approach to management and reporting (Pricewaterhouse Coopers, 2001; Sean Kildare, Sustainable Development Consultant with Ernst and Young, personal correspondence, September 2002). The commitments of all levels of Government in Australia to the central place of the TBL to Australia's SD initiatives, together with the support for the TBL approach to SD by environmental non-government organisations (NGOs) and businesses demonstrates the importance of the TBL to SD efforts.

If those commitments were not enough evidence of the importance of the focus on the TBL within Australian responses to SD, the second reason that the TBL is important to

this dissertation is that the research dealt with issues of SD at the level of local government in Australia. Local government in Australia has a narrow range of operations and functions and a history of concern with local issues of "rubbish, rates and roads". Local government in Australia is also notoriously "non-political" and run on corporate or business models (WAMA Local Agenda 21 Advisory Group, 2001). Moreover, local government in Australia, unlike other countries, is not particularly involved with providing programs that address human rights issues, education, local policing, militarism and military spending, third world debt and poverty, and the like. It is acknowledged that the widest possible definitions of SD could include items and definitional components related to these, and many other issues. Indeed, many of these types of issues were noted during the generation of the communication concourse and the initial Q-sample, details of which are provided in Section 3.6.2. But a decision was taken, for the purposes of this research, to restrict the Q-set to only 50 items, more closely associated to the very obvious TBL concerns of State and local government in Western Australia and local non-government community and environmental groups.

Finally, although the joint focus on economic, environmental and social concerns was central to the various policy responses of the United Nations, Commonwealth, State and local governments, there appear to be recurring differences of opinion over which TBL issues and concerns should be integrated in the pursuit of SD. People's definitions of SD appear to be driven by their *Weltanschauung* – the worldview or philosophy that determines what they believe and what they do. According to Eckersley (2000), Weltanschauung is a difficult issue to address because worldviews comprise deeply internalised systems of beliefs about what is important, right and good, about how we should live and what objectives we should strive to reach. For that reason, it was felt that if SD was to be a useful concept, people had to be enabled to define, more or less, what it meant with regard to their worldview. That suggestion stemmed from an intial reading of the relevant literature on SD. What became immediately apparent on examining the literature is a deep and far-reaching contestation over what SD is, exactly.

In a summary of the direction taken in this dissertation, it was noted that various authors have suggested that people's values about the human relationship to nature have undergone recent change and this has impacted on the SD debate. With regard to Weltanschauung, it has been suggested that the dominant social paradigm, described in more detail later, has recently been transformed from a traditional worldview previously termed the Human Exemptionalist Paradigm (HEP) towards a fresh worldview called the New Environmental Paradigm (NEP). There is a great deal of debate amongst advocates of both paradigms about the legitimacy of each view and a great deal of

contestation between the expressed viewpoints. Nevertheless, the growing endorsement of the NEP has seen a parallel growth in awareness of, and support for, SD. However, just as there is a vigorous debate between advocates of the NEP and HEP, so there appears to be a great deal of contestation over the definitional concepts supporting SD.

It is important to note that the direction of the current research was not charged with identifying a "consensus" definition of SD. Rather, it was designed to identify the possible plurality of views that existed within the population of interest. Furthermore, in considering sustainable development, the research sought to avoid taking the "definitional form" as highlighted by Dobson (1996). The problem with the definitional approach, according to Dobson (1996), and one which any reader of the SD literature soon appreciates, is that definitions are widely contested and contestable. Quite simply, many hundreds of definitions of SD now exist. As Dobson (1996, p. 402) noted "seekers after enlightenment are often left as confused at the end of their search as at the beginning". Instead of offering another academic commentary by summing up what SD is and encapsulating its meaning in a formal definition, it is worth stating again, for the purpose of clarity, that this research is charged with allowing people involved with the implementation of SD in Western Australia to provide *their* visions of SD.

The purpose is not necessarily to provide a formal definition of sustainable development itself, in the context of Dobson's (1996) definitional form of research. Rather, it was simply noted that multiple and contested definitions of SD had been proposed for several years by academic and other commentators, yet little was known about the ways in which those definitions were understood by people working with the SD concept in the local government arena in Western Australia. This research began the process of exploring and delivering community-derived defining visions for SD in Western Australia through the research process of Q-Methodology.

The objective of identifying how people involved with Western Australian local government understand the SD concept is important because SD is not an authoritatively "given" product with a clear set of guiding principles and objectively correct rules that people simply follow to successful implementation (Barry, 1996). As Barry noted, concepts of SD are discursively "created" by people using practical judgement and knowledge during the process of deliberation and debate. In his view, "the indeterminacy of the principle [sustainable development] calls for citizen deliberation, while its translation into policies and laws call for their consent and equally important their active participation in realising it" (Barry, 1996, p. 119).

Moreover, Buckingham-Hatfield and Evans (1996, p.5) noted that the debate about SD has hitherto been an exclusive debate. On that point, they said: "It is the preserve of a comparatively small group of people – academics, politicians, activists, administrators". For reasons of involvement and capacity building – ideas that are central to Local Agenda 21 – it seemed like an interesting and worthwhile exercise to broaden the scope of debate and to find out what people who were actively involved with the "on the ground" implementation of SD were thinking about the propositions being made in largely academic circles. With regard to purpose, this research accepted the importance of enabling citizen deliberation about SD amongst a previously under-researched audience involved with local government and community-level NGOs. Furthermore, the process of giving voice to participants involved in the activity of practical implementation of SD has become even more urgent since gathering of the empirical data for this dissertation in 2000-2001.

In September 2002, the World Summit on Sustainable Development (WSSD) met in Joannesburg, South Africa with the purpose of preparing a global program for the implementation of SD as a ten-year follow up from the original Earth Summit, held in 1992 in Rio Janeiro. The WSSD ended in acrimony and dispute with little agreement about how to move forward in the world-wide implementation of SD. Delegate Nathan Wyeth (2002) of the Sierra Club, America's largest and longest-established environmental group, summed up the mood of the summit: "the sustainable development vision of the 1992 UN Rio de Janeiro Earth Summit lay down and died". Oxfam's Kevin Watkins also dismissed the summit as a "tragic farce," claiming it was little more than "an opportunity to exchange vague generalities about unsustainable consumption". According to Watkins (2002), the summit text is "of such vacuous inanity as to make a trainspotter's diary look exciting by comparison". Don Henry (2002) of the Australian Conservation Foundation (ACF) agreed with these sentiments and was also deeply sceptical about the summit's outcomes. For those reasons, hearing the multiple voices involved in the SD debate has never been more important.

1.2 Introduction to the chapters

The introductory chapter provides an overview of the methodological issues arising from the study, together with general introduction to the substantive topic – sustainable development – and the actual purpose of the thesis. Chapter Two of the dissertation presents the analytical review. The analytical review was conducted and appraised with three purposes in mind. The first purpose was analogous with the "traditional" use of a

literature review in academic work (Anonymous author, 2002). It provided an overview of the relevant literature on the substantive content area of SD and it located the study within the wider context of previously published literature. The review provides a context for the study and attempts to illustrate the vast range of literature that exists in regard to questions of implementation of SD.

The review starts with a general analysis of literature related to environmental values and attitudes. The review moves on to encompass the value-debate over the transformation of the Dominant Social Paradigm (DSP) from the older Human Exemptionalism Paradigm (HEP) to the New Environmental Paradigm (NEP) and how these changes have influenced the rising awareness of SD. The review examines how SD emerged over recent times, mirroring the apparent abandonment of the HEP and the endorsement of the NEP by growing numbers of people. The notion that definitions of SD were highly contested is also noted. The proposition that people's perceptions – or SD vision – ranged along a "sustainability spectrum" anchored by "strong" and "weak" versions of SD is also noted within the review.

The review then highlights how, in 1992 at the United Nations' Conference on Environment and Development, a version of SD received world-wide endorsement, with 172 countries agreeing to implement Agenda 21 (Price, 2001). Chapter Two illustrates how the Commonwealth of Australia endorsed Agenda 21 and agreed to encourage the adoption of SD at the level of local government via the implementation of Local Agenda 21. This part of the review concludes by stating the thesis questions.

In meeting its second purpose, the review also provided an overview of the methodology used – Q-Methodology – in order to familiarise readers with the unique characteristics of this approach (Barry and Proops, 1999a; Bublic, 1995; Durning, 1999; and Koshansky, 1985). Issues related to Q-Methodology and its terms are dealt with later so the reader should not be too concerned about their use here. The third purpose of the literature review made it an integral component of the methodology and its function was beyond that usually associated with R-Methodology academic research (Dennis, 1986). The review provided an opportunity to identify the "communication concourse" that was an essential component of the Q-Methodology investigation (Brown, 1980; and Kitzinger, 1999).

The principal gain of developing the communication concourse during the literature review was in developing a multi-faceted typology about the components of the SD concept under study in order to make those concepts explicit when preparing the Q-sort. It may be worthwhile at this point to note that although the terms "sustainable

development" and "sustainability "are acknowledged to have specific, technical meaning within certain parts of the academic literature (e.g., Barry, 1996), they were taken from the communication concourse in a broader and interchangeable format because they were frequently treated interchangeably within the related literature (Jacobs, 1995a). Developing a multi-faceted typology from the communication concourse meant that the danger of offering participants a simple binary Q-set was minimised. Dobson's (1996) work supported the use of typological analysis in order to bring the underlying concepts of SD into sharper focus. He suggested that the typological approach is particularly useful when there could be various answers to a question.

In the present research, the process of generating a typology meant addressing material that was drawn from a wide range of divergent positions with regard to SD, and specifically with regard to the environmental dimensions of SD and a plurality of views was expected at the outset. Pearce's typological model (1993) and that of Dobson a little later (1996), both spelt out those authors' "propositions" about various defining characteristics of SD, based, one assumes, on their reading of the relevant academic literature. The typologies of SD presented by Pearce (1993) and Dobson (1996) represented the starting point for this project and both authors assumed that the definitions they examine cover the main spectrum of opinions that are commonly held.

The purpose of the review and subsequent identification of the communication concourse was not to produce a critique of the arguments previously made about SD by others, or to evaluate their "correctness", foundations, shortcomings or theoretical weaknesses. Rather, it was from the communication concourse on SD, identified in the process of reviewing the literature, that relevant characteristics, issues, themes, opposing opinion, divergent propositions and other ways of speaking and writing about SD were identified for potential inclusion in a Q-sample. The Q-sample was then of use in a Q-sort process with a sub-set of actors involved with the implementation of SD at the level of local government and community in Western Australia.

How people involved with the SD debate at the level of Western Australian local government made sense of the intellectual and academic debates and proposed models of SD was unknown because little previous work appeared to have focused upon it. In that sense then, this study started with a typological model that was similar to that proposed by Pearce (1993), but rather than suggesting that the author's own model defines the SD debate, the purpose of this research was to examine how people define their own visions of SD. In investigating perceptions about the propositions previously made about SD, this study accepted the claim of Barbier (1987) that it is extremely difficult, if not impossible, to define SD in an analytically rigorous way, but that there is a

strong requirement to describe its characteristics and to distinguish its underlying concepts.

To restate an earlier point, this dissertation does not take an a priori stance, relative to the correctness of the various propositions previously articulated about SD. Rather, it seeks to capture a sufficient cross-section of the relevant communication concourse to enable the plurality of definitions about SD to be identified and subsequently to be put to an interested audience in the form of a Q-sample. Having identified a wide spectrum of literature about SD, the review was used, literally, to build a conceptually relevant population of statements about SD, based on a representative sample of literature (Brown, 1980). In Q-Methodology terms, selecting a sample of relevant statements from the communication concourse was called Q-sampling (Brown, 1980, 1986; and Stephenson, 1984, 1980).

The purpose of Chapter Three is to provide a description of Q-Methodology – the method chosen to provide the empirical data for the study – and to familiarise the reader with the unique characteristics of the Q-Methodology approach to research. The chapter also presents the formal methodology for this study. It provides a detailed account of the data gathering process and methods of analysis. It also describes the participants and the instruments that were deployed during fieldwork. Chapter Four presents the findings of the research process and describes the results. Chapter Five provides a discussion and interpretation of the results, together with conclusions, limitations and recommendations for further research. The dissertation ends with various Appendices.

CHAPTER TWO

LITERATURE REVIEW

2.1 Changes to the dominant social paradigm

2.1.1 Introduction

Following Kuhn's seminal work on paradigm change (1970), and that of Rosnow a little later (1981), social commentators and academics from a variety of disciplines noted that values and attitudes about a number of issues recently underwent radical change (Buss and Craik, 1983; Davidson, 2000; Gollner, 1995; Inglehart, 1990; Rohrmann, 1996; and Sloan, 1996). One change related to how people viewed their relationship to the natural world (Arcury, Johnson and Scolley, 1986; Davidson, 2000; Dunlap, 1993; Eckersley, 1992; and Pell, 1996). The literature review that follows suggests that a conflict arising from changing views over the human relationship to nature have driven increasing demands for SD and that the debate over the form that SD should take is also deeply contested as a result. In illustration of the level of contestation of the debate, the evolving sentiment of modern times was neatly captured by the following conflicting quotes, written in the early 1980s:

> If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now. Serious stresses involving population, resources, and environment are clearly visible ahead. Despite greater material output, the world's population will be poorer in many ways than they are today (Anonymous author, 1980, p.1); and
>
> If present trends continue, the world in 2000 will be less crowded, less polluted, more stable ecologically, and less vulnerable to resource-supply disruption than the world we live in now. Serious stresses involving population, resources, and environment will be less in the future than now. The world's people will be richer in most ways than they are today (Simon and Kahn, 1984, p.1).

Those two sentiments were expressions of polar opposite paradigms and they reflected the archetypal values held by people about the human relationship toward nature (Eckersley, 1992; Inglehart, 1990; and Wenner, 1997). The first viewpoint, expressed in the "Global 2000 Report to the President of the United States" (1980) presented an alarming litany of apocalyptic disasters. The doom-saying sentiment of the "Global 2000 Report" accepted that there was an environmental crisis either present or looming. The second view, presented in "The Resourceful Earth" (Simon and Kahn, 1984) was a reversed-image of the first sentiment, and provided an optimistic vision of "Brave New World" proportions. The representation from "The Resourceful Earth" rejected any notion of ecological Armageddon implicit in the first quote (Dryzek and Schlosberg, 1998).

The opposing properties of the sentiments expressed in the two quotes were important because they reflected changes occurring in the Dominant Social Paradigm (DSP) (Catton and Dunlap, 1979 Dunlap and Catton, 1979; Dunlap, 1983b; Holling, 2001; Stern, 2000; and Zimmerman, 1991). The basic proposition of Dunlap (1993) and of Catton and Dunlap (1979) was that every society had a DSP that was based on the experience of people, embedded in values, related to attitudes, and influencing their behaviour (Arcury and Christianson, 1990). Dunlap (1993, p.724) called the DSP, the "taken-for-granted way of viewing the world into which most people are socialised". Numerous authors (e.g., Eckersley, 1998) noted that changes to the DSP were a source of confrontation between people whose values were fiercely held.

In his seminal work on values, Rokeach defined values as "a single belief that transcendently guides actions and judgements across specific objects and situations and beyond immediate goals to more ultimate end states of existence" (1973, p. 15). McAllister offered a similar account when suggesting that:

> human values serve as guides for personal decision-making, attaching significance and importance to objects and events, directing choices towards things considered desirable or good and away from things considered undesirable or bad. Seldom is only a single value involved in a decision; most require selecting and weighting several values simultaneously (1980, p. 110).

Fischhoff, Slovic and Lichtenstein offered a third definition and stated: "By "values" we mean evaluative judgements regarding the relative or absolute worth or desirability of possible events, in short, the fundamental inputs to most conscious, deliberative decision making" (1983, p. 39). Dunlap, Grieneeks and Rokeach (1983) argued that values were internal standards that guided or determined specific attitudes to relevant objects or situations. They also suggested that values acted as a criterion for guiding action. Values were frequently considered to be an important human attribute in that they appeared to play a key role in motivating behaviour (Foxall, 1983; Kerlinger, 1988; Krause, 1993; Newhouse, 1990; Rokeach, 1973; and Whicker, 1969). Numerous studies supported that proposition over a range of behavioural outcomes, including cigarette smoking (Grube, Weir, Getzlaf and Rokeach, 1984), automobile purchase (Henry, 1976) and choice of leisure activities (Beatty, Kahne, Homer and Misra, 1985). Because researchers were partially successful in linking values to a variety of behaviours, interest in values related to environmentally relevant behaviour expanded (Dunlap, Grieneeks and Rokeach, 1983). Values were also widely held to be important within the debate about the future form of development (Black and Reeve, 1993; Boldero, 1995; Clayton, 1998; Golner, 1995; and Heberlein, 1989).

Unfortunately, however, the literature regarding the values associated with environmental problems and SD remained relatively immature (Dunlap, Grieneeks and Rokeach, 1983). Rhoads et al. (1999) were quite specific in suggesting that detailed empirical studies about environmental decision-making were lacking. Beierle and Konisky (2000) made a similar point when they stated that few studies of the values involved with environmental planning explicitly operationalised them into evaluative criteria. This situation resulted in confusion about the use of related terms (Conn, 1983; Gigliotti, 1992; and Stephenson, 1978). Heberlein (1981, p. 241) went so far as to suggest that the previous work on values and attitudes was "almost hopelessly disorganised and fundamentally unintegratable". Regardless of that problem, research into environmentally relevant values and their impact on attitudes and behaviour gained increasing attention and reached important conclusions (Karp, 1996; Smith, Haugtvedt, and Petty, 1994; and Kalof, 1995).

For example, Rokeach (1973) argued that values were few in number and relatively stable and that they operated as generalised internal standards that transcended specific situations. Rokeach (1967) suggested that human values were factored into two categories with one factor composed of 18 terminal values and the other factor composed of 18 instrumental values. For Rokeach, terminal values represented a desirable end-state of existence such as "salvation" or a "world at peace" whilst instrumental values represented desirable modes of conduct such as "cleanliness" (Rokeach, 1967). Heath and Fogel (1978) and Schwartz and Bilsky (1987) both identified eight categories of values in their respective studies. Some researchers have also suggested that people held a limited number of values (e.g., Peritore, 1993; and Gigliotti, 1992). Based on Rokeach's theory of human values, Tetlock (1989) proposed a value pluralism model of ideological reasoning in which all ideologies involved terminal values specifying the ultimate goals of public policy. Tetlock's (1989) model assumed that ideologies vary across the terminal values to which they assigned high priority and the degree to which they acknowledged high priority values to be in conflict with one another.

With regard to that point, the paradigm conflict within the debate over the terminal values of the DSP was distinguished in several ways by a variety of authors. A central feature of the changes occurring to the DSP involved what Grendstad and Wollebaek (1998) called a distinction between values associated with anthropocentricism on the one hand and ecocentrism on the other. The two domains represented ideological opposites. According to Eckersley (1992, p. 33) the split between ecocentrism and anthropocentricism represented "the most fundamental area of divergence" in

environmental research today. That position was supported by Davidson (2000), who argued that the most basic division amongst advocates of environmentalism was the difference of opinion between an anthropocentric and an ecocentric worldview.

Buss and Craik (1983) offered a typical bipolar orientation to debate about development with the opposing poles being termed "Comucopian" and "Catastrophic" or alternatively "pro-growth and pro-technology" versus "anti-growth and anti-technology". Daly (1996) called the conflicting paradigms "Cornucopian" and "Neo-Malthusian". Naess (1973, 1984, and 1990) called the split "shallow ecology" versus "deep ecology". Dobson (1995) distinguished between ecologism and environmentalism. Dunlap and colleagues (e.g., Dunlap and Van Liere, 1978a, 1984) identified the Human Exemptionalism Paradigm (HEP) and the New Environmental Paradigm (NEP). The HEP was also referred to as the anthropocentric paradigm, or the Promethean view (Dryzek and Schlosberg, 1998; and Simon, 1982). Arcury et al. (1986) called the underlying social viewpoint of recent times the Dominant Western Worldview (DWW). For purposes of clarity, as far as possible the terms "Human Exemptionalism Paradigm" and "New Environmental Paradigm" will be used from this point on.

The divergent worldview positions articulated between and within the HEP and NEP held distinctive implications for humankind's relationship to the physical environment. Each position was said to have a distinctive set of core values and a wide variety of beliefs and attitudes toward the economy, the polity, society, nature and knowledge. On that point, Eckersley (1998, p. 4) noted:

> Every relevant issue is contested; experts continue to argue over whether our future – the future we are creating through our past and present choices and decisions – will be bleak or rosy, nationally and globally. There are pessimists and optimists about economic progress, the state of the environment, population carrying capacity, technological change, social justice and equity, war and peace.

The issues outlined in that quote from Eckersley are at the core of debates over SD. Furthermore, because of the paradigm conflict over the DSP, objective measurement of progress in the form of sustainability indicators has proven to be highly contentious and deeply divisive (Institute of Environmental Studies, 1996). For that reason, much debate and confusion remain about the meaning and use of a variety of indicators of progress (Eckersley, 1998). Nix (1996) went so far as to state that the search for indicators of SD was "naïve, ill-founded, costly and potentially dangerous". Bradbury (1996) was even more critical of sustainability indicators, describing them as "voodoo science". Dunlap

(1983a) also suggested that the competing worldviews of the NEP and HEP were not testable in a rigorous sense. Neumayer (1999) reiterated the proposition that the value positions of the competing paradigms were indeterminate and non-falsifiable by science. Rhoads et al. (1999, p. 298) also emphasised that the relevant concepts were "value-laden social constructions that cannot be derived from, or made absolute by, scientific inquiry". Other authors (e.g., Eckersley, 1998; and Furedi, 1997) noted that little empirical validation existed to support the variety of claims made within the HEP-NEP debate. On that point, Dunlap (1983b, p.200) explained that the advocates of the HEP and NEP value positions disagreed over their interpretations of empirical data, and they even disagreed over what constituted "the facts" of development itself.

Advocates of the HEP and NEP presented theoretical propositions and empirical data to support or discredit each value position and this has led to intense (and often personal) disputes between the rival schools of thought (Dunlap, 1983b). Stern, Dietz and Kalof (1993, p. 323) also noted the cleavage in views within the debate over value orientations and they stated: "The participants seem to be talking past each other...part of the problem is that the actors do not value the same things. Sometimes, it seems, they do not even see the same world". It certainly appeared that changes to the DSP were not necessarily supported by empirically derived, objective evidence of progress or decline and for that reason scientific investigation has proven problematical (Eckersley, 1998).

With regard to conflict between values related to the DSP, the work of Miller (1983), Fazio (1989) and Fischhoff et al. (1983) was particularly important since it provided the insight that values were inherently incoherent. Fischhoff et al. (1983) claimed that people have contradictory values for the following reasons:

- Issues were unfamiliar and complex;
- People often had little knowledge about terms in which issues were formulated;
- Daily life forced people to adopt a range of roles with clear-cut but inconsistent values;
- People simply do not know what they want or how to begin thinking about some issues; and
- People's values matured over time.

In summary, Fischhoff, et al. (1983) warned that people frequently had poorly formulated or incoherent values when faced with complex or unfamiliar issues. Miller (1983) suggested that only a small percentage of the population was likely to be directly

interested and have salient attitudes toward any complex issue such as SD. The corollary was that people were likely to exhibit clear preferences amongst values when the values were concerned with issues that were familiar, simple and directly experienced.

Because of the potential for poor conceptualisation about values, it would be misleading to categorise the environmentalism of the NEP or the anthropocentricism of the HEP as coherent constellations of values, accepted by all people sharing the relevant paradigm (Fox, 1990; and Rodman, 1980, 1983). Instead, as Eckersley (1992) noted, an ecological focus was basic to the new paradigm but there was a diversity of views amongst theorists and the lay public as to the meaning, scope and consequences of the NEP. Similarly, there was a diversity of views about support for anthropocentricism within the HEP (Fox, 1984).

In charting that diversity, contemporary theorists have proposed bi-polar or tri-part models to describe the range of environmentally-relevant values held by people (e.g., Kellert, 1980; and Schwartz, 1992). Bi-polar value positions were proposed by Kellert (1980) and Arluke (1988). Arluke (1988) proposed a fundamental division between values associated with identification with animals on the one hand, and their objectification by instrumental demands on the other. In an earlier paper, Kellert (1980) identified an instrumental-ethical distinction and also highlighted an empathic dimension regarding the interaction of people with animals and nature generally.

Schwartz (1992) developed a theory of altruism and argued that environmentally relevant values were arrayed along two dimensions. According to Schwartz, the first value dimension related to person-relevant values and existed as a continuum with self-enhancement at one extreme and self-transcendence at its opposite. According to Karp (1996, p. 113), "this dimension reflects the distinction between values oriented toward the pursuit of self-interest and values related to a concern for the welfare of others". The second value dimension suggested by Schwartz contrasted openness to change with conservation of the status quo. The value dimension was said to indicate the degree to which people were motivated to challenge themselves for intellectual or emotional realisation. In Schwartz's model, people were said to be motivated to follow personal values because they fulfilled self-expectations and were tied to the self-concept.

Schwartz assumed that personal norms were activated by the person's awareness of consequences for others of intended behaviour and personal ascription of responsibility for bringing about or preventing those consequences (Karp, 1996; and Widegren, 1998). Schwartz's model connected that sense of moral obligation to altruistic behaviour. For

Schwartz, altruistic behaviours were likely to occur when moral norms against causing harm to others were activated. On that point Widegren (1998, p.78) stated, "some kind of moral or altruistic motivation is essential for pro-environmental behaviour". Over recent years, a number of studies have attempted to relate Schwartz's theory of altruism to environmentalism, in which social-altruistic behaviour was said to result from the activation of personal values of environmental concern (Boldero, 1995; Karp, 1996; Schwartz, 1977; and Widegren, 1998). A study by Karp (1996) lent support to the Schwartz model and found that people whose values were categorised as high on self-transcendence and openness to change were much more likely to engage in pro-environmental behaviour. For people with the values of self-enhancement and conservation of the status quo, however, these values were seen to be strong negative predictors of pro-environmental behaviour.

Stern, Dietz and Kalof (1993) and Stern and Dietz (1994) extended Schwartz's model. They suggested that environmental concern was motivated by altruism that extended concern for consequences of behaviour beyond other people to biosphere values more generally. Stern, Dietz and Kalof (1993) developed a three-part model of values to expand on the earlier two-dimensional model of Schartz (1992). They labelled the value positions "egoistic", "social-altruistic", and "biospheric" values respectively.

Within the tri-partite value model offered by Stern, Dietz and Kalof (1993), egoistic values were said to predispose people to be concerned about environments and environmental problems that impacted on them directly. In that sense, people were considered to be "rational actors" in so far as they were concerned with issues that had direct positive or negative consequences for them (Widegren, 1998). This "egoistic" predisposition for action was said to take the form of pro-environmental attitudes and behaviour; for example, when a person's home was directly threatened by a development which was seen to have negative consequences for the home owner. Positioning a locally unwanted land-use (LULU) such as a landfill near to the person's home was an example of this type of environmental threat. This was the classic case of the "not in my backyard" or NIMBY effect (Stocker and Pollard, 1994). Egoistic values were also seen to involve a negative reaction to environmental protection measures, as when the costs of such protection were perceived to be too high or too inconvenient for the individual.

Although preceding Stern's, Dietz's and Kalof's (1993) work on egoistic values, Stern and Oskamp (1987) and Van Liere and Dunlap (1980) also suggested that different individuals may display environmental concern in relation to different substantive issues. Oskamp, Harrington, Edwards, Sherwood, Okuda and Swanson (1991) also made this suggestion and noted that some people may be concerned about population growth and

others about pollution levels. Cook and Berrenberg (1981) concluded that specific pro-environmental behaviours, such as recycling, were likely to be related to different antecedent values and attitudes for different individuals. Those suggestions had important implications for explaining why some people embraced SD, while others remained less than enthusiastic.

For example, amongst other issues, the TBL focus of SD concerned environmental protection, economic growth, social progress, an orientation toward participation and democracy, and the rights of future generations. The studies by Cook and Barrenberg (1981) suggested that any individual may hold a variety of values and pro- and anti-attitude evaluations for each of those issues. The studies by Fischoff et al. (1983) also demonstrated that such values and attitudes could be incoherent or logically inconsistent. For example, one person may favour environmental protection together with economic growth and believe that the two issues were not mutually exclusive. Another person may believe that economic growth was the cause of environmental destruction, and hence, favour protection over growth. Both may ultimately support or reject the SD concept, but for very different reasons.

The second focus of Stern's, Dietz's and Kalof's (1993) tripartite value model involved social-altruistic values. The motivation to act from the social-altruistic value orientation was said to be based on the moral imperative of the golden rule: "Do unto others as you would have them do unto you" (Heberlein, 1972). Moreover, social concerns were said to evoke a sense of obligation, as individuals performed pro-environmental behaviour because they believed it was expected of them. Widegren (1998) also suggested that the egoistic value position must be augmented by considering social-altruistic motivations for pro-environmental behaviour. The third of Stern's, Dietz's and Kalof's (1993) value classifications related to biospheric values and these were said to be prominent within the thinking of environmentalists. The biospheric value orientation led people to make judgements on the basis of costs or benefits to the whole ecosystem (Stern, Dietz, and Kalof, 1993). For some individuals, biospheric values represented a moral maxim or terminal value (Rokeach, 1967) and these values motivated behaviour in a similar manner to the social-altruistic values in Schwartz's (1992) model.

Stern and Dietz (1994) further refined their earlier work and offered a general theory of values, beliefs, attitudes and behaviour. Stern and Dietz (1994) developed their tri-partite model and they suggested that environmental concern was connected to three classes of valued objects: other people (the golden rule), non-human objects (the land ethic), and the self (egoistic values). Stern and Dietz (1994) suggested that the three value orientations were not mutually exclusive in that any individual may hold

components of each orientation to varying degrees. Linking back to the work of Rokeach (1973), Stern and Dietz suggested that values were criteria for guiding action and for developing and maintaining attitudes toward relevant objects and situations. Stern and Dietz (1994, p. 67) stated: "We presume that people construct their attitudes on the basis of their expectations about how the attitude object affects the particular set of people or things they value". In their attitude construction model, beliefs mediated between values and attitudes. According to the model, individuals will, when asked to express an attitude, review their beliefs about the attitude object to estimate likely effects on the things they value (Stern and Dietz, 1994).

Stern (2000) recently developed a further refinement and proposed a conceptual framework linking values, beliefs, norms and behaviours. In Stern's "Theory of Environmentally Significant Behaviour", pro-environmental behaviour was activated by beliefs that environmental conditions threatened the things a person valued and the belief that the person was able to reduce the threat. Beliefs were in turn impacted by the constellation of biospheric, altruistic and egoistic values that defined a person's ecological worldview. Within Stern's latest model, norms, beliefs and values were all subsumed within the concept of "attitudinal factors" (2000). According to Stern, these attitudinal factors operated as a general predisposition to act with greater or lesser pro-environmental intent.

Abelson (1982) and Petulla (1980) also offered tri-partite models to allow for description of values toward nature. Petulla's first value position was termed the economic or instrumental perspective. This value position involved the assessment of the environment in terms of its usefulness to humanity. The biocentric perspective was Petulla's second value position and this involved intuitive, experiential identification with the natural world. The ecological perspective involving a commitment to understanding how nature ordered itself was the third value position outlined by Petulla. Merchant (1992) offered a similar model to Petulla that classified three sets of values. Merchant's value positions were labelled as "homocentric", "ecocentric" and "egocentric" values respectively.

To summarise the communication concourse so far, it was now apparent that the changes occurring within the DSP were based on alternative paradigms relating to the human relationship to nature (Rosnow, 1981). The alternative paradigms of the HEP and NEP, in turn, were based on values and attitudes of people and those values were widely considered to guide action. The relevant values were regarded as being few in number (Rokeach, 1967) and frequently incoherent (Miller, 1983; Fazio, 1989; and Fischhoff et al., 1983). Moreover, the indicators of progress and values on which they were based

were considered by many authors to be indeterminate (Bradbury, 1996; Nix, 1996; and Rhoads et al., 1999). That did not mean that people's beliefs about the "correctness" of each paradigm and their supporting reasons were not available for inspection. To date, however, the literature on those issues was relatively immature. The next part of the review begins the process of describing the characteristics that a variety of authors have asserted were associated with the paradigm conflict. The purpose of the next section is to provide more detail about the characteristics of the HEP and NEP.

2.1.2 The Human Exemptionalism Paradigm

In order to advance the communication concourse for the present study, this section begins by outlining the variety of characteristics that the HEP was said to involve and illustrates how the paradigm came to dominate Western thought. The section moves on to note how the HEP was challenged by an ideological competitor and how advocates of the HEP have firmly defended it against recent criticism (e.g., Bailey, 1993 and 1995; Beckerman, 1995; Maly, 1993 and 1995; North, 1995; Ridley, 1995; and Simon, 1981).

In terms of the suggested environmental value continuum, the blatant anthropocentric position of the HEP was one of unrestrained exploitation of nature (Fox, 1990). At least since the time of the classical Greeks, Western thought was said to be overwhelmingly anthropocentric (Fox, 1990; and Reilley, 1973). Steffen (1996) noted that the biblical notion of dominion was a source for Western attitudes to the environment. In the book of Genesis, God was said to have blessed humanity with the imperative: "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth".

By the late 1950s, almost four centuries of industrialisation and global economic expansion had raised the HEP, with its strict laissez-faire economic orientation, to prominence as the DSP in Western thought (Braun, 1995; Davidson, 2000; Dunlap, 1993; Heberlein, 1972; and Reilley, 1973). The traditional paradigm was a pro-development attitude characterised by a complex of notions incorporating a view of land and resources as privately owned commodities with monetary values determined by market forces. The HEP entailed core values of economic growth, valuing nature as a resource for human use, and allowing for the domination of nature by society (Brown, 1980; Dunlap, 1983a; and Reilley, 1973). According to Buss and Craik, this orientation "embodies the notions of a high-growth, high-technology, centralised free enterprise society, with a pro-business stance on regulation, materialistic goals, and rational, quantified decision-making" (1983, p. 261). Adherents of that view were expected to hold positive attitudes toward those attitude objects (North, 1995; and Ridley, 1995).

According to Grendstad and Wollebaek (1998), the defining quality of anthropocentricism was the suggestion that humanity was the aim of history and the endpoint of evolution. Within this worldview, nature was viewed in terms of its use to humanity, and there was "unrestrained exploitation and expansionism" (Fox, 1990, p. 2). The human-centred attitude to the human-nature relationship had a long history (Reilley, 1973). Eckersley (1992) also suggested that anthropocentricism positioned humanity at the centre of all life. Anthropocentricism was aligned with homocentric, self-interested or egoistic values (Merchant, 1992; Stern, Dietz and Kalof, 1993; and Thompson and Barton, 1994). In the anthropocentric vision, humanity had the right and obligation to manage nature's resources for human benefit. The centrality of humanity within the anthropocentric value-base appeared to flow from an extension of the "golden rule" (Heberlein, 1972). The classification of environmental values and attitudes based on the golden rule was specified as an extension of traditional attitudes flowing from the value assigned to other people. The underlying common assumption of the golden rule indicated that the proper scope of ethical action was restricted to the human realm (North, 1995). Such a view articulated that value in the natural world originates in the attitudes human beings held toward nature. Trees, insects, birds and whole ecosystems possessed no intrinsic worth or ethical standing, beyond their capacity to serve human ends. The instrumental value position was quite straightforward. It derived from the fundamental need for humanity to make use of the environment in order to survive and prosper (Angyal, 1941; and Hills, 1996). The legitimacy of the instrumental value position was a result of the apparent need for humanity to harness nature to human ends (Hills, 1996).

Arcury and Christianson also articulated some of the other core characteristics of the HEP (1990). Firstly, within the HEP, society was considered to be exempt from the laws and limits of nature. Secondly, there was a faith in the human ability to meet all needs through the application of science and technology. Lastly, there was an acceptance of unlimited social and economic growth. Dunlap (1993) suggested additional characteristics of the HEP included a view of humans as separate from the rest of nature and as having the right to exploit nature and natural resources for human purposes. These assertions were supported by Ferry (1995) when suggesting that humans alone had moral and legal rights. Other features of the HEP, according to Dunlap, included valuing free enterprise, limited government, private property, and individual freedom as essential to the good of society. Dunlap (1993) was quite specific in referring to this constellation of core values and beliefs of the HEP as the DSP of modern times.

In 1979 and again in 1984, Dunlap and Catton and Dunlap respectively proposed that the HEP was the all-pervasive DSP. Dunlap reiterated that point in 1993. Other authors

supported that view. Mead-Hooker (1992, p. 7) stated that: "the mechanistic belief, which views humans as separate and in control of nature, continues to dominate Western beliefs about nature and society". A few years later, Pell (1996, p. 139) made the implicit assumption that the HEP was still the DSP and he called for a "major shift" towards a "shallow green" paradigm. As recently as 2000, Davidson (2000) also suggested that the HEP was still dominant, but that it was on the threshold of change. On that point, Davidson said: "Western societies are poised on a civilisation threshold similar to ones which marked the end of the feudal period when outmoded institutions, values, and systems of thought and their associated dogmas were ripe for transcendence by more relevant systems of organisation and knowledge" (2000, p. 25).

Many authors have argued, however, that the anthropocentric worldview of the HEP has been replaced by the ecocentric worldview of the NEP as the DSP. On that theme, Yearly stated: "At the start of the 1990s the arguments of the greens appear all pervasive" (1992, p. 511). In a revision of their original (1978) work on the NEP, Dunlap and Van Liere, together with Mertig and Jones (2000) also noted a modest growth in pro-environmental responses to the NEP Scale. Simon, the most strident advocate of anthropocentricism, also suggested that the HEP had become a minority position (cited in Dunlap, 1983a).

The literature on the impact of the HEP towards environmental protection and conservation reached mixed conclusions. Some authors suggested that the instrumental or homocentric values underlying the HEP opposed environmental protection efforts by government, particularly when such efforts conflicted with the goals of economic growth or impacted on property rights or individual freedom (Brown, 1980; and Reilley, 1973). Dunlap argued that "for a variety of reasons – our religious traditions, economic and political systems, and the unique history of abundant natural resources – the United States, along with most other industrialised nations, has developed an inherently anti-ecological cultural system" (1993, p. 724). On that point, however, Stern and Dietz (1994) disagreed: they suggested that the "egoistic" values associated with self-interested anthropocentricism could take a pro-environmental form when supporters of the HEP believed that environmental changes threatened them personally. Others have noted this "not in my backyard" (NIMBY) response was a rational component of the HEP (Stocker and Pollard, 1994). Thompson and Barton (1994) were quite clear in their argument that anthropocentric values were not necessarily anti-environmental values. On that point, Thompson and Barton stated: "The basic idea is that both ecocentrics and anthropocentrics will express support for the environment but with different underlying motives" (1994 p. 150).

In this review I was unable to locate sources of published data that suggested a support for anthropocentric values was associated, per se, with antagonism towards the SD concept. There was a small literature that implied, however, that anthropocentric values could be positively associated with SD (e.g., Beckerman, 1992; Logan, and Beltrao, 1995; and Neumayer, 1999). Due to lack of empirical evidence, it was assumed that anthropocentric values were compatible with a form of SD, but identification and description of a strictly anthropocentric vision of SD has not yet been offered. Dryzek and Schlosberg (1998) noted that the advocates of the HEP have made those two main arguments in its defence. Firstly, a variety of authors suggested that environmental indicators and conditions were not particularly problematical. On that point, Simon stated:

> Are we now "in crisis" and entering an age of scarcity? You can see anything you like in a crystal ball. But almost without exception, the relevant data – the long-run economic trends – suggest precisely the opposite. The appropriate measures of scarcity – the costs of resources in human labour, and their prices relative to wages and other goods all suggest that natural resources have become less scarce over the long run, right up to the present (1982, p.10).

Secondly, HEP advocates argued that where limited problems do occur, human ingenuity and creativity will overcome any supposed obstacles or limits (e.g., Bate, 1998; Maley, 1993; Mann, 1991; and Simon, 1995). For example, Bailey stated: "To counteract the seduction of the [ecological] apocalypse, scientists, policy makers, intellectuals, and businessmen must work to restore people's faith in themselves and in the fact of human progress. History clearly shows that our energy and creativity will surmount whatever difficulties we encounter" (1995, p. 16).

Within the HEP, global environmental problems were seen as a fabrication, pollution problems were said to be solvable, and all measures of human welfare were seen as showing positive improvement (Langer, 1971; and Treanor, 1997). For the supporters of the HEP, it simply appeared that issues of SD have been regarded as non-issues in that development was already regarded as sustainable and largely non-problematical and therefore an imposed SD policy was unnecessary. Implicit to the HEP position was the idea that human society was inherently sustainable because human ingenuity would solve all problems and the resource base was regarded as infinite in amount and variety (Simon, 1983). For those reasons, advocates of the HEP have firmly defended the alleged economic, social and environmental gains of modern society (e.g., Beckerman, 1995, 1992, 1974; Lomborg, 2001; Ray, 1993; Simon, 1996; and Wildavsky, 1995).

In supporting the HEP, Julian Simon, whom Dryzek and Schlosberg (1998, p. 23) described as "the Dean of the Prometheans" suggested that people were living longer; infant mortality was in steep decline; poverty was being reduced; air and water quality was improving; more resources were being made available to the world economy each year; and food supply was outstripping demand (Simon, 1982, 1995; and Simon and Kahn, 1984). Other advocates of the HEP such as Bailey (1995), Beckerman (1995), and Maley (1995) contested almost every claim made against the anthropocentric world-view. Indeed, some went so far as to suggest that alternative worldviews rank as great delusions (e.g., Campbell, 1999; Treanor, 1997; and Whelan, 1995).

Defenders of the HEP, such as Simon (1995), Maley (1993, 1995), and Lomborg (2001) provided theoretical and empirical data to support an implicit assumption of sustainability. Those authors claimed that the increase in material output, measured in Gross Domestic Product (GDP) at a national level, led to unprecedented improvement in standards of living. Others noted that more food, and more goods and services were being produced and consumed by the population than ever before and this trend showed no sign of slowing or reversing (e.g., United Nations, 1992; and Bailey, 1995). Still others suggested that people will live longer than any previous generations in history; they will be more highly educated; they will have access to a greater range of resources; and they will be less vulnerable to the vagaries of nature such as floods, famines and disease (Bailey, 1995; Bate, 1998; and Magretta, 1997). On that point, Bate stated: "By every objective measure, such as infant mortality and life expectancy, the British are healthier today and exposed to fewer and lesser hazards than ever in our history" (1998, p. 6). Indeed, since World War II, sustained growth in production and living standards has taken place in countries like Japan, Western Europe, North America and Australia (McTaggart, Findly, and Parkin, 1996). Lomborg (2001) is the most high profile author to have claimed that the "the Litany" of exaggeration about environmental problems is based on unsubstantiated myths, rather than objective data about the fundamentals of development.

The champions of the HEP argued that such "positive" outcomes were not merely restricted to the economic and social realms of life. Many writers also suggested that the pessimistic prognosis of environmental decline was simply unfounded (e.g., Bailey, 1995; Lomborg, 2001; and Simon and Kahn, 1984). They argued that for most people the environment was becoming less polluted rather than more polluted, and that more people now had access to basic essentials like fresh air, safe food and clean drinking water than ever before (Marshall, 1997). Others have also claimed the scientific evidence for predictions of problems due to the extinction of species and loss of biological diversity,

and global warming were simply missing, or at best, open to multiple interpretations (e.g., Maddox, 1972; Maley, 1993; and Mann, 1991). As an example of the problems of data interpretation, Roche identified that estimates of total numbers of species were "embarrassingly imprecise, ranging from 1.5 million to 300 million" (2001, p. 1).

In a summary review of the impacts of a growing economy, Neumayer (1999) noted the case for environmental optimism and suggested a number of arguments supporting the idea, consistent with the HEP, that development and economic growth were beneficial for environment protection. The first argument, noted by a variety of economists (e.g., Beckerman, 1992) was that demand for environmental quality was a "superior good". This meant that as incomes grew as a result of economic growth throughout the economy, and over time, environmental concern and spending on environmental protection rose more than proportionally (Dunlap, Grieneeks and Rokeach, 1983). The theoretical concept that economic growth can lead to positive environmental outcomes has been modelled and demonstrated via "environmental Kuznets curves" (Kuznets, 1955; and Neumayer, 1999; and Stern, 1998). Such models suggest that rising incomes and associated patterns of consumption and production lead to immediate deterioration in the environment with longer term improvement as more resources are applied to overcome early developmental problems. Neaumayer (1999) suggested that indicators could show a deterioration first until a certain level of income is reached, after which improvement occurs. Making that point, Stern (1998, p. 173) stated: "Advocates of the Environment Kuznets Curve hypothesis argue that as development begins rates of land clearance, resource use, and waste generation proceed rapidly. But at higher levels of development better technology, improved environmental awareness and enforcement, and structural economic change favouring services and information-intensive production techniques lead to improved environmental conditions".

Albrecht was one of the first authors to note that trend and he stated: "It may be that only when economic needs are met can one develop an enduring concern for the quality of the environment. Until one has reached a certain level of economic security, aesthetic values may be much less important" (1975, p. 578). Barro (1996) supported that claim and suggested that political systems in high-income nations were more responsive to the demands for environmental protection than those in poorer countries. It appeared to Barro that environmental protection measures gained a rising share of total government expenditure as countries became wealthier. Additional to that point was evidence that rising incomes led to better educated populations who were better able to express their preferences in defence of their perceived interests. Richer people may be more aware of

environmental hazards as a result of additional knowledge and information, and they may make additional demands for environmental improvement.

Consistent with the former argument was the proposition that richer countries had the resources to satisfy the demand for greater environmental protection. The claim was made that rich nations had the necessary social, legal and fiscal infrastructures to enforce legislation and promote environmental awareness. Put simply: "If you are rich you can better afford spending money on the environment and you have the technical equipment for environmental protection" (Neumayer, 1999, p. 77). The corollary was the observation that poor people were locked in a trap in which poverty caused environmental degradation, resulting in further poverty (Furedi, 1997). On that point, Neumayer stated: "because you are poor, you are forced to exploit your environment, which in turn makes you poorer, which in turn raises the pressure on the environment and so on" (1999, p.78).

Further reason for optimism was drawn from Etzioni (1975) and Inglehart (1977, 1981, and 1990) who suggested that rising affluence spawned increasing endorsement of "post-materialist" values, in turn leading to less materialistic lifestyles and a greater concern for ecological well being. The third reason for optimism, according to Neumayer (1999) was that economic growth resulted in the provision of newly installed, modern capital that replaced old capital. Neumayer (1999) and Simon (1981) argued that the technical progress achieved by the application of new machines and techniques tended to be less polluting than the use of older machinery and processes. Neumayer suggested that evidence supporting that claim was restricted to case-studies.

A fourth argument for the benefits of economic growth and development related to the premise that wealthy countries reduced their share of heavy industry in favour of a growth in services. The argument suggested that services were less pollution-intensive than heavy industry. Alongside that trend, the share of "heavy" industry appeared to decline in favour of light manufacturing as nations become wealthier. The fifth argument was related to the above points and suggested that growth was not logically restricted or equivalent to rising output in material terms but was related to rising output in value terms. High value "information" stored on a low value computer chip was a case in point. The final observation was that richer nations tended toward falling population growth figures. Empirical data clearly indicated that almost all the Westernised countries of North America, Europe, Japan and Australasia had dramatically reduced birth rates that were correlated with rising income levels (Australian Bureau of Statistics [ABS], 1998, 1994; Furedi, 1997; and Simon, 1981). Taken together, the points highlighted in

previous paragraphs demonstrate many of the arguments that have been made by authors now known as "ecological modernisers" (e.g., Norton, 1991; and Weale, 1992).

The central tenets of ecological modernisation are threefold (Dobson, 1995). Firstly, the costs associated with environmental protection are not regarded as a burden, but rather, as a stimulus to future growth and an impetus for innovation. This situation is alleged to occur when "quality of life" objectives become increasingly important and when environmental amenity is regarded as a superior good (Dobson, 1995). Such a trend has been demonstrated to be occurring at a perception-level by the World Value Survey (Inglehart, 1981 and 1990). Secondly, the standards applied to product acceptability are said to be determined by countries with the most stringent pollution control legislation. This is said to serve to increase the degree of adherence to strict environmental standards within the whole global economy. The basis of this argument is that in a world of stringent standards, a country gains a competitive advantage when it meets or exceeds such standards (Dobson, 1995). Lastly, ecological modernisers believe that avoiding the costs of appropriate environmental protection merely serves to compound longer term costs which could easily be avoided (Dobson, 1995). In summary, ecological modernisers accept that the future economy will be based on producing high value, high quality products with strict enforcement and adherence to environmental standards. The attraction of the ecological modernisation position is that it decouples the "zero trade off" between economic growth and environmental protection. Instead, Weale (1992) argued that the goal of a prosperous society and a protected environment are mutually inclusive and reinforcing.

To conclude this section, it is important to reiterate the major points made. In terms of the relevance of the HEP to the development of a communication concourse relating to SD, there were clearly a number of pertinent themes emerging. Firstly, the HEP had a long history in Western thought and was widely regarded to be the DSP (Davidson, 2000). Most importantly, within the HEP was the terminal value that human welfare was the paramount concern of public policy (Simon, 1982). Furthermore, the HEP was said to endorse a growing economy within the context of a democratic society involving the application of science and technology and expert decision-making (North, 1995; and Ridley, 1995). Other central characteristics of the HEP included the notion that society was exempt from the laws and limits of nature and there was a faith in the human ability to meet all needs. The idea that natural resources were infinite and environmental concerns were small in scale and consequences was also seen as being central to the HEP (Arcury and Christianson, 1990). Additional characteristics of the HEP included a view of humans as separate from the rest of nature and as having the right to exploit

nature for human benefit (Dunlap, 1993; and Simon, 1982). Lastly, it seemed that many of the values and beliefs supporting the HEP had been undermined by the growth of environmental consciousness associated with endorsement of the NEP. The next section moves on to a review of characteristics associated with the NEP and SD.

2.1.3 The New Environmental Paradigm

In spite of the optimistic prognosis of implicit sustainability within the HEP, concerns about environmental problems and a lack of sustainability appeared to have steadily grown since the close of World War II (Bramwell, 1989; Capra, 1996; Meadows, Meadows, Randers and Behrens, 1972; Meadows, Meadows, and Randers, 1992; and Syme, Bates and Milech, 1991). In contrast to the optimistic arguments of the ecological modernisers and those subscribing to the Environmental Kuznets Curve hypothesis that economic growth is followed by environmental and welfare improvement, others have argued that these relationships lack empirical support (e.g., Arnold, 1999; De Young and Kaplan, 1988; Dobson, 1995; and Ehrlich, 1968). Regardless of the debate over the links between economic growth and environmental improvement or deterioration, Rockerfeller and Rockerfeller noted as early as 1973 "a new mood in America" that was coming to the fore (cited in Reilley, 1973). The Rockerfeller brothers identified that public opinion historically reflected the anthropocentric, pro-development bias that existed irrespective of costs to the global environment. The new mood, however, increasingly measured development proposals against environmental criteria.

The last decade of the twentieth century was marked by a loss of confidence in the enlightenment project of the HEP and a steady decline in certainty about the course that humanity had steered over the previous four hundred years (Inglehart, 1991). The mood of fin de siecle challenged the HEP and the longstanding optimism of economic improvement with its advocacy for the unconditional maximisation of human welfare and progress (Braun, 1995). There was now widespread empirical data that indicated that attitudes associated with the NEP and post-materialist values were becoming more commonly accepted (Dunlap, 1983a; and Inglehart, 1991).

Support for the biospheric values and environmentalism of the NEP appeared to be associated with expectations of harmful consequences to the environment due to human behaviour (Dunlap and Van Liere, 1978a, 1984), and with associations with post-materialist values (Inglehart, 1990, 1981). For example, Gigliotti stated: "Many have suggested that the roots of environmental problems stem, in large part, from the values

upon which society has been built" (1992, p. 15). Armstrong concurred and noted: "Man and his values are the core of the environmental crisis" (1972, p. 5). Those points restate the importance of values within the debate over definitions of SD.

The catastrophist position of the NEP developed in opposition to the technological and economic optimism of the HEP and suggested that disaster would occur unless reform was made to current developmental trends (Arnold, 1999; De Young and Kaplan, 1988; Dobson, 1995; and Ehrlich, 1968). The NEP "stresses levelling off material and technological growth, redistribution of resources from richer to poorer nations, lower levels of consumption, decentralisation of control, technology and population, goals of human self-realisation, and participative decision-making guided by non-materialistic values" (Buss and Craik, 1983, p. 261). Whelan (1995) noted that it required a rapid change in direction for advocates of the HEP to enter a debate in which wealth creation and rising living standards for people were seen as being, of themselves, bad things.

The interpretation of global environmental crisis led to a realignment of world-view toward an ecocentric value position. This position was sometimes referred to as "deep ecology" (Bragg, 1996; Davidson, 2000; diZerega, 1996; Capra, 1996; Eckersley, 1992; Maloney, Ward, and Braucht, 1975; and Naess, 1990, 1984, 1973) or less formally, "environmentalism" (Arcury and Christianson, 1990; Dietz, Stern, and Guagnano, 1998; Eckersley, 1992; and Grove-White, 1993). Studies of environmental concern and environmental attitudes suggested that humanity abandoned the faith in limitless development on an expanding frontier, in favour of the NEP with its focus on limits imposed by natural systems.

Introduced by Malthus, and gaining a modern dimension with the publication of works such as "Limits to Growth" (Meadows and Meadows Randers, and Behrens, 1972) and "The Population Bomb" (Ehrlich, 1968) the pivotal concept of the NEP was the sense that human requirements had outgrown the carrying capacity of planet Earth (Davidson, 2000). Many authors agreed that continuous population growth, together with economic growth and resultant pressure on resources, was responsible for unprecedented levels of resource depletion, pollution, and ecological decline (Rozak, 1995; Wenner, 1997; Wichterich, 1995; World Conservation Union, [WCU] 1992; and Zarsky, 1990). According to Pell, the consensus of opinion "is not doom-mongering, however, but a matter of simple arithmetic, as illustrated by Ehrlich's 'impact = population x affluence x technology'" (1996, p. 138).

The debate about the characteristics of the human relationship to the natural environment, which, according to Stern and Dietz (1994), marked the start of serious

empirical work on environmental values considered whether environmentalism flowed from an extension of the "golden rule" (Heberlein, 1977) or marked the birth of new values around the "land ethic" (Leopold, 1948). The land ethic – or - "new mood" (Reilley, 1973) seemed to be an emerging trend that extended concern from nothing more than people and the problems of society, to include non-human objects (Leopold, 1948; Reilley, 1973; and Stern and Dietz, 1994). The new mood of environmentalism viewed land and the environment as a community resource to be protected for the public good (Reilley, 1973). According to Dietz et al. (1998) the land ethic challenged many common assumptions of the HEP, and from this perspective, plants, animals and even air, soil and water merited respect independent of their utility for human use. Consistent with the ecocentric values of the NEP, all life forms were regarded equally and had inviolate and intrinsic worth (Bragg, 1996; Capra, 1996; Davidson, 2000; Reilley, 1973; and Stern and Dietz, 1994).

In keeping with the work of Buss and Craik (1983), Fox (1990), and Eckersley (1992), the new mood of environmental thinking appears to have moved through a number of distinct stages in recent times. In the 1960s, environmental problems were thought of in terms of a "crisis of participation". This crisis was intimately linked to wider issues of civil liberties, grass-roots democracy and freedom to pursue a good life. Throughout the 1970s, environmental problems were seen as a "crisis of survival" in which doomsday prophecies based on a perception of "limits to growth" became central to calls for recognition of environmental problems (Meadows, et al., 1972). The 1980s saw the development of a "crisis of culture" in which the limits to growth of the earlier doomsday predictions were no longer cast in a negative light. Instead, the limits to growth scenario allowed for a shift in values away from material culture to a post-material culture in which quality of life rather than quantity of possessions became defining qualities for human aspirations (Davidson, 2000; and Inglehart, 1990).

In Buss and Craik's framework, the 1960s saw concern about chemicals, insecticides, consumer safety and global population growth come to the fore (1983). The 1970s saw environmental regulation and control come into focus with environmental impact assessment and environmental monitoring also on the international and national agenda (Myers, 1979). The possibility of global limits to growth was openly debated and the environmental concerns of an alarmed public and scientific community began to be integrated into policy-making. Since the 1980s, energy technology (especially nuclear power) was added to chemical technology as a major concern and the process of risk assessment became institutionalised. More recently, genetic engineering and global warming have been added to the list of concerns (Braun, 1995; Colls, 1997; and Mink, 1993).

Central to the current debate between the supporters and opponents of the NEP and HEP was an argument about "limits" (Dunlap 1983a). It was noted that supporters of the HEP rejected the idea of natural limits to human progress. Pell (1996, p. 138), however, summarised the NEP position and stated: "We are living beyond the carrying capacity of our planet for the human species. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions". On that theme, adherents of the NEP argued that ecological limits were not only real, but that society was already paying the price for breaching them.

Since the late 1960s, some scientists have made persistent warnings about the impact of human economies on the global environment (e.g. Carson, 1962; Ehrlich, 1970; and Meadows et al., 1972). These warnings implied that contemporary society needed to note the state of the environment and critically look at the root causes of the alleged ecological decline. Accompanying the warnings was a generalised concern for "the environment" that diffused throughout society to the point where it was no longer just a fringe view (Anderton, 1997; Black and Reeve, 1994; Counsell, 1999; and Dunlap, 1984). It was endorsed by almost all sections of society, from individuals and community groups to business leaders and Governments (Davidson, 2000; Gollner, 1995; and Scott and Willits, 1994). These environmental concerns were said to have become more widespread within the population in recent years (Gollner, 1995).

The growth in environmental concern was related to a rise in fear about the consequences of the spread of human control over the natural environment (Bailey, 1995; Davidson, 2000; Ehrlich, 1979; Rozak, 1995; and Zube, 1991). According to Grove-White (1993), the environmental agenda of the NEP coalesced around a series of issues that challenged the HEP for supremacy as the DSP. The alleged changes to nature that were important in producing fear include:

- loss of species diversity (Calicott, 1986; Norton, 1987, Opotow, 1993; and Roche, 2001);
- global warming due to greenhouse gas emissions (Gillott and Kumar, 1995; and Gillott and Wood, 1995);
- acid rain and other atmospheric pollution problems due to industrial production processes (Hume, 1993; and Kelly, 1992); and
- the over-exploitation and consumption of finite resources (Meadows, Meadows and Randers, 1992; Myers, 1979; Myers and Simon, 1992; and O'Connor, 1979).

Changes to the biophysical environment by human interactions with nature have increasingly been perceived as having negative consequences for both humanity and nature (Black and Reeve, 1994; Davidson, 2000; Goodman and Redclift, 1991; and Goode, 1998). The problem issues that were said to underlie current concerns were conceived of as being global in scale and involved an underlying sense of crisis (Gare, 1995; Grey, 1993; Hardin, 1968; and Kidner, 1994). Loss of genetic diversity clearly involved a global dimension (Calicott, 1986, Maley, 1993; Roche, 2001; and World Conservation Union, 1992). The term "global warming" was self-evidently seen as problematical at that scale (Gillott and Wood, 1995). The idea of exponential human population growth was also conceived of as a problem with a global focus (Ehrlich, 1968; and Paddock and Paddock, 1967). The over-consumption of "finite" resources and the inability of the environment to absorb human-generated waste products were also perceived as having global characteristics (Maddox, 1972; Mercer, 1995; Myers and Simon, 1992; and Peach and Constantin, 1972).

The alleged of negative consequences of human activity can be considered at two distinct levels. The first series of consequences were often attributed to the "normal" or "business as usual" practices of everyday economic and social life. These consequences were based on the human intention to use technology to dominate nature (Furedi, 1998). Other consequences resulted from aberrations in these processes – in essence, they derived from accidents or catastrophes (Beck, 1992). These consequences resulted from unintended actions and included local environmental catastrophes like Bophal, Three Mile Island and Seveso. In interpreting changes to the bio-physical environment at a global scale, and in terms of a crisis, advocates of the NEP suggested that the negative consequences of current patterns of development required a radical reduction in the scale of human practices (Geller, 1995; Kidner, 1994; and Manzo and Weinstein, 1987).

As a result of those consequences, the community appeared to have become increasingly worried about a range of environmental problems, with many voices denying the validity of the HEP approach to social, environmental and economic development (Axelrod and Lehman, 1993; O'Riordan, 1992; Papadakis, 1994; and Purser, Park and Montuori, 1995). Furthermore, various studies demonstrated a growing environmental concern. For example, a United States-based study by Harris et al. (1998) with a sample of 400 biologists, 101 science teachers and the 1000 members of the general public demonstrated that:

- 69 per cent of biologists believed that "we were in the midst of a mass extinction of the world's plant and animal life. 38 per cent of science teachers and 41 per cent of the general public also believed this to be the case";
- 74 per cent of biologists, 56 per cent of science teachers and 40 per cent of the public felt that efforts to prevent further loss of plant and animal species and their habitats should be "much greater than they are now";
- 40 per cent of biologists and 33 per cent of science teachers believed that if current trends continued, at least one-fifth of all species would be extinct within 30 years; and
- 94 per cent of biologists and 92 per cent of science teachers believed that humanity was responsible for extinction of species now occurring.

The Australian Bureau of Statistics' study on environmental issues (Castles, 1992) had a sample of 12,400 members of the Australian community and it demonstrated that:

- 75 per cent of people were concerned about environmental problems;
- Almost 19 per cent of people suggested that environmental protection was more important than economic growth. A further 70 per cent of people gave environmental protection and economic growth equal importance; and
- 10 per cent of people had taken action to register a concern about an environmental problem by writing a letter or telephoning a relevant agency.

A study by Krause (1993) demonstrated that more than 50 per cent of Americans described themselves as environmentalists. An Australian study by Black and Reeve (1994) with 1115 participants indicated that 85 per cent of persons reported a "fair amount" of concern about environmental problems. Black and Reeve reported that the majority of people in 22 of 25 countries surveyed also reported a "fair amount" of concern. Vining and Ebreo (1992) indicated that high scores on the NEP Scale (NEPS) (developed by Dunlap and Van Liere, 1978a) indicated a growth in pro-environmental attitudes and the willingness of respondents to endorse a worldview in which humans adapted to the changing limits dictated by the environment. That position was supported by the work of Hinni, Gendall and Kearns (1995). Far fewer studies have noted a reduction in environmental concern over the past 20-30 years. However, Gigliotti (1992) found that 1,500 students at Cornell University in the United States were less willing to make environmental sacrifices than their predecessors twenty years earlier.

In summary, there was now a fairly widespread acceptance that humanity faced a serious environmental crisis. On that point Zimmerman stated "In the face of ecological problems now plaguing planet Earth, increasing numbers of people are demanding that sweeping action be taken before the problems cause irreparable damage to the

ecosphere" (1991, p. 122). In an earlier article, Arcury, Johnson and Scollay reached a similar conclusion and stated "Over the past two decades the population of the United States, as well as that of most developed nations, has become more cognisant of environmental and natural resource issues" (1986, p. 35).

In conclusion, it is important to reiterate some of the main points about the values and beliefs associated with the rise of the NEP. Firstly, the NEP was seen to represent a "new mood" that focussed attention away from homocentric values towards biospheric values (Stern, Dietz and Kalof, 1993). Nature generally and all life-forms specifically were the centre of concern for the NEP and the ecosystem was regarded as having inviolate and intrinsic worth (Bragg, 1996; Capra, 1996; Davidson, 2000; Reilley, 1973; and Stern and Dietz, 1994). The NEP abandoned the optimism of the HEP and placed a central emphasis on objective limits within nature that humanity was exceeding and leading to a range of negative consequences (Davidson, 2000; Ehrlich, 1968; and Meadows et al., 1972). Particular attention has most recently focussed on a range of problems associated with climate change, pollution, over population, loss of genetic diversity and over-consumption of natural resources (Maddox, 1972; Mercer, 1995; Myers and Simon, 1992; and Peach and Constantin, 1972). Finally, many studies demonstrated that support for values associated with the NEP was very high across many countries.

2.2 Summary of the HEP-NEP value continuum

The claim was frequently made that the anthropocentricism of the HEP marked one pole of a value spectrum with the environmentalism of the NEP marking the opposite pole (Purser et al., 1995). Besides the polar-opposite positions outlined in terms of the HEP-NEP value continuum, it is also important to note that a variety of authors made suggestions about the mid-point values that lay between the polar extremes. The gradients of viewpoint have previously been categorised and they indicate the range of potential positions held by people today (e.g., Fox, 1990; and Rodman, 1980). Eckersley (1992) suggested that the orientations toward nature lay along a spectrum of opinion. O'Riordan (1992) and Fox (1990) also noted a similar environmental spectrum. Between the poles was a grading of environmentalist positions, sometimes referred to as "dry green", "shallow green" to "deep green", and marked by complexity and ambiguity (Pell, 1996). In moving from the anthropocentric pole of the HEP to the ecocentric pole of the NEP, Eckersley (1992), Fox (1990) and Rodman (1980) provided a number of categories of opinion that they termed "resource conservation and development", "human welfare

ecology", "preservationism", "animal liberation" and "intrinsic value theory". The full spectrum of opinion represented the movement from the economistic, instrumental and anthropocentric value base toward a holistic environmental ethic. Grendstad and Wollebaek (1998) suggested that there was no strict ordering of sub-types of green thinking along the value spectrum and that the anthropocentric – ecocentric continuum contained ambiguities and overlap between the different sub-types of worldview.

According to Fox (1990), unrestrained exploitation and expansionism was a totally anthropocentric value position. It emphasised the maximisation of human welfare resulting from the physical transformation of the non-human world. Nature was considered valuable only in so far as it was of economic value to humanity. The viewpoint valued nature in economic terms and equated the physical transformation of resources with progress. A central feature was a belief in superabundance of resources in order to allow for continual growth in economic activity, and hence, progress. Fox argued that the approach was characterised by short-term thinking and it did not consider the interests of future generations – except in so far as to hold an unquestioning faith in the capacity of human ingenuity to meet problems if they arose. The approach valued technological optimism and the application of science.

Fox (1990) and Grendstad and Wollebaek (1998) named the most anthropocentric stream of thought accepted by environmentalists as resource conservation (RC). Eckersley argued that RC was tied to notions of "prudent husbanding" or stewardship and was based on the application of scientific principles to land and resource management. The approach proceeded from an acknowledgment of the existence of limits to growth (Fox, 1990) and the "gospel of efficiency" (Eckersley, 1992, p. 35). Central to the notion of RC was the elimination of waste. Rodman also described the RC notion as a modern and scientific approach to land management. Fox argued that the approach had a longer-term focus than unrestrained exploitation and recognised the interests of future generations of humans.

The RC perspective involved acceptance of three principles: "conserve nature for development"; "the prevention of waste"; and "development for the benefit of the many, and not merely for the profit of the few" (Grendstad and Wollebaek, 1998, p. 656). Furthermore, RC was also strongly utilitarian and involved the notion that inefficient use or non-use or natural resources was a waste. The RC perspective appeared to be based on an anthropocentric value base, and it was the least controversial stream of thought within environmentalism. It proceeded from a human-centred, utilitarian framework that sought to maximise human benefit from the prudent management of natural resources.

This involved the minimisation of waste and inefficiency during the exploitation and consumption of natural resources (Eckersley, 1992).

The next sub-type of opinion on the anthropocentric – ecocentric value continuum has been called human welfare ecology (Eckersley, 1992). Human welfare ecology (HWE) involved a search for more ecologically benign lifestyles. Within the value position was the notion that humanity should manage nature, not for nature's own sake, but because nature looks after people. The non-human world had no self-evident or intrinsic value position within HWE because its prime objective was human welfare above all else (Grendstad and Wollebaek, 1998). The HWE value base may be characterised as "prudent anthropocentricism" and the position took a "stewardship" view of the human relationship to nature. Pell (1996) and Eckersley (1994) also suggested that the HWE movement had an anthropocentric value base with a focus on the necessity of a clean, safe, and pleasant environment providing benefit for people. A typical slogan of HWE would be: "We must look after nature because it looks after us". The stewardship of nature within the HWE paradigm represented a prudent form of enlightened self-interest. The HWE movement had a long pedigree with the working class and labour movement and Trade Unions all demanding safer and ergonomically sound workplaces. The inter-war "New Town" movement focused attention on residential and urban environments. Since the 1960s, the paradigm of HWE has grown in influence, particularly in urban centres and within local government (Eckersley, 1992; and Pell, 1996). The HWE paradigm was linked to the rise of "post-materialist values" since World War Two, and was particularly associated with the values of the New Middle Class (Williams, 1983). Where RC was centred on land management, with attention to efficiency in forestry, fishing, agriculture and other forms of resource exploitation, HWE concerned itself with the output of economic production. Concern was focussed on toxic waste and pesticide residues in the environment; soil, water and air pollution; the form and function of urban development; nuclear power and armament issues; and the modern diseases of affluence such as heart disease, obesity and "crime" (Eckersley, 1992).

Eckersley noted that the HWE paradigm was critical of RC's narrow focus on the maximisation of efficiency in production and economic growth. The school of thought was also critical of the belief that science and technology alone can solve ecological problems. Calls for "appropriate technology", "soft" energy paths, organic agriculture, alternative therapy and the urban waste management slogan of "reduce, reuse and recycle" were features of the approach. Likewise, the search for a more ecologically benign lifestyle was firmly from the HWE agenda.

The next worldview subtype has been termed "Preservationism" by Eckersley (1992). The "Resource Preservationism" of Fox (1990) was a slightly different concept to that offered by Eckersley. In contrast to the earlier RC, which sought to conserve natural resources for development, preservationism sought to protect natural resources from development (Grendstad and Wollebaek, 1998). Fox argued "the difference between the resource conservation and development approach and resource preservation is purely one of emphasis" (1990, p. 5). Preservationism focused upon ensuring that pockets of "splendid nature" were kept intact and untouched by human development. According to Grendstad and Wollebaek (1998), preservationism was concerned with the aesthetic and spiritual reverence for wilderness. As such, it remained anthropocentric as a result of the expected spiritual benefit to be gained from the "peak experience" of the wilderness encounter. Preservationism was criticised by advocates of the "deeper green" philosophy on the grounds that it gave little consideration to the preservation of less splendid settings, which may, in fact, be of greater ecological value. Fox (1990) pointed out that Preservationism remains an anthropocentric approach with a utilitarian focus. The arguments for preservation of nature within this utilitarian view were summarised below:

- nature was the life support system that provided us with all kinds of "free goods and services" that were essential to human survival;
- nature provides an "early warning system" about environmental deterioration impacting on human interests;
- nature provides a "laboratory" that allows for the scientific study of issues of importance to people (e.g., evolution);
- nature provides a "silo" or "stockpile" of diversity and resources that may have medical, agricultural or other uses in the future;
- nature was important for purposes related to human recreation and leisure, aesthetic pleasure, spiritual inspiration, and education; and
- nature provides people with a range of psychological benefits (Neumayer, 1999).

The animal liberation worldview was next along the Eckersley value continuum. This worldview extended universal justice to all human and non-human sentient beings. According to Eckersley, animal liberation fell short of ecocentrism in that it still led to a hierarchy within nature. Accordingly, on-sentient organisms such as plants and invertebrates remained in a state with no intrinsic worth. In overcoming that problem, Fox (1990) highlighted the emergence of another sub-type of environmental thought called intrinsic value theory. That value position rejected the instrumentalist approaches

of the anthropocentric value positions and instead recognised that the non-human world was intrinsically valuable (Calicott, 1986; Capra, 1996; and Zimmerman, 1991). Advocates of the position gravitated to one of three justifications for assigning intrinsic value to the non-human elements of nature (Fox, 1990). The first justification for intrinsic value was based on the concept of sentience. This position suggested that if an entity was sentient then it had interests – in particular – it sought pleasant and avoided unpleasant states of being (Hills, 1996). It was argued that it was arbitrary to respect or uphold only human interests simply because it was people who held those interests. The second justification for intrinsic value went beyond sentience and suggested that the possession of interests applied to any entity that was alive, in the usual, biological sense (Fox, 1990). The basic proposition was that all living things have basic interests that must be met in order to survive and function optimally.

The third justification for ascribing intrinsic value to non-human elements was termed autopoiesis. Autopoietic intrinsic value theory ascribed intrinsic value to all organisms that were able to reproduce themselves. In this value position, the capability to reproduce provided an organism with a goal internal to itself, and hence, the organism had intrinsic value beyond the value ascribed to the organism by external entities (Grendstad and Wollebaek, 1998). The concept of autopoiesis extended intrinsic value beyond living things to include the processes and systems that supported life itself. Atmospheric circulation, tides, winds, and erosion processes were examples of the systems to which value was extended within the autopoietic intrinsic value theory. The "purest" form of the ecocentric worldview was termed transpersonal ecology (Fox, 1990) or deep ecology (Naess, 1984). Transpersonal ecology involved an integration of all living organisms and holistic ecological entities. Intrinsic value was extended from all living organisms to include everything within the ecosystem (diZerega, 1996).

2.3 Conclusions about the dominant social paradigm

So far, the literature review has presented a summary of the HEP-NEP paradigm conflict, with a description of the starkly divergent assumptions about the status of the human relationship to nature. The review focused on the characteristics and descriptions of the value spectrum and it served as a backdrop to the communication concourse on broader values related to visions of SD. The proposals regarding the spectrum of values were demonstrated to occur along a value continuum with the anthropocentricism of the HEP anchoring one pole and the ecocentrism of the NEP in opposition. Between these two extremes were said to occur a variety of shades of light green to dark green

environmentalist attitudes and values. A number of authors have noted the existence of this paradigm conflict (e.g., Pell, 1996).

This dissertation accepted Dunlap's proposition that the paradigms expressed by proponents of the HEP and NEP were not testable in a rigorous sense. Eckersley (1998) and Neumayer (1999) also suggested that the value positions were non-falsifiable under scientific standards. Furedi (1997) made a similar case with regard to the specific issue of population growth. Witherspoon and Martin (1992) reached a similar conclusion and stated "when we use the term 'green' we refer to expressions of concern; we do not imply a judgement about the scientific 'environmental correctness' of those attitudes". There was little unambiguous support for the HEP, NEP or any variety of shallow green thinking. Most empirical data comes from case studies, and "the facts" presented in studies were often highly contested (Dunlap, 1983a; and Furedi, 1997). Furthermore, when considering the DSP, the case made by Lomborg (2001) that available data is used by HEP optimists who see the best of all possible Worlds and by NEP pessimists who see a World in decline with Armageddon around every corner portray the complexity of the problem facing those with an interest in promoting SD.

In noting the transformation of the DSP from the HEP toward the NEP, it is suggested that environmental concern and calls for sustainable development have grown not only amongst people with ecocentric attitudes and values, but also amongst people with anthropocentric attitudes and values (Thompson and Barton, 1994). The growth in concern has resulted in new proposals about the future development ethic of humanity. These proposals have been encapsulated by the concept termed SD (Davidson, 2000; and Eckersley, 1998). There was now a general acceptance that society can find solutions to the triple bottom line social, environmental, and economic problems via the implementation of SD (Sarre and Treuren, 2001). It was the form and content of SD solutions that was the source of the biggest disagreements. For example, Pell (1996, p. 19) stated that "While there is a general acceptance of the idea that a serious environmental crisis confronts mankind, and while there is reasonable agreement as to the characteristics of this crisis, there is considerable disagreement over the relative seriousness of the different manifestations of it". The next chapter deals with the disagreements over the form of SD and it covers issues related to its implementation. The chapter helps to build the communication concourse by focussing attention from the general literature on the changing worldviews and values toward the specific triple bottom line properties of SD itself.

2.4 Rising awareness of sustainable development

2.4.1 Introduction

As noted already, associated with the transformation of the DSP from the earlier and long-established values of the HEP towards the values of the NEP was a rising interest in, and awareness of, the SD concept. This awakening of interest in SD was a defining characteristic of the late 1980s and 1990s (Anonymous author, 1992b, Diesendorf and Hamilton, 1997; Geller, 1995 and International Council for Local Environmental Initiative (ICLEI), 1997a, 1997b). Environmental groups and governments throughout the World adopted and endorsed SD as policy (Kahn, 1991; Kennedy, 1996; Lang, 1991; and Levine, 1998). Towards the end of the 1990s, even multinational corporations had come to endorse their own SD credentials and commitments (Jayasuriya, 1992; and Kins, 1998). For example, BP, Shell, and Woodside Energy Ltd have all recently created SD employment positions and endorsed SD policies (personal correspondence with Malcolm Doig, Head of Environment, Woodside Energy Ltd, July 2001). The giant Monsanto Corporation even called itself the "Sustainability Company" (Magretta, 1997). From the European Union, International Monetary Fund and United Nations Development Programme, to the Australian Commonwealth, GreenPeace and United States Presidential Council, it was clear that the deployment of SD was a major concern of modern times (Anonymous author, 1992a, 1992b, 1992c, Leach, Mearns and Scoones, 1998; March, 1998; Reid, 1995; World Commission on Environment and Development (WCED), 1980; and WCU, 1991).

Interestingly, regardless of the continuously evolving definitional basis for SD, which will be highlighted in the following pages, it is noteworthy that the SD concept rests on an extreme degree of consensus that sustainability is "right" (Buckinham-Hatfield and Evans, 1996). On that theme, Torgerson (1995, p. 10) asked: "Sustainable development certainly sounds like a good idea. How could anyone object to something that is obviously meant to resolve environmental problems and promote the enduring well being of humanity?" Because of its self-evident "correctness", it could be said that SD became internationally accepted as a planning goal across the planet. In fact, the defining characteristic of SD policies is that they are often highly "official" (Treanor, 1997). In recent times, they have flowed from international treaty obligations and been enforced by national governments internally.

In spite of the global consensus over the "correctness" of the requirement for SD, however, the term was contested because there existed widespread disagreement over definitional foundations and how to go about implementing related TBL management

through associated social, environmental and economic policies (Jacobs, 1999; Davidson, 2000; and Woolston, 2001). On those points, Luke (1995, p. 22) highlighted "the continuing tension in the sustainability debate between the contradictory operational objectives of 'preserving nature' and the practical ends of 'maintaining the economy'". Consideration of the proper basis for the human relationship to nature and the correct form for the future development ethic gave rise to a vast literature marked by complexity, contested debate and ambiguity (Jacobs, 1999; Harris, Wise, Gallagher and Goodwin, 2001; Logan and Beltrao, 1995; and Van Den Born, Lenders, De Groot and Huijsman, 2001).

This chapter details the emergence and development of the SD concept and it illustrates how the notion of SD grew in both status and coverage (Addison, 2002). The chapter suggests how SD remained a contested concept, paralleling the contestation over the transformation of the DSP. It suggests that various advocates of SD proposed radically different definitions based on their own values (Lafferty and Meadowcroft, 2000). For those reasons, developing a Q-sample related to SD was particularly difficult but the purpose of the chapter is to help to further define the communication concourse in order that an appropriate representation of themes, issues and statements about SD can be captured for use in the Q-Methodology fieldwork. In order to create a well-constructed Q-sample, many of the important arguments within the debate about SD are indicated.

2.4.2 Early references to sustainable development

The term "sustainable development" was first used by Eva Balfour, founder of the Soil Association, and it gained prominence with the publication of the "World Conservation Strategy" (WCU, 1980). The term reached a wider audience with the publication of *Our Common Future*, often termed the "Brundtland Report" (WCED, 1987). Sustainable development established itself as a mainstream international policy initiative with the publication of *Agenda 21*, the report of the United Nations Conference on Environment and Development in 1992. The formalisation of SD in policy was affirmed by the majority of national Governments, under the auspices of the United Nations (Her Majesty's Stationary Office (HMSO), 1994; ICLEI, 1997a and 1997b). That said, however, the scope of the concept of SD continued to evolve over the past 30 years (Addison, 2002; and Palmer et al., 1997). Recognising the changing characteristics of SD goes some way to establishing the empirical foundation for the claim that SD was a contested concept (Campbell, 1996; Wildavsky, 1995; and Woolston, 2001) and the changing characteristics of SD are illustrated in the coming pages.

In the past, when the HEP was widely regarded to be the DSP, economists tended to emphasise the requirement for sustained economic growth (Brueckner, 1998; Jayasuriya, 1992; and Pezzey, 1989). Development was seen to involve higher incomes and consumption levels, as well as the accompanying benefits of improved health and education services. For a long period of human history, development was considered to be sustainable when income, consumption, health and education levels continued to rise (Steer and Wade-Gery, 1993). Empirical evidence supported the notion that sustained economic growth had occurred (ABS, 1994; Peach and Constantin, 1972; and Simon, 1982). Western countries with high levels of investment enjoyed sustained increases in income and the consumption of goods and services. They had also seen increased production of metals, minerals, energy and food, and contrary to predictions going back several centuries, there was little evidence of scarcity of resources (Steer and Wade-Gery, 1993). Indeed, judged by real prices, important major commodities like coal, oil, iron and grain were said by some to be more plentiful than at any time in the past (e.g., Simon, 1981 and 1984).

In spite of the positive prognosis of sustained economic development, growing concerns about a range of perceived environmental and social problems resulting from an increased acceptance of the NEP meant that the SD concept emerged during the previous three decades, assuming an increasingly higher profile (Davidson, 2000; Jayasuriya, 1992; Reid, 1995; and Zarsky, 1990). It is worth dwelling on some of the major principles of SD that have been said by a variety of authors and institutions to play an important role in characterising the concept. Highlighting the principles in the following paragraphs illustrates the range of topics that need to be included in the communication concourse for Q-sampling purposes of this study.

In charting the evolution of the SD concept, it should be noted that the earliest references to SD were simply concerned with protection of the environment and the conservation of resources and they resulted from growing concerns about the economic focus of the sustained growth of the world economy (e.g., The Ecologist, 1972). In thier earliest manifestations, calls for SD were not associated with the TBL. Palmer et al. (1997) suggested that the term was originally coined to focus attention on the sometimes conflicting objectives of economic growth and environmental protection. In fact, the SD concept originally emerged because many people, increasingly adopting the values of the NEP, were concerned that environmental considerations were not being taken into account during development decision-making (Shrivastava, 1994, 1996; and Steer and Wade-Gery, 1993). Papadakis (2000) provided a useful summary of the development of the SD concept in Australia and he noted that the word "ecologically" was added to

"sustainable development" to add a greater emphasis and focus on the environmental component only and thus, was a narrower concept at first.

At the United Nations Conference in Stockholm in 1972, human welfare was included in the concept with the addition of the rights of people to a clean and healthy environment. Concern for equity and the welfare of future generations were included in definitions by the 1980 World Conservation Strategy (cited in International Union for the Conservation of Nature (IUCN), 1981). The protection of the interests of future generations also received emphasis in the Brundtland Report (WCED, 1987). The United Nations Conference on Environment and Development (1992) made the concept of citizen participation a key SD principle, and citizen participation was noted to be central to many visions of SD during the 1990s (Barry and Proops, 1999b; Chavis and Wandersman, 1990; DeLeon and Fuqua, 1995; and Flynn, 2000).

As highlighted earlier, the term "sustainable development" was popularised in the Brundtland Report, being defined there as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43). In expounding the implications of this definition, the Bruntland Report identified several fundamental principles. Those principles received widespread endorsement by environmental groups and governments, and they included economic, environmental and social policies.

2.4.3 Later references to sustainable development

Post 1987, with the widespread endorsement of the Brundtland Report, the SD concept was said to recognise three essential aspects of sustainability, encompassing economic sustainability, social sustainability and environmental sustainability (Beder, 1993, and 1994; Harris, et al., 2001; and Witherspoon & Matin, 1992). This position was most clearly articulated by Elkington who introduced the concept of the "triple bottom line" (1997). The recently formulated concerns of the TBL concept became of increasing interest to governments and citizens around the globe (Hart, 1997; Elkington, 1997; Malouf, 2002; and WCED, 1987). For that reason, SD was promoted by the United Nations, Australian Commonwealth, various academics, and a host of non-government groups as a central component of future economic, social and ecological development solutions (Commonwealth of Australia, 1992; Bender, 1993; and Leach, et al., 1998).

With regard to the social principles of SD, these were said to include an element of equity and the need for egalitarian, democratic participation in decision-making (e.g., Dutta, 1996). With regard to those points, Beirele and Konisky stated: "The drive to increase

the access and influence of non-government players in environmental policymaking has been a key component of U.S. Environmental Protection Agency re-invention activities, Department of Energy efforts to clean up its nuclear weapons facilities, and many agencies' efforts to deal with contentious natural resource issues" (2000, p. 587). Inter-generational and intra-generational equity also came to be regarded as core social components of SD (e.g., Brueckner, 1998). Those concepts promoted the idea that current generations should not leave a degraded environment to future generations and that this in turn required the pursuit of equity within the current generation (WCED, 1987). Decentralisation of decision-making to the local level was also a key feature of SD policy (Patterson and Theobald, 1995; and WCED, 1987). In addition to those key social points, the sustainability notion encompassed a number of environmental principles (Fowke and Prasad, 1996; Patterson and Theobald, 1995; and Wright, 1995). Those principles included:

- integration of economic and environmental priorities – acceptance of the link between the health of the economy and the natural ecosystem;
- precautionary principle – adoption of a cautious approach to new developments in science, technology and society;
- conservation of biological diversity – maintaining ecological integrity by ensuring the viability of life forms; and
- global and systems outcomes – acceptance that activities were not spatially or temporally confined, but that actions affect other micro or macro systems, both now and in the future.

Wright (1995) also suggested that SD required the development of fully integrated social, economic and environmental policies. Furthermore, according to Wright (1995), sustainability required that such policies be implemented at local, regional, national and international levels of society. Accordingly, a sustainable society had to safeguard two critical components of the natural environment (Labonte, 1989; Reid, 1995; and WCU, 1991). Firstly, the disruption associated with resource use and contamination by waste products should remain within the carrying capacity of the ecosystem. Secondly, species diversity should be maintained.

In the economic sphere, it was suggested that economies must be sufficient to meet needs, but they should not be continually expansive in resource use and waste production (Davidson, 2000; and Labonte, 1989). It was also suggested that economic policy should create an equitable social environment that involved enhancement of cultural roles, educational and health opportunities and local employment. It also

involved minimisation of crime and other anti-social activity, promotion of multiculturalism and diversity, and elimination of racism and sexism (Labonte, 1989).

2.4.4 Sustainable development as a contested concept

The review so far has illustrated the "fluid" and contested nature of SD and how the core principles of SD expanded in several directions to encompass a range of modern concerns (Addison, 2002; Barbier, 1987; Brueckner, 1998; Gladwin, Kenelly and Krause, 1995; and Upham, 2000). It is apparent that the majority of the relevant literature agreed with the sentiments of Steer and Wade-Gery and Palmer et al. and suggested that the definitional properties of SD were contested and that multiple definitions and descriptions of SD were in evidence (e.g., Allen, 1983; Jacobs, 1999; and Pretty, 1995). Furthermore, those definitions resulted from the intense, highly contested debate about the TBL characteristics of SD, together with the multi-disciplinary domains from which SD definitions were developed, and the personal values of participants engaged in relevant debates (Basagio, 1995; Elkington, 1997; Harris et al., 2001; Sarre and Treuren, 2001; and Steer and Wade-Gery, 1993).

Moreover, there was clearly a considerable disunity regarding the actual definition of SD (Barbier, 1987; Basagio, 1995; and Woolston, 2001). The spectrum of definitions about SD varied depending on the paradigm from which they came. There were differences in the perception of ethical responsibilities towards future generations (e.g. Downs, 1972; and Cousteau, 1980) and the value of the environment (Purser, Park and Montuori, 1995; and Repetto, 1992). Differences also appeared regarding the need for paradigm shifts towards sustainable societies and a sustainable future (Dowling, 1998; Fox, 1984 and 1990; Inglehart, 1977; Rodman, 1980; and Milbrath, 1994). There were also differences over implementation, the scope of problems to be overcome, and the role of science and technology in a sustainable world (Furedi, 1995; and Giddens, 1994). Furthermore, Luke (1995) suggested that important issues requiring answers include sustainability time frames, sustainable at what level of human appropriation, sustainable for whom and under what conditions, and sustainable development of what characteristics.

Nowhere is the divergence in views about SD more clearly illustrated than by authors such as Beder (1998), Pell (1996), Braun (1995), and Myers (1979) presenting viewpoints about the "ecocentric" focus of the SD concept and Lomborg (2001), Ray (1993), and Simon (1981) presenting counter arguments within a "technocentric" focus. It seems that on almost every issue, these two groups of authors interpret the available data to arrive at opposing interpretations and stances. The debate over interpretations of

the scale and implications of environmental problems by authors such as Lomborg (2001) and Beder (1998) simply illustrates the complexity of the issue facing the lay public. Moreover, the differing emphases on SD illustrate and reflect various degrees of commitment to the SD itself. In summary, the SD concept remained disputed as a function of:

1. people's various understanding and interpretation of empirical data relating to development problems;
2. the time span over which problem development and solutions were viewed;
3. the value system within which the author exists and within which problems were analysed and solutions were proposed; and
4. the academic or other professional and personal background characteristics of people involved with the debate.

The literature relating specifically to defining the characteristics of SD was further complicated by an acknowledged paucity of research on environmental decision-making (Beierle and Konisky, 2000; and Rhoads, Wilson, Urban, and Herricks, 1999). Redclift (1987) suggested that the confusion over SD made it difficult to apply clear strategies to economic or environmental problems. Jacobs (1999), Redclift (1987), Barbier (1987) and Jickling (1994) also noted that competing interpretations of SD have vied for international, national and local acceptance. Within the contested context of the debate over SD, authors have tended to put forward various propositions about the nature of SD (e.g., Franks, 1996; Palmer et al., 1997; and Upham, 2000). The propositional approach was most clearly demonstrated by authors who suggested that definitions of SD occurred along a "sustainability spectrum" that stretched from a "strong", "ecocentric" pole to a "weak", "technocentric" pole (e.g., Pearce, 1993; Neumayer, 1999).

The suggestion that people's beliefs about SD are arrayed along a value continuum with "strong", "radical" or "ecocentric" SD and "weak", "technocentric" or "trivial" SD underpinning each pole of the spectrum appeared to be a key feature of the debate (Brueckner, 1998; Davidson, 2000; Lélé, 1991; Neumayer, 1999; Pearce, 1993; and Palmer et al., 1997). It seems that the words "strong" and "weak" are most commonly used within the relevant literature to indicate the anchoring poles of the SD spectrum (e.g., Ayres, van den Bergh and Gowdy, 2001; Neumayer, 1999). Interestingly, in addition to strong and weak SD, Daly (1995, p. 49) also introduced the concept of "absurdly strong sustainability" and Beckerman (1995b, p. 174-175) introduced the concept of "pathetically weak sustainability". Regardless of that aside, numerous authors

(e.g., Ayres, van den Bergh and Gowdy, 2001; Davidson, 2000; Fowke and Prasad, 1996; Luke, 1995; and Palmer et al., 1997) noted that a dichotomy existed between the strong and weak propositions regarding SD. It should be also noted that other authors have suggested that, in reality, the strong and weak sustainability positions are actually indistinguishable (eg., Common, 1996). On that point, Holland (1997, p. 127) said "the idea that weak and strong sustainability differ in any important respect turns out to be a charade". Common (1996, p.83) also stated: "The principal confusion is the idea that strong and weak sustainability are different concepts. They are not". It is important to state that the arguments put forward in the debate are problematical and contested and it is not the intention of the current research to resolve the question "who is right?" Certainly many have tried but this process of academic debate seems to have compounded rather than clarified the situation. For the purposes of this research I will attempt to illustrate the arguments made in order to capture the appropriate communication concourse.

Having made those points, there are at least three central characteristics in the literature that are said to define weak SD. The first defining characteristic of weak SD is widely regarded as the basic idea that society today should leave to the future the option and ability to meet human needs in the same way as people do today (Solow, 1974, 1992; Norton, 1999). Central to that theme is a concern with passing on to future generations a similar stock of generalised capital to that inherited by the present generation from our predecessors (Ayres, van den Bergh and Gowdy, 2001; Jacobs, 1995a; and Norton, 1999). Indeed, Dobson (1996, p. 409) noted how Herman Daly, not himself a supporter of weak SD, stated that: "Maintaining total capital intact might be referred to as weak sustainability". Holland (1997) also supported the proposition that weak SD is defined by its desire to maintain total capital intact. On that point, Holland (1997, p. 119) stated: "Weak sustainability is here understood as the requirement to keep capital intact over time". As indicated above, the purpose of maintaining capital intact is the desire to continue to meet human needs in the future. As such, the second defining characteristic of weak SD is its focus on maintaining or promoting human welfare (Ayres, van den Bergh and Gowdy, 2001; Barbier, 1987; and Holland, 1997). On that point, O'Neill (2001, p. xxx) stated: "What is to be sustained? A certain level of human welfare, where in standard welfare economics this is understood as preference satisfaction. For whom it is to be sustained? Present and future generations of humans. Why? Either (a) to maximise welfare over time, or (b) to meet the demands of distributional justice between generations".

Before moving on to further description of the weak SD definitions offered in the relevant literature, a few words about capital are important. Generalised capital, within the SD debate can take several forms but paramount amongst them are "natural capital" and "human-created capital" (Ayres, van den Bergh and Gowdy, 2001). Natural capital includes useful and useable resources drawn from or provided by nature like oil, coal and iron; ecological services including the water cycle, atmospheric functioning, and the like; and natural entities, processes, landscapes and landforms that are worthy of preservation or conservation for some specified reason (e.g., eco-tourism, aesthetic values, intrinsic value, etc.). A distinction for natural capital could be made between "non-renewable" natural resources like oil and coal and "conditionally-renewable" resources like land, soil and plants. Non-renewable resources are characterised as such because they are incapable of biophysical regeneration within realistic timeframes. Human-created capital includes previously collected wealth available for future investment, productivity capacity and technological and intellectual knowledge. Human-made capital is sometimes referred to as "produced capital", "constructed capital" or "manufactured capital". Other authors include knowledge, cultural values and the like in their definitions of human capital (e.g., Daly, 1992).

Norton (1999) and others (e.g., Ayres, van den Bergh and Gowdy, 2001; Daly, 1995; Beckerman, 1995b) noted that central characteristics of the weak SD view are that total capital should remain intact and that natural capital and human-created capital are said to be interchangeable or substitutable. O'Neill (2001, p. xxxi) indicated that "proponents of weak sustainability are taken to affirm that natural capital and man made (sic) capital are indefinitely or even infinitely substitutable". The idea that human-made capital might completely remove the requirement for natural capital, or at least eliminate problems associated with the supposed finite nature of natural resources is the third defining characteristic of the weak SD viewpoint (Holland, 1997). On that point, Norton (1999, p. 125) noted the weak SD view and said: "Resources are, to use a favourite word of economists, fungible in a certain sense. They can take the place of each other". Daly (1995, p. 49) said: "In the literature, weak sustainability assumes that man made (sic) and natural capital are basically substitutes". Solow (1974, p. 11) went so far as to suggest that "the world can, in effect, get along without natural resources if it is very easy to substitute other factors for natural resources". Such "other factors" are frequently suggested to include renewable or reproducible resources which substitute for "exhaustible" natural resources (Holland, 1997). Beckerman (1995b) uses the example of synthetic rubber being increasingly substituted for natural rubber to illustrate the process at issue.

With those points in mind, the general success principle for weak SD is to provide a future that is richer, or at least as rich as today so future generations will have no right to complain that they have inherited a World with less access to resources they will require (O'Neill, 2001). Holland (1997, p. 122) summarised that theme of weak SD and said: "In general, the answer which most discussions of sustainability seem to assume is that human-made capital is substitutable for natural capital if it preserves the degree and kind of benefits which human beings derive from natural capital". Beckerman (1994, p. 195) also summarised the weak sustainability position with regard to substitutability of capital and future human welfare and said weak sustainability "allows for substitutability between different forms of natural capital and man made (sic) capital, provided that, on balance, there is no decline in welfare". Central to those notions of SD is the idea that SD, is in some way related to maximisation of welfare (Beckerman, 1999). Of course, it should be recognised that where weak SD tends to emphasise the welfare of people, strong SD tends to extend "welfare" to encompass non-human elements, but both sides of the debate frequently extend welfare to include the welfare in the future (Beckerman, 1999).

With regard to intergenerational welfare, weak SD suggests that sustainability is achieved if the total stock of capital is not declining into the future (Solow, 1992; Holland, 1997). On that point, Beckerman (1999, p. 73) stated: "Sustainable development is also sometimes interpreted as meaning that per capita welfare must never fall below that enjoyed by the current generation". Interestingly, both Daly (1995), who advocated strong SD and Beckerman (1995b) who rejected both weak and strong SD noted the logic that when human-created capital is a substitute for natural capital, then neither form of capital could be a limiting factor. Complicating matters further, both authors rejected the idea that SD should be defined in terms of the welfare of future generations. On that point, Daly (1995, p. 50) stated: "To his reasons [Beckerman], I would add that the welfare of future generations is beyond our control and fundamentally none of our business. As any parent knows, you cannot bequeath welfare. You can only pass on physical requirements for welfare. Nowadays natural capital is the critical requirement".

The weak SD position is also regarded as suggesting that SD could be achieved by modest reforms of current social and economic practices (Davidson, 2000; and Jacobs, 1995b) and this fits the ecological modernisation position mentioned earlier. The general tendency was to suggest that the goals of a dynamic economy and high quality environmental protection were mutually inclusive, dependent and reinforcing. Jacobs (1995, p. 110) noted the common assumption of the weak approach to SD and suggested: "By increasing the environmental efficiency with which we use resources and energy, and by which we produce wastes, by using "clean", non-polluting technologies,

by minimising and recycling wastes and substituting non-toxic substances, it is, in theory at least, possible for a modern economy to grow in income terms while reducing its impact on the environment". In support of that point, Neumayer (1999) described weak SD as the "substitutability paradigm" and Norton (1999) used the term "total fungibility assumption" to describe how natural- and human-created capital are interchangeable. The weak form of SD would appear to have a value base drawn from the HEP and included a commitment to minor reform of current economic and social development practices and harmful environmental policies together with a great deal of technological optimism (Lélé, 1991; Norton, 1999; Marshall, 2001). That point further links weak SD to the underlying values of the HEP which was considered by many authors to represent the DSP of modern times.

Proponents of the strong SD perspective were, however, highly critical of the ecological modernisation thesis and the anthropocentric nature of weak SD (Schmandt, 2000). Advocates of strong SD reject the proposition that human-created capital can substitute for, compensate or offset losses in natural capital if natural capital is accepted as a finite factor and limiting to economic growth (Ayres, van den Bergh and Gowdy, 2001; Holland, 1997; and Neumayer, 1999). Central to strong SD is a rejection of the substitutability paradigm. There may be acceptance and a belief that human-created capital and natural capital may complement each other but they are not widely considered to be substitutes for each other within the strong SD definitions (Daly, 1995; Norton, 1999). Supporting that premise, Holland (1997, p. 119) said "the distinction between weak and strong sustainability is supposed to turn on the question of whether human-made capital is indefinitely substitutable for natural capital".

In that sense, the arguments for the strong SD paradigm often reject any use of natural capital that would restrict or minimise the options of future generations. For example, Daly (1995) proposed that resources identified as natural capital should be set aside because they are in some way essential for the welfare of future generations, and also worthy of preservation in their own right. This position has been termed "sustainability as constraint" and natural capital is seen as the limiting factor because demographic and economic growth means we have entered the era of the "full world" economy (Daly, 1995, p. 49). That is, humanity has reached or breached the carrying capacity of the planet to support further demographic or economic expansion and natural capital will now be a barrier to growth that cannot be overcome by substitution of human-created capital.

Another characteristic that was said to be central to radical or strong SD was the desire to revolutionise and reconstruct social and economic development and management (Daly, 1996; and Schmandt, 2000). There was a rejection of modern industrial society

and calls for a simpler, self sufficient and decentralised society (Pepper, 1998). At the core of the strong approach to SD was the notion that economic activity must be controlled and production and consumption reduced in order to prevent the exploitation of natural capital (Ayres, van den Bergh and Gowdy, 2001; Pezzey, 1989; and Repetto, 1992). Markets would be constrained by laws and regulations, taxes and cultural restraints (Jacobs, 1995b). Beckerman (1995b) suggested that the strong view of SD often elevated natural capital (i.e., the environment) to the status of an over-riding moral value to be preserved at all costs. Beckerman (1995b) also suggested how it is often argued from a strong sustainability standpoint that the environment must not be damaged on account of the rights of animals or because of "intrinsic" value in non-sentient forms of natural capital. The strong form of SD was said to correlate closely with the NEP and it was based on calls for a wider and far-reaching transformation of development (Ayres, van den Bergh and Gowdy, 2001; Davidson, 2000; Eckersley, 1992; and Papadakis, 2000). In essence, the more radical concept of SD expressed the notion that humanity must live within the capacity of the environment to support it (Daly, 1996). According to Grove-White (1993) there was a widespread consensus within the strong SD viewpoint that pressing problems existed objectively within nature because of the over-exploitation of finite natural capital.

From that position, the strong concept of SD was frequently depicted as the guiding principle by which humanity could free itself from an ecological catastrophe of its own making. The central assumption of strong SD was that the world was on course for catastrophe, and patterns of resource use and social and economic development must change. That view of strong SD implied that people should adopt an ecocentric world-view, in which the interdependent relationships between human society and the environment were acknowledged and respected (Labonte, 1989). The strong version of SD represented a break with the industrial and anthropocentric ideology that the world was infinite, that there were unlimited resources, and that a bottomless reservoir existed into which the waste products of industrial society could be poured. On that point, Jacobs noted "Living within the Earth's carrying capacity means accepting that there are environmental limits which must not be transgressed" (1995, p.110). Furthermore, there was a rejection of the technological optimism of weak SD that human-created capital will substitute for natural capital that is "used up" during the process of meeting human needs (Norton, 1999).

Davidson (2000) offered a useful summary of the major dispute between weak and strong discourse on SD with particular emphasis placed on the degree of environmental protection, the degree of inter-generational equity, the level of participation and the

breadth of the subject area. In Davidson's summary, the weak version of SD balanced environmental protection against economic growth, whereas the stronger version of SD held that economic activity was restricted by ecological limits. Holland (1997) also summarised the difference between weak and strong SD. In Holland's analysis (1997, p. 126), "proponents of weak sustainability hold that sustainability requires that we maintain the level of capital assets, but that within this total any amount of substitution is allowed between the different kinds of capital. Proponents of strong sustainability, on the other hand, hold that because there are limits to which natural capital can be replaced or substituted by human-made capital, or at any rate that we maintain natural capital at or above the level which is judged to be critical".

With regard to the value basis of SD, a number of authors made the point that the acceptance of the strong or weak definitions of SD involved value judgements relating to the choice of features to be sustained (Upham, 2000). Those value judgements occurred regardless of any scientific content that the variety of definitions held (Marshall, 2001; and Upham, 2000). Other authors (e.g., Dunlap, 1983a; Neumayer, 1999; and Rhoads et al., 1999) also noted that the values associated with a range of SD related problems and issues were non-falsifiable by scientific inquiry because such values were always subjective. That point did not mean, however, that such subjective values could not be objectively assessed and described using appropriate scientific methods. Palmer et al. (1997) were quite specific in suggesting that the solution to the problem of contested values over strong and weak SD was for those involved in the SD debate to make explicit their views in relation to the range of principles underpinning the concept. Upham also contended that SD was as much a political and ethical statement as a scientific one and accordingly, it demonstrates the need "to make these judgements explicit, particularly regarding environmental and other features to be sustained, and those to be lost to development, if any" (2000, p. 188).

In accounting for the endorsement of SD, providing a description of the vision of SD held by the attentive public - people participating in the SD debate – was said to be a critical task by a number of authors engaged in the debate (e.g., Almond, 1963; and Miller, 1983). This was important because three issues existed that were said to lead to differences and disputes over definitions of SD (Thompson, 1966). The first issue related to disagreement over facts. The second issue related to disagreement over the appraisal of various desired ends. The third issue related to differences in the definition of the best way to achieve the desired ends. The literature on values suggested that visions of SD reflected a general preference or bias. This bias was based on a particular interpretation

of facts, a desire for a particular state or outcome and a desire for a particular course of action to achieve the wished-for outcome.

Any analysis of visions of SD should include reference to the overall viewpoints that developed around the differing interpretations of "facts", together with the preferences shown for ends and means (Brown, 1980). It was important because people who were faced with complex and unfamiliar issues where they do not know what they want or how to achieve it may have poorly formulated or incoherent values and attitudes (Fischoff, et al., 1983). On that point, Papadakis (2000a) suggested that just 20 per cent of people were aware of the ecologically sustainable development concept and able to define it. Identifying and analysing the visions which people held about SD was an important step forward. On that point, Fischhoff et al. (1983, p. 44) made an important claim when suggesting:

> In the context of values, when we are confronted with any interesting issue, we must decide which of our basic values are relevant to the situation, how they are to be interpreted, and what weight each question is to be given. Once we have reached a summary judgement, we must decide how strongly we believe in it and in the perspective upon which it is based. Finally, we must translate these opinions and impressions into a recordable response.

The work of Addison (2001), Heij and Heinze (2001), and Redclift (1987) promoted the assumption that the lack of a clear consensus or community-sanctioned agreement about the defining characteristics of a SD definition was a major impediment to the implementation of related SD policies. It is certainly possible to question whether the realisation of SD, however it is defined or measured, depends upon the achievement of a consensus on the relevant issues. For instance, Buckingham-Hatfield and Evans (1996, p. 6) suggested that the attempt to operationalise or "technicise" SD is "doomed to failure". Furthermore, in opposition to the idea that a consensus is required about a national vision and shared purpose, or a clearly defined operationalisation of SD, various authors have argued that no such consensus is necessary. Nevertheless, the United Nations Commission on Environment and Development (UNCED, 1992) suggested that local authorities *should achieve a consensus* with their local community about SD at the local level, via the adoption of a LA21 plan (1992).

In Australia, Addison (2001) and Heij and Heinze (2001, p. 3) were particularly strong advocates of the requirement for a common consensus on SD and they also noted that such a consensus was currently absent. On that point, Heij and Heinze (2001, p. 3) recently stated: "Moving towards sustainable development is necessarily a long journey

requiring a national vision and strong sense of purpose shared by all Australians. Currently, as a nation, we lack the unified vision and purpose required". The requirement for a "national vision" for SD in Australia suggests that SD can be operationalised in policy terms, only when a single, concise meaning can be agreed upon.

According to several authors, reaching a consensus about the meaning of SD is important (Van Den Born et al. 2001; Heij and Heinze, 2001). For example, it is important according to Van Den Born et al. (2001, p. 65) because "an understanding of the normative images that people have about the proper relationship between humans and nature is a central condition for effective communication between governmental and non-governmental nature conservation agencies and the public at large". Interestingly, Jacobs (1999) noted that calls for consensus on SD are usually expressed from a policy-technocratic standpoint. On that point, Jacobs (1999, p. 23) suggested how some people consider that: "Sustainable development is never properly defined... everybody seems to think it means something different. How can the term be adopted as a policy objective unless its meaning is clarified and agreed upon?" he asks. Jacobs (1999) noted that the unease about the definitional ambiguity of SD is particularly common amongst policy makers and environmentalists, but for differing reasons.

According to Jacobs (1999), unease amongst policy makers and environmentalists occurs because the breadth of endorsement of SD suggests to them that SD might have no meaning at all. There is ample evidence of this belief within the literature on SD and it is highlighted shortly. Because of a concern about the potential lack of meaning of SD, there is a widespread desire amongst policy makers to more clearly define and operationalise the meaning of the term (Jacobs, 1999; and Beckerman, 1995). Unease amongst environmentalists occurs because the ambiguity of the term means that almost anything can be claimed as "promoting sustainable development" (Jacobs, 1999, p. 24). Central to that problem, one assumes, is the attempt by business to promote SD credentials for their positive contribution to environmental management which "green" authors view as "green wash" or even outright untruth. For a fairly typical negative perception towards the SD claims of business, see the work of Beder (1998). Myserson and Rydin (1996) also suggested that the indeterminacy of SD could be regarded as a disadvantage because ambiguity indicates "muddled thinking".

Unfortunately, however, for those policy makers and environmentalists who would like to see a clear definition of the SD concept, it is widely recognised that reaching a consensus about SD is particularly difficult. As Barbier (1987, p. 101) noted, "the concept of sustainable economic development is a difficult one to grasp analytically. Given that one is attempting to describe the environmental, economic, and social

features of an ongoing process, the difficulty lies in arriving at a universally acceptable definition that is also analytically precise". Furthermore, Luke (1995, p. 21) noted that sustainability is fraught with unresolved questions because of the attempt to integrate TBL issues and he stated: "One must wonder about concepts like sustainable development. Some will take sustainable development to mean ecologically sustainable. Others can just as rightly see it as economically sustainable, technologically sustainable or politically sustainable".

On that point, Jacobs (1999, p. 24) noted how people engaged in the policy-making debate would like to seek a clear definition and how: "Ideally it should be defined so that one could specify a set of measurable criteria such that individuals and groups with widely differing values, political preferences or assumptions about human nature could agree whether the criteria are being met in a concrete development program". Beckerman (1995, p. 170) added to the general debate with the rhetorical question: "Who on earth would want to operationalise the concept of Sustainable Development?" To which he offered: "The answer is, I suppose, all of us who would like to use concepts for purposes of designing policy rather than just for demonstrating the nobility of our sentiments" (Beckerman, 1995, p. 170). Brooks (1992, p. 30) made a similar point in favour of the requirement for the operationalisation of SD and stated: "For the concept of sustainability in the process of development to be operationally useful it must be more than just an expression of social values or political preferences disguised in scientific language".

Jacobs (1999, p. 25), however, was forthright in suggesting that the attempt to forge a "common consensus" about SD is mistaken because he recognised it to be a "contestable concept". He also suggested that the contestable concept of SD has definitional meaning at two levels, with implications for anyone interested in defining the concept. On that point, Jacobs (1999, p.25) stated:

> Democracy, liberty and social justice, for example, all have readily understood meanings. We know what the subject is when we use these terms, there are no other terms expressing the same set of core ideas, and even people holding widely different interpretations of them can agree on the evaluation of situations in which democracy, liberty, and social justice are not present. For common political concepts, the battle is neither over the first level of meaning nor indeed whether one accepts the normative goal. Almost everyone is in favour of democracy, liberty and social justice; the debate is over alternative conceptions of what they mean, at the second level. Sustainable development is a contested concept of this kind.

It is worth noting that the first level of meaning of SD is unitary but vague and is expressed in a series of short, commonly heard definitions such as that spelt out by the Brundtland Report – "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). At the first level of meaning, SD is defined by a set of core ideas that are general and readily understood. First level definitions are also widely accepted with almost everyone in favour of them. Earlier paragraphs noted that SD is now universally endorsed by many global-level policy-making organisations, national governments, NGOs and businesses. Indeed, several authors have noted that the central concepts underpinning sustainable development now have a common currency with radical greens, technocentric environmentalists and capitalists all using the same language and supporting the same broad objective, that of sustainable development, and that this is presumably a positive outcome. Jacobs (1999, p. 22) contrasted the common currency of SD to earlier times and stated: "Not long ago, environmental policy and politics was a battlefield, not just for sharply conflicting interests and worldviews...but correspondingly for competing vocabularies". Lélé (1991, p.607) also noted the potential value of definitional ambiguity of SD and stated: "To some extent the value of the phrase [sustainable development] does lie in its broad vagueness. It allows people with hitherto irreconcilable positions in the environment development debate to search for common ground without appearing to compromise their positions".

In response to problems associated with defining SD, Jabobs (1999) argued that attention needs to focus on second level definitions in order to examine the potential plurality of views that exist rather than trying to forge a common consensus. The second level of meaning is, according to Jacobs (1999), where the contestation within the debate about SD occurs. This takes the form of a political argument over how the term should be interpreted in practise. The contest at the second level of meaning is over alternative conceptions of what is meant by first level definitions. On that point Jacobs (1999, p. 26) stated..."attention needs to focus on the second level. Here, there is a battle for the meaning of sustainable development. But there is no point in trying to secure universal agreement on a unitary meaning for the term. This will never happen, for those who use it have different interests and political values".

Some authors, however, have argued that the very ambiguity of SD is its strength and it should not be defined too rigorously (e.g., Buttel and Gillespie, 1988; and Lélé, 1991). Lélé, for instance, is not in favour of a strict definitional consensus on SD, and she cautions that it is still worthwhile and important to examine the insights that characterise the concept before it is misinterpreted, distorted or coopted. Furthermore, Lélé (1991, p.

618) also concluded that "better articulation of the terms, concepts, analytical methods and policy-making principles...is necessary if SD is to avoid either being dismissed as another development fad or co-opted by forces opposed to changes in the status quo". Torgerson (1995) was another author who suggested that the ambiguity of SD is attractive because it fosters cooperation and provides a common ground for discussion amongst individuals and groups who may otherwise be rivals. Reinforcing that point, Torgerson (1995, p. 11) said: "The vagueness of sustainable development, a weakness in terms of technical discourse, gains a certain political strength because it allows political actors to proceed without having to agree also on exactly what to do".

Likewise, Buckingham-Hatfield and Evans (1996) did not have a major problem with the contested nature of SD and instead, they suggested this was its strength insofar as it fostered a lively and informed public debate leading to a more sustainable world. Myerson and Rydin (1996) also suggested that for SD to be robust and workable, it must be a subject of debate. They argued that the process of debate forces people to articulate their views and learn more about sustainability, and that this process is critical for its evolution and implementation. That philosophy is adopted in the current research which seeks to encourage debate by allowing participants to explore and express their own unique visions of SD.

As noted earlier, within the debate over definitions of SD, there were some authors who argued that the concept was so vague as to be meaningless (Logan, and Beltrao, 1995). O'Riordan (1992) was one of the first authors to suggest that SD was in danger of losing its meaning. Illustrating the complexity of the SD topic, Steer and Wade-Gery (1993, p. 23) stated that the literature about the characteristics of SD was a "definitional mélange" and they also noted a risk of rendering the term meaningless. Those who argued that SD was in danger of losing meaning suggested that achieving a sustainable future and the endpoint for SD were seen to be so broad as to mean almost anything to anyone (Lélé, 1991; and Woolston, 2001). In a somewhat tongue-in-cheek comment, Hitch (cited in Allen, 1983) noted that: "A great many people are in favour of conservation no matter what it means". This situation appeared to be reflected with regard to SD since the concept was widely endorsed regardless of what it actually entailed. Palmer, Cooper and van der Vorst (1997, p. 88) echoed that sentiment and called SD a "fuzzy-buzzword" that was open to multiple interpretations. It appeared that definitions of SD were so "high-minded" that no one could possibly oppose them and they were of little use as guides to policy- and decision-making (Allen, 1983).

Pearce (1989) was another who believed that SD was an oxymoron and that SD contradicted sustained existence. Logan and Beltrao (1995) also noted that SD was considered by many to be an oxymoron. Reid (1995, p. 13) echoed those sentiments and noted that some authors described SD as variously, "moral convictions as a substitute for thought", "a good idea which cannot sensibly be put into practice" and "how to destroy the environment with compassion". Fowke and Prasad (1996) also noted that the lack of consensus on a clear definition of SD was leading to a risk of the concept being rendered meaningless. On that theme, Woolston (2001, p. 84) stated: "The definition of sustainable development is where problems start, because the objectives are so broad as to mean virtually anything to anyone. This apparently nebulous nature has left many companies somewhere between disinterested and stumped, while allowing politicians to wrap numerous agendas in a sustainability flag".

Others have noted that although the SD concept had a wide range of definitions and was understood and interpreted in differing ways by different people, it still rested on a consensual foundation (Treanor, 1997). For instance, Davidson (2000, p. 26) noted the widespread appeal of SD and stated "now that the objective of sustainability has been generally accepted by radical greens, technocrats and capitalists alike, the contestation revolves around how it should be interpreted and implemented in practice". The interest in furthering the SD agenda was also evidenced by the fact that over 50 academic definitions have been developed (Pearce, Markandya, & Barbier, 1989; and Steer and Wade-Gery, 1993). Eckersley (1998) noted that that number had more recently risen to 80 definitions. The multi-definitional basis of SD was problematical because the concept of SD was defined by interest groups in ways that served their own agendas (Palmer et al., 1997).

On that theme, Campbell (1996, p. 11) said, "attempts to define sustainability miss the point that, like beauty, sustainability is in the eye of the beholder". Davidson (2000, p. 29) also noted: "Whether sustainable development is conceived as mere rhetoric, a cloak for business as usual, or as an ethic which forms the basis for restructuring human productive activity and its relationship to ecological integrity, involves its contestability as a political subject". That point was reiterated by Beierle and Konisky (2000, p. 589) who wrote: "different members of the public can have widely differing values that affect their views about environmental issues". In an earlier paper, Pretty (1995, p. 17) also captured the essence of the problem of definition and stated: "any belief that sustainability can be precisely defined is flawed. It is a contested concept and so represents neither a fixed set of practices or technologies, nor a model to describe or impose on the world".

In a very recent article, Woolston (2001) also highlighted the ambiguous status of the sustainability concept. Woolston (2001, p. 84) stated: "As the European Union launches its strategy for sustainable development, it is clear that it remains an issue that has failed to appeal to many...partly because, in the last decade, the sustainability message was so appallingly vague". In addressing the promotion of SD, Pretty (1995, p.17) stated that "the question of defining what we are trying to achieve is part of the problem, as each individual has different values". Pretty went on to suggest that SD problems were open to interpretation, based on the uniquely different perspective of what was a problem and what constituted improvement.

Davidson (2000, p. 2) made a similar point when stating "general agreement is developing that utilisation of the world's material resources must be pursued without compromising the life chances of either present or future generations, albeit that there is much contestation about the strategies which can achieve this end". In its simplest form, SD also remains highly contested because, as with all issues of contentious public opinion, there was disagreement over facts, disagreement over the appraisal of various desired ends, and differences in the definition of the best way to achieve the desired ends (Davidson, 2000; Wenner, 1997). With regard to those points, "Our Community, Our Future: A Guide to Local Agenda 21" published by Environment Australia (the Department of Environment and Heritage) stated that: "There is no one set of principles of sustainable development" (1999, p. 171).

The points made by Heij and Heinze (2001), Beierle and Konisky (2000), Rhoads et al. (1999) and others indicated that little progress was made in providing an empirically derived description of what the SD concept means to people. Luke (1995, p. 22) also noted that "For the most part, few of these questions [about SD timeframes, level of commitment, characteristics, etc.] are even being adequately conceptualised, much less thoroughly addressed in the debates over sustainable development". For those reasons, it seems that defining what is meant by SD is critical because what people mean may have significant impact on how they believe policies such as LA21 are designed to achieve it (Allen, 1983). Furthermore, the points made by Van Den Born et al. (2001), and Heij and Heinze (2001) also demonstrated that identifying areas of consensus and conflict about visions of SD was a prerequisite to effective implementation of LA21. However, it could perhaps be argued that the implementation of SD at the level of local government is possible, or more readily achievable, where communities hold a plurality of views about the concept itself. Various authors have suggested that communities in Australia do, in fact, hold multiple views about SD and that any sense of consensus about SD is already absent (Addsion, 2001; and Heij and Heinze, 2001).

For the purposes of this research, it was recognised in the foregoing pages that definitions of SD were fiercely debated and deeply contested (Dobson, 1996; and Jacobs, 1999). Furthermore, the debate over the definitions of SD has created interest in how the public comes to assess and evaluate related issues (Jacobs, 1999; and Logan and Beltrao, 1995). Researchers and the interested-public may never resolve which version of SD represented the "correct" basis for the human relationship to nature, or the "true" strategy for a sustainable future (Lafferty and Meadowcroft, 2000; Pretty, 1995; and Rhoads, et al., 1999). However, establishing what people believed SD to entail in terms of its defining characteristics at Jacobs' (1999) "second level of meaning" was achievable. Having made those points, the purpose of this research was to pursue two closely related problematical issues.

Firstly, as noted above, a number of authors identified the contested nature of the SD debate and the lack of consensus about SD. Other authors also noted the contestation over SD and concluded that people supported a range of possible visions of SD (e.g., Neumayer, 1999; Pearce, 1993; and Pepper, 1998). The most common propositions about SD can be simplified to four broad definitions. These being "very weak" or "pathetically weak" sustainability (e.g., Beckerman, 1995; Common, 1996), "weak" sustainability (e.g., Daly, 1995), "strong" sustainability (e.g., Beckerman, 1995; Daly, 1995) and "absurdly strong" sustainability (e.g., Holland, 1997). Little effort had yet been made to provide empirical evidence for the propositions and conclusions regarding people's support for those definitional types (Rhoads et al., 1999; and Van Den Born et al., 2001). With that point in mind, it was unclear whether people actually held SD visions in ways that fitted the propositions related to very weak, weak, strong or absurdly strong SD, or even, whether or not consensus about SD was already available.

Secondly, the definitional debate regarding SD matured to a point where many authors recognised the need for all those involved with the promotion of SD to make explicit where they stood in relation to the major principles that were said to underpin the term (Palmer, et al., 1997). Because the SD concept was said to be disputed as a function of the triple bottom line concept and between strong and weak versions, it was recognised that SD propositions unavoidably involved value judgements regarding the choice of TBL features to be sustained (Malouf, 2002; and Upham, 2000). In addressing those related problems, this research sought to allow people involved with the implementation of SD at the level of local government to articulate their definitions for SD and to evaluate if there were empirical support for prior propositions regarding strong or weak visions of SD.

In closing, it should be stated again that the purpose of this research was not to forge a consensus about definitions of SD in Australia, but rather, to check if consensus or

disagreement exists and to present the direction of agreement and contestation. The next section extends the process of establishing details about the characteristics considered to relate to SD. It provides another step in building the relevant communication concourse that will allow people to translate their visions about SD into recorded responses during Q-sorting.

2.5 Implementation of sustainable development

Regardless of the propositions of a variety of authors regarding weak or strong definitions of SD, the most widely endorsed definition of SD was delivered at the United Nations Conference on Environment and Development (UNCED, 1992), known as the Earth Summit and was reported in the blueprint document "Agenda 21". Agenda 21 called upon governments around the world to take a course of action to implement SD (Harris, et al., 2001; and Laffertty and Meadowcroft, 2000). Agenda 21 identified nine major groups whose participation in working towards the achievement of SD was fundamental. Those groups included women, youth and children, indigenous people and their communities, non-government organisations, trade unions, business and industry, scientists and technologists, and farmers. The activities of local councils were also one of the nine groups mentioned as critically important to the achievement of SD (UNCED, 1992). Chapter 28 of Agenda 21 dealt specifically with the implementation of SD on the part of local government and it introduced the concept of Local Agenda 21 (LA21) (Price, 2001).

The centrality of the TBL characteristics to sustainable development responses in Australia are noteworthy. The TBL objectives of Agenda 21 that related to local government were identified by the Local Government Management Board (LGMB, 1994) and are illustrated below:

- Environmental objectives:
    - Reducing unsustainable consumption;
    - Promotion of sustainable settlements;
    - Protection of the atmosphere;
    - Sustaining biological diversity; and
    - Minimisation of waste.

- Social Objectives:
    - Protecting cultural diversity and identity;
    - Creating places, spaces and buildings that work, wear and look well;
    - Meeting local needs locally;
    - Making settlements human in scale; and
    - Promoting disease prevention and health care.
- Economic Objectives:
    - Creation of vibrant local economies providing employment opportunities;
    - Valuing voluntary work;
    - Encouraging access to facilities, services and other people while decreasing reliance on cars; and
    - Providing opportunities for culture, leisure and recreation.

LA21 was promoted within Australia by a range of organisations (Bunny, 1998). The Commonwealth of Australia endorsed Agenda 21 and committed local government to participate in the creation of LA21 planning processes (Anonymous author, 1992a; and Productivity Commission, 1999). Furthermore, local government in Australia committed itself to the implementation of LA21 with the adoption of the *Newcastle Declaration* (Anonymous author, 1997a). The triple bottom line focus of the *Newcastle Declaration* was illustrated in the statement that: "We declare our commitment, as local governments and communities, to enhancing global sustainability, by developing processes at the local level based on simultaneously achieving economic, social, cultural and ecological goals by integrating them in the design and implementation of all local policies, programs and projects" (Anonymous author, 1997a, p.3). The *Newcastle Declaration* was signed on behalf of all Australian local governments by the Australian Local Government Association (ALGA) and on behalf of overseas local governments by the International Union of Local Authorities (IULA) (Addison, 2002). The International Council for Local Environmental Initiatives (ICLEI, 1997a and 1997b) actively coordinated the international LA21 Campaign and supported the TBL approach of LA21. Environs Australia (the Local Government Environment Network) promoted LA21 to Australia's 876 local government authorities. In Western Australia, peak local government bodies such as the Western Australian Municipal Association (WAMA) and the Eastern Metropolitan Regional Council

(EMRC) also employed LA21 officers and provided active assistance to local councils. Furthermore, the National General Assembly of ALGA confirmed local government's commitment to LA21 and SD.

The Commonwealth Government, through the Department of Environment and Heritage and some State Governments provided support for LA21 in terms of resources and finance (Inter-Government Committee on Ecologically Sustainable Development (IGCESD), 1995). The Commonwealth and Western Australian State Governments have firmly endorsed the TBL approach to sustainable development. For example, Professor Peter Newman, Director of the Sustainability Policy Unit within the Department of Premier and Cabinet defined the Western Australian Government's TBL approach to sustainable development as "meeting the needs of current and future generations through simultaneous social, environmental and economic improvement" (Newman, 2002, p.3). The Western Australian State Government's draft sustainability report also indicated the TBL approach and stated: "For many years we pursued economic, environmental and social goals in isolation from each other. We have come to recognise that our long-term well being depends as much on the promotion of a strong, vibrant society and the ongoing repair of our environment as it does on the pursuit of economic development. Indeed, it is becoming obvious that these issues cannot be separated" (Government of WA, 2002, p. 1).

The State Government of Western Australia has also been encouraged by the Environmental Alliance, a coalition of such non-government environmental groups as the WA Conservation Council, Wilderness Society, Australian Conservation Foundation and WA Forest Alliance to focus on the TBL. The Environmental Alliance Sustainability focus group (2001, p. 1) stated: "The Environmental Alliance recommends that the public face of the [State Government's Sustainable Development Strategy] initiative should bear the name 'sustainability' rather than 'ESD' or 'Sustainable Development'. The contemporary language reduces the likelihood of the ESD process being marginalised, and draws attention to the planned focus on integrating environmental, social and economic considerations in planning and decision-making". More recently, the International Union for the Conservation of Nature (IUCN, 2002) welcomed the TBL statements of the draft political declaration of the World Summit on Sustainable Development (WSSD) because "it highlights the interdependency of the three inseparable pillars of sustainable development, namely economic well-being, social equity and environmental protection".

Rightly or wrongly, the TBL appears to be central to the emerging definitions of sustainable development across a range of interested parties. The TBL has now been endorsed by international community at the WSSD, the World Conservation Union and

various Australian conservation groups in the Environmental Alliance, the Commonwealth of Australia and the State Government of Western Australia, and businesses such as BP, Shell and Woodside Energy.

Regardless of those commitments and support mechanisms for the TBL, however, very few local governments in WA endorsed LA21 or embraced SD more generally. In a recent survey, Price (2001) reported that just nine local governments indicated they had implemented LA21 and a further 10 were pursuing SD by a variety of other policy mechanisms. Agenda 21 (UNCED, 1992) explicitly suggested that local government had a critical role to play in implementing SD (Leach, et al., 1998; and March, 1998). The Agenda 21 Report noted (UNCED, 1992, p. 4) "Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and co-operation of local authorities will be a determining factor in fulfilling its objectives". With the ratification of Agenda 21, a focus on individuals within the community, and specifically, within the realm of local government was recognised nationally and internationally as a desirable location for SD initiatives to occur (Bell, 1992; Heycox, Meadows and Vernon, 1997; HMSO, 1994; Wright, 1995; and Zarsky, 1990). This was so, since local government was recognised as helping to shape the lives of communities at local, regional and statewide levels. For those reasons, Mueller (1995) argued that the role of local government in securing a sustainable future was crucial.

The Agenda 21 document recognised that local governments had the potential to act as agents of change for social, environmental and economic management (Howard, 1988; Jones, 1989; Kerr, 1987; and Wright, 1995). The integration of effort between local people and local government in pursuit of SD was recognised to require joint ownership of problems, and joint ownership of a unified set of objectives and agreed upon plans and actions to secure a better future (Johnson, 1994; Pilisuk, McAllister, and Rothman, 1996; Pratkanis and Turner, 1996; Presby, Wandersman, Florin, Rich and Chavis, 1990; and Reynolds, 1995).

With that point in mind, however, Mercer, Keen and Woodfull (1994) noted that the Australian Commonwealth and local governments tended to endorse the conservative or weak concept of SD. There was a general belief that the economic system, wealth, power and institutional arrangements were working well, but that resource use and waste production must be more carefully controlled. The Commonwealth of Australia's official response within the SD debate was endorsed within the "National Strategy for Ecologically Sustainable Development" (NSESD) (Commonwealth of Australia, 1992). That strategy defined the goal of SD as "Development that improves the total quality of

life, both now and in the future, in a way that maintains the ecological processes on which life depends". The conservative character of the Federal response to SD was revealed in the core objectives of the National Strategy (Commonwealth of Australia, 1992, p. 8). These objectives included:

- "To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- To provide for equity within and between generations; and
- To protect biological diversity and maintain essential ecological processes and life-support systems" (Commonwealth of Australia, 1992, p.8).

The Commonwealth position outlined in the NSESD also outlined a number of guiding principles for the implementation of SD in Australia. These principles included:

- "Decision making processes should effectively integrate both long- and short-term economic, environmental, social and equity considerations;
- Where there were threats of serious irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
- The global dimension of environmental impacts of actions and policies should be recognised and considered;
- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised;
- The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised;
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms; and
- Decisions and actions should provide for broad community involvement on issues which affect them" (Commonwealth of Australia, 1992, p.11).

"Our Community, Our Future: A Guide to Local Agenda 21" (Anonymous author, 1999a, p. 173) highlighted that the goals, objectives and guiding principles of the Commonwealth's NSESD endorsed a balanced approach that took into account all the objectives and principles and should be considered as a complete package with no objective predominating over others. Environment Australia (The Department of Environment and Heritage) suggested that six critical principles were important for the

implementation of SD in Australia (Anonymous author, 1999a, p. 171). These principles were:

1. Integration. This involves the effective integration of environmental, social and economic considerations in decision-making.
2. Community involvement. This principle recognises that sustainability cannot be achieved without the support and involvement of the whole community.
3. Precautionary behaviour. This requires the careful consideration of possible adverse environmental effects of planning, policy and practice. Precautionary behaviour implies that a conservation ethic exists within environmental planning and management frameworks to guard against environmental degradation.
4. Equity within and between generations. This principle aims to ensure fairness and equal access to opportunities both in our lifetimes, as well as for future generations. The notion of equity stresses the importance of maintaining ecological integrity and resources in order to provide for a certain quality of life, both in the short and long term.
5. Continual improvement. This principle recognises that change was a steady process and that it was important to take advantage of advances in technology and scientific understanding about what was sustainable.
6. Ecological integrity. This principle seeks to protect biological diversity and maintain essential ecological processes and life support systems.

Regardless of the nominal emphasis within Australian SD policies on the integration of the triple bottom line issues of economy, ecology and society, a major feature of much of the literature on SD was that it promoted a positive environmental focus (e.g., Anonymous author, 1999; Anonymous author, 1992c; Beder, 1993; Briffett and Lee, 1993; and Carow-Reid, Prescott-Allen, Bass and Dalal-Clayton, 1994). However, much writing on SD suggested it should not be merely an "environmental" issue, but rather, it should include an economic and social focus as well (Addison, 2002; Chanon and Vos, 1990; Counsell, 1999; Faucheaux and O'Connor, 1995; and Hart, 1997).

Local government in Australia had a long tradition of involvement in the triple bottom line areas of economic and environmental management and planned social change (Atkins, 1979; Bell, 1992; Dempsey, 1990; Department of Local Government, 1981; Goode, 1998; Jewson and MacGregor, 1997; and Kennedy, 1996c). Local government was involved with decisions relating to land use planning, housing matters, waste collection and disposal, urban infrastructure development and maintenance, and financial investment (Boaden, 1971; Bowman, 1976; Brand, 1976; and Cutts, 1987). Hall (cited in Mercer, Keen and Woodfull, 1994) went so far as to suggest that 90 per cent of all

planned developments in Australia were decided upon within the local government planning apparatus.

Numerous authors (e.g., Dahl, 1961; Dente and Kjellberg, 1988; Gordon, 1987; Local Government Structural Reform Advisory Committee, (LGSRAC) 1996; Mercer, Keen and Woodfull, 1994; and Patterson and Theobald, 1995) also noted that local government was a major employer, producer, consumer and purchaser of goods and services. Wright also suggested that local governments constructed, operated and maintained social, environmental and economic infrastructure, oversaw planning and development proposals, set policy and helped implement international, national and state environmental policy. Flowing on from the provision of services and resource use, the onus was on local government to perform in a manner that promoted SD (Irwin, 1995; Roche, 1998; and Syme, Seligman and Macpherson, 1989). Through policies covering economic, technological, social, and environmental change, local government had the potential to impact on SD in major ways (Jones, 1989; Pearce, 1989; Pearce, Markandha and Barbier, 1989; and Silvaris, 1998). Local government, as the third tier of government in Australia and the level of government closest to the people, had the potential to act as a vehicle for environmental change (Mercer, Keen and Woodfull, 1994; Mueller, 1995; and Wright, 1995). Local government could also educate, advocate, mobilise and respond to the local community in promotion of SD (Wright, 1995).

For fully integrated SD, however, it was necessary that local government had clear linkages with both State and Commonwealth governments, and with local communities (Anonymous author, 1992a; Local Government Ministers' Conference (Part 2 and Part 3), 1987; and LGSRAC, 1996). Reynolds (1995) argued that the key features of inter-government linkages to the community included a genuine exchange of information and use of innovative information dissemination networks, a joint capacity to set objectives, joint ownership of problems and solutions, benefits to all parties, diminished adversarial relationships, and a genuine attempt to make the best use of scarce resources.

Labonte (1989) suggested that local government could impact on SD in five functional roles of policy, legislation, education, partnerships and advocacy. Mueller (1995) argued that the greatest potential of local government lay in its ability to respond to local issues and empower local community action in solving problems. To achieve the goals of SD, however, local councils needed to establish mechanisms, procedures and priorities for integration of environmental management into land use plans, infrastructure and service delivery, and facilities operation. The key to the establishment of SD was that activities be fully integrated across policy areas and government and community sectors (Labonte, 1989; Reynolds, 1995; and Wright, 1995). The scope for the integration of environmental

management at the local level was considerable (Bell, 1992). Reynolds (1995) noted that integrated environmental management at the level of local government involved the following elements:

- environmental controls relating to Commonwealth or State laws and local by-laws;
- organisational and administrative structures necessary for operation of buildings and services provided by government;
- the planning instruments used to control spatial and temporal changes to the environment such as land use planning and developmental control;
- the allocation of resources necessary to ensure that plans and controls were carried out; and
- monitoring and auditing of changes to the environment.

Wright (1995) argued that integrated local area planning (ILAP) involved community consultation to define problems, set priorities and implement programmes. It also involved the local authority establishing an adequate information base of its environmental, economic and social make-up. Establishing a strategic plan with a community vision, targets, milestones, time frames and activities was also crucial to the ILAP process. The indicators of success and evaluation of outcomes were necessary for further SD progress (Anonymous author, 1997b; Jones, 1989; and Lemons and Brown, 1995).

Gordon (1987) suggested that the current climate of expenditure constraint, greater political and financial accountability and limited revenue resources, when combined with social and political pressure for an expansion of services was leading to organisational restructuring with features of openness, co-operation, forward planning and accountability. Gordon (1987) used the term 'corporate management' to describe this new local government organisational style. Corporate management was described by Floyd and Palmer (1985, p.11) as: "the effective management of a Council in such a way that it functions as one coordinated body working within the framework of an agreed set of goals, programs, policies and priorities rather than a disparate aggregation of committees, departments and individuals responsive to sectional demands and seeking to maximise sectional interests". Corporate management offered the most useful approach to ensuring SD, because of its inherently holistic style (Donaldson and Werhane, 1988; Dorweiller and Yakhou, 1995; Jackall, 1988; Sharpe, 1988; and Shaw and Barry, 1992). Where the traditional focus of local government management involved operational control over specific tasks, a corporate focus involved corporate planning of aims, programmes and polices, corporate management of resources to achieve aims

and, only then, operational control of tasks (Shrivastava, 1995; and Span, 1972). The last element of corporate management involved performance review to ensure programmes and policies were meeting planned objectives, and making modifications where necessary. This approach to local government was termed 'management by objectives' (Gordon, 1987) and was characterised by the establishment of a hierarchy of objectives for application throughout council functions. The essential elements of the management by objectives approach were the predetermination of planned objectives and the on-going monitoring of performance in meeting these objectives. Furthermore, management by objectives involved four key components:

- planning involves the determination of priorities;
- programming involves the organisation of action strategies in pursuit of planned objectives;
- budgeting involves organising priorities into financial components; and
- systemic framework involves the process of implementation and review in a structured and ordered fashion.

Labonte's (1989) holosphere concept, Reynold's (1995) integration concept, Wright's (1995) integrated local area planning policy and Gordon's (1987) corporate planning approach all pointed to the importance of a holistic approach to SD. Nevertheless, the key issues remained as to whether local government had the legislative power, political will, administrative capacity, financial resources and networking abilities to be able to effectively implement SD policy. Wright (1995) argued that local governments in Australia do not presently have the capacity to implement SD. It was also interesting to note that the report of the LGSTRAC "Advancing Local Government in Western Australia" (1996) made no mention of Agenda 21, SD, or sustainability!

Having noted some of the major themes of the SD debate together with the official position on SD of the Australian Commonwealth Government, it was important to highlight the more specific details of Local Agenda 21. This was because much responsibility for the implementation of SD policy was passed on to local government (Flynn, 2000; Parker, 1987; and Smith, 1996). Although Fowke and Prasad (1996), and Mercer, Keen and Woodfull (1994) have noted that many of the policy and strategy initiatives for SD occurred at the international, national and state levels of government, in Australia, a large part of the burden for implementing SD policy was directed to local government. Mercer, Keen and Woodfull for instance, stated that "Although the three tiers of government in Australia are becoming much more aware of environmental issues, it is frequently up to local government to implement policies impacting on land, water,

and air" (1994, p. 41). Reynolds (1995) also commented on the unique ability of local government to be directly involved with the impacts of people on the physical, social, biological, economic and cultural spheres of life.

LA21 highlighted a growing recognition that "top-down" regulation and legislation were no longer sufficient safeguards in ensuring the protection and enhancement of environments for human welfare (Johnson, 1994; and personal correspondence, Bryan Jenkins, Chief Executive Officer, Department of Environmental Protection, June 1998). LA21 recognised that environmental management required community education about the costs and benefits associated with resource development and consumption and it required shifts in attitudes and values (Jacobs, 1995b; Newman, 1998; Oskamp, 1989; and Shaw and Dingle, 1998). This recognition also extended to an implicit assumption that the behaviour of individuals was central to both the creation and the elimination of many urban social, environmental and economic problems (Breheny, 1992; Olsen, 1965; Mouritz, 1998; Perkins, Brown and Taylor, 1996; and Perkins, Florin, Rich, Wandersman and Chavis, 1990).

With the growing endorsement of the need for SD, the actions of individuals, households, businesses, communities and governments came under increased scrutiny (Breheny, 1992). LA21 placed the onus on individuals and communities to translate a concern for a variety of current practices into positive behavioural change (Hills, 1996). This was the central theme of LA21. The task for local government in implementing LA21 was to translate local scrutiny into meaningful change at the level of the local community (Anonymous author, 1997b; Bowman, 1981; and Reynolds, 1995).

Within that context, current developments in the implementation of SD policy emphasised public participation as a key issue (Beierle and Konisky, 2000). LA21 made explicit the demand for democratic participation in the creation of SD policies at the local government level of society (Patterson and Theobald, 1995). The endorsement of public involvement in LA21 was central to a range of environmental management innovations including civic environmentalism, community-based environmental protection, and local ecosystem management (Bunny, 1998; and Floyd and Palmer, 1985). Reynolds (1995) recognised that the implementation of successful environmental programmes required both the support and participation of local people and the responsiveness and accountability of local government.

In harmony with local government-sponsored policies on SD, Irwin (1995) suggested that the quest for SD required citizens to develop their own means of living within the local environment. Other authors (e.g., Chanan and Vos, 1990; Stocker and Ollard, 1994; and

Van Eeten, 2001) suggested that local action was intrinsically valuable to SD in that it generated public-spiritedness and common interests. Irwin drew a contrast between the externally developed technical solutions to urban environmental problems and local efforts to alter everyday practices at the household level. According to Irwin such local initiatives "offer the means of responding to citizen demand at an immediate, local and contextually appropriate level" (1995, p. 175). Furthermore, Chanan and Vos (1990) suggested that those local initiatives have psychological value for the individuals involved and social value for the local community. They also made a wider contribution to the protection of the local environment. The benefit of this 'bottom-up' approach, according to Irwin, was that it built upon people's everyday experiences rather than seeking to enforce sustainable policies from above. The 'bottom-up' approach to sustainability was based on the living practices, behaviours and social arrangements of individuals rather than the institutional arrangements of governments (Baxter, 1996; Bowman, 1981 and 1985; and Cohen and Uphoff, 1977).

A further powerful aspect of local responses was that they connected with citizens at an immediate level, in terms of people as consumers, workers, commuters and homemakers. Irwin stated: "Perhaps the key point of this expression of citizenship is that environmental response functions within the terms and conditions of citizens themselves rather than being framed by State-led activities" (1995, p. 178). The local approach to sustainability can be seen to be demand driven. The needs and concerns of local people led to calls for change.

2.6 Conclusion and statement of the thesis questions

Survey data indicated that attitudinal factors about the human relationship to nature were in a state of transformation. Various authors (e.g., Dunlap et al., 2000; Inglehart, 1990; and Stern, 1992) noted a change in the DSP with the abandonment of the values associated with the HEP and the rising endorsement of the NEP. Importantly, however, Eckersley (1992) suggested that values are not simply or singularly "ecocentric" or "anthropocentric". Instead, relevant values were suggested to occur along a value continuum marked by complexity, ambiguity and inconsistency. As suggested earlier, simple binary analytical frameworks often misrepresent, oversimplify or highlight artificial differences between people at the expense of the subtlety of human subjectivity. Indeed, this dissertation has noted that the classification of SD definitions into a strong or weak form is perhaps, a central problem. For that reason, the literature review for this study suggests that Q-sampling of the communication concourse should involve the selection

of items that reflect the subtle differences that occur as one considers the full spectrum of SD values, rather than a simple binary sampling of items.

The review demonstrated how the scope of SD broadened and evolved over time and that this evolution partially explains the high levels of contestation about the subject. It was suggested that in spite of a general consensus on the requirement for a SD paradigm, disunity remained as to what exactly that paradigm entailed. SD was recognised as a contested concept and numerous authors noted that a multitude of definitions existed to capture the essence of the concept (e.g., Franks, 1996; and Pezzy, 1989). To reiterate the earlier points, this dissertation recognises the multi-definitional properties involved in the debate and it seeks to sample a fully representative selection of Q-statements to allow people to model their subtle viewpoints, and avoid simple binary interpretations. The multi-definitional properties of SD were problematical because different groups used the term in different ways. The most important disunity occurred between those people with an incremental, business-as-usual view of SD – often termed weak SD – and those pursuing a strong, radical, even revolutionary reorganisation of social and economic development (Faucheaux and O'Connor, 1995; Neumayer, 1998; and Palmer et al., 1997). Other authors have suggested the occurrence of at least two additional "ideal" types of SD, namely the absurdly strong and pathetically weak concepts of Daly (1995) and Beckerman (1995b) respectively. Still others (e.g., Common, 1996; and Holland, 1997) have suggested that there are no differences between the proposed types and that only one dominant type occurs. Irrespective of the debate, this dissertation suggests that all definitions of SD are propositional and that they offer a very wide range of features, characteristics and concepts. Regardless of the contested and controversial nature of the propositions about SD, however, the chapter noted that a SD policy commitment had been endorsed by over 170 countries with the signing of Agenda 21 in 1992. The chapter noted how the Commonwealth of Australia endorsed Agenda 21 and the TBL focus of SD on economic, social and environmental problems and solutions. Within Australia, the responsibility for the implementation of SD via LA21 had been assigned in part to local government, but local government had been largely ambivalent about embracing LA21.

The review was important for methodological reasons in that it allowed for a systematic identification of the features and characteristics of the various value positions and definitions said to support SD. The review noted that no single value position or definitional proposition could be accepted as providing an objective, empirically grounded guide to SD. The various interpretations and descriptions of SD were based on individual values, that in turn, reflect a spectrum of opinion. Adequately capturing that full

spectrum during Q-sampling of the communication concourse is important. When it comes to issues of SD, the question of "correctness" was noted to be one of subjectivity rather than objectivity since human values and attitudes are frequently subjective. In that sense, there can be no answer to the question "which version of SD was correct?" All calls to action in promoting the TBL of economic and social development or environmental conservation as part of a wider SD ethic are made on the basis of value systems. With those points in mind, this thesis follows the work of Palmer et al. (1997, p. 88) who suggested:

> In much current usage, sustainability and sustainable development are fuzzy buzzwords: terms that appear to encapsulate a discrete notion but which actually have multiple interpretations. Sustainability has come to mean different things to different people yet it appears to unite them under what is actually a falsely shared banner.

It was recognised by Palmer et al. (1997) and others (Basagio, 1995; and Franks, 1996) that definitions of SD were based on values of individuals and that a solution to the problem of the contested nature of SD was for people involved in the SD debate to articulate where they stood in relation to key SD principles. On that point Palmer et al. (1997, p. 92) stated:

> A large selection of quotations from recent writing on sustainability shows that there is no agreement on what exactly sustainability means. One solution, we suggest, is for all those with something to offer the continuing debate about sustainability to make explicit where they stand in relation to...principles that underpin the term.

In this thesis it has been argued that SD is a contested proposition, based on human values, and that a key requirement is to identify how the term is understood in everyday use. To that end, the thesis addresses two inter-related questions:

1. How do individuals involved with the implementation of LA21 at the local government level structure their visions of SD? This first task was to allow individuals to make explicit their understanding of the SD concept. This was an exploratory activity that aimed to allow participants to describe and define their own unique views about SD.

2. Do the visions of SD that were generated in response to question one support previous proposals regarding the existence of strong or weak definitions of SD? The second task was to establish if people actually held visions of SD that fitted the previous propositions related to strong or weak SD.

It was also hoped that the opportunity presented by fieldwork interviews in this study would allow some light to be shed upon the very low level of adoption of LA21 in Western Australia.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Q-Methodology or Q-sort factor analysis was frequently misunderstood and misinterpreted as a form of R-sort factor analysis. This was because both and R- and Q-Methodology accomplished data or variable reduction but the assumptions and ramifications of both methods are unique. For that reason, this section describes factor analysis and the interpretation of results within a Q-Methodology study. Factor analysis was originally intended to identify latent similarities among characteristics or traits through the process of correlation. In the study of trait relationships, the use of Pearson's product-moment correlation, r, led to this approach becoming known as R-Methodology or R-sort factor analysis. R-sort factor analysis reduces a universe of characteristics of people or objects into a smaller set of summary variables, such as the words 'red', 'blue', 'green' and 'yellow' into a variable coded "colour".

In 1935 it occurred to William Stephenson that factor analysis could be used to analyse the correlations among people about their opinions. Stephenson used the term "Q-Methodology" to distinguish it from the traditional use of R-Methodology and he introduced the Q-sort as the instrument allowing individuals to model their own opinions. In a similar fashion to the way that R-Methodology reduces a wide variety of traits into a smaller sub-set of variables, Q-sort factor analysis reduces a large universe of opinions into a smaller set of "belief types" – termed "factors". It does so by identifying correlations between people who share a similar opinion and it identifies the common and unique characteristics for each opinion. This is accomplished in the process of Q-sorting, when individuals use their Q-sort as a projective device through which they express the relative importance of various issues explaining their unique opinions (Kerlinger, 1988).

The purpose of factor analysis in Q-Methodology is to create a typology of belief types. That is, it leads to the creation of a classification system for the unique types of opinion presented by a variety of respondents, based on similarities and differences among their Q-sorts. The people are conceived as being examples of the belief types, with the belief types being latent and unknown a priori. The end result is an identification of the number of belief types held, together with the associated characteristics of each type. Each respondent's Q-sort is conceived as an independent variable, with Q-statements being observations and factor results becoming dependent variables that were unknown previously. Essentially then, Q-Methodology is regarded as a unique approach to the classification and description of subjective viewpoints held by a group of people about a topic of interest (Brown, 1980). This is an important component of the scientific process

insofar as it allows a researcher to place general premises, in the form of conceptually relevant statements about a topic of interest, in the open, and to then bring participant perspectives to the fore through their individual Q-sorts. Thus, the method is ideal for investigating phenomena, like definitions of SD that were conceptually underdeveloped and lack an empirically supported nomological framework (Schultz-Kleine, Kleine and Allen, 1995).

At the methodological level, this research diverted from the well-worn path of accepted consideration of value and attitude evaluation. It was apparent that the vast majority of published research on public perceptions of environmental problems and environmental attitudes more generally was conducted using R-Methodological questionnaire-based survey methods (e.g., Heberlein, 1989; Hinni, Gendall and Kearns, 1995; Kalof, 1995; McAllister, 1991). Van Den Born et al. (2001) noted that the majority of that extensive body of research has utilised the New Environmental Paradigm Scale of Dunlap et al, (2000) or other purpose-specific questionnaires (e.g., Anderton, 1997; and Black and Reeve, 1993; and Reeve, 2001). While such survey methods are important and valuable, there are some questions that are difficult to answer using surveys as traditionally defined. On that point Fischoff, et al. (1983, p. 39) stated: "If one is interested in what an individual really feels about a value issue, there may be no substitute for an interactive elicitation procedure which acknowledges the elicitor's role in helping the respondent to create and enunciate values".

This chapter introduces Q-Methodology and suggests that it is an interactive elicitation procedure that meets Fischoff et al's., call (1983). The purposes of the chapter are to introduce Q-Methodology to the reader and to introduce the formal methodology deployed during fieldwork. The first part of the chapter provides a general orientation to some of the unique characteristics of Q-Methodology as defined by its originator, William Stephenson (1935, 1972, 1978, 1980, and 1984), and others (e.g., Brown, 1980, 1993, 1996a, 1996b, 1999a and 1999b; McKeown and Thomas, 1988; and Stainton Rogers, 1995). The objective of the section on Q-Methodology is to make familiar the accoutrements of the science, its terminology, its procedures and its findings. It is important that the unique characteristics of Q-Methodology are illustrated in order to validate its usefulness for the investigation of people's visions of SD. This validation is necessary for two reasons.

Firstly, it is necessary because Q-Methodology is a complete and distinctive approach to research with its own principles for analysing attitudinal factors such as opinions, values and beliefs (McKeown and Thomas, 1988), but it remains obscure beyond a relatively small and attentive audience of researchers. This relative obscurity is noteworthy, for in

spite of Q-Methodology being an approach to research that is now more than 65 years old, it was still included in a volume dedicated to new tools for social scientists as late as 1986 (Berry and Lewis Beck, 1986). Although Q-Methodology is not a recent development, it is certainly new to the many psychologists and social scientists schooled in the traditional research methods of R-Methodology (Ernest, 1998). On that theme, Dennis (1986) described Q-Methodology as "creative and avant-garde" (p. 6). Brown (1986, p.57) also suggested that "Q-Methodology may still qualify as new, and perhaps even, innovative, even by today's standards". That situation led McKeown and Thomas (1988, p.11) to assert that "Q retains a somewhat fugitive status within the larger social scientific community".

Regardless of its relative obscurity within mainstream sociological and psychological research, however, advances in the use of Q-Methodology have occurred since 1935. The number of peer-reviewed articles being produced that draw upon Q-Methodology grew rapidly and Brown stated that the literature on Q-Methodology exceeded 1,500 entries in 1986 (1986, p. 72) and 2,200 entries in 1993 (1993, p. 114). The number of academic dissertations submitted for examination (e.g., Koshansky, 1985; Edgens, 1997; and Jonas, 1998) has also grown steadily. The first British Doctorate based on Q-Methodology was awarded in 1984 (Kitzinger, 1984). The Q-Methodology approach to research also had its own peer-reviewed Journal - the "Journal of Operant Subjectivity", begun in 1977 and now in its nineteenth volume. There was also the International Society for the Scientific Study of Subjectivity that met annually since 1985 (Brown, 1999a). Brown (1999a, p.1) also noted that: "Only recently has there been evidence that a younger generation of psychologists is rediscovering Q-Methodology and becoming acquainted with the vision which William Stephenson promoted for more than a half century".

Regardless of its relative obscurity, the use of Q-Methodology has a long and distinguished history and its application to the social sciences has been limited only by the imagination of researchers. Brown (1993, p. 91) went so far as to suggest that Q-Methodology demonstrated "its applicability to virtually every corner of human endeavour". The application of Q-Methodology has seen studies conducted in diverse fields from legal studies to nursing, and from attitudes to advertising in Islamic Nations to male perceptions of a career in science. Q-technique has been used across a variety of cultural settings from English speaking counties like the USA (e.g., Jonas, 1998), Britain (e.g., Barry and Proops, 1999b; and O'Dell, 1998) and Australia (e.g., Dryzek, 1994, 1997) to Middle Eastern society (e.g., Al-Makaty, Van Tubergen, Whitlow and Boyd (1996), European society (e.g., van Eeten, 1999 and 2001), Asian society (e.g., Young-

Khee, 1992; and Brown and Byung, 2002) and even communist countries (e.g., Mosyagina, Kashin and Peck, 1997; and Peng, 1998).

Furthermore, Q-Methodology has been widely used to investigate the perceptions of a variety of age groups and genders (Popovich, 1996). For example, Q-Methodology helped young children who lacked the pre-requisite verbo-vocal skills to faithfully communicate their experience (Taylor, Delprato and Knapp, 1994) and Thomas and Baas (1993) presented a fascinating Q-study that investigated female responses to Robert James Waller's novel, "The Bridges of Maddison County". Lastly, Q-Methodology is recognised as a viable research tool in single case studies that investigated such things as an individual's sense of the care that they received while in hospital (Brown, 1996a). In view of the wide range of application of Q-Methodology, it is worth noting Brown's admonition: "There is no other method or theory which matches Q's versatility or reach, and which incorporates so well with the principles and concepts of contemporary science, and so it remains today, as it was envisioned 60 years ago – the foundation for the scientific study of subjectivity" (1996, p. 10). Taken together, those advances in publications, defended dissertations, annual conferences and applied work mean that Q-Methodology ought to be accepted as a legitimate alternative to R-Methodology.

Unfortunately, however, there is a second reason that validation is necessary. This is because a methodology such as Q- that deviates from the path of accepted considerations of objective R-Methodological research design and statistics remains suspect within the scientific community (Dennis, 1986). Stainton Rogers (1995, p.179) neatly captured the central problem issue facing Q-Methodology researchers stating:

> It may seem perverse under the general title *Rethinking Models in Psychology* to present an approach which, in its roots, is the best part of 60 years old! However, perversion ('opposition to what is expected or accepted') was, and still remains, exactly what Q-Methodology promotes. Stephenson, in other words, produced a classic heresy – one which, all through its academic life, has troubled and distressed mainstream thinking.

When it comes to time and resources committed to teaching and assessment of research skills, undergraduate and post-graduate courses in the social sciences are weighted heavily in favour of R-Methodology and associated techniques, particularly the quantitative and qualitative techniques (Felterman, 1988; Hayes, 1997; Nagey and Viney, 1994; and Whitley, 1996). Perhaps for that reason, there is an implicit assumption that R-Methodology is somehow superior to Q-Methodology. It is worth noting that Q-Methodology was not taught within any of the five universities in WA. Furthermore, the

vast majority of peer-reviewed and published research on pro-environmental behaviour and attitudinal factors involves R-Methodology research (e.g., Breckler, 1984; Catton and Dunlap, 1979; Rossi and Freeman, 1989; Samdahl and Robertson, 1989; Strauss, 1987; Syme and Sadler, 1994; and Syme, Bates and Milech, 1991).

Nevertheless, it is not the purpose of this thesis to critically validate Q- or R-Methodology, or to find favour with one over the other. It is simply accepted that Q- and R-Methodology serve different research functions and for the purposes of this specific research, Q-Methodology has been chosen. To reiterate that major point, the intention of this chapter is not to compare and contrast Q- with R-Methodology or to suggest that one or other methodology is best. Rather, it is simply accepted that R-Methodology is always appropriate for the collection and analysis of objective subject matter and that Q-Methodology may be appropriate when the data of interest relates to subjective attitudinal factors (Hurd, 1999; Koshansky, 1985; and Lightbody and Durnell, 1996).

On those two points, Brouwer (1999, p. 36) stated: "When we are dealing with an individual human subject, we may find many characteristics which are quite objective: his or her age, or buying behaviour, or churchgoing habits. We may invent such objective characteristics by either asking the subjects about them or by looking at objective registrations including observing the subjects' behaviour". Objective characteristics include such things as weight, height, frequency of church attendance and the like (Shaughnessy and Zechmeister, 1990). R-Methodology is always appropriate for the measurement of such characteristics. Other human characteristics, however, are quite subjective. A person's preference for certain vegetables, political candidates or music tastes are subjective. Observation of eating patterns may objectively establish that a person eats carrots with every meal but such a measurement says nothing about the subjective preference of the person for carrots. Q-Methodology may be appropriate when such subjective preferences are at issue (Brown, 1980).

Q-Methodology was chosen for this study, because, as van Eeten (2001, p. 395) stated: "[it] is especially suited to the task of uncovering positions really held by participants in a debate rather than accepting decision-makers', analysts', or even the participants predefined categories". It was precisely because of the apparently contested nature of SD that this research used a Q-Methodology approach. Q-Methodology assumes that people's subjective experiences are diverse, and it aims to explore and chart that diversity (Kitzinger, 1999; van Eeten, 2001). According to R. Stainton Rogers, Stenner, Gleeson, and W. Stainton Rogers (1990, p. 250) "Q-Methodology is ideal for addressing the critical kinds of research questions which are concerned to hear 'many voices'". Within the context of an identified need to establish the opinions of the "many voices"

about SD, the central thesis problem for this study is to objectively elicit and describe the different understandings and definitions of SD at the level of local government and community. For those reasons, the chapter provides a general overview of Q-Methodology. Firstly, however, it provides a brief illustration of R-Methodology.

3.2 R-Methodology

The quantitative and qualitative techniques associated with the R-Methodology approach to knowledge defined psychological and social science research throughout the twentieth century. Literally hundreds of thousands of examples of this type of research are readily available in related bodies of literature (Ernest, 1998; and Wade and Tarvis, 1990). Likewise, the vast majority of published research on attitudinal factors toward the environment involves quantitative or qualitative techniques associated with R-Methodology. Few studies have attempted to use Q-Methodology to enlighten knowledge about attitudinal factors toward a range of environmental issues (Barry, and Proops, 1999a; and Logan, and Beltrao, 1995). Because of the relative abundance of R-Methodology studies, it is assumed that almost all social scientists and psychologists have an understanding of R-Methodology and its associated techniques and there is little profit in providing a detailed description of their underlying logic. A short summary at this point should suffice to outline the R-Methodology approach.

In essence, R-Methodology entails observing and examining the relationships between variables that are expected to vary in size, length, amount, or other quality (Ernest, 1998). In consequence, R-Methodology is preoccupied with observable behaviour and the manipulation of variables (Brown, 1996). As Tesch (1990, p. 1) noted "most researchers believe that the only phenomena that counted were those that could be measured". Accordingly, in psychological studies, R-Methodology frequently emphasised data collection methods in which an individual is measured for the expression of some trait, pre-determined as a "variable" by the researcher. Where the "variables" of interest are human characteristics such as attitude, belief or opinion, R-Methodology draws upon standardised measures to fit the diversity of potential attitudes and experience into response categories with a predetermined meaning with reference to the observer (Edkins, 1998; Epstein, 1989; and Whitley, 1996). Brown (1980, p. 2) suggested how the process of measurement of attitudes in R-Methodology works:

> In their study of behaviour, social scientists have generally adopted a strategy of conceptualising attitudes, feelings, and other relevant human events as internal states or traits with certain properties than can be measured only indirectly,

> through devices, such as attitude scales, said to be operational definitions of them. Procedurally, components x, y and z are declared to be properties of trait A (say anomy); statement X, Y and Z are constructed and subjected to tests of reliability and validity; and the scale is administered to respondents. Scale XYZ is the operational definition of A, i.e., A is operationally defined by XYZ. If the subjects respond positively to the scale, they are, by definition, anomic in attitude.

With the rise of interest by academics and others about the nature of pro-environmental behaviour, studies of values, attitudes, beliefs and opinion toward the natural environment have certainly increased in number in recent times (Dietz, Stern and Guagnano, 1998). As with studies in social science generally, R-Methodology dominated specific investigations regarding the attitudinal factors associated with environmental concern (Kalof, 1995). The attitude literature related to the environment investigated socio-demographic variables such as gender, education level and socio-economic status and their associated impact on environmentally concerned attitudes and pro-environmental behaviour (Dietz et al., 1998).

The common approach was to view environmental attitudes as constructs that were expressed in affective, cognitive or behavioural response modes and were inferred from verbal or non-verbal behaviour (Feather, 1988; Fishbein and Ajzen, 1975; Hills, 1994). Within the R-Methodology tradition, the empirical research on attitudes examined what people said they value and what their individual and collective actions indicated they value (Derksen and Gartrell, 1993; Dunlap and Van Liere, 1978; Gibson, 1995; and Stern and Dietz, 1994). The tradition of inferring attitudes from these expressions of non-verbal behaviour, or from verbal or symbolic behaviour had a long pedigree (Festinger, 1957; Hartley, Hartley, and Hart, 1955; and McNemar, 1948). As noted by Brown (1980), the major "tool of the trade", designed for the purpose of eliciting information from respondents was the standardised questionnaire used within the context of a random-sample or purposive survey methodology. In the traditional survey, people are presented with a multi-item questionnaire and they are measured for traits, attitudes, and the like from an external viewpoint. Tests of "environmental concern" presupposed that such a concept existed as a human trait and they assumed that each individual possesses more or less of this concept as defined by the test (Ernest, 1998). Measurement of the characteristic attempted to reveal how much or how little "environmental concern" each person actually had. The NEPS of Dunlap and Van Liere (1978) was probably the most widely known example of the use of that approach in quantitative research of environmental attitudes.

Within scales such as the NEPS, measuring attitudes and testing their consequences is achieved by asking respondents, for example, how much or how little they agree with any statement, or asking about the intensity of agreement or disagreement. At first glance, this appears to be what happens when participants in a Q-Methodology study sort Q-statements. But the critical difference is that a meaning is ascribed to each statement within the questionnaire scale by the researcher prior to its application to research participants. Participant responses to each statement are then taken to have objective meaning with reference to the attitude concept as pre-defined by the researcher. The independent view of participants towards each statement is considered unimportant. Green (1956) referred to the attitude concept so defined as being an abstraction from a large number of related responses by an individual. Green (1956, p. 335) stated: "We are justified in using a comprehensive concept like attitude when the many related responses are consistent". Axelrod and Lehman (1994, p. 149) offered a concise summary of that position when they stated: "studies examining general attitudinal phenomena often infer an individual's attitudes from responses given to a series of belief statements". Peng (1998) suggested that conventional survey research conceived questions whose answers were pre-judged as being somewhat "right" or "wrong" against a set of values outlined by the objective observer concerning the domain of study. Kitzinger (1999, p. 268) also suggested that conventional survey research 'measured' participants' understanding in relation to an operational definition imposed on them by the researcher. In consequence, a researcher defined what a response to their scale was to mean and then used the participants' responses to the scale to bring that meaning into being (Brown, 1980). The a priori imposition of meaning on the potential responses to items in a standardised questionnaire is absent in Q-Methodology. Rather, items making up a Q-sort are recognised to have potentially multiple meanings, based on the actual subjective understanding of any research participant.

3.3. Q-Methodology

Q-Methodology was introduced to the scientific community by William Stephenson in a letter to *Nature* in 1935. Stephenson was both a physicist (Ph.D., 1926, University of Durham) and a psychologist (Ph.D., 1929, University of London), and he served as the last assistant to the renowned statistician Charles Spearman, the inventor of factor analysis. Spearman once referred to his protégé as the most creative statistician in psychology (Brown, 1999a). Essentially, Stephenson believed that a person's point of view, which he termed "subjectivity" could be studied in an objective, orderly and scientific manner (Hawarth and Van Wetering, 1994). Stephenson realised that all

branches of science required something instrumental, like a telescope for observing distant planets, a microscope for observing minute particles or an operant chamber for observing animal behaviour. His statistical resolution to that belief was elaborated through the development of Q-Methodology. In focusing upon a science of subjectivity, he promoted the Q-sort as the instrument to reveal individual subjectivity.

The word "subjectivity" – like so many other words – had different meanings and was understood in different ways by different people. The use of the word subjectivity in Q-Methodology was specific. Subjectivity was regarded as the expression of a person's point of view or perspective. It was an expression or communication of that point of view, and accordingly, a behaviour (personal correspondence, Professor Stephen Brown, Kent State University, Ohio, 14th June, 1999). It was available for systematic inspection when an individual communicated with other people through talking, signing, and writing. To reiterate the point; subjectivity is a behavioural expression and it is modelled scientifically during the activity of Q-sorting.

Q-Methodology is fundamentally different from the research approach of the dominant and traditional R-methodology and Stephenson (1984) argued that it offered an alternative approach to the R-Methodological measurement of attitudinal factors. That difference did not imply superiority. The difference in methods was apparent in both data collection processes and the statistical analysis associated with the two approaches (Ernest, 1998). As Brown (1980, p. 1) noted "most previous work in the behavioural tradition has stressed the external standpoint of the investigator, i.e., it has begun with his vision of his world according to which all else has been measured". Brown (1980) noted that examining the world from the subjective standpoint of the individual being studied is critically important if the desired outcome was scientific evaluation of attitudinal factors.

Such an approach was important in that the content of people's communication about their values and attitudes is always subjective, especially in terms of self-talk, self-reflection and other forms of subjectivity of a behavioural kind. As Stephenson (1965) frequently pointed out the "so called mind" and even the concept of attitudes were not immediately presentable. Communicability, on the other hand, is presented directly, it is "on the surface" for all to see and examine, and it was the empirical study of communication that Stephenson set out to study. In terms of the interest in communication about personal attitudinal factors, Brown stated: "What is transpiring within the communicative field is of course what is the domain of human activity and experience which is of interest to me as a psychologist. And I believe such behaviour and the experiences can be scientifically investigated..." (personal correspondence via e-

mail, Professor Stephen Brown, Kent State University, Ohio, 13th June, 1999). Brown (1999, p. 10) also noted that "talk is primarily empirical and can be collected and examined, as one might collect and examine butterflies or stamps". Through the processes of talking, people may use words and phrases to mean different things (expressing a subjective point of view) but they were alike in that communication is taking place.

It was in that sense that Q-Methodologists, in studying subjectivity, did not purport to study "mind", "internal mentalism", or any other derivative of "consciousness" however categorised. They accepted an "inner" frame only in the behaviourist sense of a person's self-reflections, self-conceptions and self-observations (Skinner, 1972; and Stephenson, 1984). On that point, Kitzinger (1999, p. 268) highlighted that "Q-Methodology was intended to research people's own subjective experiences, opinions, ideas, beliefs, and perspectives".

The widespread confusion and antipathy in some quarters about the application of Q-Methodology would appear to be partly due to the insistence of its adherents to study subjectivity. While it is subjectivity that is assessed by Q-Methodology, it is subjectivity in the sense of uncovering participants' own perspectives, understandings and definitions (Kitzinger, 1999). Brown (1980, p. 46) summed up this theme with the statement that:

> Fundamentally, a person's subjectivity is merely his point of view (sic). It is neither a trait nor a variable, nor is it fruitful to regard it as a tributary emanating from some subterranean "stream of consciousness"...To say that a particular kind of behaviour is subjective, however, is not to preclude measurement, for it is the explicit intent of Q-technique to allow a person to express his (sic) subjectivity operantly, modelling it in some manner as a Q-sort.

It is clearly the case that many social scientists, schooled in the behavioural paradigm, had difficulty with the concept of subjectivity as it connoted for them something private and internal in a mentalistic sense (Verplanck, 1999). In correctly rejecting the possibility of the empirical study of an unobservable "mind" and its role in directing behaviour, R-Methodology encouraged a view in which all "mental" activity was suspect. For that reason, the communication of experience by individual people was discredited by the unfortunate linking of the word "subjectivity" to the internal processes of the "so called mind". On that crucial point, Stephenson (1984, p.86) wrote "only the identification of 'inner' with mind and of mind with unreliability has led to the rejection of subjectivity as worthy of our scientific endeavours".

In focusing upon human subjectivity, Q-Methodology began with the premise that individuals held viewpoints on a range of issues and they were generally able to speak for themselves. Nearly all people were capable of conversing, arguing, orating and philosophising. Verbal behaviour of that kind is always subjective. It is subjective in the sense that people talk from their own unique viewpoint (Brown, 1980). According to Stephenson (1965) and McKeown and Thomas (1988), subjectivity means nothing more than a person's communication of his or her point of view and it is the expression of that point of view that renders subjectivity accessible to rigorous examination. By the term "subjective", reference was not being made to anything ethereal that was to be counterpoised to "objective".

Procedurally, Q-technique is a process whereby a sample of stimulus objects are placed in a significant order with respect to the viewpoint of a single person (Brown, 1980). Typically, an individual is presented with a set of written statements about some matter of interest and is asked to rank order them in terms of importance to the person, a process known as Q-sorting. Statements of opinion, belief, or ideas form a communication concourse (from the Latin concursus, meaning "a running together") and it was these communication elements that form the focus of research in any Q-study (Peng, 1998). The person actively sorts the population of measurable material and this is the subjective mode in so far as measurement is from the person's own standpoint (Brown, 1999a). Of course it should be pointed out that Q-sorting is not a process of "free association" whereby any individual is asked to represent their "virgin" opinion about an issue. Rather, Q-sorting provides a participant with the opportunity to represent their viewpoint with reference to a wider communication concourse, often involving a consideration of a wide range of opinion statements gathered from other people or other sources.

In Q-Methodology then, it is the individuals who are "measuring" their own subjectivity, rather than being measured from some external referent. The statements are always matters of opinion rather than fact and the Q-sorters rank the statements according to their own subjective viewpoints. It is this process, according to Brown (1993) that brings subjectivity into the picture. The conclusion reached by Stephenson was to suggest "objective measurements and observations can, in principle, be made by everyone, whereas measurements and observations of a person's subjectivity can be made only by himself (sic)" (cited in Brown, 1980, p. 44). On that point, Brown (1980, p. 58) stated: "Where individuals are involved and can be expected to entertain viewpoints with respect to things going on around them, however subjective these viewpoints may be, Q-technique and its methodology can illuminate in broad outline the major effects that are operating". An important point to note is that Q-sorting offers access to people's

considered responses rather than their unconsidered responses or "gut reactions". Indeed, a Q-sort that is provided on the basis of little consideration is likely to exhibit low reliability as the respondent may be simply ranking items "any old how". Because Q-sorting is an activity involving the relative ranking of statements of opinion, people must first consider all of the available opinions making up the Q-set. This provides a further difference to the standardised questionnaire that frequently has participants work through items in sequence without consideration of the relative importance of each item to each other item. A consequence of Q-sorting is that people often become consciously aware of opinions they were not particularly aware of holding, or they may even change their opinions in light of consideration of new issues or combinations of issues in the overall ranking process. This facet of Q-sorting was considered to be particularly important to the present study where the research was interested in discovery of people's considered views rather than their spontaneous responses.

Although not immediately apparent, Q-sorting is also different in many other ways to the objective operational definitions of conventional questionnaires (Brown, 1980). The main difference is that in Q-Methodology, the researcher does not predefine what the placement of any Q-statement means within the whole Q-sort. By comparison, a researcher always decides what any potential response to a scale item is to mean before a questionnaire is provided to a research participant. In this sense, a subjective viewpoint in Q-Methodology is neither right nor wrong. There is no external criterion by which to judge a person's point of view, expressed when they state their opinions. All communicated statements can be seen to be both self-referential and subjective or analytic and self-evidential – statements of fact without self-reference (Brown, 1999). A person's statement that "I am an Australian" is a statement of fact (or not) and is externally verifiable by an observer checking birth certifications, passports and citizenship records. The statement "Australia is the greatest country in the World" is not subject to such external proof and is therefore subjective and referential only to the person expressing it. That is, it is an opinion that has value or meaning within the person's own frame of reference.

A general science of behaviour cannot merely restrict itself to the assessment of true assertions and empirically verified "facts". The lifeblood of human culture consists of deeply held beliefs and biases. Beliefs and biases that people hold to be "facts" constitute their subjective understanding about topics such as SD. Such subjective understanding exists independently of any scientific notion of the validity of beliefs about SD. It is simply a point of view, expressed during conversation and whether it is valid vis-à-vis "actual events" is a completely separate matter. Indeed, lies, deceptions and half-

truths are part of everyday communication and are also worthy of study. Furthermore, according to Peng (1998), in modelling opinions, beliefs, values, etc., Q-Methodology provides a situation in which people can explicitly choose from statements reflecting various points of view and they can clearly exert a preference in which one point of view is dominant over others. In that manner, all thoughts and opinions are recognised in Q-Methodology to have a "feeling tone" attached to them – people enjoy and approve of some opinions, but not others (Brown, 1996, p. 4). Feelings of approval and disapproval are at the centre of subjectivity and they are concrete and immediately experienced. Self-referent assertions are not subject to proof or disproof but that is not to say that people do not amass evidence and argument in favour of some opinions but in opposition to others (Brown, 1999a).

Q-Methodology provides a formal model of pleasure and displeasure in the form of a Q-sort (Shultz-Kleine, Kleine and Allen, 1995). That is, people are able to place statements they feel agreeable towards at the positive pole of a continuum and statements they feel disinclined towards can be placed at the opposite pole. Less salient statements are placed more centrally indicating no strong feelings of attachment. The process of Q-sorting allows various participants to construct their view using self-referent statements of opinion. Points of view are their expression of their own subjectivity. It is the finished Q-sorts and resulting factors that allow for systematic and empirical evaluation of subjectivity using Q-sort factor analysis.

On that point, Stephenson (1965, p. 281) stated: "Opinions are used as items of a Q-sample; attitudes are modelled by Q-sorts and factors; beliefs are explanations of the letter. There may be innumerable opinions, few attitudes of mind, and very few belief-systems". So, for example, in the present Q-Methodology study, stated preferences about SD are considered to be verbal expressions of attitudes within a concrete situation (Hartley, Hartley and Hart, 1955). Resulting factors are attitudes of mind held in common by many people and amenable for explanation (Stephenson, 1965). It was in that sense that the present research sought to allow people to model their attitudes toward SD and explain the resulting factors in terms of the value and belief systems that emerged.

For the reasons outlined above, statements of opinion about SD are recognised to be irrefutable. Subjective opinions are always from "my point of view". Subjectivity in that sense, is just a person's judgement about SD and there is no outside criteria by which to validate each person's own viewpoint (Peng, 1998). A person's opinion about the best way to resolve problems of SD is simply a subjective viewpoint. Some people could regard the proposed solutions as reckless and extreme while others could regard them

as cautious and conservative. That it is a subjective viewpoint about SD that is worthy of comparison to other views about sustainability is not in doubt.

The major contribution of Q-Methodology to science is that it provides answers to questions that seek understanding of the dimensions of human behaviour from the unique lived experience that is intrinsic to each person. It is also able to determine what is statistically different about the dimensions and it identifies characteristics of the definitions shared by similar viewpoints (Dennis, 1986). On the same theme, Al Makaty et al. (1996) suggested that Q-Methodology was able to identify and describe the different subjectively held belief systems that individuals hold about a phenomenon. Such perceptions are always subjective and can reasonably be expected to differ from one individual to another.

According to Bublic (1995), Q-sort factor analysis uncoveres the underlying structure of the "order of things". This was said to facilitate understanding of how different sides of a communication conflict made sense of the information they were receiving from the external environment. Q-technique factor analysis revealed clusters of opinions and these clusters or "Q-factors" represented groups of like minded people who shared a common interpretation of events or were linked by common beliefs, attitudes and opinions (Singer, 1997).

Q-Methodology identifies the dimensions of subjective phenomena from the unique viewpoints and experiences of individual people and categories emerge from the generated data and are named. In Q-Methodology, participants are provided with specific items with which to respond and the resultant categories are derived statistically, and all categories may have statistically significant differences among them (Dennis, 1986). Those points indicate how Q-Methodology is fundamentally a taxonomic undertaking in which the researcher uses factors derived from data observations to identify psychological categories (Taylor et al., 1994). It is important to note, however that Q-Methodology is inductive and in most Q-technique studies hypotheses are not posed at the outset of the research, beyond the expectation that diverse patterns of value perceptions exist and are discoverable (Al-Makaty et al., 1996). Yet it is possible to analyse the Q-sort rankings using factor analysis and the resulting factors that emerge are derived from individual subjectivities and indicate that different segments of subjectivity exist (Brown, 1993).

In order to conclude this section, the points articulated above indicate how the basic characteristics of Q-Methodology relate to the role of subjectivity. In spite of the concerns about the use of the 'S' word, Stephenson (1935) founded Q-Methodology on

the premise that the study of subjectivity can be objective, orderly and scientific (Dennis, 1986; and Peng, 1998). On that point, Ernest (1998, p. 2) stated: "Q-Methodology...provides researchers with a systematic and orderly means for investigating individuals' thoughts, judgements, attitudes, and points of view on a particular topic or in a given situation". For Stephenson and later Q-practitioners (e.g., Brown, 1980, 1986 and 1999; McKeown and Thomas, 1988; Thomas, 1980; and Weimer, 1999), in the same fashion as blood pressure was made operant when measured by auscultation, subjective experience could be rendered observable for evaluation by Q-Methodology. On that point Stephenson stated: "All precepts, concepts, reports of events; all dreaming, daydreaming, quarrelling; all enjoyment of art, music, literature, and so on can be transformed into operant factors" (1980, p. 883). According to Brown (1996, p. 561): "It is life lived from the standpoint of the person living it that is typically passed over by quantitative procedures, and it is subjectivity in this sense that Q-Methodology is designed to examine". Put simply, Stephenson merely distinguished subjectivity from objectivity on the basis of self-reference that appears in the former but not the latter (Taylor et al., 1994).

3.4 Research design issues for Q-Methodology studies

3.4.1 Introduction

According to Dennis (1986) and Durning (1999), the research design of Q-Methodology is deceptively simple. This section will detail the steps required to conduct a Q-Methodology study. It starts with a simple overview of the four major steps involved in Q-sort factor analysis and then goes on to provide more detail about each step in turn. According to Durning (1999), the major steps involved in a Q-Methodology study involve:

1. The creation of a Q-set, which is a set of appropriate statements that are representative of the discourse covering the issue of interest to the investigator.

2. Administration of the Q-set to one or more participants during the process of Q-sorting. Q-sorting involves each person in sorting the statements and placing them in relation to all other statements on the basis of a condition of instruction. Selecting people to participate is often purposeful and designed to include people whose opinions were likely to be of practical or theoretical interest to the research.

3. Correlation of the completed Q-sorts and factor analysis of the correlation matrix in order to identify groups of participants who sorted the Q-set statements in essentially similar ways.

4. Examination of the full array of statement placement derived from the different groups of participants ("factors" in factor analytical terminology) to identify the beliefs that characterise each group and which cause them to differ from each other.

Those four basic steps will now be outlined in greater detail.

3.4.2 The sorting procedure

In Q-Methodology, a universe of statements is derived from a communication concourse and this universe is known as a Q-set. The communication concourse represents the "raw material" for Q-Methodology (McKeown and Thomas, 1988). According to Brown (1993), the concourse may be developed in a number of ways. Statements drawn from the universe of potential items reflect the domain under study and may be taken from sources such as published literature, private letters, public speeches, books, extant measures, ordinary conversations or derived from preliminary interviews. Even pictures, photographs or paintings have been used as stimulus material. A typical way of investigating a concourse is to interview a variety of people and record what they say (McKeown and Thomas, 1988). The level of sophistication of the discourse dictates the necessary sophistication of the communication concourse.

In traditional quantitative research, a large number of people constitute the population of interest and persons are randomly sampled from that population. In Q-technique, however, the "n" of interest is the population of statements making up the communication concourse. Large-sample theory is not an issue in Q-technique where the statement items rather than the persons comprise the sample and unit of analysis. According to Al-Makaty et al. (1996), sampling concerns do not relate to people, but rather the universe of discourse in which subjectivity operates is of interest.

Once a communication concourse is identified, the task is to organise, analyse and present a representative sample of statement items reflecting the wider nature of the discourse. In a Q-study, the researcher attempts to identify the domain of interest and then draw a representative sample of statements from that domain. This sample of statements is known as a Q-sample. As in the process of sampling people in survey work, the main goal in selecting statements for a Q-sample is to provide a miniature that contains the comprehensiveness of the larger process being modelled (Brown, 1993).

Although the process of statement selection clearly involves the artificial categorisation of statements by the researcher, Brown (1993) suggested that such artificiality was ultimately replaced by categories that are operant and represented functional distinctions from the subjective position of the Q-sorter. According to Brown (1993), meanings were not to be found in the categorisation of statements by the researcher but more importantly, in the reflections of the individual as he or she sorted the statements in the context of a singular situation. McKeown and Thomas (1988) echoed that sentiment and suggested that statement items in a Q-sample do not have inherent meaning or significance, and they cannot be regarded as "facts". The person performing the Q-sort attributes meaning and significance to the statements.

The participants who perform the Q-sorting are known as a P-sample or P-set. The P-set is often selected for theoretical reasons on the basis that they hold competing points of view on the topic being studied. They may also be selected on the basis of specialised knowledge about the domain of interest. The participants are thus, purposively sampled based on a priori research purposes.

The condition of instruction is a guide for people to use when sorting the Q-sample cards. The P-sample are often presented with a forced-choice Q-sort in which participants will sort cards into a quasi-normal distribution along an 11-point continuum (from plus five, through zero, to minus five). The continuum usually represents a subjective orientation from "statements most important" to "statements most unimportant". A typical condition of instruction is shown in Figure 1.

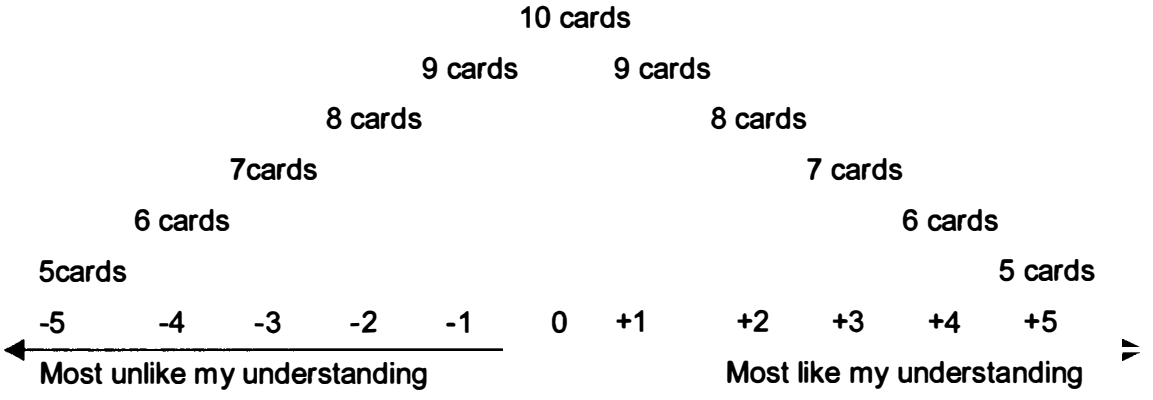

Figure 1. Illustration of Q-sort card placements.

3.4.3 Data analysis and interpretation

Factor analysis is *the* form of data analysis associated with Q-Methodology (Dennis, 1986). In Q-Methodology, factor analysis examines a data correlation matrix and determines how many basically different Q-sorts are in evidence. Q-sorts that are highly correlated are considered to have a family resemblance that separates them from other families that are also highly correlated. Factor analysis indicates how many families (factors) exist. The number of factors is empirically derived and depends on exactly how the P-set actually sorted the Q-sample (Brown, 1993). The resulting factors are the operant form of thought, feelings or other kinds of subjectivity regarding the phenomena under investigation. In Q-studies, however, factor loadings are persons rather than items (i.e., people with similar viewpoints factored together to illustrate broadly similar opinions). When people load together on the same factor, it is because their individual Q-sorts are similar and highly correlated.

The number of participants in a Q-study reflects the requirement for enough persons to define the factors that emerge from factor analysis of the individual Q-sorts. In Q-technique the factors-to-participants ratio replaces the variables-to-participants ratio of traditional R-Methodology factor analysis. Since it is usual for much less than seven factors to emerge from the data in Q-studies, Q-technique is robust with small numbers of participants (Dennis, 1986). Brown (1980) suggested that four or five people were needed to define each factor so studies with a maximum of 35 people were more than adequate. A later paper by Brown (1993, p. 101) suggested that even in studies of public (rather than specialised) opinion, a P-set exceeding 50 people was rarely required. Q-technique is biased towards small-person samples and single case studies (Dennis, 1986). According to McKeown and Thomas: "The purpose is to study intensively the self-referent perspectives of particular individuals in order to understand the lawful nature of human behaviour" (1988, p. 36). Ultimately, subject selection in Q-studies can be based on theoretical (persons are chosen for their special relevance to the study) or pragmatic (almost anyone will suffice) considerations. One further point to note about sampling relates to the issue of extensive and intensive person-samples. A survey of 50 people would likely be classified as "intensive" according to the criteria established for R-methodology which often works with hundreds, if not thousands of participants. In Q-Methodology, however, a survey of 50 subjects would be considered to be an "extensive" sample. An intensive Q-study, on the other hand, involves an in-depth analysis of one person who performs Q-sorts under many different conditions of instruction. These issues allude to the point that sampling is partly defined contextually, in both Q-and R-Methodology.

Factor extraction is an important issue in Q-Methodology and factor loadings are considered significant at the alpha = 0.05 level if they exceed 1.96 (1/ square root of N, where N equals the number of items in the Q-set) (Dennis, 1986, p. 12). What makes each factor different from the rest is the different ordering of the items. Each factor loading is most like the person's Q-sort with the highest loading on that factor and least like the person's Q-sort with the lowest loading. Just as an individual's Q-sort represents the world "as I see it", each Q-factor represents a version of the world that is commonly held by a group of people (Brown, 1993).

According to Brown (1993), it was important to note that a completed Q-sort should be followed by a formal interview to allow the Q-sorter to elaborate his or her point of view. The Q-sort provides a valuable contribution to a focussed interview by indicating which of the various topics in the Q-sample are worth examining in more detail. Obviously, those statements placed in the "tails" of the quasi-normal distribution are demonstrably the most salient for the person. In concluding this section, it is worth reiterating some of the major points:

- A Q-sample is often comprised solely of statements which people have actually made in the lingua franca of shared culture, and it is therefore indigenous to people's understanding of their own form of life;
- The Q-sorting operation is wholly subjective in representing "my point of view" and issues of the factual validity of beliefs are inconsequential since there can be no external criteria by which to judge a person's own opinion. For example, a person may hold the belief that god exists but the factual validity of this belief is unknowable;
- The factors that emerge from the Q-sort procedure represent functional categories of the subjectivity at issue; and
- Those points relate to any Q-sort, on any topic, administered by any person in any culture, under any condition of instruction and at any time (Brown, 1993).

3.5 Limitations of Q-Methodology

It would be remiss of this section to fail to address some of the major limitations that have been raised about Q-Methodology and its deployment and how these limitations impact on the interpretation of current research findings. Of course, it should be recognised that no method of research is perfect and Q-Methodology certainly has its own set of problems.

According to Ernest (1998), many criticisms of Q-Methodology are due to the application of inappropriate R-Methodological concerns to the technique. For example, concerns about small "population" sizes (in the sense of sampling of human participants) are common and misrepresent the Q-Methodological issue of sampling from a communication concourse. Q-Methodology is designed to sample from a universe of perspectives and not to sample people from a larger population. No matter how small the sample of people, a person's unique perspective will not change by increasing the sample size. A major limitation of Q-Methodology, however, is that the process is not designed to reveal how many people believe something to be the case. This limitation means that the results obtained from specific participants in Q-Methodology studies do not generalise to wider populations of people who were not surveyed. According to Dennis (1986), some of the other problems of Q-Methodology include:

- Personalised administration of Q-sorts requires a large time burden for both researcher and participant. This was certainly true in this study with many participants being interviewed on multiple occasions over several hours;
- Most participants are now routinely familiar with questionnaires, interviews, and the like, but they are less likely to be familiar with Q-sorts and for this reason the whole process must be explained to them in quite some detail; and
- Internal validity is a problem when lack of participant comprehension or simple participant reactivity leads to misrepresentation of viewpoints. Participant reactivity can take the form of faking bad or faking good, both of which result in Q-sorts that do not represent the genuinely-held beliefs of participants.

McKeown and Thomas (1988) noted that some controversy exists over the magnitude of the sorting task and the actual cognitive ability of people to perform adequately. The forced-choice distribution of the Q-sort may lead participants to make mechanical rather than conceptual choices to complete the process. Related to this criticism is the notion that Q-sorting involves too many categories and that people make too many fine distinctions between items. The forced-choice format is designed to minimise task difficulty insofar as people are enabled to make multiple choices within the Q-sort columns rather than the more difficult task of ranking all items singularly; in this case from 1-50.

The selection of the Q-set is crucial, as irrelevant items need to be minimised. A problem, however, is that selected Q-sort items will always reflect issues that are considered to be important by the researcher. Ultimately, however, all researchers must make choices about their research topics and this problem is not restricted to Q-

Methodology. A further problem is related to the possibility for omission of certain important components of the communication concourse that will then result in distortions in viewpoints of participants who model their viewpoints using less than adequate Q-sets. The important consideration is that of all the millions of potential items that could be included in a Q-set, the final selection is made on the basis of relevance, rather than irrelevance to the research topic and that omission of items is minimised as far as possible.

The so-called "forced-free" distinction used in the process of Q-sorting is also controversial in that participants are forced to place all statements within a quasi-normal distribution but they are free to choose exactly where each statement will be placed. Forcing participants to place all items within a predefined array arrangement certainly means that statistical analysis can be contemplated. This offers a partial justification for the forced-choice Q-sort format. That said, however, the process also forces participants to make fine discriminations between items that they may otherwise avoid. A problem resulting from this arrangement is the possibility that finely graded discriminations are artefacts of the method itself rather than real views held by participants. This may be a genuine problem and it should certainly be considered. A counter to this possibility, however, is the ability to interview participants about their actual Q-sort arrangement following sorting. During the follow-up interview, it is possible to identify any methodological artefacts that have influenced the person's Q-sort and this certainly provides an option that is not readily available to such methods as mail-out questionnaires.

McKeown and Thomas (1988) demonstrated that the shape of a Q-sort distribution is methodologically and statistically inconsequential. The Q-sorting process and use of a quasi-normal distribution is merely a device to encourage participants to think about items more systematically than they otherwise might. Furthermore, the resulting divisions on a Q-sort continuum do not result in nominal rather than ordinal data as they are not distinct categories wherein items placed in a +5 position are cognitively and functionally separate from those placed in the +4 position. Q-sorting involves judgements of "more or less" rather than "either/or" (McKeown and Thomas).

3.6 The formal method for this study

3.6.1 Introduction

The purpose of this part of the chapter is to outline exactly how this study was conducted. The study used a multi-method approach drawing on:

- a survey using Q-sort factor analysis;
- a questionnaire survey (see Appendix A and B for the participant declaration and questionnaire respectively);
- in-depth semi-structured interviews with key informants; and
- desk-top analysis of documents.

Data was collected from June 1998 through to August 2000. The major component of the research study involved a Q-Methodology survey of people's opinions about SD.

3.6.2 Designing the Q-Set

Q-sort factor analysis was used in this study to create a taxonomy of belief types or visions concerning the description of SD within a group of 170 people associated with Western Australian Local Government. A factorial design was used to elicit and select potential response stimuli, called Q-statements, from a Q-sample of items resulting from a major review of the literature on SD. The next sections detail how potential response stimuli were selected for use in the Q-set.

Stage 1

During the course of the major literature review for the study, over 500 books, articles, reports, speeches and web sites were read and screened for their content relating to SD. In Q-Methodology terms, these sources of written material formed the "communication concourse" for this study. Items were scanned for relevance relating to the SD concept. Further analysis of the text led to the construction of a coding frame for selection of the Q-sample.

Q-samples take a number of forms and have been distinguished on one dimension as "ready made" or "naturalistic", and on another dimension as "structured" or "unstructured" (McKeown and Thomas, 1988). The ready made Q-sample applies to statement items that are derived from sources other than the communications of respondents (McKeown and Thomas, 1988). By way of contrast, naturalistic Q-samples are based on the actual

things which respondents have said during communication. Naturalistic Q-samples are often generated from interviews with the potential participants in a Q-study whereas ready made Q-samples are generated from other sources of information such as newspaper articles or books.

The structured-unstructured distinction relates to just how statements were selected from the communication concourse for inclusion in the Q-sample. In unstructured sampling approaches, items presumed to be of relevance to the topic at hand are chosen without undue effort to ensure coverage of the range of possible sub-issues. The risk in unstructured Q-samples is that some issues could be over- or under-sampled, and consequently, a bias would be introduced to the final Q-sample. Structured samples are constructed more systematically and seek to eliminate the weakness of the unstructured approach. Deductive designs involve a priori theoretical considerations and seek to impose a structure on the way statements are allocated to the Q-sample. Inductive designs emerge from the patterns that are observed as actual statements are collected (McKeown and Thomas, 1988). Q-samples also exist as hybrid-types involving Quasi-naturalistic samples or standardised Q-samples (e.g., California Q-Set).

Stage 2

From the literature review, it was possible to identify a coding frame with a factorial arrangement for use in selecting a range of statements along two dimensions relating to SD. This process involved an inductive design by which patterns emerged as actual statements were collected. Each dimension was comprised of five sub-components making for the establishment of a 25-cell coding frame matrix (demonstrated in Figure 2). The first dimension of the coding frame related to the underlying value-base that the literature indicated to be important to SD. In essence, this mirrored the HEP-NEP value continuum and the sustainability spectrum. The coding frame partially replicated the Eckersley (1992) model in so far as it suggested that people might hold anthropocentric values, resource conservation values, human welfare ecology values and deep ecological values. The typological model is also somewhat similar to that of Pearce (1993) who suggested that people hold technocentric or ecocentric values, which were further sub-divided by Pearce into cornucopian and accommodating, and communalist and deep ecological respectively. A composite of the four value positions of Pearce (1993) together with a representation of the values proposed by Eckersley (1992) formed the first sub-component by which statements could be allocated for this study.

An additional "fifth" category was added to ensure that a range of "value neutral" statements were also recorded. It should be stated at this point that the value positions

in the coding frame are not mutually exclusive, categorically correct or even definitive. The coding frame was simply a heuristic device, deployed to ensure that the communication concourse about SD was adequately sampled across a range of pertinent value positions. The coding frame was used to ensure that statements selected for the Q-set were not simply, or simplistically drawn from value positions that could reflect the "strong" or "weak" definitions of SD that had been previously proposed. If that had been the case, it would be hardly surprising if respondents simply identified that they held either strong or weak visions of SD. Rather, consideration of four of the value positions suggested by Pearce (1993) and Eckersley (1992) together with a "value neutral" category making up the fifth element meant that participants could choose to articulate a viewpoint reflecting a very large number of combinations of value positions.

The second dimension related to the content of the material on SD. In this case, statements were identified as falling into one of four broad categories. The first category related to the "priority of solutions" of SD. The second category related to the role that science and technology played in a sustainable future. The third category related to the scale of problems that society and nature were said to face. The fourth category related to the implementation of SD, in terms of its objectives and goals. Statements that were not easily categorised into any of the initial four groups were assigned to a fifth – "other" – grouping. Two Q-statements were assigned to each cell of the coding matrix. The dimensions of the coding frame, the 25 cells and the statement numbers associated with each cell (shown in brackets) are demonstrated in Figure 2. Again, it should be stated at this point that the categories used in the coding frame are simply a heuristic device, deployed to ensure that the coding frame about SD adequately sampled across a range of issues and themes that could be relevant to SD.

The a priori categorisation involved in creating the coding frame simply served to ensure the maximum issue coverage for SD. The a priori designations represent a template for Q-set selection but the investigator's primary role is to allow participants to speak for themselves through the Q-sorting procedure and subsequent interviews. The coding frame template remains fluid and Q-set statements were not considered to have any a priori 'objective' meaning prior to the meaning that was projected into them in the process of Q-sorting by participants. In that sense, statements were open to multiple designations, and interpretation follows from participant actions.

When Q-sorting begins, there is absolutely no reason why people should not place anthropocentric statements about the objectives of SD from cell 1 in Figure 6 in the same array column as deep ecological statements about the implementation of SD from cell 19, or any other combination. To restate an earlier point, there are very many

combinations of statements open to participants during Q-sorting. It is the actual way that participants *themselves* create their own Q-sorts that will ultimately help to identify exactly how people define, for *themselves*, the SD concept.

	Theme for statements				
Typology labels	Objectives of SD solutions	Role of science in SD	Scale of SD problems	Implementation of SD	Other issues
Anthropocentric (Very weak SD)	Cell 1 (1,2)	Cell 2 (3,4)	Cell 3 (5,6)	Cell 4 (7,8)	Cell 5 (9,10)
RC (Weak SD)	Cell 6 (11,12)	Cell 7 (13,14)	Cell 8 (15, 16)	Cell 9 (17,18)	Cell 10 (19,20)
HWE (Strong SD)	Cell 11 (21,22)	Cell 12 (23,24)	Cell 13 (25,26	Cell 14 (27,28)	Cell 15 (29,30)
Deep ecology (Very strong SD)	Cell 16 (31,32)	Cell 17 (33,34)	Cell 18 (35,36)	Cell 19 (37,38)	Cell 20 (39,40)
Neutral	Cell 21 (41,42)	Cell 22 (43,44)	Cell 23 (45,46)	Cell 24 (47,48)	Cell 25 (49,50)

Figure 2. The factorial arrangement for statement selection.

Stage 3

More than 500 sources of information identified in stage one and two were reduced to 49 "key" articles that were considered to provide coverage of a wide array of opinion about SD. The 49 sources of information were read in detail and verbatim quotations were recorded. A total of 943 quotes were selected from these 49 articles (see Appendix C for the full list of statements and Appendix D for their original sources). This was the first stage of the Q-sampling.

Stage 4

The 943 quotes collected in stage three were content-analysed using an invivo categorisation method. This approach attempted to identify the major themes and sub-themes relating to each statement and to place each statement into the relevant cell shown in Figure 2. The 943 quotes shown in Appendix C were culled during a series of nine sub-sampling exercises. Appendices E to H highlight four of the nine sub-sampling

exercises undertaken to refine the Q-sample down to the final Q-set. The sampling process helped to ensure that statements were being assigned to the appropriate cell of the factorial matrix. The analysis process involved two major steps. Firstly, items that seemed to cohere and dealt with the same topic were identified and marked off into categories and labelled. That is, each of the 943 statements was tentatively labelled as representing an anthropocentric, resource conservationist, human welfare ecology, deep ecology or "indeterminate" value position. Secondly, the units within a category were sorted into subcategories at different levels of analysis. For example, a category named "science and technology" was identified of which "positive statements about science" and "negative statements about science" were named as subcategories. Each statement was then assigned to its appropriate cell within the 25-cell coding frame matrix. This process resulted in all items being assigned to a tentative value position, with a tentative theme attached to each item.

The next stage involved a re-analysis of the collected items to ensure that they seemed to cohere with their appropriate value category and their appropriate theme label. The fourth stage began the statement culling process. This involved de-selecting items that on reflection, were least appropriate for their respective value categorisation or theme. This process was done with the intention of keeping the number of items assigned to each of the cells in the 25-cell coding frame approximately equal in number. The culling procedure quickly reduced the original 943 quotes to around 250 items, with about 10 items representing each cell of the coding frame.

The fourth stage of the process involved another re-analysis of the 250 items with further de-selection of items based on their apparent relevance, length, complexity and "fit" to the SD topic under consideration.

Stage 5

By the fifth level analysis the 943 quotes were reduced to a Q-sample comprised of 120 items. Statements were selected on the basis of their brevity, clarity and content. At this point, some slight modifications to some of the original items were made to ensure that items were more specific to the Australian local government situation.

Stage 6

Further reduction meant that only 75 statements remained in the factorial matrix by the sixth level of analysis. The Q-sample of 75 statements was then pilot-tested with 10 people using a 75 cell Q-Methodology array chart. The purpose of the pilot test was to enable statements that appeared to consistently fall in the "neutral" position on the array to be identified and eliminated. This process resulted in the 75 statements being reduced to a draft selection of 50 items. Minor modification to the text of some statements to make the items more "user friendly" was also undertaken at this point, based on feedback from the pilot test. This modification was primarily involved in reducing the word length of each item because it was apparent that lengthy statements posed practical problems in the size and design of the Q-cards themselves, as well as in the process of Q-sorting by participants.

Stage 7

The selected 50 items were then further refined and checked in order to qualify for selection in the final Q-set. The last 50 items were factorially-based on two items per cell from the matrix shown in Figure 2. See Appendix I for the final Q-set selection. Examples of the statements included in the final Q-set are:

- The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies;
- Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about;
- The environmental practices of current generations are harming the interests of future generations;
- Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth; and
- Decision-making about problems of sustainable development ought to be left to those people with expert scientific knowledge.

3.6.3 Q-sorting process

Each person who agreed to participate in the present study (N=170) was asked to sort a Q-set card deck comprised of 50 opinion statements. The sorting procedure involved a forced-normal distribution with an array chart using a scale ranging from "most like my opinion" (+5) to "most unlike my opinion" (-5). A representation of the array chart is shown in Figure 3.

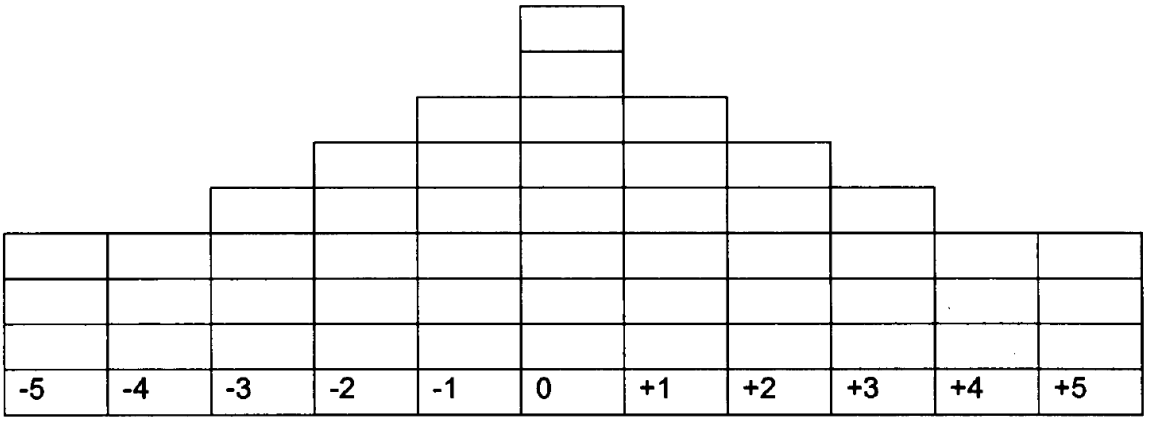

Figure 3. The Q-sorting array chart.

The Q-sort interview took place at a location convenient to the participant. Most Q-sorts were gathered at the participants' workplace, home or office. A small number of people visited the researcher's University office.

The Q-sort sessions took an average of 80 minutes. The quickest sort was completed in 25 minutes. The longest sort took more than five hours and was completed over three separate sessions.

Brown (1980) and Mead-Hooker (1992) noted that participants found it difficult to make distinctions between more than 10 to 20 Q-statements at one time. For that reason, people were instructed to read through the Q-set and place cards into three appropriate piles according to:

1. those that were strongly like their own view of SD;
2. those that were strongly unlike their view of SD; and
3. those they were indifferent toward.

Participants were then asked to make finer distinctions within each pile of cards, using the array chart as a guide. On completion, participants were asked to make any final adjustments to their Q-sort before it was recorded on the pre-printed questionnaire form.

3.6.4 Q-sort factor analysis

During the process of making a Q-sort, an individual's unique subjective perspective about SD is made manifest and concrete in order that objective description, comparison and analysis can occur. In particular, the common analysis for Q-sort data involves correlation of various sorts provided by a variety of people and factor analysis of the correlation matrix to reveal like-minded people. The Q-sort factor analysis for this study was facilitated using the PQMethod 2.09 Freeware Software Package available from the University of Munchen, Germany. Each Q-sort was entered into the software package. Principal component factor analysis of Q-sort data was then used to reveal latent belief types (Shultz-Kleine, et al., 1995).

In line with traditional R-sort factor analysis, Q-Methodologists used the term "factor" to describe groups of people that loaded together (correlated) with a similar opinion or belief – as demonstrated in their Q-sorts. The factors that emerged from the Q-sort factor analysis identified individuals as having common category membership or non-membership. From the many millions of possible ways to arrange the 50 statements, participants whose Q-sorts grouped on a particular factor sorted the statements in essentially similar ways. If there was only one belief type about SD, then Q-sort factor analysis would reveal a single factor with all statements from all participants loading strongly to similar locations on the Q-sort array chart.

Q-Methodology offers a description of the types of beliefs that are held toward a substantive topic (e.g., sustainable development) by a variety of people. To enable comparison of belief types, Q-Methodology also offers a descriptive summary ranking in the form of an "ideal type" or Q-sort model for each emergent factor. Profiles from the Q-sorts of individuals who are most highly correlated with each factor (belief type) are also offered. Conceptually, a Q-sort model is a distribution of Q-set statements that is prototypical of all those people who loaded most strongly on the identified factor (Shultz-Kleine, et al., 1995).

In order to calculate the mean, standard deviation and variance of each factor, the PQMethod Software transforms the Q-sort rankings from –5 to +5 for each statement into positive values from 1 to 11. The next step of the computer programme is to correlate each pair of Q-sorts. In the case of this study, a 170 X 170 correlation matrix was

calculated using the Pearson product-moment correlation (r) to establish similarity between Q-sorts. The correlation coefficients vary between –1 and +1. A coefficient of –1 demonstrated that pairs of variables have a perfect negative correlation. That indicated that people placed statements on the array chart in ways that were absolutely opposite to each other. A score of +1 indicated a perfect positive correlation. That demonstrated that two people placed statements in absolutely identical positions on the array chart. A score of zero indicated no correlation. As noted earlier, principal components factor analysis was used to collapse the 170 Q-sorts into readily identifiable belief types that were previously "latent" and unknown within the data set. Mead-Hooker (1992, p. 162) described the principal components technique as "the most simple and efficient method of common factor analysis". Principal components factor analysis assessed "communality" between Q-sorts. Communality is a measure of the extent to which a person's Q-sort shared statement placing in common with the responses made by other people. Communality is calculated as the squared multiple correlations of each variable with all other variables (Mead-Hooker, 1992). Communalities should be high since a low communality indicates that a Q-sort has little in common with others.

The latent belief types are exposed for analysis when factors are extracted from the data set. All Q-sorts load onto each factor to some degree. But each sort is associated with the factor on which it has the highest factor loading (Mead-Hooker, 1992). Factor loadings represent the degree to which a Q-sort correlates with other Q-sorts in the factor. In essence, factor loadings represent the degree of communality that is accounted for by each factor.

Although the PQMethod 2.09 software facilitated the factor analytical process, a few words about the background to the analysis are appropriate. Firstly, when identifying factor loadings, some Q-sorts are closer approximations to the resulting factor than are others. The PQMethod 2.09 software automatically "weights" factor scores for each statement according to the closeness of the Q-sorts on which they loaded. Secondly, the weighted scores are normalised to facilitate comparison of the scores for each statement across different factors. To achieve normalisation, each Q-sort total is converted into a z score. Once again, the PQMethod software calculates the z scores automatically. The final automatic process of the PQMethod software involves "rounding" of the weighted and normalised scores of each Q-sort. This process involves sorting the Q-sorts that load on each factor from least to most highly correlated with the factor. The scores are then rounded to create a summary Q-sort. Each factor then comprises a "rounded" Q-sort that characterised the best overall pattern of statement rankings from each of the Q-sorts making up the factor. The pattern of placement of statements can then be clearly

compared from one factor to another and so on with all extracted factors (Brown, 1980).

The most important decision to make in a factor analytical study is how many factors to retain. Although factor analysis used in Q-Methodology is essentially the same as in other applications, a number of authors have noted that the rules for factor extraction applied to R-Methodology need not be applied so strictly to Q-Methodology (e.g., Brown, 1980; Thomas, 1980; Lightbody and Durndell, 1996; and Kitzinger, 1999). The reason for this is due to the post-priori and theoretical, as opposed to merely mathematical basis of factor rotation found in Q-sort factor analysis (Brown, 1980). There are, however, several conventional criteria available for limiting factor extraction to the smallest set of factors providing for the highest level of communality. One of the most common is the "latent root criterion". According to Mead-Hooker (1992, p. 163) "the latent root is the eigenvalue (EV), or sum of squared factor loadings of all the Q-sorts for each factor. It represents the variance accounted for by each factor". These results are automatically calculated and demonstrated by the PM Method software programme. It is common for factors with EV's greater than 1.00 to be extracted, that is, the factors that explain the variance of at least one variable, with a "variable" in Q-Methodology being the Q-sort of a single person. It is also common for researchers to use judgement to determine when to stop factor extraction. Echoing Mead-Hooker's advice, Hills (1994, p. 88) suggested that: "The most commonly used criterion for making this decision is to retain those factors with eigenvalues greater than 1" – or – "you can also examine the scree plot". In the scree-plot test, the number of factors extracted depends on the point where the amount of total variance explained levels off. In this study, the eigenvalues were examined but the final decision on factor extraction was made on the basis of an examination of the scree plot.

Finally, it is also common when using traditional R-Methodology factor-analysis to report the given percentage of total variance that is accounted for by each factor or set of factors. Within Q-Methodology, this is more habitual than informative in so far as most Q-Methodologists have previously applied R-Methodology to research and become familiar with its lingua franca. On that point Stephenson, (1978, p.124) stated: "It is sometimes necessary to toss a statistical bone to the mastiffs which guard the professional journals". In Q-Methodology, however, the substantive or theoretical importance of a factor is not equivalent to factor size as measured statistically via explained variance or eigenvalue (Kitzinger, 1999). On that point, Brown (1980, p. 40) stated: "In the use of factor analysis for example, it is conventionally thought that the significance of a factor is somehow related to its "strength" as measured by the magnitude of its eigenvalue, or equivalently, in terms of the percentage of total variance

accounted for. Such conventions are in widespread use but are quite arbitrary and substantively meaningless, and occasionally, meaningless in a statistical sense as well".

3.6.5 The Questionnaire

The three-page questionnaire (see Appendix B) included the six-item modified New Environmental Paradigm Scale (NEPS, Dunlap and Van Liere, 1978) together with a range of socio-economic and demographic questions. Items dealt with issues such as age, occupation, income and sex. The instrument also included the response form for recording the Q-sort data.

3.7 Participants

In order to objectively record the subjective beliefs about SD of individuals engaged with the debate about its implementation in Western Australia, the population (termed the P-set in Q-Methodology studies) of such individuals had to be identified in a meaningful way.

Laswell (1931) introduced the concept of "participatory publics" and this notion was further developed by Almond (1963) and Miller (1983) who used the term "attentive public" and "non-attentive public". The varied terms were used to differentiate between people who display a high level of interest in a certain topic; possess an adequate level of current information about the topic; and, who are committed to a pattern of information acquisition that would assure continuing knowledgeability. Mead-Hooker (1992) contended that the concept of participatory publics was useful because it identified individuals who had manifested an interest in an identifiable issue. Miller (1983) suggested that the attentive public comprises scientists and academics, top management of corporations and other relevant bodies, editors, journalists and writers, public-interest advocates in non-government groups and people pursuing a career closely associated with the substantive topic.

In this study, purposive sampling was used to identify and select people who appeared to be meaningfully affiliated with questions of SD at the local level. In the case of the present study, the issue of interest is the adoption of SD at the local level via Local Agenda 21 and the participatory public was expected to comprise those directly and indirectly associated with local government. In order to approach these types of people, a list of 102 non-government groups with an interest in local community or environmental issues was identified (see Appendix J for details) together with a database of local

government elected councillors and council staff, academics working in the area of environmental management or SD, and employees of state government departments.

Altogether, 210 individuals were identified as being involved with the non-government community groups. A further 164 elected councillors in 14 metropolitan local governments were also identified by name and address. A further 64 key local government employees with managerial positions were also identified for potential participation in the study (see Appendix K for details of Councillor and Council employee numbers involved with the study). In addition, 15 academics in three local universities with a known interest in SD issues were also identified. State-based government departments with a SD co-ordination role were also targeted to provide participants for the study. These departments included Environmental Protection, Commerce and Trade, Transport and Planning.

The study used a purposive sampling technique. This method was appropriate to this Q-Methodology study since such studies do not require random participant selection. Each of the 518 people identified as a potential participant for the study was contacted by letter that described the study and requested their permission to take part. A follow-up reminder letter was sent to those people who had not contacted the researcher by the predetermined date. The fieldwork component of the study involved 170 Q-sort interviews with people drawn from the six major groups. The overall response rate of 170 people from 518 invitations to participate was 33 per cent.

For the purpose of Q-Methodology factor analysis, a P-set of 170 Q-sorts is more than adequate (Brown, 1980). In standard R-Methodology factor analysis, the "rule of thumb" is a ratio of 5 items per identified factor. Since few Q-Methodology studies result in more than seven to eight factors, P-Sets of 30-40 people are adequate. Because Q-Methodology was employed and the topic was relatively contested, a low response rate was expected. For this reason, over 500 people were contacted. It was hoped that at least 100 interviews would occur.

3.8 Demographic data about participants

3.8.1 Age

Details about the ages of 170 participants are demonstrated in Table 1. The oldest participant was 77 years of age and the youngest was 20. The majority of those interviewed were in their forties and 53 per cent of participants were under 50 years of age.

Table 1. Ages of participants.

Age	Number of participants	Percentage
20-29	16	9.6
30-39	26	15.5
40-49	48	28.8
50-59	31	18.4
60-69	13	7.8
Over 70	7	4.0
No reply	29	15.9
Total	170	100

3.8.2 Education

People were asked about their highest level of education and their major area of academic specialisation. Table 2 provides information regarding the levels of schooling attained by participants. Participants indicated 27 major areas of academic specialisation including chemistry, engineering, biology, architecture, town planning, nursing, political science, mathematics, leisure studies and social science. Environmental management and policy were the main areas of academic specialisation with 31 people (18.2 per cent) indicating they held a formal qualification in these subjects. Nineteen people (11.2 per cent) indicated that they held formal qualifications in education (teaching). The third most frequent specialist topic related to "business" qualifications with 15 people (8.8 per cent) making this choice.

Table 2. Level of education of participants.

Level of Education	Number of participants	Percentage
Year 10	5	2.9
Year 12	6	3.5
TAFE	13	7.6
Undergraduate degree	49	28.8
Honours degree	42	24.7
Masters degree	28	16.5
Doctorate	17	10.0
Other qualification	3	4.1
No reply	3	1.8
Total	170	100

3.8.3 Sex

One hundred and two of the participants were male, accounting for 60 per cent of the total. The remaining 68 participants were female.

3.8.4 Voting preference

Participants were asked whom they would be likely to vote for in a Federal Parliamentary election in one week's time. Table 3 demonstrates the results of the voting preference of the participants.

Table 3. Voting intention of participants.

Voting Preference	Number of participants	Percentage
Greens WA	45	26.5
Labor	44	25.9
Unsure	35	20.6
Liberal/National	15	8.8
Democrats	11	6.5
Independent/other	8	4.7
No reply	12	7.1
Total	170	100

3.8.5 Family income

Participants were asked to indicate their annual family income, prior to tax being removed. The results for the income of participants are demonstrated in Table 4.

Table 4. Family income of participants.

Income (In 000's $)	Number of participants	Percentage
Under 20	15	8.8
21-35	17	10
36-50	37	21.8
51-65	21	12.4
66-80	23	13.5
81-95	22	12.9
Over 96	26	15.3
No reply	9	5.3
Total	170	100

3.8.6 Other demographic information

People were asked about their involvement with non-government environmental groups, participation in community groups with a non-environment focus, and participation in business or professional groups. Seventy-nine people (or 46.5 per cent) indicated that they were a member of a non-government environmental group. Thirty-one people (18.2 per cent) said that they were a member of a business group. Sixty-two people (36.5 per cent) participated in a local community group.

People were also asked to classify their current occupational status. The largest grouping, with 29 people (17.1 per cent) indicated they held management positions. Chief Executive Officers and Director level management accounted for a further 15.9 per cent of the total, with 27 people indicating this category. A further 27 people (15.9 per cent) classified their job description as "Environmental Officer". The self-employed – 13 people - accounted for 7.6 per cent and 15 people in the "Retired" category accounted for 8.8 per cent of those surveyed. The study also involved seven "Mayors/Presidents" of local government and seven full-time students (accounting for 4.1 per cent respectively).

3.9 Follow-up interviews

3.9.1 Overview

A secondary step in this Q-Methodology study was to re-interview people who were, upon analysis, revealed to have provided a strongly "defining" sort for each factor. The reason for the follow-up interviews in Q-Methodology studies is due to the general desire of researchers to engage participants in ensuring that factor interpretations made by the researcher are sound. As Kitzinger (1999) recognised, the process of attributing meaning to a Q-sort is a process dependent on the interpretation of findings by the researcher. It is at the critical point of defining the meaning of factor arrays that the researcher's own biases and limitations may intrude, resulting in poorly constructed "meanings" being attributed and imposed on the Q-sorts of research participants. For that reason, the present research methodology followed William Stephenson's (1972, p. 182) advice to "go back to the original subjects, the Q-sorters, to find out what their interpretations are for the factors on which the factor analysis has placed them".

The purpose of the interviews and analysis was to enable the participants who provided a defining Q-sort to add further additional commentary about their views of SD. This process was designed to offer assistance to the researcher when interpreting the factor arrays. Kitzinger (1999, p. 269) summarised the purpose of the interviews with her comments that they assist when "a researcher is telling a plausible story about the choices made by research participants whose sorts load on that factor, seeking to explain the pattern of their rankings". The interview transcripts are shown in Appendix L.

3.9.2 Interview procedure

Thirteen individuals were identified and asked to participate in the follow-up interview via a telephone conversation. The introductory telephone conversation had four aims:

1. To describe the general purpose and approximate length of the proposed interview process;
2. To indicate that interview' would be audio-taped for ease of transcription;
3. To ask respondents to spend some time before the interview reflecting on their thoughts about SD; and
4. To request respondents' participation in the interview.

All those contacted initially agreed to participate in the interview, but logistical issues meant three people did not participate. The secondary, semi-structured interviews took approximately 90 minutes and they were conducted at a place of convenience for the

participant. Respondents were informed that they could withdraw their permission to be interviewed at any time.

The interview involved partially re-modelling each person's sort by placing relevant statements from each SD topic issue on the array chart. The statements from each of the SD topic issues demonstrated in Figure 2 were shown to participants. For instance, statements about the "priority for SD solutions" (card numbers 1, 2, 21, 22, 31, 32, 41 and 42) were shown first. The process was repeated for the statements relating to the "role of science and technology in SD", "scale of the problems faced by SD", and "implementation of SD". For each set of cards, individuals were asked questions about the reasons for their assignment of the relevant statements. Follow-up questions and "prompts" were used to elicit additional information and to aid clarity. Examples of the types of questions used were:

"The first set of cards we have here are the implementation cards. So, if you could just describe, perhaps, when you think about sustainable development and the implementation of sustainable development, what your own view is about who the important players are?"

"Moving onto the next issue, is what role do we have for science and technology in implementing or promoting sustainable development?"

"Can you tell me why you think that not many Councils have adopted LA21?"

3.9.3 Interview analysis

The interview analysis drew upon a "grounded theory" approach. The grounded theory approach proposes to "discover theory from data through the general method of comparison" (Glaser and Straus, 1967, p.1). The interviews were tape-recorded for later transcription and to allow for comparison. Transcriptions were verbatim and typed on A4 paper. Each transcript was given a number (from 1 to 10) which was written in the top right hand corner of the front page of each transcript. Interview analysis involved an invivo categorisation process that sought to identify dominant and minor themes and common and unique perspectives. The invivo categorisation involved an initial stage of open-coding. The researcher scanned each transcript for 'empirical indicators' such as actions, events, attitudes and opinions of respondents that related to the questions being asked. The scanning process was carried out on a 'minute' level: sentences were the smallest unit of analysis with multiple indicators/themes being noted for each sentence, rather than simply the primary theme of the sentence.

As indicators emerged, handwritten notes and comments were made which represented an initial attempt to name the emerging themes. Each note was given an identification number (starting at number one for each transcript) and was written parallel to the corresponding text and in the right hand margin of the transcript, in a column entitled 'initial coding'. Interview coding is illustrated in Appendix M.

During this initial process, researcher thoughts such as ideas on the themes of the text and the relationship between these themes were written as short memoranda as they emerged. Each memorandum was assigned an identification number which corresponded to the open coding note from which it derived. If memos could not be attributed to a particular note on the transcript, then an 'asterisk' symbol was made on the transcript where the idea emerged. The open coding process was repeated until all possible themes had been noted and the handwritten notes were an accurate reflection of the themes they were attempting to summarise.

Further analysis of the text led to the construction of a coding frame. This process involved four steps. Firstly, units of analysis which seemed to cohere, in other words, they dealt with the same topic, were identified and marked off into categories. Secondly, the units within a category were sorted into subcategories at different levels of analysis. For example, a category named "science and technology" was identified of which "negative opinion" and "positive opinion" were named as subcategories. Thirdly, categories were assigned a code which was designed to represent the name of the category in a shortened form (typically 3-8 characters in length). For example the "science and technology" category was assigned the code SCITECH. Subcategories were also assigned a code which was used as a suffix to the main category code. For instance, the "science and technology – positive opinion" category was given the code SCITECH-POS. The fourth step in the coding frame process was to ground (link) the codes back to the transcript data. This was done by revisiting each initial coding note and its corresponding text, and verifying that the categories and the subcategories on the coding frame were a good "fit" to the initial data. If there was a fit, the transcript text under analysis was underlined and the appropriate category code was written alongside the text. For cross-referencing purposes, the identification number of the initial coding note was then written alongside the relevant category in the coding frame.

Categories that could not be grounded back to the data were revised through filling, extending and surfacing. This process was repeated until the researcher was satisfied that all themes identified in the initial coding process were represented in the coding frame, and that all categories in the coding frame could be linked back to the original data.

In order to identify relationships between categories and subcategories, memoranda made during the open coding and categorising process were reviewed. Hypotheses about links between categories were 'tested' by revisiting the text. The 'item' column of the coding frame was used to calculate (a) the total number of units of analysis that emerged from the analysis, (b) the number of times a theme (i.e., subcategory) occurred, and (c) the number of respondents who mentioned a particular theme.

3.10 Re-evaluation of results following examination

A review of the results and the interpretations of findings was undertaken following the formal examination of this dissertation. Examiner comments indicated that a re-evaluation of some results and conclusions was justifiable in light of alternative propositions about findings coming from the examiners. Additional interpretation of results are depicted in sections 4.4, 4.9, 4.10 and elsewhere in the dissertation.

Furthermore, a new one-way analysis of variance (ANOVA) of data was undertaken on the results obtained from the New Environmental Paradigm Scale (NEPS, Dunlap and Van Liere, 1978) that was included in the questionnaire presented in Appendix B. The additional analysis was undertaken to identify if significant differences existed in the attitudes of participants regarding the NEP following the identification of factors during the Q-sort factor analysis. Vining and Ebreo (1992) indicated that high scores on the NEP Scale indicated pro-environmental attitudes and the willingness of the respondent to endorse a worldview in which humans adapt to the changing limits dictated by the environment. Low scores indicated a support for the HEP. The NEPS was included in the questionnaire because it is one of the most widely used R-Methodology environmental attitudes questionnaires.

3.11 Council document search and review

In June 1998, the 29 councils making up the greater Perth metropolitan region were contacted, and information was sought about their SD activities. In early September, a follow-up letter was posted to those councils who had not responded to the initial request for documents. Of the 29 councils who were contacted, 24 (83 per cent) chose to provide documents to the researcher.

A desk-top analysis of the documents that were forwarded by councils was undertaken. It must be recognised that the Local Governments that chose to forward documents

provided a wide range of detail concerning their activities. The results represent a 'snap-shot' picture of only the documents sent to the researcher. Individual Shires may well have a greater range of environmental, economic or social management functions than those represented in this dissertation.

The purpose of the document search and analysis was to provide the researcher with a background on the roles and functions of local government, together with the opportunity to provide a limited comparison of activities across councils. This stage of the research also sought to identify the councils that had actually endorsed Local Agenda 21.

CHAPTER FOUR

RESULTS

4.1 Introduction

The purpose of Q-Methodology is taxonomic classification of human viewpoints about any topic. Taxonomy involves comparing attributes and making decisions about group inclusion and exclusion. For example, the marking patterns of tiger pelts are unique to any tiger, but all tigers have certain attributes that allow them to be distinguished by biologists from lions or leopards. But all lions, leopards and tigers can be classified by biologists as felines to distinguish them from other types of animals classified as primates, or whales. Even at this level of classification, all felines, primates and whales can then be classified as mammals to distinguish them from birds or insects.

A central issue of classification relates to the specificity or generalisability imposed upon the attributes of comparison. For example, imagine a biologist that looks at 170 tiger pelts and notes that each specimen is unique with no two specimens being identical. The biologist may conclude, at the broadest level of classification that any single tiger is different from all other tigers. This will be undoubtedly be true. But further analysis by the biologist notes that some tiger pelts are relatively large where others are relatively small. On this basis, the biologist is able to demonstrate that although each specimen is unique, some pelts appear to come from smaller Javanese tigers where others come fromlarger Siberian tigers. In this example, the biologist has considered what makes the pelts systematically different or similar to one another in determining their likely origin, and classifying each pelt into one of two groups.

Within the current study, 170 Q-sorts were collected as specimens of visions of SD. At the level of each specimen collected, the results indicated that no two Q-sorts were absolutely identical. In other words, 170 completely unique Q-sorts were collected, but that finding says little about the common attributes found in the Q-sorts. Instead, principal components factor analysis revealed a five-factor solution in which a single bi-polar factor dominated the collected specimens. Just as a biologist is able to classify any tiger into its appropriate sub-species, the findings of this research indicated that the majority of participants in this study held, relative to one another, one of two opposing views about the underlying basis of SD. Where the first group of people held one belief type about SD with relevant statements placed at the positive pole of the Q-sort array chart, the second group had a relatively opposing opinion. The results that were revealed by the present study add a confirmatory arrow of evidence that the assumption that definitions of SD fall into one of two major groups, previously labelled as "strong" and "weak" sustainable development are at least partially correct. The present study also

revealed that the versions of SD that were offered by this specific participatory public are not opposites and that they do share some characteristics in common.

According to Professor Steven Brown (personal correspondence via e-mail, May 30th 2001) it is not common for Q-Methodology research to reveal a single bi-polar factor solution. Professor Brown noted: "but it does occur from time to time, most often with controversial issues (such as abortion, AIDS, or gun control) about which the public may be deeply divided". Professor John Carr from the University of Technology, Sydney echoed this point and stated "I have found that inviting people to deal with highly evaluative/emotive (issues) tends to generate a single-factor solution" (personal correspondence via e-mail, May 31st 2001). The emotive issue that Professor Carr dealt with was the portrayal of media violence following the Port Arthur Massacre in Tasmania. The finding that a dominating bi-polar factor existed amongst the views of over 150 of the 170 collected specimens for this study, with two dominant and defining views is somewhat surprising given the vast number of definitions of SD that have been previously reported and the almost infinitely large number of different ways that people could have created their individual Q-sorts using the 50 item Q-set. Having made that point, however, it should also be noted that there were 170 completely unique visions of SD presented. This chapter provides summaries and detailed descriptions of the two dominant types of belief about SD that were presented by the majority of participants in this study. It also integrates information from the qualitative interviews, together with a summary of the key information gathered from the local government document search.

4.2 Factor analysis of the Q-sorts

The 50 statements forming the Q-set and the 170 Q-sorts were entered into the PQ-Method 2.09 Software Package and correlated and factored using principal components factor analysis. As was noted in the methodology section, the purpose of principal components factor analysis is to discover which variables in a specific set form coherent subsets that are relatively independent of one another (Tabachnick and Fidell, 1989). In Q-Methodology, the Q-sorts of individual people are the "variables" and the identified subsets are groups of Q-sorts that load strongly to express a coherent viewpoint. Seven unrotated factors were automatically output for analysis by the PQ-Method software. The unrotated factor matrix is shown in Appendix J. Note the names of participants have been concealed in Appendix J to maintain the anonymity that was assured to them. The eigenvalues and percentage of explained variance are presented in Table 5 and a scree-plot of results is given in Figure 4.

Table 5. Seven-factor eigenvalues and explained variance.

Factor No.	1	2	3	4	5	6	7
Eigenvalues	84.69	13.63	3.77	3.44	3.32	3.14	3.00
Variance (%)	50	8	2	2	2	2	2

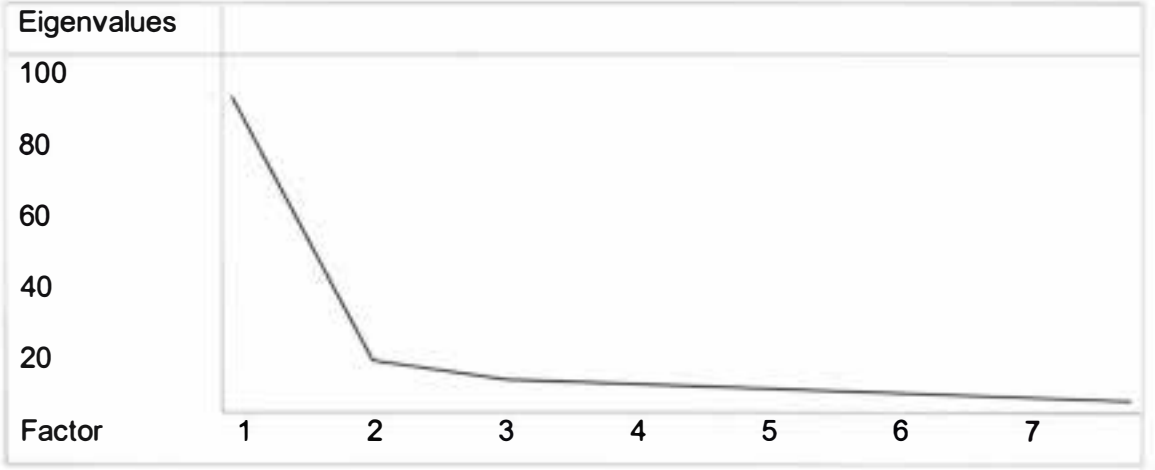

Figure 4. Scree-plot of eigenvalue results.

The significant eigenvalues indicated that a dominating bi-polar opinion type existed, with one group of people holding a view about SD that was largely rejected by the second group. The scree plot test indicated that only the first two factors were worthy of further analysis. The usual criterion to aid decision-making about factor retention is to discount the factors that occur after a rapid change in angle of the "slope" of the scree plot. In this case, that occurs for Factor 3. The first factor accounted for a much greater amount of variance than accounted for by the second factor. The second factor accounted for

almost four times the variance explained by the third factor. The third and subsequent factors then accounted for only marginal amounts of variance.

4.3 Hand rotation

The seven-factor solution presented in Appendix J was hand-rotated using the PQ-Method software program. The hand rotation function of the PQ-Method software makes this task relatively straightforward. According to Hills (1994, p. 89), "it is usual to rotate the factors in order to achieve simple structure, where variables load highly on one and only one factor, and where each factor has high loadings for some variables, and low loadings for the rest". This process makes the factor matrix more interpretable. As the scree-plot in figure one demonstrated, a bi-polar factor solution appeared to be optimum at the outset. Following hand rotation, this proved to be the case. The process of hand rotation is described below.

Firstly, the factor loadings are listed, as shown in the example in Figure 5. Then a choice is made about which factors to rotate. Note that the following examples are illustrative of the hand rotation process and are not based on data drawn from the current research.

```
+-------------------------------------------------------------------------+
|                  Factors                                                |
|SUBJ     1     2     3     4     5     6     7                           |
|  1     47    69    43    21    -1     9     2                           |
|  2     57    50    19     9     3     6    16                           |
|  3     39    47    16    -6   -17    35    -1                           |
|  4     44   -61    30   -57     1    16     3                           |
|  5     55   -65    35    -1    62    13    76                           |
|  6     77   -42    12     6     5    -1   -78                           |
|PLEASE ENTER YOUR CHOICE OF FACTORS (TWO ONLY)                           |
|                                                                         |
+-------------------------------------------------------------------------+
```

Figure 5. Example of a factor table generated by PQ-Method.

The rotation works on one pair of factors at a time. Examples of selected factors are illustrated in diagrammatical form by the PQ-Method software, as illustrated in Figure 6.

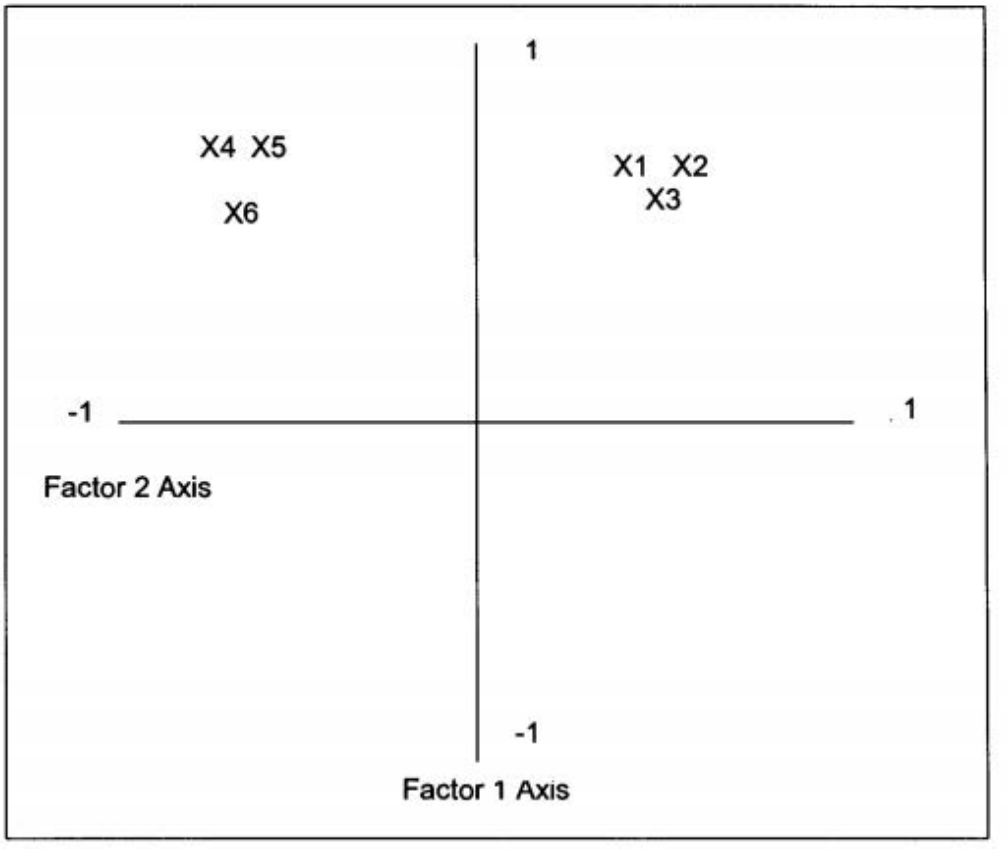

Figure 6. Illustration of factors ready for manual rotation in PQMethod.

Using the "arrow keys" on the keyboard, each factor is rotated through a number of degrees until an appropriate angle is established between the chosen factors. A positive degree number rotates the axes clockwise, and a negative number rotates the axes counter-clockwise. The objective is to maximise the explained variance of each factor under rotation by clustering subjects close to an axis. This situation generates the highest possible loadings on that factor for those subjects. In addition, it is advisable to attempt to load subjects positively so that rotations leave subjects close to the positive axes (the ones at 12 o'clock and 3 o'clock). This type of factor rotation is illustrated in Figure 7.

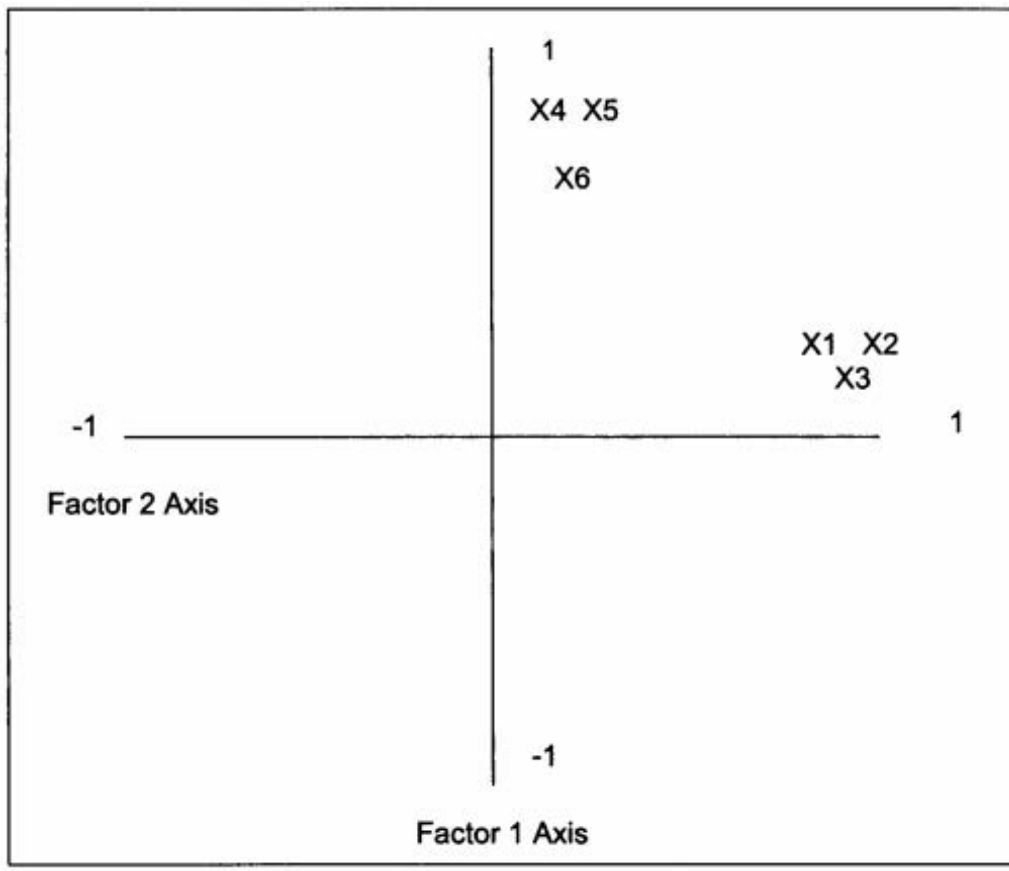

Figure 7. Completed factor rotation with subjects 4, 5, and 6 in factor 1 and subjects 1, 2, and 3 on factor 2.

After the factors are chosen for rotation, it is then possible to select which variables should be further considered. The PQ-Method software "paints" on the screen the plot of the variables with the chosen factors as axes. Once the axes have been rotated to a satisfactory outcome, the current array of factor loadings is displayed again.

At this point it is possible to associate particular participants with particular factors, termed "flagging". Flagging is provided automatically by the PQ-Method software or each factor can be gone over in turn, and relevant selections made manually. To flag specific subjects, the number of each factor is identified and the subjects (sorts) to be associated with that factor are entered into the program. An example of flagged subjects and their respective factors is illustrated in Figure 8.

SUBJ	1	2	3	4	5	6
1	7	92X	20	21	0	-7
2	17	76X	-5	9	3	-7
3	5	68X	0	-5	-16	24
4	79X	-13	8	-56	1	19
5	91X	-9	8	0	62	15
6	85X	12	-21	6	5	-2
1						

Figure 8. Flagged factors with "x" indicating defining sorts for each factor.

The factor matrix is then displayed again so that flagging of other factors can continue. Following flagging, the analysis module of PQ-Method calculates a synthetic Q-sort for each factor consisting of a weighted average of the sorts of those subjects that were flagged for the factor. This is necessary for input to the analysis routine that will come next. At least one of the factors written to the output file must be flagged for at least one subject for analysis to continue.

4.4 Describing the results

The final step in the formal factor analysis is the subjective process, on behalf of the researcher, of interpreting the factors. According to Hills (1994, p. 91): "we look at what variables load highly on the factor, and make a subjective decision about what those variables have in common. This construct may then be used as the factor label". To aid interpretation and labelling of the factors, the PQ-Method 2.09 Software generates an "idealised type" or composite Q-sort for each factor that emerged from the factor rotation.

In the current study, the results indicated that a single bi-polar factor solution accounted for the optimum variance, with 140 people grouping together to form the dominant opinion group and eleven people grouping together with a minority viewpoint about SD. A further 12 people "clustered" into three less coherent factors represented by 5 people, 4 people, and 3 people respectively. Seven other individuals did not "load" with any other people. In total, five factors represented by at least three people each were identified.

Although not strictly necessary because of the relatively low level of variance explained in the analysis and the small number of people representing the third, fourth and fifth factors, it was decided to also include the full array for these factors. The full array for all factors is shown in Table 6. The placement of items for the minor factors is also presented in Tables 7 and 8, where the most salient items for factor 1 and factor 2

respectively are arrayed from +5 to –5.. Having offered a formal description of all five factors in Table 6, and noted how all five groups of people placed items relative to the two dominating factors, as shown in Tables 7 and 8 respectively, little further analysis of the three minor viewpoints was considered necessary. That decision was taken because the inclusion of factors 3, 4 and 5 adds little to the overall conclusions from the study.

Suffice to say, the viewpoint expressed in factor 3 tended to fall between the stronger and weaker versions of SD, as typified by factor 1 and factor 2. That is, in the Q-sorts of people representing the third factor, they tended to place their individual items in between the relative extremes of the stronger and weaker versions of SD. That situation occurred with regard to 36 items in the 50-item Q-set. However, five items (numbers 4, 9, 17, 28 and 45) were placed in the same or a more extreme position compared to those of factor 1. On the other hand, four items (numbers 30, 32, 42 and 50) were placed in the same or a more extreme position compared to those of factor 2. A further five items (12, 18, 46, 47, and 48) were identifed as being statistically consensual with both factors 1 and 2.

The wide range, and relative inconsistency of views offered in factors 4 and 5, and the remaining seven Q-sorts which did not load strongly on any of the five factors was an interesting finding, but also one that was very difficult to interpret or explain. Reasons for the wide discrepancy in views include several possibilities. Perhaps these people didn't understand the task at hand; perhaps they "randomly" placed statements during Q-sorting because of time pressure or other reasons; or perhaps the task was simply too difficult to complete. There may also be other unknown reasons for these hard-to-interpret Q-sorts. One possibility is of course, that the Q-sorts represent this group's honestly-held opinions about SD which are just simply multi-faceted and hard to categorise by an external observer.

Because of the relatively insignificant numbers of people representing the minor factors, however, and the relatively small amounts of variance that their viewpoints explained, only factors 1 and 2 were finally selected for interpretation following review of the eigenvalues, the scree-plot and hand rotation. The average correlation coefficient for both factor 1 and factor 2 was very high at 0.8 and 0.8 respectively. Those results indicate that the views of individuals in each group were highly correlated with the views of other people making up their respective groups. Hills (1994) suggested that loadings above .30 are usually considered important enough to take into account. The correlation coefficient between the two factors was extremely low at only 0.06. Factor 1 accounted for 50 per cent of the variance and factor 2 accounted for eight per cent.

The literature review demonstrated that previous work suggested that viewpoints about SD could be classified into "strong" or "weak" categories along a "sustainability spectrum". The present study did indeed, find two dominating types of SD viewpoints, amongst several minor ones, and the two dominating types of opinion were labelled the "stronger SD" position and the "weaker SD" position. Labelling the views as "stronger SD" and "weaker SD" was decided upon in order to link them, historically, to earlier descriptions to be found in the prevous "strong" and "weak" definitions of SD and to indicate the less "categorical" nature of the newly-discovered information about views of SD . The descriptive labels for each factor could also be described as "environmental pessimists" for the stronger SD vision, and "technological optimists" for the weaker SD viewpoint. The findings supporting these labels are illustrated throughout the rest of the results section.

To reiterate an earlier point, the current study examined 170 individuals' viewpoints about SD, but saying that each person holds an individual view of SD does not add very much to classification, and subsequent debate. Rather, the study attempted to classify what attributes of each of the 170 individual viewpoints were held in common with other visions and where differences occurred. This comparison resulted in a classification of the majority of the collected viewpoints about SD into one of two dominating versions and the composite Q-sorts for each of the stronger and weaker visions of SD are illustrated in Figures 9 and 10 respectively.

With regard to the current labelling of factors as "stronger SD" and "weaker SD", according to Kitzinger: "The discerning reader of Q-Methodology studies should bear in mind that labels for factors are always contestable...Moreover, as long as researchers present the full factor array and the set of Q-sort items, the adequacy of the researcher's factor interpretation is open for evaluation by the reader" (1999, p. 269). The interpretation of results in this study are, in principle, contestable and alternative interpretations of the findings are to be welcomed. That is part of the process of scientific verification and advancement. Indeed, following examination where two of the three examiners were satisfied with the outcome of this study, one examiner insisted on major review.

The composite Q-sorts, illustrated in Figures 9 and 10 respectively, offer a pictorial description of the way in which the 140 people forming factor 1 and the 11 people in factor 2 sorted the Q-statements. The cells of the factor arrays, shown in Figures 9 and 10, are coloured in order for the reader to more clearly make sense of the alternative placement of statements in the two belief types. For example, statement numbers 1-10 are coloured dark red whereas statement numbers 31-40 are coloured light green.

Following Kitzinger's (1999) advice, the full factor arrays demonstrating each of the statements are also shown in Table 6.

Again, following the advice of Kitzinger (1999) and Brown (1980), the factor interpretation presented in the results section includes a discussion of those items scored in the extreme positions in the stronger and weaker SD versions, indicative of strong agreement or disagreement. As Kitzinger stated: "These items are relevant because, compared with the other Q-sort items, they are those about which the participant feels particularly strongly. Their relevance in factor interpretation is enhanced when items that receive strong agreement on one factor receive strong disagreement on another (and vice versa)" (1999 p. 270). This is precisely the result that emerged in this-study.

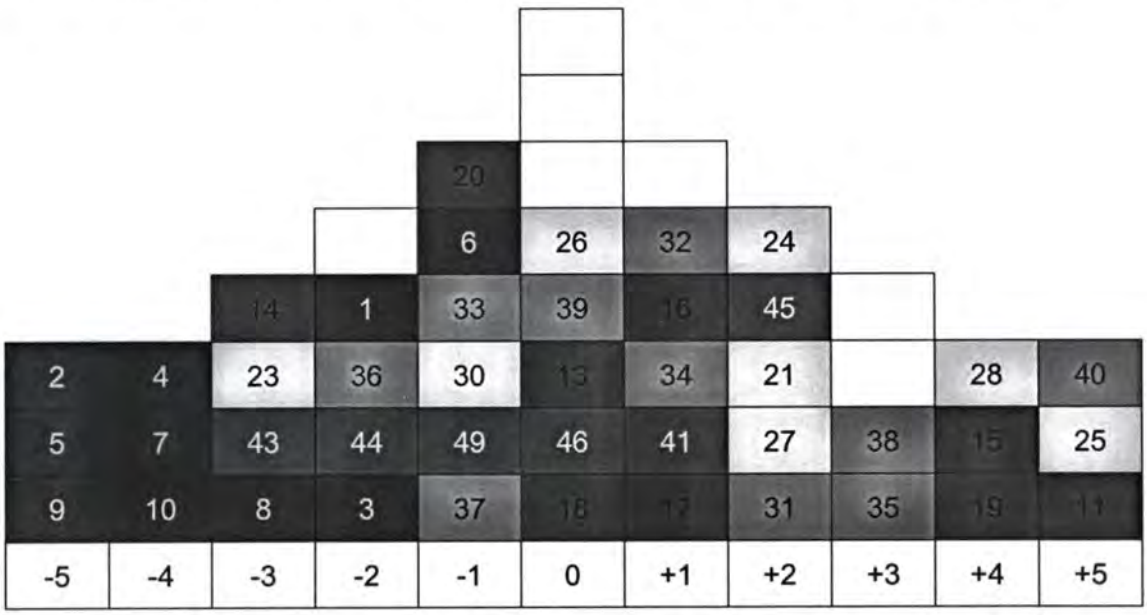

FIGURE 9. Factor one array – the "Stronger" environmentally pessimistic vision of SD.

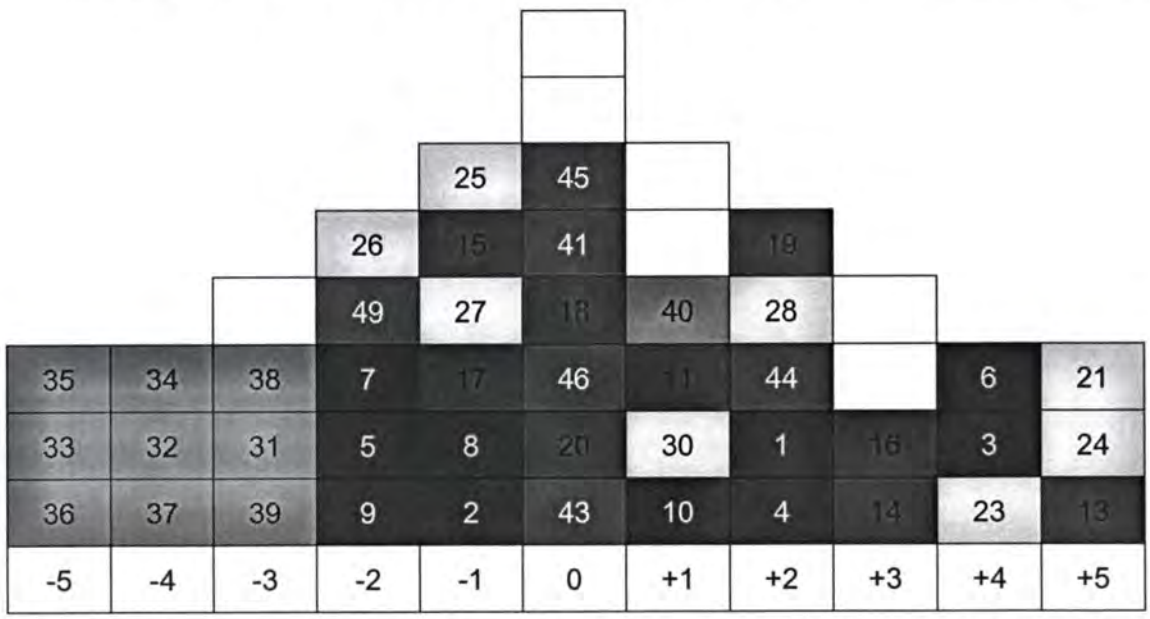

FIGURE 10. Factor two array – the "Weaker" technologically optimistic vision of SD.

Table 6. Full Factor array of Q-sort values for each statement.

No.	Statement	F 1	F 2	F 3	F4	F5
1	The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies.	-2	2	1	-5	0
2	Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.	-5	-1	-2	-4	-3
3	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems.	-2	4	0	0	0
4	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species.	-4	2	-5	-2	-2
5	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources.	-5	-2	-4	-4	-5
6	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about.	-1	4	0	2	-1
7	In truth, 'sustainability' has been carried too far.	-4	-2	-3	-1	-5
8	Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development.	-3	-1	-2	-1	-2

Table 6. Cont.

No.	Statement	F 1	F 2	F 3	F 4	F5
9	Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit.	-5	-2	-5	-5	-4
10	Environmental protection or conservation is useful, only to the extent that peoples' welfare is positively affected or human needs are served.	-4	1	-3	-3	0
11	Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed.	5	1	2	5	4
12	The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse.	1	1	2	2	2
13	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development.	0	5	2	3	1
14	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable.	-3	3	-1	1	0
15	Our civilisation is put at risk when we misuse or mismanage natural resources and disturb natural systems.	4	-1	0	1	2

Table 6. Cont.

No.	Statement	F 1	F 2	F 3	F 4	F5
16	Like other political ideas, we tend to agree with the need for resource conservation, social equality and pollution control but disagree over what it entails.	1	3	2	4	1
17	Perhaps the best hope for the greatest Worldwide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour.	1	-1	1	5	-1
18	The role of non-government organisations (NGOs) is most critical to the success of sustainable development.	0	0	0	1	3
19	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now.	4	2	4	3	4
20	Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic.	-1	0	0	1	-4
21	The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship.	2	5	3	1	5
22	There is a common interest between looking after the environment and looking after people.	3	3	5	5	3
23	The best and only route for countries to overcome environmental problems and promote human well-being is to become richer and more technologically advanced.	-3	4	-2	2	-1

Table 6. Cont.

No.	Statement	F 1	F 2	F 3	F 4	F 5
24	Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.	2	5	4	3	3
25	The environmental practices of current generations are harming the interests of future generations.	5	-1	0	1	-1
26	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems.	0	-2	-1	-4	-2
27	With regard to sustainable development issues, women, indigenous people and youth need to be represented in decision-making, planning and implementation processes.	2	-1	4	0	1
28	There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed.	4	2	5	2	2
29	The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations.	3	3	5	2	2
30	Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies.	-1	1	2	0	0
31	Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution.	2	-3	0	-5	0

Table 6. Cont.

No.	Statement	F 1	F 2	F 3	F 4	F5
32	In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over all economic or social considerations.	1	-4	-4	-1	1
33	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment.	-1	-5	-3	-2	-3
34	All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe.	1	-4	-2	0	-2
35	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions.	3	-5	-1	-2	-2
36	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind.	-2	-5	-4	-3	-3
37	Economic, industrial and urban development has gone too far in Western Australia.	-1	-4	-1	-3	-4
38	Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth.	3	-3	-1	-2	0
39	Multinational Corporations are the gravest threat to an environmentally sustainable society.	0	-3	-1	-2	-3
40	All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake.	5	1	1	4	2

Table 6. Cont.

No.	Statement	F 1	F 2	F 3	F 4	F 5
41	Implementing sustainable development ought to be core-business for Local Government.	1	0	3	0	4
42	SD has the force of political commitment at the highest level of the Commonwealth Government.	-2	-3	-5	0	1
43	Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge.	-3	0	-2	-1	-5
44	Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation.	-2	2	1	0	-1
45	Few of the key decision-makers in positions of power have accepted sustainable development values.	2	0	3	-1	0
46	Decision-makers involved in Government lack awareness about internationally accepted environmental policies and standards.	0	0	1	-3	-2
47	The State Government should have the dominant role in implementing sustainable development in WA.	0	0	0	3	5
48	Local Governments should have the dominant role in matters that need to be considered in implementing sustainable development.	0	0	1	0	5
49	The world's religions must become a major force in implementing a new sustainable development ethic.	-1	-2	-3	-1	1
50	Implementation of sustainable development ought to be the responsibility of the Commonwealth Government and national strategies, plans, policies and processes should be the principle mechanism for its delivery.	0	1	3	4	3

4.5 Formal description of sustainable development

4.5.1 Introduction

The purpose of this section is to highlight the major areas of consensus and disagreement between the two factors of opinion in order to offer a richer description of SD from each perspective. As indicated in the Methodology Chapter, Q-Sort factor analysis identifies individuals who create a "defining sort" for the weaker, technologically optimistic and stronger, environmentally pessimistic SD positions. That is, people whose viewpoint most strongly represented the factor 1 – environmental pessimists – and factor 2 – technological optimists – composite Q-sorts. Thirteen people who were identified as fitting the "ideal type" description for each factor were contacted by telephone or e-mail with a request to participate in a follow up interview to further discuss their Q-sort. All those invited to participate in the interview agreed to do so, but logistical issues meant that only ten people were interviewed. Two people went on extended holiday during the secondary interview period and one person moved away. Seven people who appeared to provide a defining sort for stronger SD were interviewed alongside three people defining the weaker SD. The data from the interview sessions are integrated with the results from the Q-Sort factor analysis in order to demonstrate the similarities and differences between the two viewpoints about SD. The themes that emerged from Q-sorting and the tape-recorded interviews are presented.

4.5.2 Stronger and weaker sustainable development

There were some striking patterns that emerged from the pictorial description of the two-factor solution shown in Figures 5 and 6 respectively. The first issue to note is the strong rejection of the statements numbered 1-10 (coloured maroon) by the environmentally pessimistic stronger SD Q-sort. Where all these items were emphatically rejected by people holding a stronger SD vision, they were only moderately rejected by people holding the weaker SD vision, with at least three of the items being moderately endorsed and a further two items being strongly accepted (shown in column +4). These items were classified a priori as representing the more anthropocentric pole of the Eckersley value continuum. On the other hand, the technologically optimistic weaker SD belief type strongly rejects the items 30-39, whereas the stronger SD vision is moderately accepting of these statements. Again, these items were pre-selected as being examples of a more "deep ecological" value base.

The patterns that emerge suggest that people with an environmentally pessimistic SD opinion reject the apparent anthropocentric items and people with a technologically

optimistic SD opinion reject the apparent deep ecology items. Interestingly, however, the corollary is not that each factor then strongly accepts the opposite pole. It would appear that people in each factor know exactly what they don't believe to be true, but they do not then systematically endorse it's polar opposite belief. Instead, each factor seems to endorse a more "middle of the road" approach to SD involving a relatively high consensus on issues previously termed 'stewardship' of nature. Interestingly, the only three consensual statements that were agreed to by both factors in a positive direction are related to apparent stewardship issues. These three consensus items were:

- There is a common interest between looking after the environment and looking after people (item 22, placed in the +3 column by both factors);
- The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations (item 29, placed in the +3 column by both factors); and
- The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse (item 12, placed in the +1 column by both factors).

The highest-placed statements within the stronger SD opinion, however, do indicate a value base that is much more aligned with a concern for ecological well being as a basis for SD and there is also a call for a reorientation of human values in order to protect nature. For that reason, the stronger SD opinions could also be described as exhibiting environmental pessimism. The defining statements for this viewpoint are indicated in Table 7. There is endorsement of the notion that current economic practices are harmful to the environment and cannot be sustained and that nature is deserving of respect regardless of its value to humanity. The following highly regarded statements for this group of people clearly demonstrate these results:

- The environmental practices of current generations are harming the interests of future generations (item number 25).
- All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake (item number 40).
- Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed (item number 11).
- Our civilisation is put at risk when we misuse or mismanage natural resources and disturb natural systems (item number 15).

- Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now (item number 19).
- There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed (item number 28).
- We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions (item number 35).
- Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth (item number 38).

People with the stronger SD vision hold a pessimistic evaluation of current development patterns. They see SD as a way to move to a future development pattern with a much greater emphasis on ecological well being than they consider to be the case at present. The defining statements of the stronger SD position suggest a belief in the limits of nature to provide resources to meet human need and the inability of the environment to absorb human-generated waste products. There is also an indication of concern about human population growth. People with this view do not see society becoming more sustainable with time, but rather, they see ecological problems becoming more entrenched and the interests of future generations being harmed by current practices. The view emphasises a respect for the value of nature and denies that humans alone have rights. People with this view down play the ability of humanity to solve its problems by the application of science and technology and they do not see that SD has gone too far.

Table 7. Salient statements for the Stronger SD vision of factor 1 (with a comparison to factors 2 3, 4 and 5).

No	Statement	F1	F2	F3	F4	F5
25	The environmental practices of current generations are harming the interests of future generations.	5	-1	0	1	-1
40	All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake.	5	1	1	4	2
11	Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed.	5	1	2	5	4
15	Our civilisation is put at risk when we misuse or mismanage natural resources and disturb natural systems.	4	-1	0	1	2
19	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now.	4	2	4	3	4
28	There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed.	4	2	5	2	2
35	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions.	3	-5	-1	-2	-2
38	Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth.	3	-3	-1	-2	0
18	The role of non-government organisations (NGOs) is most critical to the success of sustainable development.	0	0	0	1	3
46	Decision-makers involved in Government lack awareness about internationally accepted environmental policies and standards.	0	0	1	-3	-2
13	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development.	0	5	2	3	1
39	Multinational Corporations are the gravest threat to an environmentally sustainable society.	0	-3	-1	-2	-3
26	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems.	0	-2	-1	-4	-2
23	The best and only route for countries to overcome environmental problems and promote human well-being is to become richer and more technologically advanced.	-3	4	-2	2	-1
14	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable.	-3	3	-1	1	0
4	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species.	-4	2	-5	-2	-1
10	Environmental protection or conservation is useful, only to the extent that peoples' welfare is positively affected or human needs are served.	-4	1	-3	-3	0
7	In truth, 'sustainability' has been carried too far.	-4	-2	-3	-1	-5
2	Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.	-5	-1	-2	-4	-3
5	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources.	-5	-2	-4	-4	-5
9	Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit.	-5	-2	-5	-5	-4

The factor 2 view has been labelled the weaker SD or technologically optimistic position and the defining statements for this viewpoint are presented in Table 8. The dominant theme that emerged from this view was an optimistic evaluation of current development patterns. For that reason, this view can obviously be described as technologically optimistic. These people see the present form of society as becoming more sustainable with time, primarily as a result of economic progress leading to greater wealth creation. For this group, SD is much more about improving human welfare rather than any notions of ecological protection. Environmental stewardship is seen as a bi-product of good economic management in that resource use is minimised and production is more efficient – resulting in reduced pollution and waste. There is a great faith in the ability of industry, in combination with the application of science and technology to lead to more SD patterns. Current environmental problems that were commonly held by those in factor 1 – such as – population growth, resource consumption and pollution were down played in this view but there was recognition of local environmental degradation requiring better management.

The highly regarded statements for the technologically optimistic weaker SD indicate a view of SD that is much more aligned with a commitment to human welfare as a priority over environmental well being. In fact, the essence of this view is that economic, industrial and technological development is making the World more, rather than less, sustainable. The following highly regarded items demonstrate these results:

- Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development (item number 13).
- Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment (item number 24).
- The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship (item number 21).
- The best and only route for countries to overcome environmental problems and promote human wellbeing is to become richer and more technologically advanced (item number 23).
- Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems (item number 3).
- Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about (item number 6).

- While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable (item number 14).
- Like other political ideas, we tend to agree with the need for resource conservation, social equality and pollution control but disagree over what it entails (item number 16).

Table 8. Salient statements for the Weaker SD vision of factor 2 (with a comparison to factors 1, 3, 4 and 5).

No	Statement	F2	F1	F3	F4	F5
13	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development.	5	0	2	3	1
24	Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.	5	2	4	3	3
21	The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship.	5	2	3	1	5
23	The best and only route for countries to overcome environmental problems and promote human wellbeing is to become richer and more technologically advanced.	4	-3	-2	2	-1
3	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems.	4	-2	0	0	0
6	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about.	4	-1	0	2	-1
14	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable.	3	-3	-1	1	0
16	Like other political ideas, we tend to agree with the need for resource conservation, social equality and pollution control but disagree over what it entails.	3	1	2	4	1
46	Decision-makers involved in Government lack awareness about internationally accepted environmental policies and standards.	0	0	1	-3	-2
47	The State Government should have the dominant role in implementing sustainable development in Western Australian.	0	0	0	3	5
48	Local Governments should have the dominant role in matters that need to be considered in implementing sustainable development.	0	0	1	0	5
18	The role of non-government organisations (NGOs) is most critical to the success of SD.	0	0	0	1	3
41	Implementing sustainable development ought to be core-business for Local Government.	0	1	3	0	4
39	Multinational Corporations are the gravest threat to an environmentally sustainable society.	-3	0	-1	-2	-3
38	Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth.	-3	3	-1	-2	0
37	Economic, industrial and urban development has gone too far in WA.	-4	-1	-1	-3	-4
34	All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe.	-4	1	-2	0	-2
32	In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over all economic or social considerations.	-4	1	-4	-1	1
33	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment.	-5	-1	-3	-2	-3
36	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind.	-5	-2	-4	-3	-3
35	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions.	-5	3	-1	-2	-2

4.6 Areas of disagreement over sustainable development

It was highlighted in the Methodology Chapter, and illustrated in Figure 2 that a focus of the 50 statements that were Q-sorted by people related to:

- the objectives of SD policy;
- the part played by science and technology in problem generation and solution;
- the implementation of SD;
- the scope of problems confronting society and the planet; and
- the scale of solutions offered by SD.

The interviews with people identified as providing defining composite Q-sorts for each factor also related to the way people talked about these major issues. The purpose of this section is to provide more detail about these specific issues by integrating the results gathered from the Q-sorting process and the interview process.

4.6.1 Objectives of SD

A reinterpretation of findings following the recommendation of one examiner in the examination process suggests that the relative weighting given to the promotion of human welfare and the promotion of environmental protection is a fundamental source of division between people holding stronger and weaker visions of SD. The results from the Q-sorting process shown in Table 9 suggest that people holding a stronger SD vision (factor 1 represented by "F1") appeared to consider the objectives of SD to be more about environmental protection and maintaining ecosystem integrity. People with a weaker SD vision (factor 2 represented by "F2") considered SD to be about ensuring human welfare. That said, however, it is important to note that people holding the weaker SD beliefs tended to view the purpose of environmental protection and conservation as being a useful attribute for promoting human welfare. The people holding the stronger SD views appeared to consider the objectives of SD as being focussed on environmental protection and preservation, regardless of any potential benefits of that protection for human welfare.

Differences of opinion about the objectives of SD, however, were underlined by the statements shown in Table 10 that were made by participants during the tape-recorded interviews. The statements indicate how people presenting the environmentally pessimistic vision were much more inclined to talk about an environmental focus or a

"balanced" focus for SD objectives, rather than a focus on improvements to human welfare. Examples of these types of comments include:

- I think that the objective is to look at the whole of the natural environment and incorporate it into the way we live which incorporates the environment.
- Then I guess the other thing with sustainability, people talked about it being the point at which the economy, society and environment come together and I see that's important too. I would probably give priority to the environment.
- Yeah, it's not a protest by me but is quite clear in me that I place human welfare not high on the priority.

People presenting a technologically optimistic SD vision, however, were more inclined to focus on the explicit promotion of human welfare aspects of SD. Examples of these types of comments include:

- And I am sure that in any vision of sustainable development that I hold then the principle really for doing it is to maximise human welfare.
- But the priority has to be promoting policies that firstly look at the people.

Interestingly, however, with regard to two of the "objectives" items, there was consensus amongst the people in both factors. On two other items, however, there was strong positive support to varying degrees. These four "objectives" items are presented below and they may indicate that a consensus about the objectives of SD is achievable.

- Item 29. The core objective for sustainable development should be to provide economic environmental and social equity within and between generations (+3 and +3).
- Item 12. The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse (+1 and +1).
- Item 19. Sustainable development is inevitably a long-term process although it is important to start thinking and acting now (+4 and +2).
- Item 21. The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship (+2 and +5).

Table 9. Opinions about the objectives of sustainable development.

Item	Statement	F1	F2
1	The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies.	-2	2
21	The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship.	2	5
12	The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse.	1	1
29	The core objective for sustainable development should be to provide economic environmental and social equity within and between generations.	3	3
32	In implementing sustainable development primacy should be given to ecosystem integrity and environmental considerations should get priority over all economic or social considerations.	1	-4

Table 10. Interview comments illustrating the different opinions about the objectives of sustainable development.

Interview	Statement	Made by person in factor:
1	My view of sustainable development, I think it's about reaching a balance.	F1
1	That's what I've always aimed to do is be inclusive, give everybody a chance to be involved and to have development but also environmental protection and social equity and that kind of stuff.	F1
1	It's re-directing organisational behaviour to think more broadly and to take in all the different factors where decisions were made based on a very limited range of factors before.	F1
1	You want organisational decisions and organisational operations to take account of much more social, economic and environmental considerations.	F1
2	What I would have liked to have said behind card number 21 is that sustainable development means that you are not foregoing any opportunities in future stocks and benefits and flows that might be derived from the environment and that relates directly to maintaining the flow by diversity for me.	F1
2	I have really taken the position that you understand the environment first and when you are making a development decision you have to be comfortable with the best knowledge that you're not taking future opportunities away and that does relate to that inter-generation equity.	F1
2	Yeah, it's not a protest by me but is quite clear in me that I place human welfare not high on the priority.	F1
2	Particularly the furthering of human welfare. And I am thinking of first world countries. And I think I am being - I suppose it's not anthropocentric, it's eco-centric or whatever.	F1

Table 10. Cont.

Interview	Statement	Made by person in factor:
3	The ones towards me would then focus more on human welfare and don't take the whole picture, I guess which is sustainable development.	F1
3	Yeah the cards at the negative end tend to focus on the importance of sustainable development solely towards human beings. I totally disagree with that.	F1
3	Sustainable development should look at the flora, the fauna, everything from the air that we breathe to the water that we have, the floor that we walk on. The importance of all of those, the whole ecosystem approach.	F1
3	I think that the objective is to look at the whole of the national environment and incorporate it into the way we live which incorporates the environment.	F1
4	Okay I guess now looking at it my main thought was the fact that we need to look after the environment and start actually doing it now because it's a long term goal. Because without that we cannot achieve economic growth.	F1
4	I think at the moment I think the environment is in a pretty bad way and that in terms of decisions, that you have to make decisions whether people like them or not. They have to be the right decisions for the environment because in the long term that will be the right decisions for the people.	F1
5	For me, both of them focus on the fact that it's human welfare that is taken into consideration and the reason for sustainability which I don't think is the direction that sustainability has to happen. Regardless, not just because it is going to make human life better - which it is. But that is why that is out there, the purpose here is only to help human need and I don't think that is the whole point of sustainable development.	F1
5	Part of life will be creating some of these environmental problems, identifying them and working through as to how can we use sustainability to get back to a reasonable balance.	F1
6	Once again I think it is to do with disturbing the balance. But sustainability is about having those three parts in balance not conflict.	F1

Table 10. Cont.

Interview	Statement	Made by person in factor:
7	The question that lots of people grapple with so that we end up with statements that everyone agrees with but are not always very useful is that sustainable development, sustainability being sort of meeting the needs of the current generation. Not removing choices for a future generation, which is good I think that sounds good but what does that actually mean? I think that means maintaining natural capital so bio-diversity and the ability of the environment to support us so that the whole thing of the ecological process will maintain a livable world which includes us.	F1
7	Then I guess the other thing with sustainability, people talked about it being the point at which the economy, society and environment come together and I see that's important too. I would probably give priority to the environment.	F1
8	Now, I guess for me personally, I think that all strategic policies that impact people on the planet need to have a people focus.	F2
8	And I am sure that in any vision of sustainable development that I hold then the principal really for doing it is to maximise human welfare.	F2
8	That involves for me having good health, good education, high incomes, good access to multiple resources, clean water and clean air.	F2
8	And it is really up to sustainable development then if it can maximise human welfare then that's what it needs to be doing.	F2
8	But the priority has to be promoting policies that firstly look at the people.	F2
8	We don't have any immediate problems on the horizon and really I think we do live in a sustainable world as now.	F2
8	So that's my view of the objectives of sustainable development in a summary I would say it is definitely about promoting human wealth and wellbeing - those sorts of issues.	F2

Table 10. Cont.

Interview	Statement	Made by person in factor:
9	This one sums it up really nicely – "The maximisation of human welfare is the main objective" – card one in the very first place.	F2
9	Everything about environmental protection should be about looking after people.	F2
9	You see those Koala bear suits collecting money to save this or save that, whales, koalas, whatever. It annoys me that young people like that are wasting their energy when they could be helping people. We need to make the world a better place for people as a priority, then look after the animals.	F2
9	It's just about sustaining development involving a continuously growing, better educated world. Sustainable development is about creating a fairer share for everyone. A better world. It's not just about environmental protection. That will come from making the world more affluent.	F2
9	One last point, I totally reject that number 32, and the number 31. I know that's the standard rhetoric "primacy to the environment", "biodiversity in danger" blah blah blah. We should never give priority to environment over people.	F2
10	I feel that the objectives of sustainable development are like a long-term benefit. Everybody wants to be protecting for the future the next generation. But we also need to look at the humans today that they are benefiting.	F2
10	Sustainable development for me is about related to human factors not just the plants. The whole objective is about enabling humans to live not just necessarily just plants to live.	F2
10	I definitely think that it is all about humans that count in the long run not just the planet.	F2

4.6.2 The role of science and technology within SD

Nowhere is the disagreement between the two types of opinion so large as when it comes to the role of science and technology in furthering or inhibiting SD. The results from the Q-sorting process shown in Table 11 demonstrate that people presenting a stronger SD vision (F1) consider the application of science and technology as being one of the root-causes of the current environmental problems that these people see all around them. These people were not technologically optimistic at all. The results from the weaker SD vision (F2), however, present science and technology as the solution to any current environmental problems these people consider. That is why these people were called technological optimists. In keeping with that label, the weaker SD vision suggests that problems have actually been reduced where science and technology has been embraced by society. In essence, people subscribing to the weaker version of SD suggest that the World is becoming more sustainable while advocates of stronger SD see it as becoming less sustainable. Table 11 clearly demonstrates the wide discrepancy in views about science and technology between people holding the stronger and weaker SD visions.

The wide discrepancy in views about the science and technology Q-statements that emerged between the two groups of people during the Q-sorting process is reinforced by the comments that were made during the tape-recorded interviews. These differences of opinion about the role of science and technology were underlined by the statements made by interviewees and shown in Table 12. The statements indicated how people presenting a stronger SD opinion were much more inclined to talk about science and technology in a negative fashion. Examples of those types of comments included:

- The whole environmental sustainable development movement is about changing the way people think about what they do and what they consume. Technology will help, but technology is not the answer.

- The bottom cards for me are again reflecting my very anti-anthropocentric point of view. Particularly card number 4 there – "The exceptional characteristics of Homo sapiens, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species".

- Technology has helped sometimes but I don't think there is a solution because I don't think we have understood the technology we have created. So I don't know if it will answer the environmental problem we have.

- So I see science and technology as only part of the picture so only part of the answer and you can't just rely on the fact that if you've got a problem and ecological problem often science can't solve that problem for you and you have to find other ways.

People presenting a weaker SD opinion, however, were more inclined to focus on the positive benefits that they see as being delivered by the promotion of science and technology within society. Examples of these types of comments include:

- I don't think there is any basis, the traditional view for sustainable development of one where limit is essential. The reason for that is that humans themselves have the ability to solve all of our problems whether they be social, economic, environmental, all those type of problems.

- And I also quite strongly doubt that science and technology has a negative impact on the environment.

- We're more sustainable now than before because we use science and technology to solve our problems.

- I think the cards demonstrate that I see science and technology as a very positive thing and that a lot of benefits come out of science and technology and research in general.

It is recognised, however, that the Q-statements presented in Table 11 are not absolute opposites with all people holding a stronger SD vision completely disagreeing with people holding a weaker SD vision. In that sense, these results and interpretations are not unequivocal. The very large differences in the composite Q-sorts do, however, indicate that a wide discrepancy in views about science and technology is apparent.

Table 11. Q-sort results indicating differing opinions about the role of science and technology.

Item	Statement	F1	F2
2	Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.	-5	-1
3	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems.	-2	4
4	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species.	-4	2
8	Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development.	-3	-1
13	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development.	0	5
14	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable.	-3	3
23	The best and only route for countries to overcome environmental problems and promote human well-being is to become richer and more technologically advanced.	-3	4
24	Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.	2	5
33	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment.	-1	-5
43	Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge.	-3	0

Table 12. Interview comments illustrating differing opinions about the role of science and technology in relation to sustainable development.

Interview	Statement	Made by person in factor:
1	I see that science has a role to play, but its not going to solve the outcome, or be the outcome, in the end you need to change attitudes first, that's what we're doing with LA21.	F1
1	The whole environmental sustainable development movement is about changing the way people think about what they do and what they consume. Technology will help, but technology is not the answer.	F1
1	This card is saying that crisis is more critical than we've been led to believe by science and technology. It's a paradox. Science, it's a paradox. It created the problem – industry – that created problems; but its also part of the solution, and it's also part of what's identifying the problem. Mind you, people know that things aren't quite right with the world. More faith than figures – they just get the general sense that things aren't quite right, or that quality of life isn't quite what it was 20 years ago.	F1
2	I guess science and technology is part of the solution but it is sitting in the cart and it's not the horse. The social and particularly the political aspects of our society, the world population whatever they are the ones for me that need to drive or be the horse of sustainable development.	F1
2	Science and technology will play a part in that but at the moment it plays – I have set out the statement of "science and technology as a major driving force between increasingly negative effects of human actions on the global environment" - I don't see it as the major driving force. What I mean by that is that stems from a social and political basis.	F1
2	So really, I guess that forms the basis of why I am so largely in the negative of science and technology. I see it as important with massive benefits to sustainable development but it is not the answer.	F1
2	The bottom cards for me are again reflecting my very anti-anthropocentric point of view. Particularly card number 4 there – "The exceptional characteristics of Homo sapiens, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species".	F1

Table 12. Cont.

Interview	Statement	Made by person in factor:
3	I think that the role of science and technology is very important to understand the facts and what is actually happening as a result of our actions. The science and technology are a vital part in that process that just, I guess, gives us the facts to do the research and find out what exactly is happening.	F1
3	I don't believe you can, like many of these companies from the negative areas [person referring to the placement of statements in the Q-sort] with the statements. They suggest that it can be the same in the future. *Interviewer: Where they say we will overcome our problems.* Because I don't believe we can do that. You can't solve all the problems with technology.	F1
4	I guess I am disappointed in science and I studied science. I guess to me, science has let society down.	F1
4	Scientists are unable to communicate their thoughts at the best of times.	F1
4	I also think they are working for multinational companies and being manipulated by them. Their views are put out into society and they are often conflicting and that creates a lot of difficulty for the average person. It could be because they have found different things or whether because they have kind of led their scientific studies in that direction because a group is supporting them financially	F1
4	I guess also, I don't believe that science provides all the answers unless their view takes into account everything that has an effect on the research that they are doing.	F1
4	Technology has helped sometimes but I don't think there is a solution because I don't think we have understood the technology we have created. So I don't know if it will answer the environmental problem we have.	F1

Table 12. Cont.

Interview	Statement	Made by person in factor:
5	I think what most of these cards seem to be saying is that science and technology was the answer to solving all these problems all these ecological and environmental problems and that if you have science and technology then you don't have to worry to much. While I believe to a certain point, and there are a couple of statements here that I do think that "emerging technologies do offer higher productivity and increased efficiency" and "decrease pollution", I do believe that some of it, it's true, it's not the whole answer though.	F1
5	I think that science and technology has a part to play and that where the solution to a problem can be solved that way it's great but there are other strategic things that you can look at.	F1
5	So I see science and technology as only part of the picture so only part of the answer and you can't just rely on the fact that if you've got a problem and ecological problem often science can't solve that problem for you and you have to find other ways.	F1
5	But I think science is beneficial. I mean, I wouldn't want to go back to being a cave man.	F1
6	I think there are some things that we are never going to be able to do in a sustainable way and we are actually going to need science and technology to help us out.	F1
6	But the latest science and technology wants as much waste as you can get it and they don't want it separated. So this it a bit of a contradiction.	F1
6	I guess my main worry is that science does just continue on inventing things that maybe of no use or are harmful to the community, harmful to the environment long term – if we can invent lets keep going lets not stop. I think genetic engineering is a perfect example, I think that should be looked at quite differently. We should think of good farm management practises rather than how we are going to produce more crops. I think that is the wrong approach.	F1
6	If it can be invented lets go for it - that's how humans are made and I don't agree with that.	F1

Table 12. Cont.

Interview	Statement	Made by person in factor:
7	I guess science being important for us to understand the state of the environment. To provide some sort of objective measure of where things are at.	F1
7	I tend to think that it is not a matter of science and technology saving the day.	F1
7	The card number four at minus five – "knowledge of technology makes us above all other species that we don't need to be concerned about ecological constraints" - I disagree with that sort of notion.	F1
7	Science and technology is a problematic role because it's been very much the agent of change and this whole notion of economic progress is bound up in knowledge called innovation.	F1
8	This for me is the core issue. What I would suggest is that I don't agree with any notions that suggest the world has limits to what humans can achieve. Only two of the nine cards that relate to the roles of science and technology in promoting sustainable development only two of those cards are at the negative end.	F2
8	I don't think there is any basis, the traditional view for sustainable development of one where limit is essential. The reason for that is that humans themselves have the ability to solve all of our problems whether they be social, economic, environmental all those type of problems.	F2
8	I think if you look at the historical trend what you will see quite clearly, if you go over the historical pattern of development, over any period If you look at 200 years since the industry revolution, 2000 years since ancient roman society, 200,000 years since humans started to appear on the planet. Then what you will see is an upward sweep of progress. People now live longer than they used to, the technology that we utilise today in most ways have less negative consequences than technology did in the past.	F2

Table 12. Cont

Interview	Statement	Made by person in factor:
8	My idea is that what sustainable development is really. It needs to be that third world countries - very poor nations, the best way that they can achieve sustainable development or a better future is to become like we are in western countries. High levels of technology, high levels of science. We really need to use our science and technology to help them join the global market.	F2
8	The technologies that are coming around like the Internet, Bio-engineering, genetic engineering – really do offer us the promise of increasing productivity, increasing efficiency by which we produce things, increasing equality by which we distribute those things to people because obviously we must create the resources to go around.	F2
8	And I also quite strongly doubt that science and technology has a negative impact on the environment.	F2
8	The big companies are putting their money and resources into development of new ways of working, new techniques. Look at steel making, the steel plants – furnaces are much less polluting. Agriculture using less toxic pesticides than before.	F2
9	Well, looking at the layout, they're opposites really. Card number 3 – "Instead of contributing to problems, industry solves them" and at the other end – card 33 – "The application of science is the major driving force behind negative impacts". *Interviewer: Just for the tape – statement 3 is at the positive end and 33 at the negative.*	F2
9	We're more sustainable now than before because we use science and technology to solve our problems.	F2
9	Again, genetic engineering is one where we can overcome food shortages – potential famines by always having enough food.	F2
9	Card number 4 – "The exceptional characteristics of Homo sapiens, particularly our knowledge and technology exempt us from the ecological limits that constrain other species" at plus 5 position. Again, there is just so much evidence that as the world has progressed we've made it better.	F2

Table 12. Cont.

Interview	Statement	Made by person in factor:
9	Think about Christopher Columbus setting off in those little ships. Captain Cook sailing to Australia. Now you fly in a Jumbo in one day what took three years. And have gin and tonic with smoked salmon for lunch! I just think that we can overcome problems we face by using our brains.	F2
9	Science is the answer, but many people see it as the problem.	F2
10	I think the cards demonstrate that I see science and technology as a very positive thing and that a lot of benefits come out of science and technology and research in general.	F2
10	I think overall we have more benefits come out of science and technology than we do bad aspects. Normally we find a solution to the bad aspects anyway.	F2
10	So research in general is very good and I certainly don't see it as a negative thing that is harming the world in the big picture	F2
10	I think that that's where the money should be spent on science and technology to come up with more efficient ways to do things or better ways of using these resources and not causing waste and stuff like that.	F2

4.6.3 Scale of problems facing sustainable development

The major theme of the results for this part of the analysis revolved around the relative optimism of the two opinions. The people presenting the stronger SD vision were pessimistic about the scale of current problems, particularly environmental problems facing people and the planet. They were also less optimistic about the likelihood of their favoured SD solutions reaching fruition. People with the weaker SD vision, however, presented an optimistic prognosis about the current scale of problems facing people and the planet. They were also optimistic about the current drive towards the promotion of SD in so far as they see the World becoming more sustainable. Relevant statements and factor scores are presented in Table 13.

Table 13. Q-sort results indicating differing opinions about the scale of problems confronting sustainable development.

Item	Statement	F1	F2
5	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources.	-5	-2
6	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about.	-1	4
15	Our civilisation is put at risk when we misuse or mismanage natural resources and disturb natural systems.	4	-1
19	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now.	4	2
25	The environmental practices of current generations are harming the interests of future generations.	5	-1
26	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems.	0	-2
31	Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution.	2	-3
34	All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe.	1	-4
35	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions.	3	-5
36	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind.	-2	-5
37	Economic, industrial and urban development has gone too far in Western Australia.	-2	-5
45	Few of the key decision-makers in positions of power have accepted sustainable development values.	2	0

The interpretation of results about the scale of SD problems that were derived during the Q-sorting procedure were enhanced by the statements that emerged from the tape-recorded interviews and shown in Table 14. The people presenting a stronger SD vision were more concerned about the ecological crisis and considered that humanity and the economy were the source of excessive demands on the ecology. It is for those reasons that the group were labelled as environmental pessimists. Examples of the environmentally pessimistic comments made by that group are presented below:

- I think everything is still anthropocentric. That's my view of environmental work and sustainability work altogether. There's no balance and I don't think we can ever get that balance either;
- I guess if I look at the highly negative cards in terms of problems we face - the anthropocentric ones that nature has an unlimited simulation capacity. And that humans alone have rights I think they are the biggest problems. The flip side of that is that the hardest ones as well is that we are living way beyond our capacity; and
- Lots of these are about real doomsday sort of comments that we are sort of taking the planet to the brink of destruction things like that. Yeah, I suppose that is why I agree with it.

People presenting a weaker SD vision were quite dismissive of environmental problems, didn't consider that objective limits to resource production or consumption existed and felt that problems were primarily associated with social issues like poverty. Once again, these types of views support the description of this group as being technological optimists. Some examples of these types of comments made by people presenting a weaker SD vision are demonstrated below:

- I guess, in summary I think we don't have any major global environmental problems as such;
- So I guess to summarise the cards – I do think that our planet has an unlimited capacity to provide resources to us;
- I think – and I've indicated here that "there is a record of enormous environmental progress and much to be optimistic about". That's so true; and
- I don't believe that we are living beyond our capacity of the planet or anything like that.

Table 14. Interview comments illustrating differing opinions about scale of problems confronting sustainable development.

Interview	Statement	Made by person in factor:
1	Looking at my cards, I'm definitely not anthropocentric.	F1
1	What I'm trying to do is get a balance in the way that I'm doing it. Interested, other species have rights as well as humans do. I mean, you can't make the human side go away, but you shouldn't let the other species go away either.	F1
1	We're such in a pressure cooker situation that you need top quality management of environment areas, you know natural areas.	F1
1	I think everything is still anthropocentric. That's my view of environmental work and sustainability work altogether. There's no balance and I don't think we can ever get that balance either.	F1
1	I don't think that, the way that our system is set up, being a financial – economic, where everything is run by economics, that things will necessarily change.	F1
1	It's very difficult because basically the money thing will always win.	F1
1	And that's why it all comes back to basically, its going to be a global threat before people will be willing to make the big sacrifice to either their lifestyle or how they live. That's what it's going to take.	F1
2	I guess if I look at the highly negative cards in terms of problems we face - the anthropocentric ones that nature has an unlimited simulation capacity.	F1
2	And that humans alone have rights I think they are the biggest problems. The flip side of that is that the hardest ones as well is that we are living way beyond our capacity.	F1
3	I think there is a problem.	F1
3	I mean we need to re-evaluate and rethink the way we see sustainable development and I think we see it as a separate entity group.	F1

Table 14. Cont.

Interview	Statement	Made by person in factor:
3	We see ourselves as human beings being so far from nature and all that when really we need to rethink and be more in tune with nature that we are a part of it and that we respect it and it respects us. Basically that is not our philosophy or not the people's philosophy – that is our essential problem.	F1
3	We feel like we can control it when really we are only one part of the whole picture and we can't control it.	F1
3	It seems to me that card says we live in a world that has plenty of resources, or there is no limits beyond which we are exceeding. I certainly do.	F1
3	Resources certainly aren't inexhaustible.	F1
3	On a larger scale from that even is deforestation you see what is happening in Africa.	F1
3	We can't just keep going the way we are.	F1
4	I see our environment, our natural world as being extremely important to me and we need to preserve it because we don't know enough about it.	F1
4	I think our free market system is the root of all evil.	F1
4	Then I went into I guess again, I think current environmental practises are harming us, what we are doing and the same with the development that is going on.	F1
4	I don't think the World has an unlimited capacity – I think we will exhaust it.	F1
5	Lots of these are about real doomsday sort of comments that we are sort of taking the planet to the brink of destruction things like that. Yeah, I suppose that is why I agree with it.	F1
5	I mean our population for the planet is large and you would have to look at big cities as plague proportions.	F1
5	I think we have environmental problems.	F1

Table 14. Cont.

Interview	Statement	Made by person in factor:
5	But you can't ignore things like, the ones that I think are really worrying are things like greenhouse, something that can effect the whole planet.	F1
5	The global problems are probably the most scariest because if somebody really messes up a specific site be it a country or a city and leads to its destruction it doesn't necessarily mean there is destruction to the whole planet. But things like global problems are really starting to worry me because number one they are effecting everyone and the survival of the planet.	F1
5	But I don't know I think that the whole political and economic pressures are so great that environment... I don't think that people will make radical decisions until the environmental crisis is a crisis and at the moment I don't think that people recognise that it's a crisis and I don't know whether you would describe it as a crises at this point and time.	F1
5	If we are going down that road I think what will happen is it will be like the Romans. A whole civilisation will disappear and be wiped out and they may have been trying to fix up the problem but they may not be able to fix up the problem so therefore the population numbers will drop and hard times will come about and I think you have seen that happen in countries like Ethiopia that used to be fertile and now it is nothing more than barren desert.	F1
6	So the problems that I guess we face with sustainability is becoming aware of those so it is to do with knowledge and understanding what repercussions and things are from building a wider road.	F1
6	So it's that thought that knowledge getting people to think about the side effects in everything that we do.	F1
6	Well it's traditional views of the fact that economic growth is the most important thing. And it's always been that sort of approach to the bottom line. It is really what matters so if you are trying to implement something that is good for sustainability it's the bottom line approach that is the problem.	F1
6	Other problems would be lack of thought, history - the way we have just done things progressively without thinking about things impact and the overriding importance placed on economic consideration above all else.	F1

Table 14. Cont.

Interview	Statement	Made by person in factor:
7	Key problem is the amount of resources consumption.	F1
7	The value we place on resources including land.	F1
7	The card that "Nature has an unlimited capacity to absorb waste and provide resources". I guess that has been the view that we felt collectively for some time and it is partly why we are in the state that we are.	F1
7	Certainly in the current day and age knowing that nature can't absorb all the waste that we put out hence problems of global warming because of the amount of greenhouse gasses that we are putting out.	F1
7	It's a statement which is contestable even scientifically, the idea that nature has a lot of capacity to absorb waste doesn't stand up and some scientists that I have spoken to have noted the assimilative capacity which is the idea that the environments and whether they would say that's a coastal water.	F1
7	Number nine at minus four – "Humans and humans alone have rights" - there are a few other cards earlier on which are the similar sort of thing. Utilitarian view and from the anthropocentric view that we are all that matters. I disagree with that. I think that we share the space with other species and we should have regard for them as well.	F1
7	You have global warming which potentially means that species will disappear.	F1
7	Land which is now productive for agriculture might not be, all that the radical disruption to settlements or to industry then that is obviously going to impact to our kids and their kids.	F1
7	And that if species are disappearing because of us then that limits the options for future generations.	F1
7	If vast areas of habitat are destroyed for farmland or housing well that is irreversible.	F1
7	Obviously it limits what is available to the people that will follow us.	F1

Table 14. Cont.

Interview	Statement	Made by person in factor:
8	I guess, in summary I think we don't have any major global environmental problems as such.	F2
8	We have economic problems and we have distribution problems and we have equality problems but we don't have global environmental problems.	F2
8	I don't think that we have global environmental problems and again the problem we do have are the global requirements of equality and equity and distribution and we have people in the west who are incredibly rich and we have third world who are incredibly poor.	F2
8	In my view sustainability is one in which those people in those third world countries become as rich and as affluent as we are in the first world countries.	F2
8	So I guess to summarise the cards – I do think that our planet has an unlimited capacity to provide resources to us.	F2
8	I don't think that there are any resource limits in any meaningful ways.	F2
8	I do believe that if even we were polluting the planet to some extreme levels which is what is promoted by the green people then the world can assimilate those pollution's on a global level.	F2
8	But I don't believe collectively that we face this thing called a "global problem".	F2
8	Moving onto the other end of the scale, I don't think that economic development has gone too high in Western Australia. I think we could do a lot more, we have an enormous amount of land. I think we could do with a lot more people here to develop our land.	F2
8	I definitely don't believe that we as a society in Australia or in the planet are living beyond our means.	F2
8	So as far as I'm concerned the problems we face are pretty much under control.	F2
8	I think we are pretty much self sustaining. Our economy sustains itself. We have plenty of resources we need to have.	F2

Table 14. Cont.

Interview	Statement	Made by person in factor:
8	As I said earlier I don't actually believe that there are limits and if there are no limits why do you need to have sustainable development? Living within the constraints of those limits is meaningless if they don't actually exist.	F2
9	I don't actually think we have many problems as set out in these terms. These seem to be more about environmental problems.	F2
9	I think – and I've indicated here that "there is a record of enormous environmental progress and much to be optimistic about". That's so true.	F2
9	All that "back to nature" stuff is actually dangerous.	F2
9	That's how PolPot started – get the city dwellers back in the fields and look what happened in Cambodia. It's a dangerous and backward view.	F2
10	I suppose these cards that are in the negative end are showing that I don't agree that we are going too far or that we should stop production and that we should stop all use of resources and all that.	F2
10	I don't believe that we are living beyond our capacity of the planet or anything like that. Everyday we see solutions to problems.	F2
10	We see science creating new ways to produce food and for us to support the lifestyles that we choose and make the most of our resources and all that.	F2
10	So basically I don't agree that things are like the history of civilisation has been one of decline. I think everything has improved. We live longer, we have better food, we have less diseases.	F2
10	At the positive end the one I have at the positive end is about species and systems and nature deserving respect regardless of its usefulness to humanity.	F2
10	So even though I don't think we have gone too far I still believe that nature is important so it goes back to having that stewardship role that we have to continue to develop.	F2
10	There is no point being here unless we continue to grow and discover the benefits of science and what the earth has to offer us, but at the same time nature is important.	F2

4.6.4 Implementation of SD

The two groups strongly disagree about implementation of SD when it comes to the role of the individual and local community versus the role of business and government. Supporting evidence for these findings comes from the Q-sort placement of the relevant statements shown in Table 15. Q-sort results demonstrate how people presenting a stronger SD vision see a requirement for more of a commitment by highly motivated individuals making changes to their own lifestyles with a radical change in personal values. There was also a suggestion within the stronger version of SD that change needs to be "bottom up" driven involving the whole community. The evidential base of results derived from the Q-sorting procedure is enhanced by the statements about the implementation of SD that emerged from the tape-recorded interviews and shown in Table 16. The commentary from people presenting a stronger SD vision reinforced the suggestion that the implementation of SD requires a commitment to attitude and behaviour change by highly motivated individuals within the context of a community driven process.

Q-sort results for the people presenting a weaker SD vision, however, suggested much more of a pro-business requirement for involvement in implementing SD with "top down" implementation involving experts, scientists and governments. This is especially true when it comes to the use of science and technology by business for furthering SD, and once again, this finding strongly supports the claim that this vision of SD is based on technological optimism. The tape-recorded interviews also reinforced that people presenting a weaker SD vision were less inclined to view the implementation of SD as a community driven or "bottom up" process. Rather, this opinion suggested that the implementation of SD requires a "top down" commitment of resources and expertise by governments and a greater involvement of multinational corporations.

An important finding with regard to implementation of SD is that not one of the 170 people involved in the study, nor any of the people during in-depth interviews was actually hostile or indicated an opposition to SD. Everyone appeared to agree that SD was important. Why it was important seemed to be the issue of disagreement between the two dominant viewpoints.

Table 15. Q-sort results indicating differing opinions about the implementation of sustainable development.

Item	Statement	F1	F2
11	Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed.	5	1
38	Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth.	3	-3
28	There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed.	4	2
27	With regard to sustainable development issues, women, indigenous people and youth need to be represented in decision-making, planning and implementation processes.	2	-1
17	Perhaps the best hope for the greatest World-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour.	1	-1
20	Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic.	-1	0
24	Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.	2	5

Table 16. Interview comments illustrating differing opinions about the implementation of sustainable development.

Interview	Statement	Made by person in factor:
1	Well, my view is that the community has a large role, coming from a Landcare background.	F1
1	The Community's role is really about placing pressure on the local government to pick up on this program and to run with it.	F1
1	So, while community provides the energy for it, local government puts in place and manages the framework.	F1
1	They can't do it on their own because they need the whole structure around it.	F1
1	You need a framework that you can implement large scale change.	F1
1	It is all incremental, but you need to have a direction for it.	F1
1	I mean, but the contradiction is that the community has got to lead the local government to make the decision to participate.	F1
2	I guess if I look at these cards they are quite pessimistic in terms of pure decision-makers.	F1
2	They have taken on board those things.	F1
2	I see it as the core business of the local government as they are the people closest to communities – people on the ground.	F1
2	Regardless of the present resources they have at the moment to do that job I think there is the most scope there for them to interact with the community.	F1
2	There is a huge gulf in terms of implementation at the local government level.	F1
2	There is a huge gulf between that potential for those people to interact with the communities and what they can actually do at the moment.	F1
2	I see the need for the community to be educated informed and involved but I don't see it as bottom up.	F1

Table 16. Cont.

Interview	Statement	Made by person in factor:
2	A lot of people see bottom up as let community groups look after bushland, let GreenPeace save the whale and I don't see that as a way forward for sustainable development.	F1
2	I think you will get clear benefits from a top down and bottom up approach.	F1
2	I don't know whether that makes sense but by that I mean part of the top down approach would involve consulting and educating quite widely with the community.	F1
2	So what I am saying is that it needs to be a ground up, it needs to be a bottom up but it does need to be supported with mechanisms and recognised.	F1
2	I don't see the way forward as individuals picking up the banner.	F1
2	Or multinational companies, I mean they will have a role to play but I don't see that as the saviour.	F1
3	I think sustainable development is something that needs to be taken on by everybody within the community from individual members of the community to government and private industries.	F1
3	It can't be stressed by one point of view or one agency taking on that role.	F1
3	Because sustainable development is a way of life.	F1
3	It's your attitude to things around you and the things that you actually do.	F1
3	The individual in the home whether it be from composting to being more aware of energy efficiency in the home.	F1
3	it goes to private industries such as lead developers, building codes in houses, companies that build fencing or implementing strategies towards accountable development such as solar orientation in homes all that sort of stuff.	F1
3	No one person can address it.	F1

Table 16. Cont.

Interview	Statement	Made by person in factor:
	Interviewer: I suppose the most negative point of view is the minus three which is right at the end you have card number 43 – "Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge".	
3	That seems to be about decision making by experts.	F1
3	I think it tends to be one sided it can be very narrow and it doesn't necessarily incorporate the wider community and their needs.	F1
3	Though if it is totally bottom up individual and communities – I'm talking about bottom up don't really have the knowledge to drive that, they need to have that driven from that end, they need guidance as well.	F1
3	I think local government should be doing it by getting down to the last, to the grass roots level because they have the most contact with the community.	F1
3	I think local government, individuals in their local government doing something in their bushland or changing light globes in their street - they can see it themselves in their own little community and then they are more influenced to act on an individual basis.	F1
4	I think that sustainable development should be coming from government.	F1
4	I think that is extremely important and I was also thinking that in order for it to be of benefit to us we need to have community involvement.	F1
4	So the way I was thinking about it is in terms of government moving the community.	F1
	Interviewer: This one in particular - about Multi-national corporations – you really don't agree with that at all?	
4	No I don't because I don't think they are the organisations capable of promoting sustainable development.	F1
4	I think we as a community have much more control.	F1

Table 16. Cont.

Interview	Statement	Made by person in factor:
5	I think what it is pointing out here is that I don't believe that any one sector is responsible for sustainable development.	F1
5	But I do recognise that there has to be some leadership in that and that's where I placed some of the statements about government, especially commonwealth government and state government cards as being leaders in developing the strategies or the processes to implement sustainable development.	F1
5	But my other cards recognise that you have to have a whole range of people from community groups, indigenous people, to keep a balance.	F1
5	I definitely don't see that things like multinational corporations are the ones that are going to address these sustainable ability issues.	F1
5	Most of the local government cards are in the middle and that's because I don't see local government as being a leader in the sustainability process.	F1
6	And local government and the state government should have the dominant role.	F1
6	It should also, I mean they both have dominate roles.	F1
6	I wouldn't put one above the other - I think it has to be done together.	F1
6	I am pretty surprised that I have put this card 17 – "Perhaps the best hope for the greatest worldwide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour" - I don't actually agree with that.	F1
6	That is clearly not enough and the card doesn't say how many motivated individuals so I wouldn't agree with that now.	F1
6	I feel that we need it happening as core business and local government and state government.	F1
6	I think there is no way it can happen through just individuals, some individuals thinking about it and some not.	F1

Table 16. Cont.

Interview	Statement	Made by person in factor:
6	It needs to be happening both through local government and state government and also right through the whole business community.	F1
6	You need a few enlightened leaders who can see that's the way to go even though the majority of the population might not be at that point yet.	F1
6	It is an increasing awareness that is occurring but I would say that "no it is not enough to be coming from the bottom up".	F1
7	I guess it's all levels of government and the community and business I think everyone has a role in it.	F1
7	I probably emphasise the community and local government probably because that's where most of my work occurs and I can see them playing an important role.	F1
7	Local government is right at the forefront.	F1
7	The idea that sustainability needs to be a corporate led issue, federal government or state government isn't right.	F1
7	I guess it needs to be both but probably more likely to be bottom up because I see participation at the community level and each community being involved in decision making is critical.	F1
7	The other positive ones are clear benefits from public involvement so the key public involvement is important.	F1
7	Because unless a large number of people have some awareness of the idea and support the idea then it's not going to get far as something that is seen as important by a small group whether that's in NGOs or in particularly community groups and that's fine but that's not going to change thing.	F1

Table 16. Cont.

Interview	Statement	Made by person in factor:
8	I guess my main point I would make is I certainly agree with the idea expressed by the card that it is really up to the people that have some knowledge about it.	F2
8	We need people with some expert knowledge making decisions.	F2
8	But who implements sustainable development itself, I guess my view is that we need a top down approach involving governments.	F2
8	Good scientific advice being given to government, and then the politicians making rational decisions.	F2
8	Probably the commonwealth government need to become involved in implementing sustainable development.	F2
8	But you need to have people that know about it and have knowledge about it.	F2
8	I wouldn't say that particularly a person in the community has the knowledge that they need to be able to do it.	F2
8	I think definitely the order for me would be the commonwealth government giving money, providing resources.	F2
8	The state government also having money and resources to implement sustainability development.	F2
8	It needs everybody to be involved state government, local government non government groups and people in their own homes in that kind of order.	F2
8	So a top down approach really.	F2
8	I wouldn't say that it should be core business for local government particularly.	F2
8	I definitely don't think that sustainable development has the force of political commitment within government at this time.	F2
8	People like to talk about it because its nice but if they really have a clear view as to what it is I am not sure.	F2

Table 16. Cont.

Interview	Statement	Made by person in factor:
9	First up, and top priority is the need for business to be involved – card number 8 is exactly right – that exactly what I'd say "Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development".	F2
9	I think that because to me, they are already sustainable.	F2
9	I can think of so many businesses that are doing good things – Alcoa reforesting the mine sites in the Darling Range.	F2
9	Woodside doing good stuff with its wind farms and tree farms near Esperance.	F2
9	I also think that decisions should be left to experts.	F2
9	Again, big companies can pay for good research – the latest research.	F2
9	The Commonwealth also has a role there – you know CSIRO, the DEP etc.	F2
9	I think the Government does have a role.	F2
9	You know, paying for researching, regulating the offenders in business, and there are some like that.	F2
9	We need to weed them out so only good companies with good values of environmental protection remain.	F2
9	That's a role for government – enforcing the laws that protect us form rogues and pirates.	F2

Table 16. Cont.

Interview	Statement	Made by person in factor:
10	Okay my general feelings are that the individuals can't do anything and that small community groups can't do anything that is actually going to have an effect.	F2
10	So therefore larger organisations and the state government should be leading a lot of this because they have the power to encourage people to do these things through tax, through spending money on things.	F2
10	I believe we need the experts to actually lead the way, because a lot of group's get misled by the opinions by certain individuals and those individuals are not always correct.	F2
10	So I think that the experts should be involved and I think government bodies should be involved because they actually have the power to influence a lot of people.	F2
10	People don't do anything unless they are actually encouraged.	F2
10	We all say we want to save the world and everything but we still don't recycle or we still drive around in our cars and things like that and until we actually get penalised for driving around in our cars we won't stop doing it.	F2
10	It's the top leading it but obviously you have to get everyone on board and you can't just make them do it.	F2
10	I think we should be consulting the experts instead of people just making their own opinions not based on the evidence.	F2
10	We have to have the experts evidence and then I suppose the people have to decide what it is they value.	F2

4.7 Consensus statements

In considering the final analysis of factors 1 and 2, only nine items from the 50-item Q-set were non-significant and did not distinguish between the pair of factors. These items were statements number 12, 18, 22, 29, 42, 46, 47, 48 and 50 with the relevant statements shown in Table 17.

Table 17. Consensus statements.

No.	Statement	F1	F2
22	There is a common interest between looking after the environment and looking after people.	3	3
29	The core objective for sustainable development should be to provide economic, environmental & social equity within and between generations.	3	3
12	The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse.	1	1
18	The role of non-government organisations (NGOs) is most critical to the success of sustainable development.	0	0
46	Decision-makers involved in Government lack awareness about internationally accepted environmental policies and standards.	0	0
47	The State Government should have the dominant role in implementing sustainable development in Western Australia.	0	0
48	Local Governments should have the dominant role in matters that need to be considered in implementing sustainable development.	0	0
50	Implementation of sustainable development ought to be the responsibility of the Commonwealth Government and national strategies, plans, policies and processes should be the principal mechanism for its delivery.	0	1
42	Sustainable development has the force of political commitment at the highest levels of the Commonwealth Government.	-2	-3

It is worth noting that six of the nine statements (items 29, 42, 46, 47, 48 and 50) presenting as consensus items between the two types of opinion were drawn from the cells postulated a priori to be "ideologically neutral" in the Q-sample coding frame matrix (presented in Figure 2). The similar arrangement of these statements in both the environmentally pessimistic and technologically optimistic adds further weight to the finding that the groups were divided between the anthropocentric and ecocentric items but could agree or disagree equally where items had no obvious "ideological" undertones. The results also indicated that the cells representing the "implementation of SD" were over represented in the consensus items. In particular, the items dealing with the role of non-government groups, State Government, Local Government, and Commonwealth Government in implementing SD did not clearly divide the two groups with their widely different opinions. In fact, most of these items were placed at the mid-point – zero - or neutral position on the array chart. That indicates that people from either type of opinion were not particularly passionate about those organisations implementing SD.

4.8 Adopting LA21

4.8.1 Introduction

A partial focus of the interviews was to identify potential reasons for the adoption of LA21 by a small number of councils and the generally low level of adoption of LA21 in Western Australia. It was noteworthy that, at the broadest level of analysis, all of the interviewees provided information that was classified as:

- facilitating or assisting in the implementation or adoption of SD or LA21; or
- restricting or limiting the implementation or adoption of SD or LA21.

An analysis of themes to emerge from the interviews was undertaken to identify the reasons that currently do, or have the potential to facilitate or restrain the endorsement of SD via LA21.

4.8.2 Reasons for adoption of LA21

The principal reason for the adoption of LA21 in the small number of councils in WA was said to relate to the requirement for councils to have a person playing the role of "key champion" for LA21. These people were sometimes considered to be councillors and

sometimes were seen as council employees. Where there was no key champion, it was felt that LA21 was never placed on the agenda for council consideration. The themes related to a requirement for a key champion leading to the adoption of LA21 are outlined in Table 18.

Table 18. Main reason for the adoption of Local Agenda 21.

Interview	Statement
1	I think the driving comes from the people within the council. There's a particular mix of attitudes that I've notice that you have particularly pro-sustainable development councillors
1	You can have really proactive officers but to pick LA21 you need a particular councillor that's open to the idea. Or who is willing to push it, or a combination of a group of councillors.
1	Any issue will be driven by either one or more people. It's a really innovative and highly energetic Environmental Officer that can explain anything to anybody.
1	The officer is making it easy for that group of councillors – who tend to be – you know my impression is that group can be fairly green anyway and environmentally aware.
2	I feel that what they have is one maybe two people within the councils that are highly motivated anti-greed motivations, very passionate about their work and drive the change.
2	Often I think of the sorts of people that drive changes are council staff. My feeling is that one or two motivated people are driving these things.
3	I believe within those councils there have been people in positions of power such as president's or CEOs that are generally motivated and feel in their heart that it is the right thing to do and have driven it from within local government and have influenced. I think those people are very passionate about what they believe.
3	There is only a handful, but I think that is what has been driving it from within.
3	In the council's with LA21, CEOs from the ones that I am aware of that are passionate about it and believe it and have driven it from within to gain support from their council to do that.
3	There are very few people that have that not only belief but also that drive to actually implement it and influence other people around them.

Table 18. Cont.

Interview	Statement
5	Some people have taken it up like all the environmental stuff some people have taken it up and are motivated and enthused about it and it also makes them feel good and they can see that there are positive things that they can do, and they have been able to enthuse that particular local council so you have corporations in other councils where you haven't got a motivator or councils where there are much more immediate issues or their just not interested.
5	A lot of environmental things need to be pushed by motivators, you need a person or people who guide the Local Agenda 21.
6	But it's generally been one person, sometimes a group like say in Subiaco there is a group of councillors that have felt it was important.
6	So it's not, it's always come through the actions of one or more individuals that have bought it forward.
6	So in other councils it has just been the environmental officer, generally when I met the other focused councils that formed the LA21 advisory group there was only a couple of councils.
6	Mainly officers that have become interested and see it as a way of improving council's decisions so they have been responsible for getting it implemented.
6	In each council you can usually pin point a person or an officer or councillor who has initiated it.
7	Probably trace that to particular individuals that hold the environment to be important and whether that is from a personal involvement in local activity or having gone to a conference or something and being exposed to these ideas and seeing how they apply locally.
8	There certainly are some people who are enthusiastic though.
8	I can think of a few case study examples where one or two individuals have put LA21 on the local council agenda.

There were other reasons that were said to be important for the adoption of LA21 by only a small number of councils. There was a view that LA21 was also being promoted by a younger generation of council employees who had been exposed to a more professional level of training and newer ideas. This was particularly emphasised for the stronger push for LA21 in the urban as opposed to rural councils. There appeared to be a perception that people and organisations that were promoting LA21 were simply "early adopters"

and that others would see the benefits and embrace SD in due course. These types of comments were reflected in the interview quotes below:

- There is a growing group of younger CEOs that are more willing to do some radical stuff – they have a different background as far as training goes. A lot of them are coming from business management type courses.
- Professional officers who have also been taught new, innovative techniques that perhaps the old guys just haven't come to terms with. They more came up through the ranks.
- Its also interesting that there's a big difference between rural and metropolitan.
- In the metropolitan you're getting the younger blokes coming through.
- They are just the early adopters aren't they?

It was also noted that many local governments were doing LA21-type activities under another name or banner. Such comments included:

- It's anything that you're doing already. And that's, you know, like ... contrast "Cities for Climate Protection" - they set up a program with very distinct goals and milestones that they've got to achieve, and timeframes and everything and there's a lot of ongoing support for it. So its easy for local government to say "yes we can do that, we can do our energy audits and do this and do that" and they've got little celebrations along the way. So they tend to pick that up more quickly. But the good thing about it is leading on to LA21.
- That's not to say there aren't councillors carrying out very good sustainability, or being very considerate of sustainability when they are doing the things they do.
- I think there are a number of councillors in Perth, places like South Perth that I think so much what they do is really good but they haven't talked about the Local Agenda 21 structure at all.

The Federal government was also seen to be a key facilitator for the promotion of LA21. Statements supporting this point are presented below:

- The federal government is very supporting, I mean they're pushing Local Agenda 21 programs quite strongly, providing a lot of support to organisations like Environment Australia.
- Yeah, its resource support and policy support as far as helping to set up demonstration programs.
- Just recently, they offered the opportunity of a sum of money to set up a regional LA21 project here in WA, and also in Tasmania.
- I think, well they've [Federal Government] already started to go down that track with the release of the new manual. They've set it – 5 action areas which are the

equivalent of 5 milestones, except that the tasks in it are still very strategic, non-specific type stuff, but they're starting to step it out.

- So, they're starting to look at process and how do you promote the process, but still maintain that flexibility that's so characteristics of LA21, the individual program.
- There's, except that there's been some moves just recently to a national logo, a national LA21 program identity.
- Whether it is National Heritage Trust or it is support for sustainable development.
- So I think although local government takes on a role of supporting the individual it also needs guidance from power. Through funding, resources all that sort of stuff. I think the Commonwealth definitely.
- Then nationally the federal government there, their role relates to co-ordination and the fact that they have the financial power.
- They raise the most revenue out of all levels of government.
- Yes I guess it's resourcing and probably policy leadership and that's got to be reflected in how we think about economic management but maybe as well as being concerned about the CPI of interest rates, we need some other progress indicators.
- Probably the commonwealth government needs to become involved in implementing sustainable development.
- I think definitely the order for me would be the commonwealth government giving money, providing resources.
- The Commonwealth also has a role there – you know CSIRO, the DEP, etc.

4.8.3 Reasons for non-adoption of LA21

Just as there were a number of cited reasons leading to the adoption of LA21 by a small number of local governments, so people also provided a number of reasons for non-adoption of LA21. These reasons are outlined below:

- The short-time frame of interest in LA21 also means that the necessary process of attitude change that was thought to be important for the promotion of SD has not yet occurred within local government.

- The lack of sustainability indicators. Scientists were noted to be working on these but the relatively short time-frame of development has meant that little information is yet available. It has been difficult to build a 'business case' for LA21 that demonstrates the longer-term benefits resulting from short-term costs.

- Fear of uncertainty amongst local government decision-makers. Local governments were widely regarded to be inherently conservative institutions and elected officials were concerned about extra financial costs associated with the implementation of LA21. There is said to be a concern amongst councillors that financial costs associated with LA21 are too high.

- The financial benefits of LA21 cannot easily be captured. It is more of a 'feel good' process that is difficult to quantify.

- There is said to be a widely held misconception within local government about LA21 and a lack of understanding and knowledge about SD generally.

- The short time-frames between elections was seen as a barrier to effective decision-making in so far as it reduced a focus on longer-term issues like sustainable development.

- The community was said to lack interest and knowledge about SD and this meant that community members and groups were not putting political pressure on councillors to work with SD issues and promote LA21.

- Environmental degradation was seen to be a slow and cumulative process – spanning generations – without obvious catastrophic consequences. This process was said to result in a lack of urgency for pro-environmental decisions.

- The short-term business and administrative cycles were regarded to have a high priority in decision-maker over longer-term geological timeframes in which environmental degradation and loss of species diversity were seen to be occurring.

- Councillors were regarded as being elected to pursue their own 'pro-development' agendas and were simply disinterested in LA21.

- There is a perception that no requirement is coming from the State or Commonwealth for local government to implement LA21. It is simply up to a largely disinterested group of elected councillors.

- Councils are said to be reluctant to release funding for officers to instigate LA21.

Finally, some people, particularly those representing the weaker SD factor were just uncertain about what LA21 was. Typical of the comments about this issue were:

- I would have to say that I haven't really heard of that the agenda so I am not aware of them actually doing anything in this area or who's doing and who's not then.

- I'm not sure. I don't know about this LA21.
- I haven't given it a lot of thought. Oh a little bit of thought perhaps.

The stated reasons for the non-adoption of LA21 are noteworthy because they replicate Price's recent findings (2001). Price sought to identify why local governments in WA had been slow to endorse LA21. Her major findings included:

- A general lack of awareness within local government about LA21;
- Inadequate legislative authority;
- Inadequate expertise amongst employees;
- Lack of resourcing;
- Lack of will and commitment by councillors;
- LA21 regarded as a Commonwealth agreement that was imposed on local government without consultation;
- Aims of LA21 not considered to be applicable to local government capabilities; and
- LA21 was not regarded as a community priority.

4.9 Results from council document review

4.9.1 Introduction

Asking councils for information and documentation about their SD and LA21 policies was actually the first component of the fieldwork of this thesis. The main purpose was to scope the project by assessing which councils were actually involving themselves with SD issues and to identify the types of issues with which councils were involved. The results of the document scoping exercise are presented after the Q-sort results and the results of the participant interviews. This ordering of results was decided upon for two reasons. Firstly, the Q-sort process and in-depth interviews helped with the identification of some themes that were not apparent when the documents were originally collected. Secondly, the major points to emerge from the document search offer confirmatory support to the evidential base that emerged from the later data gathering processes.

In June 1998, all 29 Perth Metropolitan Councils were contacted, and information was sought about their SD or Local Agenda 21 practices and activities. It is important to note

that Councils were asked to forward documents about their SD policies and activities, rather than their environmental policies. The objective of this request being to get some partial insight into the types of policies and actions that councils considered to fit the SD realm. In early September 1998, a follow-up letter was posted to those Shires that had not responded to the initial request for information. Of the 29 Councils who were contacted, 24 (83 per cent) provided documents about their activities. Due to confidentially requirements, responding Councils are not identified. A desktop analysis of the documents that were forwarded by Councils was undertaken and the results arising from this part of the study are reported in this section.

4.9.2 Major findings

The Metropolitan Councils of Perth forwarded documents that demonstrated they were undertaking at least 68 different policies or strategies that they considered to be related to SD. The majority of the policies and strategies that Councils considered to fall within the SD realm had an environmental management focus. This major finding seems to reinforce the notion that SD was widely considered to be an "environmental" management issue, rather than a TBL issue of integrating environmental, social and economic concerns and solutions. This overwhelming focus on environment certainly appeared to be the case with regard to the vision of people in the dominant factor when Q-sorting and again during the structured interviews. This is interesting given that the TBL concept was a relatively new concept in June 1998 when councils were asked to forward documents. Indeed the TBL concept was only introduced by Elkington in 1997. It may be that SD was widely considered to be an "environmental" issue at that point in time in Perth, with a maturing of the debate about SD occurring in subsequent years to encompass the triple bottom line.

Illustration of the environmental focus of SD was shown insofar as the majority of policy documents that were forwarded can be broadly categorised under the following environmental management headings:

- Waste management, recycling and energy use policies;
- Water conservation, foreshore and wetlands management;
- Transport and air quality management;
- Reserves, public open space and remnant bushland management;
- Aesthetics, streetscapes and street-tree policies;

- Problem animals (e.g., dogs) and plants (weeds) management;
- Public participation and environmental education policies;
- Pollution control and management of contaminated sites;
- Strategic planning initiatives.

In response to the request for details about current SD practices, almost all of the responding Councils provided documents that included a strong focus on waste minimisation and recycling. Waste minimisation was most frequently cited within the Principal Activities Plan of those Shires who supplied this document and only one of the 24 Councils did not include documentation regarding a waste minimisation strategy. Specific policy or strategy documents that were forwarded that related to waste minimisation included the following:

- Waste minimisation strategy;
- Domestic recycling policy;
- Energy efficient building policy;
- Energy efficient vehicle policy;
- Minimising packaging policy;
- Use of rainforest timbers policy;
- Recycled paper products policy;
- Environment purchasing policy;
- Composting service; and
- Green waste collection service.

It appears that these various waste management policies have had an objectively verifiable impact on the amount of waste going to landfill in the Perth region. The DEP (1998) noted that tonnes of waste per capita was predicted to fall from 1.3 tonnes per year in 1995 to 0.7 tonnes per year in 2000.

A number of different types of documents relating to strategic planning were forwarded for review. Environmental Strategic Plans (ESPs) were submitted by a small number of Shires. Eight Councils had prepared a formal ESP for their locality. In addition, two

Councils had undertaken and prepared a State of the Environment (SoE) Report, and three others had also developed a formal Conservation Strategy. Strategic planning documents were variously titled as follows:

- ISO 14000;
- Town Planning Scheme Audits;
- LA21;
- Environmental Impact Assessment Studies; and
- Regional Environmental Plans.

In reply to the request for information about specific policies or processes related to LA21, three Councils indicated that they were considering moving towards the preparation of an LA21 plan. Seven Councils supplied information indicating they had begun the process of LA21 planning. Two other Councils were also identified by Price (2001) to have begun the LA21 planning process but neither responded to the request for information during the present study. One Council identified as pursuing LA21 was not considered for further participation in this study as a Commission of Inquiry into corruption was begun during the initial stages of the present research and the elected council was suspended. Corruption inquiries were also established for two other Councils during the course of the study.

It is noteworthy that although one specific inner-metropolitan Council had not adopted LA21, it appeared to have adopted the greatest range of SD-related initiatives. This finding is interesting given the positive comments during the interviews with participants about the initiatives being taken by that Council. Many people indicated that some Councils were "doing LA21 under another name" or that SD was being implemented but was just not being classed as LA21. This notion of "doing LA21 under another name" was quite prominent in the interviews with participants who also identified that SD could be so all-encompassing as to render it meaningless within the context of local government. This idea may be important when trying to explain the low level of adoption of LA21 in WA as it appears some councils may consider themselves to be implementing SD without recourse to LA21.

Another interesting finding that emerged from the document review was that many of the councils have moved toward regional level initiatives. For instance, The Eastern Metropolitan Regional Council (EMRC) has developed a Regional Environmental Strategy (RES) which was endorsed by five Councils. Three south-western coastal

Councils also indicated that they were working jointly on regional level initiatives. A regional perspective was most apparent for the various catchment management and wetlands initiatives that various shires indicated they were working on. The various water resource, catchment management and wetlands management documents that were forwarded for review included:

- Irrigation of lawns policy;
- Compensation basin management;
- Ground water management policy;
- Ground water monitoring policy;
- Stormwater management and monitoring policy;
- Foreshore management policy;
- Foreshore rehabilitation initiatives;
- Beachfront management initiatives;
- Sediment/erosion control initiatives;
- Water sensitive design policies;
- "Ribbons of Blue" initiatives;
- Water efficient gardens policy;
- Water conservation policy; and
- Catchment management policy.

In spite of this wide range of policies related to catchments and wetlands management, the DEP (1998, p. 69) noted that: "In the short-term, changes are arising from human population and activities which place significant pressures on surface and groundwaters in Western Australia". It appears that water management remains a major environmental management problem facing the community in WA.

It is apparent from the range of documentary sources forwarded by the majority of metropolitan councils that local government in Perth has taken many pro-active steps in developing policies related to management of the natural environment within Perth. Individual councils have developed policies, which collectively cover a very wide range of

environmental management functions. Specific policies that were considered to be related to SD, and that were forwarded for review are presented below under a number of headings.

- Transport and air pollution management:
    - Travel demand management policy;
    - Bicycle promotion policy; and
    - Air pollution control policy.
- Bushland and reserves management:
    - Fire regime management policy;
    - Wildlife corridor policy;
    - Flora conservation policy;
    - Reserves management policy;
    - Fauna conservation policy;
    - "Corridors of Green" initiatives;
    - Land Care initiatives; and
    - Remnant bushland management policy.
- Aesthetics and street tree management:
    - Tree planting initiatives;
    - Street tree policy;
    - Significant tree inventory; and
    - Tree preservation policy.
- Problem animals and plants:
    - Midge/mosquito control initiatives;
    - Weed control initiatives;
    - Feral animal control policy; and

  - Termite spraying policy.

- Pollution control policies:
  - Contaminated sites policy;
  - Industrial pollution survey; and
  - Noise pollution policy.

- Public participation:
  - "Friends of" groups promotion policy;
  - Environmental education policy;
  - Community involvement policy; and
  - Schools environmental education initiatives.

Whether or not all of these policies that local government considered to address SD have had a progressive impact on the actual objective conditions of SD in Perth and Western Australia is another interesting question. It is not, however, a question for which the current research sought answers. Nonetheless, the answers to such a question that are provided by a number of documentary sources serve to reinforce the wider propositions and findings of this study, insofar as evidence presented on net gains and losses is deeply contested. For example, the Commonwealth of Australia's *WSSD – Australian Assessment Report* (Environment Australia, 2002a, p. 3) stated: "Australia has made considerable progress since 1992 in assimilating sustainable development into decision-making processes of government, in industry and in the wider community". The Commonwealth report went on to state: "the quality of Australia's environment is now on a more desirable trajectory" (2002a, p.4) and "We are confident that the rates of environmental degradation are now falling" (2002, p.4).

In contrast to the positive prognosis of the Commonwealth, however, a report prepared in preparation for the WSSD for a coalition of non-government environmental and community groups by Christoff (2002) suggested that the environment in Australia was in decline across a range of major indicators. For example, Christoff (2002, p. 1) stated: "Over the past decade, in ecological terms, Australia has been a continent in reverse". In criticising the *WSSD - Australian Assessment Report*, Christoff (2002, p.6) also stated: "This Government publication overstates domestic environmental policy achievements, understates the nature of the ecological crisis faced by Australia, fails to indicate

Australia's persistent and substantial contribution to worsening global environmental problems, and makes no mention of Australia's exceptionally negative role in international environmental governance over the past decade".

Once again, it is suggested that these polarised findings are a result of the contested debate and the differing subjective interpretations and beliefs that people impose on data as a result of their *weltanschauung* – the worldview that determines what any individual believes (Eckersley, 1999). Furthermore, while trend data is available for some issues, such as atmospheric lead and particulates, other necessary data to reach robust conclusions about the success or otherwise of SD is absent. For example, the Western Australian Department of Environmental Protection has only recently started the process of creating first generation environmental indicators (DEP, 1998). The Australian Commonwealth Government has also only recently begun to address this lack of data with the first *State of the Environment Report* being produced in 1996, with a follow up in 2001. On that point, Environment Australia (2002b, p.1) stated: "Since most of the agreed headline indicators for these [sustainable development] values have been developed very recently, there are no time series data on which to base an assessment of whether or not we are sustaining the ecological systems on which life depends…Subsequent reports against the headline indicators will begin to answer these questions". The United Nations Commission on Sustainable Development (UNCSD, 1995) also noted the difficulty in addressing the TBL indicators of SD. With regard to problems in developing TBL indicators, the UNCSD (1995, p.1) stated

> When developing the indicators, it is important to address the challenge of fully integrating the social, economic, environmental and institutional aspects of sustainable development. Much further work, primarily by the scientific community, is needed in order to understand and explain these interlinkages. Social indicators have been developed over the past years and are used all over the world. Economic indicators have also been used for many years at national, regional and international levels. Environmental indicators have been developed more recently. For some of the environmental aspects, considerably more work needs to be done to make the data available.

The acknowledged lack of data on behalf of the United Nations, and the Commonwealth and States of Australia mean that a definitive answer to the level of SD progress is currently unknown in WA. It is the case, however, that indicators for monitoring progress towards SD are required and internationally accepted indicators of sustainable development (ISDs) were adopted by the United Nations Commission on Sustainable Development (UNCSD) at its Third Session in 1995. A working list of 134 indicators and

related methodology sheets were developed and are now ready for voluntary testing at the national level, by countries from all regions of the world. Australia has not yet tested its SD efforts against the UNCSD indicators (United Nations Division for Sustainable Development, 2001).

However, *State of the Environment Reports* (SOE) have been produced by both the Commonwealth (Thom, 2001) and WA State Governments (DEP, 1998). The priority environmental issues for the Perth region were identified by the WA DEP (1998, p. 9) to include problems of carbon monoxide generation, land contamination, loss of biodiversity, sulphur dioxide generation, contamination of inland waters, eutrophication, lead pollution, photochemical smog, dust, haze, loss of fringing vegetation and ozone depletion. The fuller list of 13 problem issues occurring in the Perth metropolitan region that were identified in the WA SoE (DEP, 1998) are noted in Table 19.

Table 19. Priority problems from the WA SoE Report (DEP, 1998).

Problem issue	System	Priority	Main Source	Main Solution
Carbon Monoxide	Atmosphere	1	Transport	Less trips
				Vehicle technology
Greenhouse effect	Atmosphere	2	Transport	Less trips
			Land clearing	Vehicle technology
				Compact city design
Land contamination	Land	3	Industry	Regulation of pollution
Maintaining biodiversity	All	4	Many sources	Many solutions
Sulphur Dioxide	Atmosphere	5	Industry	Regulation
			Transport	Less trips
Waterways contamination	Freshwater	6	Industry	Regulation
			Household	Garden practices
Eutrophication	Freshwater	7	Household and Gardens	Garden practices
Lead	Atmosphere	8	Transport	Less trips
				Vehicle technology

Table 19. Cont..

Photochemical smog	Atmosphere	9	Transport	Less trips Vehicle technology
Dust	Atmosphere	10	Land clearing	Compact city design
Haze	Atmosphere	11	Domestic stoves	Dry wood regulation Heater standards Household education
Loss of fringing vegetation	Freshwater	12	Multiple sources	Multiple solutions
Ozone depletion	Atmospheric	13	Multiple sources	Chemical phase-out

Having said that, at a macro level the Parliamentary Select Committee on Perth's Air Quality (1998, p.2) stated: "Perth's air quality can be considered good, with only episodes of poor air quality that do not necessarily occur throughout the whole region at the same time". With regard to Perth's marine environment, the Environmental Protection Authority (2000) noted that 99.2 per cent of Perth's coastal waters have a high level of protection. The lower levels of protection occur in the immediate vicinity of wastewater treatment outfalls.

The Commonwealth SOE Report (Thom, 2001) addressed several SD concerns including natural and cultural heritage, human settlements, biodiversity, atmospheric functioning, marine environments, terrestrial environments, and inland waters. The results across each area of concern were mixed, with many favourable and unfavourable findings about progress and some degree of uncertainty. In a press release to mark the presentation of the SOE Report to parliament, Dr Kemp, Minister for the Environment and Heritage (Kemp, 2001) stated: "The 2001 SoE Report acknowledges that government, industry, land holders and community groups have taken important steps during the past five years to address the environmental pressures which the 1996 SoE Report identified and it also identifies the major challenges that lie ahead for Australia's governments and her people...Professor Thom and his committee acknowledge that the $2.5 billion Natural Heritage Trust is assisting in this task". The major positive findings of the Commonwealth SOE Report (Thom, 2001) included:

- urban air is cleaner;

- efforts to economise on domestic water usage are succeeding;
- houses are more energy efficient;
- streetscapes and parks are improving;
- industries are developing codes of practice on environmental management;
- Australia is better able to assess the health of its rivers;
- the 90% reduction in rabbit numbers from the calicivirus has improved vegetative cover in much of Australia;
- marine resources are being better managed; and
- globally the ozone loss over Antarctica appears to have stabilised.

The major negative findings of the SoE Report (Thom, 2001) suggested that:

- the degradation of river and land quality through salinity is a major challenge;
- many of the key threats to biodiversity still persist, including salinity, changing hydrological conditions, land clearing and fragmentation of ecosystems;
- there is still a net loss of vegetative cover, with broadacre clearing continuing, particularly in Queensland and New South Wales;
- pressure on our coral reefs and estuarine and coastal waters continues unabated from the downstream effects of land use and other human activities;
- our cities and towns continue to place unsustainable pressures on our environment; and
- the loss of heritage places, including indigenous heritage, continues.

Besides the limited formal evaluations of SD progress by the United Nations, Commonwealth, and States, others have also sought to chart Australia's attempts at promoting SD. For example, the international environmental advocacy group, Friends of the Earth (FoE, 2002) in conjunction with the Centre for Environmental Strategy at the University of Surrey and the New Economics Foundation have deployed a methodology to produce an Indicator of Sustainable Economic Welfare (ISEW). The FoE indicator is similar to that of the Australia Institute (2002) called the Genuine Progress Indicator (GPI) (Hamilton and Saddler, 1997). Both the ISEW and GPI have been used to evaluate Australian SD performance with regard to economic performance and human welfare. Both measures indicate modest progress being made on some of the recognised indicators of SD that relate to human welfare and economic performance.

Regardless of the difficulties in analysing the absolute qualities of improvement or decline resulting from the SD initiatives of local government, it is possible to provide data that reports on the relative success of SD initiatives in Australia compared to those of other countries. The Global Leaders of Tomorrow Environmental Taskforce (2002) reported on Australia's progress towards SD in a global comparison to 142 other countries using the Environmental Sustainability Index (ESI). Daniel Esty of Yale's Centre for Environmental Law and Policy stated: "The ESI permits systematic cross-national environmental comparisons. Environmental decision making has long been plagued by uncertainties and a lack of critical information. As a result, choices are made on the basis of generalised observations and best guesses, or worse yet, rhetoric or emotion. The ESI moves us toward a more analytically rigorous and data driven approach to environmental decision making" (Devitt and DeFrusco, 2002, p.1). The ESI uses 20 indicators of SD with 68 underlying data sets. The data sets include information on environmental systems, reducing stresses and global stewardship. The ESI results reported by the Global Leaders of Tomorrow Environmental Taskforce (2002) indicated that Australia was ranked 16th out of the 142 countries surveyed. Finland was ranked in first place for its sustainable development initiatives, with Norway and Sweden ranked 2nd and 3rd respectively. Germany was ranked 50th and the United Kingdom was ranked 91st. On the basis of the ESI rankings, it appears that the initiatives of the Australian commonwealth, states, and local governments have made Australia one of the better performing countries when it comes to progress towards SD. That is not to say that improvement could not still be made.

A further interesting question could be raised over the actual importance of SD in comparison to other issues facing Australian local governments and the community. Although providing a response to this particular question was not a central concern of the current study, it may be worth reflecting on other survey data available from the Australian Bureau of Statistics (ABS). The most recent ABS (1999, p.8) data demonstrated that 68.7 percent of Australians surveyed are concerned about environmental problems. This percentage is down from a high score for environmental concern of 75 per cent of the population in 1992. Furthermore, almost 43 per cent of the Australian population considered that the quality of the physical environment had declined over the previous ten years with only 25 per cent perceiving an improvement (ABS, 1999, p.13). When it came to ranking popular concerns, however, environmental problems were ranked top priority by only nine percent of the population, behind health (29.7 per cent), crime (25.5 per cent, education (16.6 per cent) and unemployment (13.3 per cent) (ABS, 199, p.4). Those ABS findings from the 1999 report are also interesting when compared to perceptions about environmental protection versus economic growth.

The ABS (1996, p. 6) reported that 18.7 per cent of people considered environmental protection to be more important than economic growth and only 8 per cent considered economic growth to be more important than environmental protection. Over 70 per cent responded that protection and growth are equally important. Three per cent were undecided.

On the topic of indicators of economic development, there appears to be little disagreement that Australia has become an increasingly wealthy country (Christoff, 2002). Since SD is widely regarded as a TBL initiative in Australia, it is important to consider the economic and social, as well as environmental impacts of commitments. The International Monetary Fund (IMF, 2002) indicated that Australia is the World's 16th largest economy producing 1.1 per cent of global economic output. Australia was one of only four countries to increase its share of the global economy in the last two decades with per capita output increasing by 53 per cent and gross domestic product increasing by 3.6 per cent per annum, well above most other industrialised nations.

On the social front, Australia is a diverse, multicultural society with a federated system of government with three tiers of government. Suffrage is universal and Australia has an advanced system of universal and free education. Health care and social services are also highly developed and life expectancy for males and females steadily increased throughout the twentieth century. Australia has long been regarded as "the lucky country" (Christoff, 2002). Environment Australia (2002b) also noted that Australia is enhancing most aspects of individual and community well-being and welfare by following a path of economic development. But it is not clear whether this enhancement of welfare is sustainable.

In conclusion, it is currently difficult to say whether or not the policies developed by local government and forwarded to the researcher have had a collective positive impact with regard to SD progress. Nonetheless, the council document review reinforces the concept that SD itself was primarily regarded as an "environmental" policy-issue rather than a social or economic one by the majority of people involved with its implementation in local government. This suggestion is made on the basis that only a minority of councils forwarded documents about their public involvement processes, and none forwarded documents regarding their economic activities. It should be noted, however, that this finding resulted from data collected in June 1998, just a year after the triple bottom line concept had been operationalised by Elkington (1997). This finding lends support to the proposition coming from those people with a stronger SD vision that SD should elevate environmental protection before social and economic priority. It could be the case, however, that this situation has changed in the four years since data collection

and in response to a maturing discourse over SD in Australia (Addison, 2001) and the widespread use of the TBL concept at all levels of Australia's government.

4.10 Additional comparison of views

As was noted in Section 4.2, Q-sort factor analysis indicated that 140 people held a highly correlated viewpoint (factor 1), with eleven people holding a second viewpoint (factor 2), and an additional 12 of the remaining 19 people cohering into minor factors. The three sub-groups, comprised of people forming factor 1, factor 2 and the residual group of 19 were able to be compared for similarity of answers in response to the New Environmental Paradigm Scale that was included within the questionnaire presented in Appendix B. Descriptive statistics for the NEPS findings are demonstrated in Table 19.

Table 20. Descriptive statistics for the New Environmental Paradigm Scale.

Group	Number	Mean	SD
Factor 1	138*	4.44	.414
Factor 2	10*	3.36	.968
Factor 3	19	3.62	.844
Total	167	4.28	.626

*Two people representing the factor 1 viewpoint did not complete the NEPS. One person representing the factor 2 viewpoint did not complete the NEPS. The results from these three persons have been excluded from the ANOVA.

Using SPSS for Windows (version 10), the NEPS evaluation measure (mean score) was submitted to a one-way analysis of variance (ANOVA) with group [group 1 (N = 138), group 2 (N = 10), and group 3 (N = 19)] as the between subjects factor. Results indicated that there was a significant main effect for group (F (2, 167) = 37.08, p<.000). Post-hoc pairwise comparisons were conducted among the three sub-groups means to ascertain where differences occurred. Due to group size differences, it was decided to use the Waller-Duncan test with harmonic mean sample size to indicate the post-hoc

between-subjects contrasts. This approach is recommended in the SPSS on-line help guide.

Results of the post-hoc pairwise comparisons indicate that the Group 1 Mean of 4.44 is significantly more supportive (alpha = 0.5) of the NEPS items than the Group 2 and Group 3 Means of 3.36 and 3.62 respectively. There are no statistically significant differences between Groups 2 and 3 on the NEPS. The post-hoc plot is presented in Figure 11.

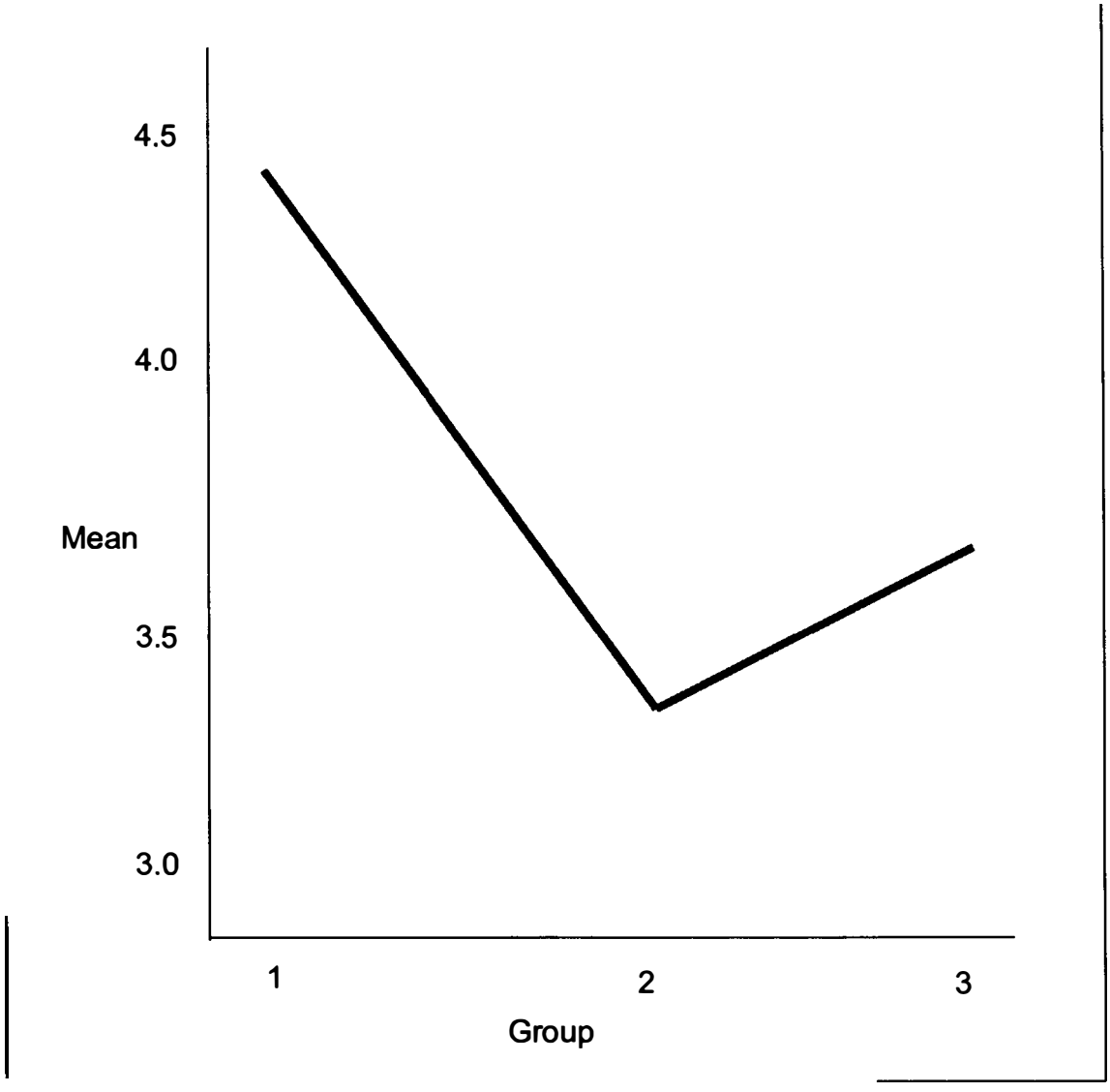

Figure 11. Comparison of means for the NEP Scale.

The descriptive statistics of the ANOVA analysis, presented in Table 19, confirm that people demonstrating the stronger SD viewpoint during Q-sorting, previously noted as factor 1, were significantly more inclined to support the NEP than were people presenting

the weaker SD viewpoint of factor 2. Interestingly, the 19 people who did not correlate strongly to define any factor during Q-sorting presented fairly similar views to the factor 2 group when assessed on the NEP Scale. Overall, the mean score on the NEPS of all 167 participants who provided data is 4.28 from a possible high-score of 5.00. This result indicates that the participants in this study as a whole, were generally strongly supportive of the NEP.

CHAPTER FIVE

DISCOVERY AND DISCUSSION

5.1 Introduction

This study involved the empirical assessment of beliefs about sustainable development. A group of 170 people who were involved with the implementation of SD at the level of Western Australian local government were each asked to demonstrate their vision for SD using the process of Q-sorting. The two purposes of the dissertation were:

1. To offer a fuller description of the visions held about SD; and
2. To examine the degree to which previous assumptions about the sustainability spectrum and "strong" and "weak" definitional properties of SD were confirmed.

It was also hoped that the opportunity presented by fieldwork interviews in this study would allow some light to be shed upon the very low level of adoption of LA21 in Western Australia. In meeting these objectives, the dissertation drew upon a multi-method and multi-stage approach to fieldwork. This fieldwork involved:

- A primary review of local government documents relating to SD;
- An extensive literature review relating to SD in order to sample from an adequate communication concourse about the substantive topic;
- 170 Q-sort interviews in order to allow participants to model their own vision of SD and leading to empirical data on the definitional properties of SD;
- In-depth interviews with participants identified as providing defining Q-sorts for the various sub-types of visions that emerged during Q-sort factor analysis; and
- ANOVA of the NEPS scores of participants identified as forming the different factors during Q-sort factor analysis.

This final chapter reiterates what has been discovered in the course of the research and discusses those findings. It also identifies the limitations of the present study and highlights some directions for further research.

5.2 Critical findings

5.2.1 There were two dominant versions of sustainable development

This dissertation offers fuller descriptions of the definitional basis of SD than previously offered by the body of literature noted by Van Den Born, Lenders De Groot and Huijsman (2001). The new descriptions are important in two ways. Firstly, they add a small amount of new information to the existing literature related to descriptions of SD as analysed by writers such as Pearce (1993), Dobson (1996) and others. Secondly, and more importantly, they verify some of the older propositions about SD. This thesis presents an added empirical dimension to the propositional debate over very strong, strong, weak, and very weak definitions of SD discussed previously by Pearce (1993), Dobson (1996), Neumayer (1999) and others (e.g., Beckerman, 1995b; and Daly, 1995). Furthermore, the results confirm and expand on Price's (2001) explanations for the low level of adoption of LA21 in Western Australia. Having made those points, the reader should note that Q-Methodology does not seek nor permit generalisation of findings from the specific P-set to a wider population. Any implication that the findings of this study reflect society at large must be approached with extreme caution.

With reference to the definitional basis for SD, the study revealed not one, but two, major versions amongst a constellation of minor definitional versions for SD that were often mutually exclusive and conflicting, but sometimes consensual within the current P-set. Participants in the present study were predominantly identified as holding one of two types of vision of SD, with each version lacking much consensus with its opposite. That finding adds empirical support to the propositions made by the likes of Pearce (1993) and Dobson (1996) regarding the emergence of a spectrum of SD definitions, underpinned by technocentric and ecocentric values. The characteristics of each of the two dominating versions of SD have been described empirically in the previous chapter and the two definitions were labelled "stronger sustainable development" and "weaker sustainable development", or environmental pessimism and technological optimism respectively. At first glance, the reported finding of two visions of SD may not be regarded as particularly striking, or even very original because of the previous work by Pearce (1993) and others.

It is certainly accepted that the literature review for this dissertation suggested that SD definitions had often assumed a "strong" or "weak" form. Indeed, it could even be suggested that the assumption that definitions of SD take a strong and weak form is now routinely taken for granted. But just because something is taken for granted does not mean it should not be patiently and painstakingly examined. The fieldwork for this dissertation involved subjecting popular assumptions about SD definitions to just such an

empirical examination through clarifying and documenting a specific participatory public's beliefs about the topic of concern. The revelation that two dominating definitions for SD existed amongst several minority views lent support to the notion of a spectrum of SD definitions (Pearce, 1993) and to the work of Steer and Wade-Gery, (1993), Palmer, Cooper and van der Vorst (1997) and Upham (2000), all of whom suggested that the definitional properties of SD were highly contested. It is worth reiterating the main points again, however. This research concerned itself with the empirical assessment, via Q-Methodology, of SD definitions held by participants in the debate over SD at the level of local government in WA. It did not involve a mere presentation of a definition based on this author's, or the previous literature's, assumptions and propositions. The propositional approach is most clearly illustrated in the works of Pearce (1993) and Dobson (1996).

Of the 170 specimen Q-sorts that were collected for analysis, no two were identical. In that sense we can say that all people in this study held different beliefs about SD. That result is not surprising given Eckersley's (1998) observation that over 80 formal definitions of SD had been made. But to suggest that all people in this group held completely unique views about SD does not aid classification or clarification of the broader visions of SD. While recognising the importance of the uniquely subtle differences of opinion of all 170 people in the study, the taxonomic objective of the study was to identify apparently important commonality and divergence between the Q-sorts and to allow these common and divergent elements to be demonstrated empirically through factor analysis and the generation of composite Q-sorts.

In providing greater conceptual clarity about visions of SD, this study of SD has also partially challenged and also partially supported Steer and Wade-Gery's (1993) concept of the "definitional mélange" related to SD. While recognising that each of the 170 Q-sorts collected in this study was unique, this study also revealed that the multiple definitions of SD that were in everyday usage amongst the majority of participants could be "loaded" onto five factors represented by 140, 11, 5, 4 and 3 people respectively. A further seven people did not cohere onto any of the first five factors, nor group together to define subsequent factors. In that sense the study identified 12 types of views in total. Identifying 12 types of viewpoint about SD supports the notion of a "definitional mélange" (Steer and Wade-Gery's, 1993). However, the majority of participants in this specific study held one of two dominating types of viewpoint about SD. Only 19 of the 170 Q-sorts that were collected did not readily "fit" into one or other of the dominating types that emerged.

Those were somewhat surprising findings given the wide number of definitions of SD that have previously been noted (Eckersley, 1998). In an earlier work, Dunlap (1983b)

proposed that advocates in the debate disagreed over their interpretations of "the facts" of development and this study lent support to Dunlap's claim insofar as people in the two identified groups were at odds over many areas of their beliefs about SD. The present study also lends support to the proposition of Stern, Dietz and Kalof (1993, p. 323) who stated: "The participants seem to be talking past each other...part of the problem is that the actors do not value the same things. Sometimes, it seems, they do not even see the same world". With regard to that proposition, in the main, participants in the present study clearly did not value the same things when it came to their beliefs about SD. There was, however, some limited degree of consensus on a small minority of Q-set items.

At a conceptual level, the present research suggests that a variety of propositions could be hierarchically "nested" to describe SD within a newly identified model that is somewhat similar to that proposed by Lélé (1991). Figure 12 presents a diagrammatic representation of the hierarchical arrangement of the new model of visions of SD. The model outlined here suggests that an environmental value continuum, variously identified in the works of Rodman (1980), O'Riordan (1992), Fox (1990) and Eckersley (1992), provides the foundation from which people identify their own visions of SD. Those visions appeared to cluster toward a more-or-less anthropocentric or ecocentric orientation. Emerging from the foundation were values that could be interpreted as being characteristically anthropocentric and opposing values that could be interpreted as being primarily ecocentric. From these two value positions emerged beliefs contributing to the HEP and the NEP. As shown by the results of the NEP Scale survey, people holding weaker SD beliefs tended to favour anthropocentric values associated with the HEP and supported its dominant characteristics. People holding stronger SD beliefs held greater degrees of ecocentric values and favoured the NEP, as demonstrated by the NEP Scale survey results. More directly, the resource conservationism concept then appeared to provide the immediate orientation for weaker SD views (Fox, 1990; and Grendstad and Wollebaek, 1998). That is, the new model suggests that weaker SD views have much in common with the earlier propositions regarding the resource conservation position. In the new model, however, stronger SD was suggested to be conceptually associated with Eckersley's (1992) human welfare ecology. In that sense, the more anthropocentric values of the resource conservationist position, drawn from the HEP, could be seen as a foundation for weaker SD, while the more ecocentric values of the human welfare ecology position are suggested to be the basis for stronger SD. This study revealed that stronger SD was not, however, categorically ecocentric; rather, it was more inclined to ecocentrism but with a "shade of grey" of anthropocentric values. Likewise, weaker SD views were not categorically anthropocentric; rather, they offered some support for environmental protection.

This apparent gradual grading of positions supported Pell (1996) and Grendstad and Wollebaek (1998), who suggested that there was no strict ordering of sub-types of belief along the environmental value spectrum and that environmental values were marked by complexity and ambiguity. Furthermore, the stronger and weaker SD definitions offered in this dissertation can be conceptually linked to the previous propositions made by Lélé (1991), Pearce, (1993), Dobson (1996), Neumayer (1999) and others (e.g., Mercer, Keen and Woodfull, 1994; Jacobs, 1995b; Fowke and Prasad, 1996; Palmer et al., 1997; Brueckner, 1998; and Davidson, 2000) regarding weak sustainability and strong sustainability.

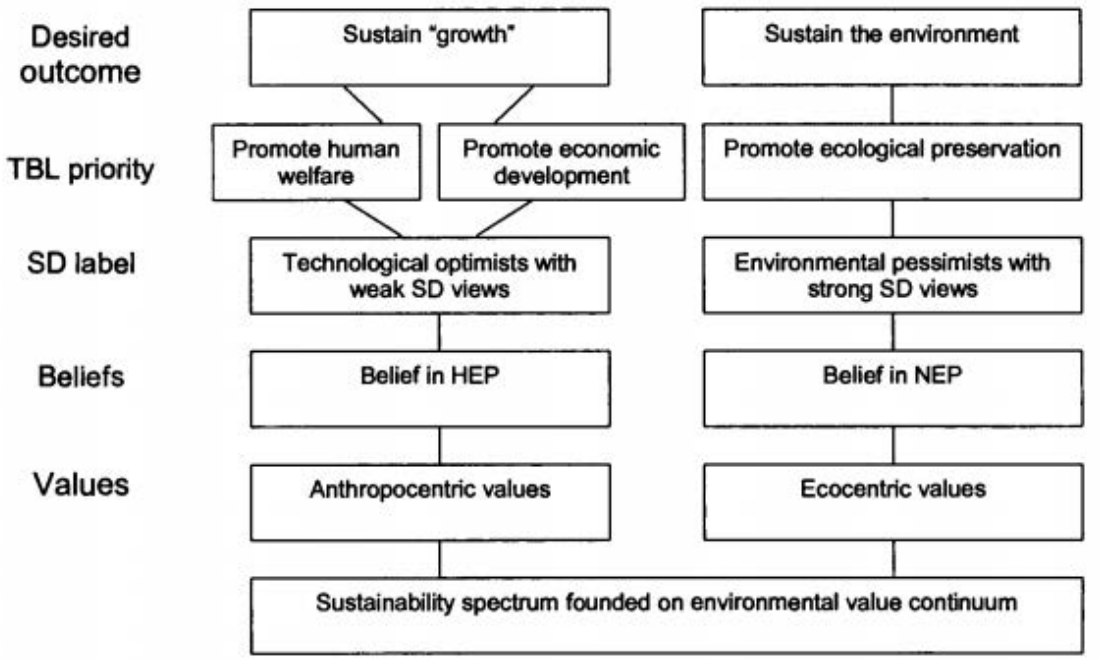

Figure 12. Conceptual diagram illustrating how Stronger and Weaker definitions for sustainable development are "nested" on other concepts.

The finding that two dominating versions of SD definitions existed in the present participatory public is particularly important given the previous propositions and assumptions that SD took a strong or weak form (e.g., Neumayer, 1999). Findings presented in this dissertation partially support the notion that a weaker or stronger version of SD existed within the belief systems of the majority of people in this study, but the present results also suggest that the definitions of weaker and stronger SD are more subtle and complex than previous propositions suggested. That point was true, at least insofar as each of the stronger and weaker versions of SD that emerged in the present study was highly internally consistent, if largely unrelated and oppositional to its counterpart.

The versions of SD that emerged when people outlined their views about SD appeared to be much more aligned with the values and beliefs associated with the NEP and less so with the values of the HEP (Arcury et al., 1986). The Q-methodology results for the majority of people with a stronger SD viewpoint suggest that they understand SD in a manner consistent with Pearce's (1993, p. 18) description of the ecocentric "communalist" type of strong sustainability. That is, they share the resource preservationist label and desire a steady-state economy marked by limited or zero growth and a reduction in population growth.

The ANOVA of findings collected from the NEPS questionnaire support that finding, as attitude scores were generally supportive of the NEP, particularly for the vast majority of people associated with the stronger vision of SD. The predominance of stronger SD thinking within the current population of interest was an interesting finding, but it is not claimed conclusively because Q-Methodology is not designed to enable generalisation from a small sample of people to larger populations. It is clear, however, that within the participatory public that was surveyed for this specific study, stronger SD beliefs and a support for the NEP were most common. Across all of the data sources for this study – the Q-sorts, NEPS questionnaire scores, and in-depth interviews – people appeared to subscribe to a belief in the Litany of environmental problems that were noted in Lomborg's recent work (2001). Furthermore, the council documents about SD that were forwarded to the author appeared to indicate that councils considered SD to be an essentially "environmental" issue. Lomborg, however, suggested that the Litany of environmental problems was based on popular myth and that the claim of widespread environmental problems threatening the whole planet did not seem to be supported by the available statistical evidence. Regardless of Lomborg's claims, it is clear that the majority of people in the present study certainly believed that a crisis is emerging or already apparent – at least to them.

Of course, the finding that the majority of people in this study were environmental pessimists with a belief in the Litany of environmental crisis could result from the somewhat "biased" sample of people, who were, for example, more educated, and more politically "green" than would be the case in a purely random sample of the Western Australian population. Countering that problem, however, is the reasoning for the selection of a "biased" sample of people who were actually identified to be involved in some way with sustainable development implementation in WA. Furthermore, the study was not conducted with the purpose of identifying percentages of a population that hold such and such a view. Rather, the purpose was to illustrate and interpret the fundamental nature of the views of SD themselves. The results presented in the full

factor array at Table 6 indicate the two dominating views held by the majority of participants in this study.

If the finding of environmental pessimism associated with the stronger vision of SD within the current P-set is actually common within society, and the claim by Lomborg (2001) that the environmental crisis is a myth lacking empirical support is also true, then the implication of this possibly mistaken belief system for future development is profound. On that point, Lomborg (2001, p. 5) stated: "The constant repetition of the Litany and the often heard environmental exaggerations has serious consequences. It makes us scared and it makes us more likely to spend our resources and attention solving phantom problems while ignoring real and pressing (possibly non-environmental) issues". Countering that suggestion, however, is the recognition that if Lomborg (2001) is wrong and the Litany of environmental problems is actually objectively correct, then it makes perfect sense for people to be environmental pessimists and to demand a version of SD with a key focus on the environmental bottom-line. As stated in the introduction, this dissertation did not evaluate the objective correctness of the data indicating the degree, and consequences, of the "environmental crisis". Rather, it concerned itself with people's subjective evaluations and beliefs about SD. For that reason, enabling people to share their various views of SD within the sphere of human subjective belief is critical to a mature debate about the TBL promotion of human welfare, economic development and environmental protection.

Of course, it should be noted that neither the stronger nor the weaker SD views that were found in this study can be shown to be the correct and only path towards sustainability, for they both simply represented a variety of people's subjective beliefs about SD (Steelman and Maguire, 1999). In recognising those points, SD does have the multi-definitional properties of the Palmer, Cooper and van der Vorst (1997) "fuzzy-buzzword" but it was not necessarily a "fuzzy-buzzword" to the two groups of people who identified quite clear and articulate beliefs about their respective mutually-shared but opposing visions of SD. This was particularly evident when considering that the vast majority of participants shared a single, highly correlated, stronger SD viewpoint. Nevertheless, identifying the subjectively-held beliefs about SD was important because understanding the normative images that people held about the future was said to be a central condition for effective communication between all levels of governmental, community groups and the public at large (Van Den Born, Lenders De Groot and Huijsman, 2001).

With the benefit of hindsight, the finding that two dominating versions of sustainable development existed within this specific P-set is particularly noteworthy because the 2002 World Summit on Sustainable Development (WSSD) was widely regarded as a

failure. The allegation of failure of the WSSD came about because it ended in acrimony with little agreement between the various stakeholders over actions required for the achievement of SD. Perhaps the acrimonious outcome of the WSSD in September 2002 resulted from similar disagreements over SD objectives to those discovered in this study. Perhaps the outcome at the WSSD resulted from a divergence of opinion between the environmental pessimists and the technological optimists attending the international conference. These points are only speculative, but nonetheless interesting for all of that. The next two sections will locate the new findings about the weaker and stronger SD viewpoints within the context of previous literature related to SD.

5.2.2 Characteristics of weaker sustainable development

The current research enabled the systematic evaluation of many of the characteristics that were previously said to be associated with anthropocentricism and eco-centrism and impacting on views about SD (Eckersley, 1992; Fox, 1990; and Rodman, 1980). The study provided many useful insights about the definitional properties and values that people holding the weaker and stronger SD viewpoints appeared to endorse. In terms of the previously noted sustainability spectrum, people holding the weaker SD viewpoint did not appear to hold a blatant anthropocentric position (Fox, 1990). The weaker SD opinion, however, did fit the more anthropocentric characterisation suggested by the likes of Eckersley (1992), Fox (1990) and Rodman (1980) for the position known as resource conservationism. It was not the case, however, that the smaller group favoured "unrestrained exploitation and expansionism" (Fox, 1990, p. 2). Neither did they indicate a support for the World's major religions to play a role in the implementation of SD. Indeed, people with both the stronger and weaker SD viewpoints seemed to have consensual and negative opinions about the role of religion in determining a SD future. Statement number 49 from the Q-sort ("The world's religions must become a major force in implementing a new sustainable development ethic") was placed in a similar negative position on the array chart by both groups (-1 for the weaker SD vision and -2 for the stronger SD vision).

It was the case, however, that people with the weaker SD views suggested that humanity had the right and obligation to manage nature's resources for human benefit and this was a defining characteristic of resource conservationism. Another characteristic of weaker SD that was also noted by this study to endorse Eckersley's (1992) previously defined resource conservation concept was an emphasis by the participants on "stewardship of nature" linked to the application of scientific principles to land and resource management. The people holding the weaker SD view sought conservation through the elimination of

waste. The study results also supported Rodman's (1980) claims about the resource conservation notion being a modern and scientific approach to land management. The people holding weaker SD views appeared to also see the value of "scientific" management of the environment. The positive attitude of these people to the application of science and technology was certainly highly characteristic of their views of SD. According to Grendstad and Wollebaek (1998), resource conservation involved acceptance of three principles: "conserving nature for development"; "the prevention of waste"; and "development for the benefit of the many, and not merely for the profit of the few". These three characteristics were all present in the Q-sorts and interviews of the people presenting a weaker SD vision.

The resource conservation perspective of the weaker SD vision appeared to be closely aligned with an anthropocentric value base, and proceeded from a human-centred, utilitarian framework that sought to maximise human benefit from the prudent management of natural resources. This was said to involve the minimisation of waste and inefficiency during the exploitation and consumption of natural resources. The centrality of human welfare as a paramount goal within the weaker SD viewpoint appeared to indicate that the proper scope of ethical action was restricted to the human realm for the minority group of participants. This small group of people shared a laissez-faire economic orientation. They also had pro-development opinions entailing a core support for economic growth. These people favoured a high-growth, high-level use of science and technology, free enterprise society, with a pro-business stance on regulation, materialistic goals, and rational, quantified decision-making. These characteristics were previously said by Buss and Craik (1983) to typify the HEP. Furthermore, this group of people supported characteristics of the HEP that were predicted to be important by Arcury and Christianson (1990). For instance, they appeared to believe that human society was largely exempt from the laws and limits of nature. Secondly, they held a faith in the human ability to meet all needs through the application of science and technology. Lastly, they held an optimistic acceptance of the possibility for unlimited social and economic growth. Interestingly, although this "constellation of core values and beliefs" that was said by Dunlap (1993) to form the HEP was evident in the opinions of those people with a weaker SD viewpoint, it was definitely not the dominant social paradigm of the whole group of people surveyed. Indeed, it was the minority viewpoint in this sample of people.

The minority status of the weaker SD viewpoint is an interesting finding in that, as recently as 2000, Davidson suggested that the HEP was still the dominant social paradigm, but that it was on the threshold of change. On the other hand, Simon

suggested that the HEP had already become a minority position (cited in Dunlap, 1983a). Yearley (1992) was another who argued that the anthropocentric worldview of the HEP had been replaced by the NEP as the dominant social paradigm. Evidence from the present study lends some limited support to Simon and Yearley but it should be recognised that this evidence is not definitive because both Q-sort results and sample selection bias minimise the potential for generalisation to a wider population.

Authors such as Reilley (1973) and Dunlap (1993) who suggested that the values underlying the HEP were aligned with opposition to environmental protection efforts and support for an "inherently anti-ecological cultural system" were not vindicated by the results of this study. It appeared that the suggestion by Stern and Dietz (1994) that self-interested anthropocentricism could take a pro-environmental form was closer to the mark. Thompson and Barton (1994) were also explicit that anthropocentric values were not necessarily anti-environmental values and this seemed to be the case for the people with a weaker SD vision in this study.

It seemed that believers in the weaker version of SD suggested that the course of human development was already sustainable and therefore an imposed SD policy was largely unnecessary. The supporters of the weaker SD position were firm defenders of their vision of economic, social and environmental gains of modern society. The small group of people identified as belonging to the weaker SD position offered an explanation for their view that accorded with the arguments put forward by authors such as Ray (1993), Beckerman (1995a), Wildavsky (1995), Simon (1981), and Lomborg (2001). Supporting arguments for the weaker SD group included the notions that people were living longer; infant mortality was in steep decline; poverty was being reduced; air and water quality was improving; more resources were being made available to the world economy each year; and food supply was outstripping demand. The small group of weaker SD supporters also argued that environmental indicators and conditions were not particularly problematical, and that where limited problems did occur, human ingenuity and creativity would overcome any supposed obstacles or limits. These positions were previously argued by Bate (1998), Simon (1995), Maley (1993), and Mann (1991). The minority group were optimistic and enthusiastic supporters of the twin ideas that increases in material output had led to unprecedented improvements in standards of living (McTaggart, Findly, & Parkin, 1996) and that society was now less vulnerable to the vagaries of nature such as floods, famines and plagues (Bailey, 1995; and Bate, 1998). Furthermore, the minority group also suggested that pessimism about global environmental decline was simply unfounded. In line with the arguments previously advanced by Bailey (1995) and Simon and Kahn (1984), people holding the weaker SD

viewpoint suggested that the environment was becoming less, rather than more, polluted. They also suggested that more people now had access to basic environmental essentials like fresh air, safe food and clean drinking water. Participants in this group also dismissed predictions of problems due to the extinction of species and loss of biological diversity, and global warming. All of those points highlighted the implicit ideology of this weaker SD viewpoint that human society is already sustainable.

5.2.3 Characteristics of stronger sustainable development

People holding the stronger SD vision did not share the optimistic prognosis of implicit sustainability held by those with a weaker SD vision. Instead, concerns about environmental problems and a lack of sustainability were at the forefront of these people's views. They appeared to endorse "the Litany" that was identified by Lomborg (2001) insofar as they were highly concerned about a range of environmental problems. That finding lent support to Meadows et al. (1972), Bramwell (1989), and Syme, Bates and Milech (1991) who all suggested that environmental concerns had risen substantially since the close of World War II. Such concerns were certainly present in this sample of people. The views presented by those with a stronger SD vision also supported Rockerfeller and Rockerfeller (1973) who noted "a new mood" that was coming to the fore and replacing the anthropocentric western worldview as the dominant social paradigm. The stronger SD mood of environmental pessimism stood in sharp contrast to the weaker SD optimism of economic improvement with those people's support for the unconditional maximisation of human welfare and the upward sweep of human progress. The results of the present study were consistent with previous empirical data that suggested that attitudes associated with the NEP and post-materialist values were becoming more common (e.g., Inglehart, 1991; and Dunlap, 1983a) and the belief that disaster would occur unless reform was made to present developmental trends (Buss and Craik, 1983). While cautioning that the present results tell us little about the views of people beyond the current P-set, this study does offer an additional "arrow of evidence" that a generalised concern for the environment may have diffused throughout society to the point where it was no longer just a fringe view (Davidson, 2000; Scott & Willits, 1994; Gollner, 1995). Indeed, if the views of participants in the present study are representative of local government councillors and officers in Perth, this would suggest that the stronger vision of SD is now a relatively common opinion in such circles.

The changes to nature that were, according to Grove-White (1993), important in producing concerns about the environment included: loss of species diversity; global

warming due to greenhouse gas emissions; acid rain and other atmospheric pollution problems due to industrial production processes; and the over-exploitation of finite resources. During both the Q-sorting process and the structured interviews, those problem issues were all mentioned extensively by participants sharing the stronger SD vision. Acceptance of the veracity of those problems was consistent with the contentions of authors who suggested that human interactions with nature have increasingly had negative consequences for both humanity and nature (e.g., Daly and Cobb, 1994; Davidson, 2000; Goodman and Redclift, 1991; and Wackernagel and Rees, 1996).

It appeared that for people seen to define the stronger SD factor, their interpretations of global environmental crisis were central to their ecocentric value position. Evidence for this finding was presented in Tables 14 and 16. The environmental concerns meant that these people did not report any faith in limitless development on an expanding economic frontier. Instead, people holding stronger SD beliefs asserted that natural systems impose limits to population and economic growth. The pivotal concept for the people with stronger SD views was the sense that human requirements had outgrown the carrying capacity of planet Earth, a view held by writers such as Wackernagel and Rees (1996), Daly and Cobb (1989), Davidson (2000), Pell (1996), Meadows et al. (1972) and Ehrlich (1968). Those authors agreed that continuous population growth, together with economic growth and resultant pressure on resources, was responsible for unprecedented levels of resource depletion, pollution, and ecological decline. Those beliefs were widely shared by the people supporting a stronger SD vision in the present study.

The opinions held by people presenting stronger SD views were partly reflective of the human welfare ecology category that was proposed by Eckersley (1992). Human welfare ecology was said to involve a search for more ecologically benign lifestyles and this was certainly a central component of the views expressing a stronger SD position. Within the value position was the notion that humanity should manage nature wisely because nature looks after people. It was in that sense that Pell (1996) and Eckersley (1994) suggested that the human welfare ecology movement had an anthropocentric value base with a focus on the necessity of a clean, safe, and pleasant environment providing benefit for people. For people presenting stronger SD opinions, it did seem to be the case that stewardship of nature represented to some degree a prudent form of enlightened self-interest.

Eckersley (1992) noted that people holding the human welfare ecology perspective were critical of resource conservation's narrow focus on the maximisation of production and economic growth. The human welfare ecology school of thought was also critical of the

belief that science and technology alone could solve ecological problems. These two points were made quite forcefully by people in this study who shared the stronger SD vision. Where the weaker SD views could be said to mirror the resource conservation position and were centred on land management, with attention to efficiency in resource exploitation, the human welfare ecology perspective of stronger SD concerned itself with the outputs and wastes of economic production. Concerns of these people holding the stronger SSD vision focused on environmental problems of toxic wastes, pesticide residues, soil, water and air pollution, and global warming. The majority group in this study expressed a great deal of concern about the impact of such phenomena upon human welfare.

At the same time, people presenting the stronger SD vision in this study also believed that plants, animals and even air, soil and water merited regard and respect independent of their utility for humans. It was widely suggested by people in this study who articulated a stronger vision of SD that all life forms were equal and had inviolate and intrinsic worth. Thus, the findings of the present study are consistent with Leopold's (1948) observation of an emerging trend for public opinion to extend concern from people to include non-human objects. In summary, there was a widespread belief amongst people holding stronger SD beliefs that there is an environmental crisis, together with a belief in the limits of nature to support the human economy. They also stressed the importance of living within those limits and also respecting nature for its own sake.

5.2.4 Visions of sustainability may have a common foundation

Although it was noted that this study revealed two dominating, semi-opposing views or belief types about SD, another finding that requires further discussion should also be highlighted. This finding is partly based on an intuitive interpretation of the research results but it does seem to be present throughout the research interviews – more as an implicit theme than an explicit statement, and also to a degree within the Q-sort array presented in Table 6. The issue certainly needs further investigation and verification but it is a theme that merits discussion nonetheless.

The critical finding related to two apparent areas of consensus or semi-consensus between the weaker and stronger SD viewpoints, and it is also apparent across the Q-sorts of the minor three factors as well. Put simply, all belief types appeared to suggest that a reason for the actual requirement for SD was to promote, or at least maintain, environmental functioning. The maintenance of environmental functioning appeared to be the foundation from which both dominating belief types built their visions of SD. The suggestion that maintaining environmental functioning may be a foundation for both

stronger and weaker SD was noteworthy because it may serve a unifying role in overcoming future antagonistic debates over necessary courses of action or policy implementation.

Although the two viewpoints seemed to agree that a purpose of SD was to maintain environmental functioning, they disagreed over how and why this objective should be delivered. This was the critical area of disagreement requiring resolution. In essence, the weaker SD vision suggested that the promotion of human welfare through continued economic expansion would automatically flow on to improved environmental functioning for the "natural" world. This finding was clearly and explicitly articulated by those people holding a weaker SD opinion but it did also partially emerge during informal conversations and in interview sessions with people sharing the stronger SD vision. The people holding the stronger SD belief, however, suggested that the maintenance of environmental functioning should be an objective in its own right regardless of its impact on human welfare. Interestingly, however, it could be interpreted that at least some people holding the stronger SD beliefs argued that environmental protection would automatically flow on to improved conditions for people and society. Again, this viewpoint was clearly articulated in the tape-recorded interviews by some of those people holding stronger SD views. The evidence for this claim was also derived from the positive placement of the Q-statement: "There is a common interest between looking after the environment and looking after people". The consensus from both groups about this item seems to indicate that both groups consider that "looking after the environment and looking after people" are linked.

There appeared to be two parts to each version of SD – human welfare and environmental welfare – and each belief type was at cross-purposes when debating the implementation of SD. Those people holding weaker SD beliefs suggested that promoting economic expansion and raising living standards for people resulted in greater levels of protection and conservation of nature. Those people holding stronger SD beliefs, however, suggested that promoting greater protection and conservation of nature rather than economic development was the purpose of SD. Some of the comments from the tape-recorded interviews also suggested that promoting environmental protection resulted in an improved quality of life for people. It was almost a "chicken and egg" or "horse and cart" debate revolving around which part came first.

Those findings are particularly important in light of the propositions of Grendstad and Wollebaek (1998), Eckersley (1992), and Davidson (2000), all of whom suggested that it would be incorrect to categorise the environmentalism of the NEP or the anthropocentricism of the HEP as coherent constellations of values. Furthermore, as

Fox (1990), Rodman (1980, 1983) and Eckersley (1992) noted, environmental concern was now common within the community but a diversity of views existed about the meaning, scope and consequences of that concern. The results of the NEP Scale survey certainly suggested that, on average, people in the present study tended to support the NEP rather than the HEP. This study confirmed that the anthropocentric concern for human welfare and the concern for environmental functioning were not mutually exclusive types of thought. Rather, concern for both people and the environment was shared by participants presenting stronger and weaker SD opinions. It was the degree, emphasis, and priority on environmental or human welfare concerns that was at issue rather than an absolute concern for only one or the other.

Furthermore, there was a degree of consensus and strong support amongst the people with both stronger and weaker views of SD, plus the three minor factors, about four of the "objectives" items in the Q-sort. The placement of relevant items for factor 1 and factor 2 is presented below:

- Item 29. The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations (+3 and +3).

- Item 12. The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse (+1 and +1).

- Item 19. Sustainable development is inevitably a long-term process although it is important to start thinking and acting now (+4 and +2).

- Item 21. The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship (+2 and +5).

The relative degree of support for all four of these items, particularly for the triple bottom line focus of item 29, suggests that at least a partial consensus about the objectives of SD may be achievable. That finding is consistent with Jacobs' (1999) claim that the core meaning of SD, at the "first level" of definition, has now been broadly established by the Brundtland Commission. The possibility for some degree of consensus-building is increased when we consider a group of items that, although not necessarily placed in exactly the same position in the Q-sorts, were nethertheless placed in the same direction from zero for each of the five factors that were demonstrated during factor extraction. The 17 items and their placement in the factor array are indicated in Table 21. Only two

of the factors had sufficient cases to merit detailed examination in Chapter 4. Nethertheless, in searching for consensus, it is worthwhile including the extra cases from factors 3, 4, and 5. In doing so, Table 21 demonstrates that nearly all participants leaned in much the same direction on these particular items.

Table 21. Items indicating a degree of consensus for nearly all participants in this study.

No	Statement	F1	F2	F3	F4	F5
2	Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.	-5	-1	-2	-4	-3
5	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources.	-5	-2	-4	-4	-5
7	In truth, 'sustainability' has been carried too far.	-4	-2	-3	-1	-5
8	Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development.	-3	-1	-2	-1	-2
9	Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit.	-5	-2	-5	-5	-4
11	Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed.	5	1	2	5	4
12	The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use & reuse.	1	1	2	2	2
16	Like other political ideas, we tend to agree with the need for resource conservation, social equality and pollution control but disagree over what it entails.	1	3	2	4	1
19	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now.	4	2	4	3	4
21	The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship.	2	5	3	1	5
22	There is a common interest between looking after the environment and looking after people.	3	3	5	5	3
24	Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.	2	5	4	3	3
28	There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed.	4	2	5	2	2
29	The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations.	3	3	5	2	2
33	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment.	-1	-5	-3	-2	-3
36	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind.	-2	-5	-4	-3	-3
40	All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake.	5	1	1	4	2

The items presented in Table 21 are important because they demonstrate some degree of commonality across all five factors and they indicate a potential starting point for building a consensus about SD at the level of local government, should such consensus-building be considered important. There is, for example, fairly common agreement that: nature does not provide an unlimited store of resources for the use of humanity (item 5); sustainability has not been carried too far (item 7); nature has intrinsic value beyond human use and should be preserved for its own sake (items 9 and 40); public participation in the process of delivering SD is important (item 28); and SD involves managing economic growth while balancing environmental protection (items 12 and 29). Furthermore, it appeared that people in all five factors recognised that the use of science and technology does not necessarily promote negative consequences (item 33).

The most important finding that is demonstrated in Table 21 is that people representing all five types of opinion appeared to reject the more extreme "very strong" and "very weak" Q-set items while endorsing items from the more moderate weak and strong positions. Figure 2 on page 101 demonstrates that the "very weak" SD items were originally classified by low numbers 1-10 and the "very strong" SD items were classified by the high numbers 31-40. A review of Table 21 demonstrates that it is five of these low numbers (2, 5, 7, 8 and 9) and two of the high numbers (33 and 36) that have been mutually rejected by people in all five factors. The patterns of support and opposition indicated in Table 21 highlight several important areas of the SD debate that may serve to bring people with various value positions together and allow them to start speaking a common language.

5.2.5 Discussion about the limited adoption of LA21

Despite the agreement to do so by the Australian Commonwealth, and the commitment to do so by Australian local governments, very limited progress has been made in adopting LA21 in Australia (Addison, 2001; Price, 2001). A secondary objective of the present study was to investigate why councils in WA had been reluctant to embrace SD via the implementation of LA21. The results presented in this dissertation are not regarded as a definitive answer to the problem of the low level of adoption of LA21, but they do serve to indicate some apparent barriers that require removal before more councils will adopt SD via LA21. These results may be of use to local government environmental officers and others with an interest in SD at the local level.

The major finding presented here is that Councils that had already formally adopted LA21 were widely regarded as having people acting in the role of internal champions who had encouraged their council to embrace LA21. Moreover, councils that had not yet adopted LA21 were said to lack the necessary internal champion. It does seem that the presence of a motivated and committed champion for LA21 is a key ingredient in promoting SD via the LA21 process in local government. Importantly, it did not seem to participants in this study that it mattered whether the champion was a paid employee of council or an elected councillor. All that mattered was that such a champion was present. It did seem, however, that champions were more likely to be younger and more professionally educated in business management or environmental management. Correlated to that finding, was a geographical barrier to the adoption of LA21, based on the urban-rural division of local governments. Urban councils or those on the metropolitan fringe are at the forefront of LA21 adoption in WA, and this may be because they are able to attract employment amongst a younger and more educated workforce and attract councillors with a motivation to act on SD-type initiatives.

Barriers to LA21 were said to include the limited timeframe since the Earth Summit in 1992, which resulted in insufficient time for the necessary attitude change. Coupled to that suggestion was a concern about the limited number of sustainability indicators and demonstration projects that could act to convince councils of the actual need for involvement with LA21. Those barriers were also compounded by the limited ability to create a sound business case for LA21 because the financial benefits of SD may not always be readily apparent. Those points seem to be sound enough on logical grounds alone, and for those reasons, LA21 was seen to be difficult to actually promote. That problem may be a barrier in its own right. All of these issues require addressing before more councils are likely to move on with adoption of LA21. In fact, LA21 may be a program that has already run its course.

5.3 Significance of the study

It is important to note that not one of the 170 people involved in the study, nor any of the people during in-depth interviews, was actually hostile or indicated an opposition to SD. Everyone appeared to agree that SD was important. With regard to Jacobs' (1999) "first level" of definition, it appears that a consensus exists that SD itself is important. Why it was important and how to go about implementing it seemed to be the issues of disagreement between the main two viewpoints identified. That finding supports Jacobs'

(1999) claim that differences over definition are more important at the "second level" of meaning. These issues will now be explored in a little more detail.

Sustainable development policy problems are unlike experimental problems in that they admit of no solution that can be unequivocally proven to be right or even to be best. SD policy-making exists within a state of uncertainty (Harris, et al., 2001). Relevant data are clearly inconclusive and capable of sustaining alternative interpretations (Furedi, 1997). Decision-makers are faced with equally attractive or unattractive courses of action. The situation is highly complex and multi-valued, and subjective judgements and personal preferences are everywhere involved. The methodological problem that faced this study was to enable the modelling of the SD phenomenon in all its complexity and holding it steady for clear examination (Brown, 1980).

As noted previously, however, existing research tended to define current concerns about the relationship of society to the natural world in terms of value dichotomies (Dunlap, 1993; Catton & Dunlap, 1978, 1980; Stern, 2000; and Zimmerman, 1991). The paradigm conflict was distinguished in several ways by a variety of authors (e.g., Buss and Craik, 1983; Daly, 1977; Dobson, 1995; Dryzek and Schlosberg, 1998; and Naess, 1984;). Debate also ranged around the "sustainability spectrum" and arguments for and against very strong, strong, weak and very weak SD (Neumayer, 1999). While considering the human relationship to nature and the future development ethic in terms of dichotomies may be useful in certain circumstances, such considerations may also be simplistic, limiting, and ultimately, empirically unfounded. Those points were particularly important insofar as this Q-Methodology study involved an account of complex, thoughtful interactions that did not prevent participants from displaying their own logic about SD. As such, the study involved an investigation of the dynamic connections and interactions between the views of participants in order to better define and describe SD.

Very little research had previously been conducted in order to further understanding of the complexity of modern beliefs and opinions regarding the "second level" definitional basis of SD within applied settings such as local government. This study attempted to address that shortcoming and evaluate how closely the range of possible belief outcomes held by a participatory public involved with the implementation of SD fitted with the existing sustainability spectrum definitions of very strong, strong, weak and very weak SD.

This thesis is significant for the following reasons. The research demonstrated that that there is some merit in previous analyses that claimed the existence of a sustainability spectrum ranging from strong to weak conditions for sustainability, but that public views

about SD were not necessarily dichotomous. Rather, evidence in the full factor array and particularly in Table 21 demonstrated that viewpoints about SD appeared to "merge" together toward the more central positions of an environmental value continuum and were closely related to the concepts proposed by Eckersley (1992) for human welfare ecology and resource conservation. Overall, the dominating belief types for stronger and weaker SD that emerged during Q-sorting emphasised the need for stewardship and the protection and conservation of nature, but with the two groups having different reasons for why that should be so. The technological optimists holding the weaker vision of SD believed that stewardship of nature was a foundation for promoting human welfare. The environmental pessimists holding the stronger vision of SD believed that the protection and conservation of nature was the objective of SD in itself, not simply because of any benefits to humanity.

Regardless of the "merging" of views about SD, this research confirmed that two dominating views about SD, as well as a very small spectrum of other views, appear to exist within the participatory public in this study. It is worth restating the importance of this finding. It is important because it demonstrates that earlier propositions about the definitional properties of SD do in fact have merit. This dissertation characterises the two dominating views as stronger and weaker SD rather than the more absolute strong SD and weak SD of earlier work.

Stronger SD views were labelled as environmentally pessimistic and weaker SD views were labelled as technologically optimistic. The subtle difference in definition of the stronger and weaker visions of SD is an important finding. The new definition of stronger and weaker SD is important because it serves to enrich our understanding of how people interpret SD and it also indicates the areas of consensus, as well as disagreement, between the two viewpoints. The Q-Methodology research indicates how, on some points, the two dominating factors (groups of people) differed only slightly. On other points the two factors of opinion were shown to be polar opposites. And on still others, they were in complete agreement. The newly established belief types for weaker and stronger SD that were made manifest in this dissertation captured more of the complexity and subtle nuances of the conflict over what form development ought to take. The newly established belief types are also empirically-grounded rather than mere propositions based on the assumptions of the author.

The research clarified areas of consensus and conflict over SD, where previously only vague notions existed. This is a significant step forward (Steelman and Maguire, 1999). Nutt (1989, p. 417) pointed out that identifying coalitions amongst stakeholders is important and that: "the criteria supported by each coalition suggest potential

disagreements that can be explored before consensus is sought". The proposal of Nutt (1989) was significant to this study because the newly defined beliefs about SD ought to provide councillors, environmental officers, environmental NGOs, and others with a new framework for listening, communicating, interpreting, and understanding the different points of view that are involved when people think about SD. Understanding the distinctions between views opens up the possibility for increased convergence and cooperation between people, rather than continued confrontation based on uniformed beliefs (Bublic, 1995). A less antagonistic SD policy implementation process based on a greater understanding of the views people bring to the process ought to lead to a positive outcome of greater degrees of shared awareness.

On a more practical note, the findings on why some Councils have embraced LA21 and begun implementing SD where others have not done so are also noteworthy. On the positive side, LA21-adopting councils in Australia were said to be early adopters with other councils hopefully inclined to follow. The role of a key champion within adopting councils was also seen as significant. Support from the Federal Government in terms of finances and other resources was also seen as being crucial to greater levels of implementation of LA21. These findings are important and require further research work by other scholars. On the negative side, however, councils that had failed to embrace LA21 and SD were said to lack a key champion. The short time frame for the necessary attitude change was also suggested to be a reason, but given that LA21 was launched at the Rio Earth Summit in 1992, this seems rather unlikely. Other reasons for the non-adoption of LA21 included a lack of objective indicators for why councils should become involved, a lack of cost benefit analysis, fear of uncertainty and a general lack of interest in the community. Again, these problem issues require consideration by parties involved in the promotion of LA21 if barriers to SD are to be convincingly overturned.

In conclusion, this study was significant because it provided a deeper, empirically grounded, understanding to the contested nature of SD (Palmer et al., 1997; Basagio, 1995; and Franks, 1996). The research method provided people involved in the SD debate the opportunity to articulate where they stood in relation to key SD principles and to define, more or less, what the concept meant to them. Moreover, this research began the process of exploring and delivering a community-derived defining vision for SD in Western Australia as a prelude to establishing a wider consensus on SD (Heij and Heinze, 2001).

5.4 Limitations of the study

5.4.1 Introduction

A number of issues could be raised about the Q-Methodological foundation for this study, based on the "usual" criteria by which R-Methodology studies are evaluated. Many of these issues were already introduced in section 3.5. The major issues that are likely to be raised in R-Methodology studies relate to the appropriateness and adequacy of the participant selection or sampling procedure, the validity of instruments or techniques used to gather data, and the validity and reliability of results derived from participants.

For a number of reasons, these R-Methodological concerns are often inappropriate and non-comparable when applied to Q-Methodology studies (Brown, 1999; Durning, 1999; and McKeown and Thomas, 1988). Before highlighting a number of legitimate limitations of the present study, it is important to highlight why issues related to sampling, validity and reliability are not quite what they seem when applied to the evaluation of Q-Methodology. These types of limitations are discussed in the following sections.

5.4.2 Sampling

Q-Methodology has been most frequently criticised on issues related to sampling of persons. Indeed, Stainton-Rogers (1995, p. 182) went so far as to state: "To those trained in R-Methodology, the Q-Methodology approach to participants may seem perverse". Concerns about sampling of participants typically relate to the generalisability of findings. As Ernest (1998, p. 13) noted: "Such criticisms frequently are due to a fundamental misunderstanding of Q-Methodology's purpose". Q-Methodology was not designed to investigate how many people believe something to be true; rather, it is used to investigate what, why, and how they believe what they do (McKeown and Thomas, 1988). On that point, Dennis (1986, p. 16) stated: "Q-Methodology is not intended to, nor is it capable of, discerning what per centage of a larger population subscribe to the various viewpoints". Q-Methodology purports only to identify, with clarity, various points of view that people hold about issues such as SD (Hurd, 1999). How well Q-Methodology accomplishes the task of identifying participant points of view is the central criterion by which the method should be judged.

In R-Methodology, sampling issues revolve around the selection of human (or animal) participants for inclusion in a study. There are a number of ways that participants can be selected, including random sampling, structured random sampling, samples of convenience, and purposive sampling. In R-Methodology then, non-random selection or

assignment of participants is widely held to introduce a range of selection bias problems (Whitley, 1996). In Q-Methodology, however, sampling is related to the selection of stimulus items from the communication concourse (Hurd, 1999). Indeed, on that point Stephenson (1980, p. 882) stated: "What is innovative about Q-Methodology is the concept of universes or populations of statements as a primary source of statistical data in mental measurement, replacing that of populations of people". In Q-Methodology, the communication concourse represents the population of interest and the task for the researcher is to adequately sample from the wider population a representative selection of statements that mirror the overall discourse. As Ernest (1998, p. 12) stated: "Given the differences in research orientation and purposes, the specific sample principles and techniques crucial to R-Methodology are not necessarily relevant in Q-Methodology". In the present study, a great deal of effort, described in Section 3.6.2, was used to adequately sample Q-statements from the wider communication concourse. Of course, any sample of statements can never fully capture the whole breadth of the debate about SD, but the process used in this study was systematic and replicable by others.

In the present study, sampling of statements for inclusion in the Q-set was an exhaustive process involving the sampling of over 900 individual statements from a diverse number of sources. These statements were further refined and pilot tested. The final selection of 50 items for use in Q-sorting is considered to represent a wide range of issues related to SD, thus meeting Q-Methodology requirements for sampling. A limitation of any Q-Methodology study, however, relates to the adequacy of the Q-sampling process from the wider communication concourse. It could be argued that despite the rigorous process of statement selection in the current research, the study was flawed because of a less than adequate sampling of SD issues from the concourse. This point is quite pertinent because, as the literature review noted, the discourse on SD is so vast, conflicting and ultimately indeterminate. A decision was made by the researcher to select the 50 items that were ultimately used by the P-set to model their views about SD. Whether these 50 items were the optimum Q-set, or even adequate to the task, will remain a matter of conjecture.

A further question may be raised about the limitations and constraints that are imposed on participants by the researcher's choice of items for inclusion in the final Q-set. In effect, this question relates to how well the Q-sample reflects the wider communication concourse on the topic of interest and how well the study has accurately achieved its purpose. To that end, was the Q-sampling process adequate and does the final Q-set allow the P-set to articulate their views about SD without over or under representation, or omission? The degree to which the a priori structuring of a Q-set derived from the

communication concourse is a representative sample of the issue being modelled is always difficult to assess. Of course, any interpretation of results should be considered in light of the knowledge that participants responded to this particular Q-set about SD, rather than some other Q-set about the topic. Had the participants responded to some other Q-set, they may have factored into different groups, or different composite Q-sorts could have emerged.

A further suggestion that could be made is that the selected Q-set so restrained the participants as to make the "discovery" of weaker and stronger visions of SD a certainty. This possibility can be discounted on the grounds that the coding frame (shown in Figure 2) that was used to enable selection of a representative sample of statements from the communication concourse did not offer a simple binary selection of statements. Statements were not included in the Q-set on the basis that they reflected, in some way, a strong SD position, or a weak SD position. Rather, statements were selected as being representative of a continuum of value positions across at least five categories of values. Exactly how the participants would arrange the Q-set during Q-sorting was not known beforehand and the participants certainly had many thousands, if not millions of potential ways to arrange their own sort. Because of the very large numbers of combinations of potential Q-sorts, the possibility that the results of this study were somehow an artefact of the method is discounted. People had a free choice about where to place the statements in their own Q-sorts. The fact that they tended to ultimately converge into one of two dominating groups is a genuine reflection of the subjective views held by the majority of participants. That finding is further confirmed by the interview process which goes some way to demonstrating that people were content with the way their Q-sorts represented their "real" views.

Whether these "real" views were ultimately a result of the deliberation process that participants went through during Q-sorting is unknown, but this probably is so. It may be a concern to some that the process of Q-sorting results in participants' "creating" or at least accessing views that they were previously unaware or only partially aware of holding. It is certainly correct to assume that Q-sorting results in participants providing "considered" views rather than the ill-considered views so common when people are asked to quickly respond to items "without thinking about them". As a researcher, I assume that this is a strength of Q-Methodology rather than a limitation. I firmly believe that people will only solve the problems they face, such as those associated with SD, when they begin to think about the problems in some detail. More thought and consideration is what is required in problem solving.

The selection of people for inclusion in the study is best described as purposive or strategic – they were people who in some way were expected to have an interest in the implementation of SD and LA21. The strategic sampling of people for the present study accorded with Stainton-Rogers' (1995) advice that selection of participants should be made on the grounds that they are likely to produce varied stories, accounts or discourses about the finite diversity of viewpoints about SD.

5.4.3 Validity

Techniques underpinning R-Methodology focus attention on the relationship between a variable, trait, or characteristic and responses in reaction to a scale item. Operational definitions and validity are prerequisites since a standard meaning for responses from person to person is required before one can draw conclusions about the significance of different scores on a multi-item scale. Of necessity, therefore, operationally defined scales or tests must have a priori meaning that validly differentiates between the scores attributed to different people. The Q-sort technique of Q-Methodology focuses attention on the relationship between a preference and a stimulus in the form of a Q-statement. The notion of validity has very little relevance since there is no external criterion for a person's own preferences or point of view. The only question of validity within Q-Methodology relates to issues of deceit by participants.

Regardless of how well survey data are collected and analysed in either R- or Q-Methodology, the value of these data depended on the honesty of respondents' answers to the researcher's questions (Shaughnessy and Zechmeister, 1990). The major limitation of all self-reports, of any type, is that people may not be willing to make accurate and truthful reports about their actual perceptions, attitudes or behaviours and that the researcher may also introduce "interviewer bias" through leading questions or other subtle cues (Hurd, 1999). Concepts such as "faking good" for presenting a more favourable response or "faking bad" for presenting a less favourable response have been well documented and reduce the confidence of researchers in the validity of their findings. For example, Whitley (1996, p. 120) suggested: "When asked about socially undesirable behaviours or beliefs, people may edit their responses to make themselves look good". Even in the context of behaviours and attitudes that are expected to be socially neutral, people may still alter their responses to make a "good impression" to researchers.

Within R-Methodology, providing anonymity for respondents via the anonymous mail-back questionnaire has been the most usual method for attempting to reduce socially desirable responding. This Q-Methodology study involved one-on-one interviewing so

anonymity between the researcher and participants was not possible. Since the participants in this study were being asked about SD, an issue likely to have at least some "socially desirable" connotations, it could be that at least some people attempted to present a socially desirable or "politically correct" response. This "faking good" is extremely difficult to evaluate in exploratory research. Ernest (1998), however, suggested that the use of Q-Methodology may actually help to control for issues associated with the social desirability of responses and interviewer bias. Thomas (1980) also suggested that socially desirable responses were reduced by the "forced-choice" format of the Q-sort. Regardless of the problems associated with all types of self-reports, Shaughnessy and Zechmeister (1990, p. 106) suggested that "generally we accept people's remarks at their face value unless we have reason to do otherwise". With that point in mind, this study could be criticised insofar as no attempt was made to confirm the veracity of people's views about SD. The participants' views were taken at "face value".

Another problem related to participant reactivity that may lead to reduced confidence in the validity of results is concerned with the concept termed "demand characteristics" (Whitley, 1996). Demand characteristics occur when participants form their own tentative hypotheses about the goals of the research and then modify their responses in purposive ways that affect the validity of the research. Demand characteristics are problematical when participants are motivated to assume one of three specific roles: "the good participant", "bad participant", and "apathetic participant" (Shaughnessy and Zechmeister, 1990). If participants develop a "good participant" response bias they may wish to "help" the researcher by providing responses they consider to be favourable in some way. At the other extreme, if participants feel coerced or threatened in some way, they may develop a role of "bad participant" and seek to undermine what they consider to be the reasons for research. Participants who act in a purposive manner may fail to represent the "normal" situation and such responses then reduce the internal validity of the research and reduce the reliability of the overall findings. Where the good and bad participant roles involve a specific motivation to affect results in one direction or another, the apathetic participant simply does not wish to participate at all. These people seek the most convenient ways to "get through" the research process. Completing an anonymous questionnaire in a quick and completely random fashion is always a possibility, or failing to volunteer to participate at all is a common problem facing researchers. It seemed unlikely that any participants in the present study randomly assigned statements during the one-on-one Q-sort interview, but the possibility cannot be totally discounted.

5.4.4 Reliability

Reliability is an important consideration within the measurement tradition involved with R-Methodology studies of variables and traits. In essence, measurement is considered to be reliable when it is consistent (Shaughnessy and Zechmeister, 1990). In the R-Methodology perception survey, a questionnaire is designed and administered and the assumption is made that everyone who gave the same response to a question interpreted it in the same way. Furthermore, the researcher also assumes that the meaning attached to participant responses is identical to those meanings pre-defined by the researcher. In that way, the questionnaire is said to provide an operational definition of the variable being studied. On those points Steelman and Maguire stated: "The [R-] methodology presumes that communication is perfect – that the words, phrases and language mean the same things to the same people" (1999, p. 384). Reliability within Q-Methodology is less problematical because the selected Q-set that is administered during Q-sorting is never considered to be an "objective" instrument that provides a pre-defined operational definition in the same way as a questionnaire provides an operational definition in R-Methodology (Brown, 1999a). A Q-set is simply a set of conceptually relevant statements that allow participants to model their subjective viewpoint about an issue. Each statement making up the Q-set can be interpreted in many ways and there is always questioning of the purity of language and communication (Steelman and Maguire, 1999; and Brown, 1991). It is precisely the indeterminate nature of the items that allows for confidence that the finding that stronger and weaker visions of SD emerged was not an artefact of the methodology. Of all the millions of possible combinations of statement placements available to the participants in this study, it was certainly not inevitable that they would cohere into two consistent, highly correlated groups, demonstrating views that were largely antagonistic to each other. In fact, there were over 36,000,000 possible combinations of Q-sorts available to the participants.

Rather, the stronger and weaker views emerged from the analysis because the participants themselves imposed their own subjective interpretations on the items and constructed Q-sorts that were then labelled "stronger" and "weaker" by the researcher. These labels were then partially verified during the process of revisiting people who were identified as producing defining Q-sorts for each factor. These people largely confirmed that they did indeed, hold views that were consistent with the labels and interpretations attached to their composite Q-sorts.

The major issue of reliability within Q-Methodology studies relates to the extent to which participants sort the Q-set in essentially similar ways at two points in time (Brown, 1980).

This issue of reliability is frequently referred to as "test-retest" reliability (Ernest, 1998). In essence, this form of reliability is demonstrated when a person who modelled a certain viewpoint during Q-sorting recreated a highly correlated Q-sort on a second and subsequent occasions. Such an outcome is expected so long as there are no obvious or expected explanatory reasons for why a change in view ought to have occurred; for example, because of the acquisition of new knowledge about a topic. The issue of reliability for the present study related to the likelihood that the observed differences between the two factors would be found again if the study were repeated. There is no reason to doubt that the differences that were found in this study were "genuine" differences in opinion about SD between the two groups that emerged during data analysis.

5.4.5 Genuine limitations

A problem for Q-Methodology relates to the R-Methodology concern of "generalisability", by which is implicitly meant simple induction (Brown, 1980; and Weimer, 1999). That is, how likely is it that the findings of the present study will generalise from the sample of people to a wider population of people? Giving an adequate response to that concern is difficult because the focus in Q-Methodology is to provide specific people with the specific opportunity to be quite specific about the ways in which they see the world – from their point of view. On that point, Brown (1980, p. 334) stated: "to reach a complete understanding ... it is necessary to begin with those beliefs as they are believed by those who believe them". That point suggests that meaning in Q-Methodology studies is imposed on statements by participants during the process of Q-sorting and that meaning is further determined by interpretation after the factors of opinion are discovered (Berry and Lewis-Beck, 1986).

For Q-Methodology, the outcomes of future research are always indeterminate and related to the specific participatory public involved. Generalisibility from the few to the many is best left to alternative methods where such an issue is appropriate and important. But generalisations can be of various kinds (Brown, 1980). Generalisations in Q-Methodology are best considered not in terms of sample and universe, but rather, in terms of specimen and type. That is, they deal with the question 'what is the opinion of specimen persons of type A, or type B, or other types revealed from Q-sorting, being a generalised abstraction of a particular and specific outlook?' (Brown, 1980). With reference to the current findings, on logical grounds alone, it is highly likely that the visions of SD discovered in the present study will be broadly shared by other people in the wider population of people involved with the implementation of SD and LA21 in the

Australian local government context. That said, however, it is also highly likely, though unproven at this point, that somewhere in the population of 6 billion people that currently inhabit the planet are individuals or groups who hold views that are somewhat different to the two dominating types of views that were found in this study. In particular, there are likely to be people who are totally and completely opposed to SD in any form and it is true that this study failed to locate any people with that view.

Purposive sampling that involves inviting participation on a voluntary basis is also usually considered to be problematical within the context of R-Methodology (Weimer, 1999). Having voluntary participation in the present study may also be a legitimate concern as little was known about the potential differences between those who did volunteer to take part in the study and those who failed to respond to requests for participation. Within traditional research considerations, there could be a concern about the potential for a "self-selection bias" being introduced into the study (Whitley, 1996). Selection bias within the present study appeared to be evidenced when considering the demographic characteristics of the participants in terms of their economic status, education levels, voting preferences, ages and sex. Moreover, only 170 people from an original target audience of 518 agreed to participate in the study. This was slightly less than a 33 per cent response. In what ways these participants were similar in viewpoint to non-participants was not established. The participants in this study were also seen to be "over-educated" when compared to a "normal" sample of Australians. Almost 80 per cent of the participants had completed university studies at some level. Over ten per cent had completed a Doctoral degree. The participants were also somewhat "biased" in their voting intentions, with over-representativeness for the "green" and "minor" political parties (38 per cent) and under-representativeness for the Liberal/National Coalition (nine per cent). That outcome was not too surprising given the community and local government focus of the research. Interestingly, almost 21 per cent of people indicated that they were "unsure" of how they would be likely to vote.

Other questions that may be raised about Q-Methodology relate to the use of Q-sort technique and associated data analysis and interpretation. A frequently levelled criticism is that the magnitude of the sorting task is beyond the cognitive ability of most people. A related criticism is that the Q-sort array chart has too many categories and requires participants to make too many and too fine distinctions between statements (McKeown and Thomas, 1988). A final criticism is sometimes levelled that the "forced choice" nature of the distribution of statements during Q-sorting is problematic. In response to those three potential problems, however, and to make for an easier Q-sorting procedure, participants in this study were first instructed to "break" the 50 items into three sub-piles

according to items they felt "strong agreement", "strong disagreement" and "neutral" towards. They were then instructed to begin the process of placing individual items on to the array chart. The use of a 50-item Q-set did not appear to "overwhelm" participants' cognitive ability in the present study and various people were asked after Q-sorting if they were able to complete the task with ease. All people indicated the task was relatively straightforward. Previous evaluations (e.g., Brown, 1980) have also demonstrated that "forced" versus "unforced" choice distributions during Q-sorting had unimportant consequences for research outcomes. This research used a "forced choice" format, and again it seemed to be non-problematic to the participants. In fact, the use of a multi-point scale ranging from +5 (most like my view of SD) through 0 (not sure or undecided) to –5 (most unlike my view of SD) seemed to actually make it easier for people to give adequate consideration to their beliefs and opinions about SD.

Another issue that requires some mention relates to the potential problems that occur during factor array interpretation. Interpretation of factor arrays involves working out the "meaning" of a factor based on the weighted average Q-sort distribution for the factor being interpreted. Essentially, the researcher is "telling a plausible story" and seeking to explain and describe the patterns of rankings and the reasoning and choices of participants whose Q-sorts group together in coherent fashion (Kitzinger 1999). This is potentially the most problematic part of the entire Q-Methodology research process because, in interpreting factor arrays, the researcher's own biases and limitations may become apparent. The interpretation of factors is an important though difficult task, as meanings may be inadvertently imposed on participants (Kitzinger, 1999).

There are two generally accepted solutions to the problem of factor interpretation. Both approaches were adopted and followed closely in this study. The first remedy was offered by William Stephenson (1972, p. 182) who stated "go back to the original subjects, the Q-sorters, to find out what their interpretations are for factors on which factor-analysis has placed them". The second remedy involved asking participants to make comments on items at the time of completing their Q-sort and recording their statements on tape or in notation (Kitzinger, 1999). In this study, each participant was asked to make comments about "their point of view" of SD immediately following the process of Q-sorting. Following factor analysis, participants who were noted to load most strongly on each identified factor were then interviewed to gain further insight into the appropriate interpretation of the factor arrays. Regardless of these two approaches to factor interpretation, however, Kitzinger (1999, p. 269) noted: "The discerning reader of Q-Methodological studies should bear in mind that labels for factors are always contestable…".

Another limitation of Q-Methodology is the time intensive nature of the approach and the associated costs. As Barry and Proops (1999a) noted recently, a lot of time is spent identifying an issue of interest, perusing the literature and developing a knowledge of the relevant communication concourse, and selecting a representative sample of statements for inclusion in the Q-set. Identifying a participatory public using purposive sampling was also quite time consuming in this study. Organising Q-sorts with participants was also an intensive and time-consuming process involving many hours of fieldwork. Finally, interview transcription and content analysis added to the time and cost burden.

A further limitation of Q-Methodology research relates to the difficulty imposed when using a method that is rarely used and little understood within mainstream social research. Researchers using familiar methods can rely on a general level of acceptance and agreement with the basic principles on which these methods are based. This is not true of Q-Methodology and Kitzinger (1999) noted that criticism of Q-Methodology often results from the misplaced and inappropriate application of criteria that are only appropriate for the evaluation of R-Methodology. Finally, the very nature of applied fieldwork presented a range of problems that are hard to control and the term "local history" has been used to cover such issues. During the course of this investigation, a problem of local history emerged in that two local governments were stood down and a third was investigated while official corruption inquiries were conducted by higher levels of government. While not a huge problem, such events did appear to be unsettling for some potential participants in this study, and this could have had a negative impact on the number of people willing to be interviewed about their work in local government.

5.5 Suggestions for further research

This study partially confirmed the earlier propositions that definitions of SD occurred across a sustainability spectrum and that they took a strong or weak form; but in this research, the dominating belief types were labelled as stronger and weaker SD. That finding appeared to be valid, at least for the majority of participants in this particular study of people associated with SD implementation at the level of local government in Western Australia. There remains an obvious opportunity to expand this investigation into wider society and investigate perceptions about SD that were held by people in other meaningful demographic groupings such as politicians, business leaders, the lay community and scientists. It is also desirable to investigate views about SD within non-Australian populations as a way of providing confirmatory evidence for the new descriptions of SD provided by this dissertation.

Furthermore, there is always the possibility for a more refined Q-Methodology research process involving a greater sophistication. An acknowledged problem for the current research was the requirement to "start from scratch" in familiarisation with the method, without the ability to draw upon local academic support networks of familiar scholars. There have been no previous Q-Methodology studies submitted for examination in Western Australia and few academics that are sufficiently familiar with the technique. On that basis, the research was considered to be worthwhile but with associated difficulties of a lack of peer and academic support. Immaturity in Q-methodology delivery meant the researcher deployed one Q-set of 50 items that covered a range of visions, roles, and topics. Further research could be undertaken that deployed discrete Q-sorts based only on vision items, or role items, or topic items. With that said, however, this research has made a start at empirical assessment of assumptions about SD.

On the more immediate and practical front, the in-depth interviews with participants in this study demonstrated a range of themes regarding the adoption and non-adoption of LA21 by councils in WA. This work could provide advocates involved with local government and those with an interest in the implementation of LA21 with an important starting point when considering how to overcome the barriers that currently restrict the wider implementation of SD at the level of local government. This could be important work.

There is also the possibility for refining the results from this study for use in traditional R-Methodology scaling research. The purpose of this future research would be to create a questionnaire instrument in order to survey the proportions of people within the population who subscribe to each of the identified value positions. The scales and

individual items of the questionnaire could easily be constructed from the Q-Methodology data presented in this dissertation to quickly establish the relative distribution of belief types about weaker or stronger SD. This is a matter of "head-counting" and it is a task that is not suited to Q-Methodology. Any SD questionnaire derived from the present study would be similar in features, administration and analysis to existing scales such as the New Environmental Paradigm Scale. It would likely be a mail-out or web-delivered "paper-and-pencil" questionnaire utilising multiple Likert-type opinion statements with multiple response options for each item.

Finally, there is a wider requirement for experts in the environmental sciences to present long-term trend data and case-studies that demonstrate the objective reality of the environmental crisis. This data should support or negate the subjective beliefs of people regarding the crisis and better channel human efforts at finding appropriate SD solutions.

5.6 Final conclusions

As recently as October 2001 Elizabeth Heij and Kathy Heinze of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) commented that: "There is an urgent need for Australians to work together to establish meaningful dialogue leading to a new vision for Sustainable Australia" (2001, p. 3). That commentary revealed that regardless of its widespread use for over twenty years, and its positive and powerful aura, the vision of SD in Australia was neither scientifically nor popularly self-evident (Salvaris, 1998). It is rather surprising that the very words "sustainable development" have such powerful and positive associations yet remain contested within literature.

In part, the research leading to this dissertation was developed to establish what visions of SD are emerging in Australian local government by exploration of beliefs and identification of visions. The main purposes were to identify the range of SD visions that existed within a participatory public involved with the implementation of SD at the level of local government, and to offer an empirically-derived description and definition of belief types that emerged from participants. Results from fieldwork involving 170 Q-sort interviews demonstrated that all 170 views of SD were different from each other in varying degress but that the views generally coalesced into five types of opinion which were shared by three or more people, with another seven individuals holding unique views of SD. That said, however, the study also identified that of the five types of viewpoints presented, there were two visions for SD in the specific population of interest for this study that were dominant. These two belief types were characterised as stronger and weaker SD beliefs.

The weaker SD version appeared to be based on an optimistic appraisal of the ability of society to maintain economic growth into the distant future as the optimal solution for promoting human welfare. People holding weaker SD beliefs were explicit in stating that human welfare should be promoted by greater and wider access for more people to economic resources and necessary natural resources. Jobs, income, education, health care, energy and housing were examples of the former resources, and clean air and safe drinking water were examples of the latter. The perceived focus to achieve these types of objectives was improved scientific management of resources and greater technological sophistication in resource use, pollution control and the like. The benefits of scientific and technical developments that were held by people with a weaker SD opinion were also suggested to flow through to better environmental protection and conservation and less environmental harm.

The stronger SD belief type was also founded on the need to promote human welfare but this belief type was dissimilar to weaker SD in how this outcome was to be achieved. Stronger SD was based on a pessimistic appraisal of current economic impacts on the environment and a suggested inability for past and present development trends to continue into the future as a way to deliver human benefits. The purpose of SD, according to people with the stronger SD opinion, was to limit and restrict economic development as a precursor to conserving and preserving the natural environment. According to this belief type, success for SD would be measured in terms of a reduction in human demands and impacts on the ecosystem, and the belief that environmental protection and conservation flow through to greater levels of human welfare.

When people were asked to consider their views about SD, it appeared that a consensus emerged that SD was, in itself, important. No one involved in this study was actually opposed to SD. But disagreement was seen between the two dominating definitions of SD over "why" SD should be implemented. A minority of people considered that it provided a necessary agenda for the promotion of human welfare into the future. The majority of people in this study considered it to be important because it could serve to protect the environment, which in turn would have positive impacts on people. On a range of other issues related to the time frames for implementation, levels of responsibility for implementation, the scope of problems to overcome, and the role of science and technology there was also wholesale disagreement. At the heart of the disagreement over SD definitions, it seemed that the minority viewpoint considered SD solutions to more likely to be found in economic and technological progress whereas the majority viewpoint considered economic and technological progress to be the central problem.

If SD were to deliver the benefits that almost everyone involved with this study appeared to desire, then people involved with its implementation at the level of local government may need to work on forging greater degrees of consensus about what SD actually means and why we should invest time and effort in achieving it. With the failure of the WSSD because of alleged differences in why and how SD should be achieved, such a consensus may be crucial to successful SD implementation in Australia. As a minimum, this research agrees with that of Palmer et al. (1997) and Upham (2000) that a partial solution to the problem of contested values over stronger and weaker SD is for all of those people involved in the SD debate to make their views explicit.

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APPENDICES

Appendix A: Consent forms

This Appendix provides a copy of the informed consent disclosure form that was read and signed by all people participating in this study.

Name

Address

Enquiries: Graham Marshall

Telephone: [redacted]

Dear Participant

My name is Graham Marshall and I am undertaking a PhD research degree at Edith Cowan University. The research is supported by the Department of Environmental Protection and the Western Australian Municipal Association. My research is investigating the ways in which people involved with local government describe the concept of sustainable development (SD).

As you may know, the concept of SD is quite a new idea. For this reason, it is important for environmental managers to understand just how people like yourself actually understand SD. Issues which researchers don't know very much about include whether SD is thought of in a positive or negative fashion; whether people think it leads to good or bad outcomes and whether people would like to see it develop or else keep development the way it is today.

These are all interesting and important questions. Your insights into these issues are crucial in establishing a firm foundation for this and future research. I hope that the outcomes of this research will help people who are interested in issues of social development to implement policies that are better in meeting the aspirations of people in Australia.

I hope you like the idea behind such a project. You are invited to participate in this study. Your participation is of course, completely voluntary. Your participation involves undertaking two interviews with a trained researcher. The two interviews will run for about one hour each. The interviews will be designed around your schedule and can occur in your workplace, home or other place convenient to you. They can also occur at Edith Cowan University if you wish.

The first interview will involve your participation in a Q-sort. Q-sorts are a new research technique and they are not familiar to many people so I'll briefly describe how it works. The basic idea is that you sort a series of cards (each card is a little smaller than a normal playing card). In this Q-sorting exercise there are 50 cards. Each card has a statement written on it and all you have to do is decide how much, or how little you agree with the statement. When sorting the cards, you rank them from 'most like my view' to 'most unlike my view'. This gives you the

opportunity to model *your* opinion about the issue being considered. The important point about Q-sorting is that it is entirely *your* view that matters and the method allows *you* to express that view in a very clear way.

I would like to stress that in the Q-sort you are NOT being 'tested' on anything and there are no 'right' or 'wrong' answers. Everyone has a different viewpoint and all the Q-sort does is allow those viewpoints to be made clear. Previous studies using Q-sorting demonstrate that most people actually enjoy doing it once they get going!

Once the Q-sort is completed, the researcher will record the way in which your Q-sort was arranged. This data will then be entered into a computer and analysed alongside the data provided by other people.

The second part of the session comprises an interview, that will, with your permission be tape-recorded to allow the researcher to analyse the information over the coming weeks.

All of the information that you provide to the researcher will be treated with the utmost respect. Unless you agree to disclosure, your confidentiality is assured and the data you provide will remain anonymous. No individual data you supply will be used in reporting for this study, instead, results will be presented in terms of themes and norms. You are welcome to withdraw your consent at any time during the course of the session and the interview will be stopped immediately. Withdrawal from this study will not prejudice any future relationships you may have with the researcher or with Edith Cowan University.

The proposal for this research has been reviewed by a number of academics and professionals and it has also been given ethical clearance by the Edith Cowan University Ethics Committee. If you wish to receive further information about this study, please feel free to contact the academic supervisor, Professor Alan Black on 9400 5844. To become a participant in this important research, you are required to complete the enclosed consent form. I hope you will agree to participate and I'll look forward to speaking with you shortly.

Yours sincerely

Graham Marshall (M.Psych. B.Psych. BA)
29th April 1999

Informed consent disclosure

If you agree to participate in this study, please complete this informed consent disclosure form and an appointment will be arranged at a time convenient to you for conducting an initial interview.

I.....have listened to the information provided by the researcher from Edith Cowan University and I have also read the accompanying letter. I understand the nature of the research for which I am being asked to participate. I have had the opportunity to ask questions and any questions I have asked have been answered to my satisfaction. In my opinion, the researcher has undertaken to allow me to make an informed decision about participating in this study. On this basis, I agree to participate in the study, knowing that I can withdraw at any time.

Participant signature.....Date.....

Your contact telephone number.....

Furthermore, I have discussed issues of anonymity with the researcher and I am/I am not (delete as necessary) willing to allow information to be published which may allow for my identity to be disclosed in any written report arising from this study.

Participant signature.....Date.....

Researcher signature.....Date.....

If you have any queries about this research please feel free to telephone Graham Marshall on [redacted]. Additional questions can be answered by Professor Alan Black on 9400 5844.

The ethical aspects of this study have been approved by the Edith Cowan University Ethics Community. If you have any complaints or reservations about the ethical aspects of this study you may contact the Committee through the executive officer on 9273 8170. Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.

Appendix B: The Questionnaire

This Appendix provides a copy of the questionnaire that was used to collect demographic and other information from the participants in this study.

Modified New Environmental Paradigm Scale

Please use the scale in the next column to indicate your level of agreement or disagreement with the following six statements.

	Tick one box for each statement				
	Completely agree	Largely agree	No opinion	Largely disagree	Completely disagree
1. The balance of nature is very delicate and easily upset by human activities.	Y	Y	Y	Y	Y
2. The Earth is like a space ship with only limited room and resources.	Y	Y	Y	Y	Y
3. Plants and animals do not exist primarily for human use.	Y	Y	Y	Y	Y
4. Modifying the environment for human use seldom causes serious problems.	Y	Y	Y	Y	Y
5. There are no limits to economic growth for countries of a Western type.	Y	Y	Y	Y	Y
6. Humans were created to rule over the rest of nature.	Y	Y	Y	Y	Y

Demographic Details

Your name:.....

Position Title:.....

5. Length of time in current position:

.....Years and .....Months

Your employer:.....

Tick box if self-employed Y

Contact address (workplace):

.....

.....

.....

Telephone No:.....

E-mail address:.....

6. Please specify your major employment duties or areas of responsibility:

.....

.....

.....

7. Which of the following categories best captures your current paid or unpaid occupation? *Tick one box only*

Employee or unpaid volunteer of a non-government organisation (e.g., Greenpeace) Y

Employee of a University, College or TAFE (e.g., University Lecturer) Y

Employee of a State or Commonwealth Agency (e.g., DEP) Y

Employee of a Local Government Authority (e.g., Shire Ranger) Y

Elected Councilor in Local Government (Go to question 8) Y

Other (please specify).....

8. If you are a Councilor in Local Government, please supply the following information:

A. Length of time as elected Councilor:
.....Years

B. Name of Council:.....

9. Are you:

Y Male Y Female

10. In what year were you born?

Year:.....

11. Highest education qualification completed: *Tick one only*

Year 10 Y

Year 12 Y

TAFE Qualifications Y

Undergraduate degree Y

Post-graduate diploma or Hons Y

Masters degree Y

Doctoral studies Y

Other qualifications Y

12. Major area(s) of academic specialisation:

.....

.....

.....

13. Are you a member of any "green" groups (e.g., Greenpeace,)? *Tick one only*

Y Yes Y No

Please list below:

.....

.....

.....

14. Are you a member of any "business" groups (e.g., Retail Traders Association, etc.)? *Tick one only*

Y Yes Y No

Please list below:

.....

.....

15. Are you a member of any "community" interest groups (e.g., Neighborhood Watch member or Bicycle User Group member)?

Tick one only

Y Yes Y No

Please list below:

.....

.....

.....

.....

16. If there was to be a Federal Parliamentary election next week, for what political party would you be most likely to vote? Tick one only

Liberal Party	Y
National Party	Y
Australian Labor Party	Y
Democrats	Y
Greens WA	Y
Independent	Y
Unsure	Y

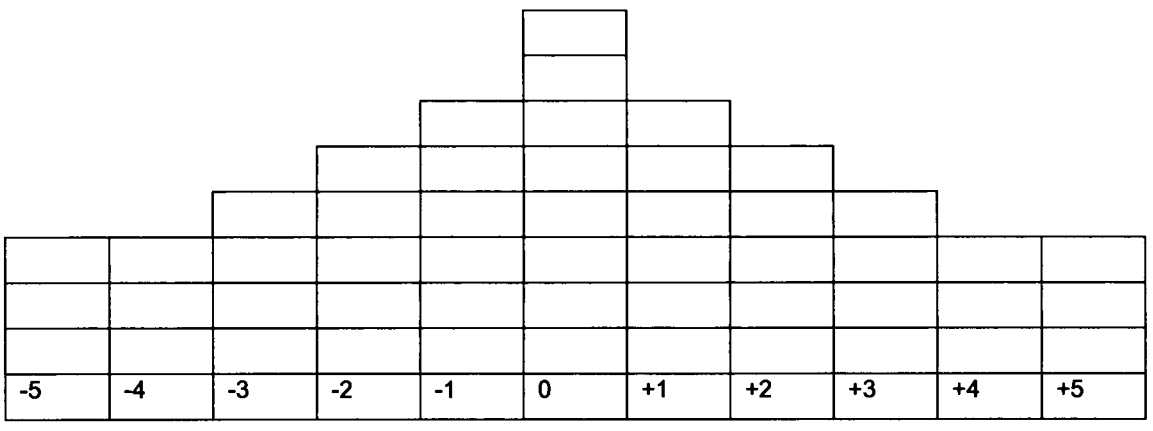
Other (specify).....

17. Please indicate your average annual **family** income prior to tax being removed:

Tick one only

Under $20,000 per year	Y
$21,000 to $35,000	Y
$36,000 to $50,000	Y
$51,000 to $65,000	Y
$66,000 to $80,000	Y
$81,000 to $95,000	Y
Over $96,000 per year	Y

Q-sort Data



CODE:_ _ _ _ _ _ _ _ _

Appendix C: Statements forming the concourse

This Appendix provides details of nearly 1,000 statements about sustainable development that were collected in order to form a "communication concourse" for the purposes of this Q-Methodology study. The statements are collated in order to show their origin, in terms of the author, publication, paragraph number, line number and page number.

Trudgill, S. (1990). Barriers to a Better Environment. Pinter Publishers: London.			
	Environmental matters are a luxury, to be fitted in after we have sorted out other human problems like poverty and health (p.13, para 4).		
2	There is a common interest between looking after the environment and looking after people (p.13, para 4).		
3	Current attitudes which stress environmental concerns may be only paying lip-service to them and, while more people now appear to agree on environmental goals, these goals may be subsumed by more immediate interests when it comes to specific actions which challenge older entrenched attitudes and interests (p. 14, para 2).		
4	Lack of agreement on environmental goals is a substantial barrier to solving environmental problems (p.18, para 1).		
5	There is agreement on environmental ideals which give us general goals concerned with environmental enhancement and human well-being (p.19, para 1).		
6	Some people are not aware that environmental problems exist, or are not aware that they matter (p.18, para 1).		
7	Society is organised, industrialised, urbanised and geared to production and consumption; our goals should therefore take the current position of the great mass of people into account if we wish to be egalitarian rather than escapist (p. 19, para 2).		
8	Our fundamental endeavour in tackling environmental problems is to move to a more self-sustaining system where our consumption is matched by the renewable resources of the earth (p. 19, para 5).		
9	A basic concept of sustainable development is to use resources at a rate at which they can be renewed (p.20, para 1).		
10	Self-sustainability is the key concept in a significant assessment of the environment written by the World Commission on Environment and Development (1987), chaired by Mrs Gro Harlem Brundtland, Prime Minister of Norway (p. 20, last para).		
11	The seven goals of sustainable development are: 1. Reviving growth in areas where it is needed		

	2. Changing the quality of growth so that growth is more sustainable 3. Meeting essential needs for jobs, food, energy, water and sanitation 4. Ensuring a sustainable level of population 5. Conserving and enhancing the resource base 6. Reorienting technology and managing risks adequately 7. Merging environment and economics in decision-making (p.21).		
12	The specific implications of the goal of sustainability come under the headings of population and human resources; achieving food security; the urban challenge; energy; industry; species and ecosystems; managing the oceans; Antarctica and space; and institutional and legal changes (p.22, para 1).		

The World Commission on Environment and Development. (1987). Our Common Future. Oxford: Oxford University Press.			
3	In the middle of the 20th century, we saw our planet from space for the first time. From space, we see a small and fragile ball dominated not by human activity and edifice but by a pattern of clouds, oceans, greenery, and soils. Humanity's inability to fit its doings into that pattern is changing planetary systems, fundamentally. Many such changes are accompanied by life-threatening hazards. This new reality, from which there is no escape, must be recognised – and managed. (Para 1, p. 1).		
14	We can move information and goods faster around the globe than ever before; we can produce more food and more goods with less investment of resources; our technology and science gives us at least the potential to look deeper into and better understand natural systems (para 2, p.1).		
15	The Earth is an organism whose health depends on the health of all its parts (para 2, p.1).		
16	People can build a future that is more prosperous, more just and more secure (para 3, p.1).		
17	Predictions of ever increasing environmental decay, poverty, and hardship in an ever more polluted world among ever decreasing resources are wrong (para 3, p.1).		
18	I see a possibility of a new era of economic growth based on policies that expand the environmental resource base (para 3, p.1).		
19	Economic growth is absolutely essential to relieve the great poverty that is deepening in much of the developing world (para 3, p.1).		
0	Hope for the future is conditional on decisive political action now to begin managing environmental resources to ensure human progress and survival (para 4, p.1).		
21	Those looking for success and signs of hope can find many: Infant mortality is falling; human life expectancy is increasing; the proportion of the worlds adults who can read and write is climbing; the proportion of children starting school is rising; and global food production increases faster than the population grows (para 2, p.2).		
22	The processes that that have produced gains for humanity have given rise to trends that the planet		

	and its people can no longer bear. (para 3, p.2)		
23	It is futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality. (para 2, p. 3).		
24	Many present development trends leave increasing numbers of people poor and vulnerable, while at the same time degrading the environment. Para 2, p. 4).		
25	There is a need for a new development path, one that sustains the entire planet into the distant future. (para 2, p. 4).		
26	The planet is passing through a period of dramatic growth and fundamental change (para, 4, p. 4).		
27	A mainspring of economic growth is new technology (last line, p. 4)		
8	New technology offers the potential to slow the dangerously rapid consumption o finite resources (para 1, p. 5).		
29	Introducing new technology entails high risks, including new forms of pollution and the introduction to the planet of new variations of life forms that could change evolutionary pathways (para 1, p.5). These risks are unacceptable.		
30	Ecology and economy are becoming ever more inter-woven – locally, regionally, nationally, and globally – into a seamless net of causes and effects. (para 2, p. 5)		
31	Many present efforts to guard and maintain human progress, to meet human needs, and to realise human ambitions are simply unsustainable (para 1, p.8).		
32	We are drawing too heavily and too quickly on already overdrawn environmental resource accounts to be]affordable far into the future without bankrupting those accounts (para 1, p.8).		
33	We borrow environmental capital from future generations with no intention or prospect of repaying (para 1, p.8).		
34	Technology and social organisation can be both managed and improved to make way for a new era of economic growth. (para 3, p.8).		
35	Sustainable development requires meeting the basic		

	needs of all and extending to all the opportunity to fulfil their aspirations for a better life. (para 3, p. 8).		
6	Sustainable global development requires that those who are more affluent adopt life-styles within the planet's ecological means (para 1, p. 9).		
37	Sustainable development can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem (para 1, p. 9).		
38	Sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs. (para 2, p. 9)		
39	Sustainable development rests on political will. (para 2, p. 9).		
40	The ability to anticipate and prevent environmental damage requires that ecological dimensions of policy be considered at the same time as economic, trade, energy, agricultural, and other dimensions (para, 3, p. 10).		
41	Urgent steps are needed to limit extreme rates of population growth (para 5, p. 11).		
42	Growth in world cereal production has steadily outstripped world population growth (para, 2, p.12).		
43	There is a growing scientific consensus that species are disappearing at rates never before witnessed on the planet (para 2, p. 13).		
4	There is controversy over the rates of species extinction and the risks they entail (para 3, p.13).		
45	Utility aside, there are moral, ethical, cultural, aesthetic, and purely scientific reasons for conserving wild beings. (para 3, p. 13).		
46	Experience in the industrialised nations has proved that anti-pollution technology has been cost-effective in terms of health, property and environmental damage avoided, and that it has made many industries more profitable by making them more resource-efficient. (para 1, p. 16).		
47	While economic growth has continued, the consumption of raw materials has held steady and		

	even declined, and new technologies offer the promise of further efficiencies. (para 1, p. 16).		
48	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. (para 3, p. 16).		
49	Emerging technologies bring risks of new toxic chemicals and wastes and of major accidents of a type and scale beyond present coping mechanisms. (para, 3, p.16)		
50	Many essential human needs can only be met through goods and services provided by industry, and the shift to sustainable development must be powered by a continuing flow of wealth from industry (para 4, p. 16).		

51	Good city management requires decentralisation – of funds, political power, and personnel – to local authorities, which are best placed to appreciate and manage local needs (para, 3, p. 17).		
52	The sustainable development of cities will depend on closer work with the majorities of urban poor who are the true city builders, tapping the skills, energies, and resources of neighbourhood groups and those in the 'informal sector'. (para 3, p. 17)		
53	Governments must begin now to make key national, economic, and sectorial agencies directly responsible and accountable for ensuring that their policies, programmes, and budgets support development that is economically and ecologically sustainable. (para 2, p. 20).		
54	Regional organisations need to do more to integrate environment fully in their goals and activities. (para 3, p. 20)		
55	Making the difficult choices involved in achieving sustainable development will depend on the widespread support and involvement of an informed public and of non-government organisations, the scientific community, and industry (para 2, p. 21).		
56	Over the past decade, the overall cost-effectiveness of investments in halting pollution has been demonstrated (para 4, p. 21).		
57	The escalating economic and ecological damage costs of not investing in environmental protection and improvement have been repeatedly demonstrated (para 4, p.21).		
58	Over the course of this century, the relationship between the human world and the planet that sustains it has undergone a profound change (line 1, p. 22).		
59	The rate of global change is outstripping the ability of scientific disciplines and our current capabilities to assess and advise. (para 3, p. 22).		
60	The next few decades are crucial. The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old approaches to development and environmental protection will increase instability.		
61	Where economic growth has led to improvements in living standards, it has been achieved in ways that are globally damaging in the longer term. (last para,		

	p. 28)		
62	Today's environmental challenges arise both from the lack of development and from the unintended consequences of some forms of economic growth. (top, p. 29).		
63	Growth and development have vastly improved living standards and the quality of life. (para 3, p. 31).		
64	Nature is bountiful, but it is also fragile and finely balanced. (last para, p. 32)		
65	There are environmental thresholds that cannot be crossed without endangering the basic integrity of the ecosystem. Today, we are close to many of these thresholds. (para 1, p. 33).		
66	We have little time in which to anticipate and prevent unexpected effects of our impact on the natural system (para, 1, p.33)		
67	Many of the risks stemming from our productive activity and the technologies we use cross national boundaries; many are global. (para 3, p. 35)		
68	The risks associated with economic growth increase faster than our abilities to manage them (para 4, p. 35).		
69	In one area after another, environmental degradation is eroding the potential for development. (last para, p. 35)		
70	Human progress has always depended on our technical ingenuity and a capacity for co-operative action. These qualities have often been used constructively to achieve economic development and environmental progress. (para 2, p. 37)		
71	Environment and development are not separate challenges; they are inexorably linked. Development cannot subsist upon a deteriorating environmental resource base; the environment cannot be protected when growth leaves out of account the costs of environmental destruction. (para 3, p. 37)		
72	Economics and ecology must be completely integrated in decision-making and law-making processes not just to protect the environment, but also to protect and promote development. (last para, p. 37)		
73	New approaches must involve programmes of social development, particularly to improve the position of women in society, to protect vulnerable groups, and		

	to promote local participation in decision-making. (para 2, p. 38)		
74	What is required is a new approach that aims at a type of development that integrates production with resource conservation and enhancement, and that links both to the provision for all of an adequate livelihood base and equitable access to resources. (para 1, p. 40)		
75	Economic growth always brings risk of environmental damage, as it puts pressure on environmental resources. (para 2, p.40)		
76	No single blueprint of sustainability will be found, as economic and social systems and ecological conditions differ widely among countries. (para 4, p. 40)		
77	Sustainable development should be seen as a global objective. (para 4, p.40)		
78	Sustainability implies a concern for social equity between generations, a concern that must logically be extended to equity within each generation. (para 2, p. 43).		
79	The satisfaction of human needs and aspirations is the major objective of development (last para, p. 43)		
80	Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life. (para 1, p. 44)		
81	Living standards that go beyond the basic minimum are sustainable only if consumption standards everywhere have regard for long-term sustainability. (para 2, p. 44)		
82	Sustainable development requires the promotion of values that encourage consumption standards that are within the bounds of the ecological possible and to which all can reasonably aspire. (para 2, p. 44)		
83	Sustainable development requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all. (para 3, p.44)		
84	Sustainable development can only be pursued if demographic developments are in harmony with the changing productive potential of the ecosystem. (para 4, p. 44)		

85	Today's interventions in natural systems are more drastic in scale and impact, and more threatening to life-support systems both locally and globally. (last para, p. 44)		
86	At a minimum, sustainable development must not endanger the natural systems that support life on earth: the atmosphere, the waters, the soils, and the living beings. (first para, p. 45)		
87	There are no set limits in terms of population growth or resource use beyond which lies ecological disaster. (para 2, p. 45)		
88	The accumulation of knowledge and the development of technology will continue to prevent ecological disaster. (para 2, p. 45)		
89	Sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few options for future generations as possible. (para 1, p.46)		
0	Sustainable development requires the conservation of plant and animal species. (para 2, p.46)		
91	Sustainable development requires that the adverse impacts on the quality of air, water, and other natural elements are minimised so as to sustain the ecosystem's overall integrity. (para 3, p.46)		
92	Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. (para, 4, p. 46)		
93	The world must quickly design strategies that will allow nations to move from their present, often destructive, processes of growth and development onto sustainable development paths. (para 3, p. 49)		
94	Economic growth can be sustainable if industrialised nations continue the shift toward less material and energy-intensive activities and the improvement of their efficiency in using materials and energy. (para 3, p. 51)		
95	Sustainable development requires a change in the content of growth to make it less material- and energy-intensive and more equitable in its impact. (para 3, p. 52)		

96	Sustainable development can be pursued more easily when population size is stabilised at a level consistent with the productive capacity of ecosystems. (para 1, p.56)		
97	If needs are to be met on a sustainable basis the Earth's natural resource base must be conserved and enhanced. (para 3, p. 57)		
98	The conservation of nature is part of our moral obligation to other living things. (para 3, p. 57)		
99	The conservation of nature is part of our moral obligation to future generations of people. (para 3, p.57).		
100	The ultimate limits to global development are perhaps determined by the availability of energy resources and by the biosphere's capacity to absorb the by-products of energy use. (last para, p. 58)		
101	The history of technological developments demonstrates that humanity can adjust to scarcity of resources through greater efficiency in use, recycling, and substitution. (para 4, p. 59)		
102	The common theme for sustainable development is the need to integrate economic and ecological considerations in decision-making. (para 2, p. 62)		
103	Many of the environmental and developmental problems that confront us have their roots in the sectoral fragmentation of responsibility. Sustainable development requires that such fragmentation be overcome. (para 2, p. 63)		
104	If humanity is to avert economic, social, and environmental catastrophes, it is essential that global economic growth be revitalised. In practical terms, this means more rapid economic growth in both industrialised and developing countries, freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows. (para 2, p. 89)		
105	The international economy must speed up world growth while respecting the environmental constraints imposed by natural systems. (para 4, p.89)		
106	Each year the number of human beings increases, but the amount of natural resources with which to sustain the population, to improve the quality of human lives, and to eliminate mass poverty remains finite (para 1, p.95).		

107	Present rates of population growth cannot continue. (para 2, p. 95)		
108	People are the ultimate resource. (para 3, p. 95)		
109	Governments must work on several fronts – to limit population growth; to control the impact of such growth on resources and, with increasing knowledge, enlarge their range and improve their productivity; to realise human potential so that people can better husband and use resources; and to provide people with forms of social security. (last para, p. 95)		
110	A reduction of current population growth rates is an imperative for sustainable development. (para 2, p. 105)		
111	Policymakers must realise that spending on efforts to raise human potential is crucial to a nation's economic and productive activities and to achieving sustainable human progress. (para 4, p. 105)		
112	Policies must aim to improve the position of women in society. Such policies should essentially promote women's rights. (para 1, p. 106)		
113	People are a creative resource, and this creativity is an asset societies must tap. (last para, p. 108)		
114	The agricultural resources and the technology needed to feed growing populations are available. (para 2, p. 118)		
115	New technologies provide opportunities for increasing productivity while reducing pressure on resources. (para 2, p. 144)		
116	Saving species and ecosystems is an indispensable prerequisite for sustainable development. (last para, p. 166)		
117	The environmental risks and uncertainties of a high-energy using future society are disturbing. (para 3, p. 172)		
118	Every effort should be made to develop the potential for renewable energy, which should form the foundation of global energy structure during the 21st century. (last para, p. 195)		

119	It is clear that a low energy use path is the best way towards a sustainable future. (para 3, p. 201)		
120	Pollution damage to human health could become intolerable and threats to property and ecosystems will continue to grow. (para, 2, p. 211)		
121	Industries and industrial operations should be encouraged that are more efficient in terms of resource use, that generate less pollution and waste, that are based on renewable rather than non-renewable resources, and that minimise irreversible adverse impacts on human health and the environment. (para 4, p. 213) With careful management, new and emerging technologies offer enormous opportunities for raising productivity and living standards, for improving health, and for conserving the natural resource base. (para 2, p.217)		
122	The products of genetic engineering could dramatically improve human and animal health. (para 5, p. 217)		
123	Chemical products have greatly improved health and life expectancies; increased agricultural production, raised comfort, convenience, and general quality of life; and expanded economic opportunities. Last para, p. 223)		
124	The overriding policy objective for sustainability must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse. (para 4, p. 227) See page 229		
125	The physical environment in many Western cities has improved substantially over the decades. (para 2, p. 242)		
126	The role of central government should be primarily to strengthen the capacity of local governments to find and carry through effective solutions to local urban problems and stimulate local opportunities. (para 2, p. 247)		
127	Urban development cannot be based on standardised models. Development possibilities are particular to each city and must be assessed within the context of its own region. (para, 4, p. 247)		
128	Although technical help from central agencies may be needed, only a strong local government can ensure that the needs, customs, urban forms, social		

	priorities, and environmental conditions of the local area are reflected in local plans for urban development. (last para, p. 247)		
129	The lack of political access to an adequate financial base is a major weakness of local government. (para 1, p. 248)		
130	To become key agents of development, local governments need enhanced political, institutional, and financial capacity, notably access to more of the wealth generated in the city. (para 4, p. 248)		
131	Sustainable development can be secured only through international co-operation and agreed regimes for surveillance, development, and management in the common interest. (para 1, p.261)		
132	Without agreed, and enforceable rules governing the rights and duties of states in respect of the global commons, the pressure of demands on finite resources will destroy their ecological integrity over time. (para 2, p. 261)		
133	Looking to the next century, sustainable development, if not survival itself, depends on significant advances in the management of the oceans. (para4, p. 264)		
134	Among the dangers facing the environment, the possibility of nuclear war, or military conflict of a lesser scale involving weapons of mass destruction, is undoubtedly the gravest. Issues of peace and security are central to the concept of sustainable development. (para 1, p. 290)		
135	Environmental threats to security are now beginning to emerge on a global scale. The most worrisome of these stem from the possible consequences of global warming caused by the atmospheric build-up of carbon dioxide and other gases. (para 2, p. 294)		
136	It is of utmost importance that governments become aware of imminent environmental stress before the damage actually threatens core national interests. (para 4, p. 302)		
137	Human survival and well-being could depend on success in elevating sustainable development to a global ethic. (para 2, p. 308)		
138	Sustainable development calls for greater willingness and co-operation to combat international poverty, to maintain peace and enhance security World-wide, and to manage the global commons.		

	(para 2, p. 308)		
139	Sustainable development requires national and international action in respect of population, food, plant and animal species, energy, industry, and urban settlements. (para 2, p. 308)		
140	The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old approaches to development and environmental protection will increase instability. (para 2, p.309)		
141	The next few decades are crucial for the future of humanity. (para, 1. P. 310)		
142	Opportunities for more sustainable forms of growth and development are growing. (para 1, p.310)		
143	New technologies and unlimited access to information offer great promise for a bright future. (para 1, p. 310)		
144	Environmental protection and resource management agencies have registered notable successes in improving environmental quality during the past two decades. (para 1 and 2, p. 311)		
45	Environmental protection and sustainable development must be an integral part of the mandates of all agencies of governments, of international organisations, and of major private-sector institutions. (para 3, p. 312)		
146	The international legal framework must also be significantly strengthened in support of sustainable development. (last para, p. 312)		
147	Nations now confront a growing number, frequency, and scale of crises. (para 4, p. 313)		
148	The ability to choose policy paths that are sustainable requires that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, industrial, and other dimensions. That is the chief institutional challenge of the 1990s. (last para, p. 313)		
149	The major central economic and sectorial agencies of governments should be made directly responsible and fully accountable for ensuring their policies, programmes, and budgets support development that is ecologically as well as economically sustainable. (para 4, p. 314)		

150	Regional and sub-regional organisations need to be strengthened and made responsible and accountable for ensuring their programmes and budgets encourage and support sustainable development policies and practices. (para 2, p. 315)		
151	Each agency should be directly responsible for ensuring that the environmental and resource aspects of programmes and projects are properly taken into account when they are being planned, and that the financial resources needed are provided directly from its own budget. (para 1, p. 318)		

152	The risks associated with new technologies are growing. The numbers, scale, frequency, and impact of natural and human-caused disasters are mounting. The risks of irreversible damage to natural systems regionally and globally are becoming significant. (para 4, p. 323)		
153	The transition to sustainable development will require a range of public policy choices that are inherently complex and politically difficult. (para 2, p. 326)		
154	Governments need to recognise and extend NGOs' right to know and have access to information on the environment and natural resources; their right to be consulted and to participate in decision-making on activities likely to have a significant effect on their environment; and their right to legal remedies and redress when their health or environment has been seriously affected. (para 3, p. 328)		
155	NGOs and private community groups can often provide an efficient and effective alternative to public agencies in the delivery of programmes and projects. (para 4, p. 328)		
156	Recognition by states of their responsibility to ensure adequate environments for present as well as future generations is an important step towards sustainable development. (last para, p. 330)		
157	It makes long-term economic sense to pursue environmentally sound policies. (para 5, p. 334)		
158	Principles of sustainable development (pp. 363-366) 1 Revive growth 2 Change the quality of growth 3 Conserve and enhance the resource base 4 Ensure a sustainable level of population 5 Reorient technology and mange risks 6 Integrate environment and economics in decision-making 7 Reform international economic relations 8 Strengthen international co-operation		
Brueckner, M. (1998). The Role of Management in the Movement Towards Sustainability: Perceived Responsibilities, Challenges, and Opportunities. Unpublished Masters Thesis, Edith Cowan University: Perth.			
159	In the last twenty years the global economy has grown beyond the physical carrying capacity of the planet earth on which all life depends. Unrestricted economic expansion, compounded by continuous population growth and resultant pressures on resources, has been responsible for unprecedented levels of resource depletion, waste discharge, and		

	subsequent ecological decline. (para 2, p. 1)		
160	Sustainable development demands changes in current patterns of consumption and resource use, and it requires attitude and behavioural shifts away from the maxim that more is better, and that this be reflected in all human activities. (line 2o, p. 2)		
161	Sustainable development is an issue of academic and political rhetoric. (line 23, p. 2)		
162	The last five years have seen mounting public pressure on politicians, academics, and the business community to seriously engage with sustainable development and move it from a theoretical concept to practice. (line 28, p. 2)		
163	The term 'ecologically sustainable development' has a wide currency and is often misunderstood and misinterpreted. (line 20, p. 7)		
164	Humanity has a right to a healthy and productive environment. (line 27, p. 8)		
165	The concept of sustainable development down plays the ability of technological advancement to solve environmental problems and the abandonment of economic growth threaten the prospects of prosperity in Third World countries. (line 15, p. 9)		
166	Sustainable development has the force of political commitment at the highest levels of government. (line 13, p. 11)		
67	The substantial lack of progress made by governments to implement sustainable development has produced a strong disappointment amongst NGOs and other interested observers. (line 17, p. 12)		
168	The Group of Eight Leading Industrialised Nations (G8) and other First World governments have failed to provide the necessary funds for the operationalisation of sustainability principles. (line 19, p. 12)		
169	The world community has reached a point where demands are being made for sustainable development principles to be translated and put into action. (line 10, p. 13)		
170	There is still a need for profound political and attitudinal shifts to occur before tangible economic and ecological changes can be expected to occur. (line 13, p. 13)		

171	The primary objective of sustainable development is to provide lasting and secure livelihoods that minimise resource depletion, environmental degradation, and social instability. (line 2o, p. 13)		
172	The concept of sustainable development can be understood as a process involving an interaction between the biological and resource system, the economic system, and the social system, with the general aim of maximising the goals of these systems through the achievement of trade-offs. (line 25, p. 13)		
173	For sustainable development, the human ascribed goals of the biological system aim at genetic diversity and resilience as well as biological productivity. Economic goals focus on the reduction of poverty and the equitable distribution of useful goods and services. Social goals are concerned with cultural diversity, institutional stability, social justice, and public participation. (line 30, p. 13) It is impossible to jointly maximise the objectives of the biological, economic and social systems. (line 11, p. 14)		
74	Sustainable development is predominantly concerned with the protection of ecosystems. (line 18, p. 14)		
175	Sustainable development is predominantly concerned with conserving resources. (line 19, p. 14)		
176	Sustainable development is predominantly concerned with the protection of the rights and welfare of future generations (line 2, p. 15)		
177	Public participation in decision-making is a key sustainable development concept. (line 5, p. 15)		
178	The term 'sustainable development has come to be used to describe a wide variety of ecological and social concerns. (line 29, p. 15)		
179	Sustainable development is a means to ensure continuous increases in per capita income. (line 17, p. 16)		
180	The fact that there is no precise definition of sustainable development currently available is a problem. (line 20, p. 16)		
181	Degrees of commitment to sustainability (p. 17) 1 Futurity 2 Environment		

	3 Public participation 4 Equity		
182	A concise and operable translation of sustainability should incorporate the optimisation of ecological, economic, and social aspects; the promotion of inter- and intra-generational equity; the protection of the environment, as well as give emphasis to the notion of public participation. (line 10, p. 18)		
183	The actions of present generations – resource depletion, pollution, overpopulation, land exhaustion, ozone depletion and global warming, to mention only a few of today's prominent environmental problems – will have an effect on those still to be born as well as people living now. (line 2, p. 20)		

184	Sustainable development generally implies consideration of a longer time horizon than the expected life span of the current generation. In other words, the notion of sustainability implies that people who are presently alive ought to consider future as well as present generations. (line 28, p.20)		
185	Current generations have an ethical responsibility to consider economic and environmental aspects in view of future generations' welfare. (line 30, p. 20)		
186	The impact of present generations on the natural environment causes unwarranted physical, social and economic harm to future generations. (line 13, p. 22)		
187	Humankind as a moral obligation to consider future generations in the decision-making process occurring in today's society. (line 19, p. 22)		
188	Because of the current non-existence of people yet to be born, they can have no rights or entitlements in the here and now; hence there is no obligation to consider future generations when making decisions now. 9line 25, p. 22)		
189	We cannot owe obligations to future generations if we do not know what their idea of wants or needs will be due to changing historical and social circumstances. (LAST LINE, P. 22)		
190	Nature needs to be preserved for its own sake and not just for the interests of human being. (line 27, p. 30)		
191	There is no moral obligation to minimise the human impact on nature. (line 30, p. 32)		
192	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources. (line 1, p.33)		
193	Humankind is separate and superior to nature. (line 3, p. 33)		
94	The natural world as intrinsic value and we should strive to emancipate nature from the effects of human environmental degradation and exploitation. (line 20, p. 34)		
195	Economic development or modernisation can be considered the root source of modern environmental risks. (line 30, p. 34)		
196	Human beings are part of the biosphere in organic		

	terms but above the biosphere intellectually. Humans are in the position of stewards of life's continuity on earth. (line 28, p. 36)		
197	A prosperous economy depends on a healthy ecology. (line 31, p. 36)		
198	Present generations have an obligation to preserve resources and eco-systems and keep them intact for future generations. (line 2, . 41)		
199	A continuation of economic expansion will lead to the destruction of large parts of the world's life support system and is ultimately unsustainable. (line 11, p. 42)		
200	There is a causal relationship between economic growth and environmental degradation. (line 1, p. 43)		
201	Examples of human impact on the environment are alarming and without immediate action being taken to reduce current levels of environmental degradation, severe ecological and, as a result, economic and social problems will soon be felt. (line 16, p. 49)		
202	Economic growth will help provide the answers to all economic and environmental problems. (line 33, p. 510		
203	Despite technological progress and resource substitution, the scarcity of resources will determine the limits of economic growth. (line 24, p. 52)		
204	Sustainable economic expansion is an illusion because the existence of limited resources will not allow for unlimited growth of the macro-economy. (line 25, p. 52)		
205	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems. (line 18, p. 55)		
206	On the whole natural resources are virtually infinite. Should certain resources become scarce, however, the economy can grow around the particular scarcity through substitution or the invention of new technologies. (line 20, p. 57)		
207	The current world crises is evidence that the conventional economics paradigm, or the Western worldview, has failed as a development model. (line 13, p. 69)		
208	We need an attitudinal shift from "more-is-better" to		

	the ecologically sustainable maxim of "enough-is-enough". (line 20, p. 69)		
209	Sustainable development is good business in itself. Green consumerism, environmentally and socially safe products, waste reductions, and efficiency increases not only contribute to social welfare and environmental protection, but also serve the bottom line of the business enterprise. (line 29, p. 72) Resource efficiency, energy savings, closed-system production processes, clean production methods and emission reductions have greatly improved the economic viability of many organisations. (line 5, p. 73)		
210	There are many tangible advantages for companies to take on the sustainability challenge. (line 21, p. 73)		
211	Receptivity to sustainable development ideas and suggestions can pay real dividends, improve companies' overall performance, and ensure their long-term economic viability. (line 29, p. 73)		
212	The economic status quo is ultimately unsustainable. (line 32, p. 73)		
213	Intensified efforts of all countries, especially industrialised nations, are necessary to work towards a sustainable global economy. (line 10, p. 75)		
214	Australia's stance towards sustainable development is controversial and characterised by a strong reluctance to change in the country's economic and political status quo. (line 27, p. 75)		
215	The present political conservatism exhibited by the Australian government may cause Australia as a nation to fall behind the international movement towards ecological sustainable development. (line 28, p. 75)		
216	Australia would generally appear to be a country with a strong potential for the successful reorientation towards sustainability. (last line, p. 76)		
217	Australia is in an advantageous position in the context of ESD when compared to other industrialised countries. (line 9, p. 77)		
218	Growing environmental awareness among members of the public have caused governments to take environmental policies seriously. (line 9, p. 78)		
219	Australia may isolate itself from the rest of the world,		

	politically as well as economically, because its current stance toward environmental policy is lagging behind international standards. (line 18, p. 79)		
220	Only modern industries and jobs that harmonise with nature can be sustained in the long run and provide economic and social stability. (line 15, p. 82)		
221	Australia's current environmental legislation is insufficient to address the ESD challenge. (line 17, p. 82)		
222	Conflicting agendas and ideas in regards to economic and environmental goals between Commonwealth, State and Local Governments compound the problem of effective environmental regulation. (line 19, p. 82)		
223	Australia needs to rid itself of the "Quarry Syndrome" and work towards the image of a "clever country". (line 27, p. 88)		
224	The ESD challenge hinges on the commitment of countries to change their current course of development. (line 3, p. 90)		
225	The commitment of government and all sectors of the community is the key element on which a sustainable future depends. (line 1, p. 91)		
226	Table on commitment to environment (P. 95)		
227	This management of this organisation have a generally pro-environment mindset.		
228	This organisation makes adequate resource allocations to pro-environmental activities.		
229	Top management supports and is involved in the environmental management process.		
230	This organisation has established environmental performance objectives.		
231	All our environmental programmes are integrated with other programmes of the organisation.		
232	Environmental reporting structures exist in the organisation.		
233	Environmental management performance is reported to top management.		
234	Environmental management involves all functional		

	areas of the organisation.		
235	All employees receive adequate environmental training.		
236	We have a forward-looking environmental attitude.		
237	There is a lack of awareness in the Western Australian Local Government community to the existence of local and international environmental standards. (last line, p. 111)		
38	Humankind needs to rethink the fundamental assumptions regarding human motivation, the place of economic institutions in society, the relationship of the world economy to nature, as well as the role given to economic rationality and economic values as guides for social decisions. (line 13, p. 116)		
239	Change needs to occur within the current systems, redirecting economic development towards the goal of long-term sustainability, re-conceptualising current economy-ecology relations, and defining new maxims for human progress. (line 18, p. 116)		
240	Local government needs to take responsibility in the sustainability challenge, developing long-term management strategies that are in harmony with societies' needs and environmental thresholds. (line 25, p. 116)		
241	Communication and participation are the keys to enable all stakeholders within the human economy to work jointly towards a shared vision of a sustainable future. (line 22, p. 117)		
242	Any attempt of sustainability practice is condemned to defeat if it fails to embrace local people. (line 27, p. 120)		
243	In essence, the individual and private household is at the core of sustainability for the planet which in turn means that the decision-making power at the level of private households needs to be recognised. (line 29, p. 120)		
244	The examples of ethical investment, green consumerism, and voluntary simplicity attest to the fact that the potential to move ESD from theory into practice rests to a large degree within private households and ultimately, the change towards sustainability starts with the individual. (line 8, p. 122)		
245	Ideological change within business needs to occur and be translated into corporate action to reverse		

	and be translated into corporate action to reverse current unsustainable development trends and to shift away from environment degrading practices. (line 9, p. 137)		

Reid, D. (1995). Sustainable development: An Introductory Guide. Earthscan Publications: London.			
246	The concept of sustainable development offers hope and encouragement to those concerned about social justice and ecological health. (para 2, p. xiv)		
247	There is no mystique or obscurity about the central meanings of sustainable development. (last line, p. xiv)		
248	The idea of sustainable development has attracted groups with very different interests. It has been able to do this largely through the vagueness and even ambiguity of the term itself. (para 2, p. xv)		
249	Sustainable development is rather like democracy or justice. People are generally in favour of it, while retaining their individual definitions of what it actually means, and conceding that they might be hard pressed to agree with others on how we might actually achieve it. (para 2, p. xvi)		
250	The ambiguities of the definitions of sustainable development allow the notion to be hijacked by those wishing to cloak unsustainable activity in its respectable garb. (para 3, p. xvii)		
251	The idea of sustainable development cannot be translated into principles on which practicable and effective policies can be based and which will reverse current unsustainable trends of ecological degradation and human oppression. (para 1, p. xviii)		
252	Sustainable development is not significantly more than an inoffensive idea. (para 1, p. xviii)		
253	Sustainable development is merely an idea that provides the basis for many theoretical studies but which cannot survive in the world of economic realities and short-term political priorities. (point 3, p. xviii)		
54	The concept of sustainable development is so open to misinterpretation that established interests can ignore its radical implications and be content with minor adjustments to their practices to allow them to claim they are following a sustainable path. (point 4, p. xviii)		
255	The call to consider the needs of future generations is not a realistic aspiration; rather, it is an example of pious and vacuous rhetoric. (para 1, p. xiv)		
256	Over recent decades increases in the use of non-		

	renewable resources and pollution levels have been accompanied by accelerating rates of deforestation, decline in fish stocks, loss of agricultural land, loss of soils, depletion of fresh water, loss of habitats, loss of species, and loss of bio-diversity. Last line, p. 4)		
257	Equity demands that we assist the South on a far grander scale and in far more effective manner than development agencies have managed so far, to tackle simultaneously the linked problems of meeting human needs and arresting environmental degradation. (Para 2, p. 21)		
258	The unsustainable impacts of current development trends means it is no longer possible to hold the view that the Third World's salvation lies in following the development path of the industrial nations. (para 2, p. 21)		
259	The importance of the concept of sustainable development is that it is built on the realisation of the need to alleviate the global crisis in a systematic way that integrates human, ecological and economic factors. (para 3, p. 22)		
260	Higher levels of production are a good measure of the success of the human economy. Such a measure is plausible since there are clearly infinite reservoirs from which raw materials can be obtained and into which waste products can be deposited. (para 1, p. 25)		
61	Sustainable development is about creating a "steady state economy" featuring resource self-sufficiency, energy conservation, resource recycling, low impact technologies, biotic rights, and a decentralised society in which people would show more interest in the quality of life than in increasing the number of their material possessions. (para 4, p. 30)		
262	Even considering the most optimistic estimates of the benefits of technology, continued economic growth will lead to systemic breakdown. (para 1, p. 31)		
263	Humanity's inventiveness in confronting problems is without limits. (para 1, p. 33)		
264	In spite of the doomsday predictions made by proponents of the need for sustainability, human welfare is actually increasing, resources are now more plentiful than previously, the problem of energy scarcity has been solved by human ingenuity and pollution levels are declining. (para 2, p. 33)		

265	The metaphor of a "space-ship" Earth is most appropriate to understanding the need for sustainable development. Growth that depends on consumption of more and more resources cannot continue indefinitely in a finite world. (para 3, p. 33)		
266	A sustainable global society is technically and economically possible. It could be much more desirable than a society that tries to solve its problems by constant expansion. (point 3, p. 35)		
267	The legitimate objective of development is the modification of the biosphere and the application of human, financial, living and non-living resources to satisfy human needs and improve the quality of human life. (para 2, p. 38)		
268	Sustainable development is founded on the notion that conservation and development are mutually dependent rather than antithetically opposed. (para 1, p. 40)		
69	Sustainable development is entirely compatible with the growing demand for "people centred" development that achieves a wider distribution of benefits to whole populations; that makes fuller use of people's labour, capabilities, motivations and creativity; and that is more sensitive to cultural heritage. (last para, p. 40)		
270	Human beings, in their quest for economic development and enjoyment of the riches of nature, must come to terms with the reality of resource limitation and the carrying capacity of ecosystems. (para 2, p. 41)		
271	Human beings have become a major evolutionary force, we are morally obliged – to our descendants and to other creatures – to act prudently. (last para, p. 41)		
272	Working towards a sustainable living is welcome, if it is taken globally, but building a sustainable society, with the present global configuration of nation states, is definitely unwelcome for the majority of the human race, suffering as they do from abject poverty and rampant diseases. Making Third World societies aware of the need and tools for caring for their environments is welcome, but convincing them to accept their suffering and be content with their squalor is definitely unwelcome. (para 4, p. 43)		
273	Rapid industrialisation is the key to progress in poorer countries and it will lead to better standards of living and improvements in social welfare. (para 1,		

	p. 44)		
274	The fact that the conventional model of development either leaves behind, or in some ways even creates large areas of poverty, stagnation, marginality and actual exclusion from social and economic progress is too obvious and too urgent to be overlooked. (para 1 p. 45)		
275	The point of development should not be to develop things, but to develop people. Any process of growth that does not lead to the fulfilment of basic needs or, even worse, disrupts them is a travesty of the idea of development. (para 1, p. 46)		
276	Previous years of economic development, far from eliminating hunger and hardship, have coincided with an increase. More of the same kind of development will almost certainly increase the number of people suffering from extreme poverty. (para 2, p. 46)		
277	No concept of development can be accepted that continues to condemn hundreds of millions of people to starvation and despair. (para 1, p. 48)		
278	Sustainable development is derived from two closely related paradigms of conservation. The first is that nature should be conserved from laissez-faire economic conditions that consider living resources as infinite and inexhaustible. The second is a moral injunction for people to act as a steward of nature. (para 3, p. 53)		
279	Sustainable development involves the integration of conservation and development, satisfaction of basic human needs, achievement of equity and social justice, the provision for social self-determination and cultural diversity and the maintenance of ecological integrity. (para 1, p. 54)		
280	Sustainable development is about respect and care for the community of life which is one great interdependent system. Other aims include the improvement of the quality of human life, conservation of the earth's vitality and diversity, minimisation of the depletion of non-renewable resources and keeping population growth within the earth's carrying capacity. Other important principles of sustainable development involve changing personal attitudes and practices, enabling communities to care for their own environments, providing a framework to integrate development and conservation and lastly, creating a global alliance. (paras 2, p. 54)		

281	Local communities are a focus for many of the changes needed to achieve sustainable development but they can do little without the power to act and must, therefore, be given authority to manage resources on which they depend. (para 2, p. 55)		
82	Sustainable developments starting point is a concern for people. (para 1, p. 56)		
283	Many forms of development erode the environmental resources on which they are based and environmental degradation can undermine economic development. (para 3, p. 56)		
284	Sustainable development fails to consider the nature of human need or its implication for development. (para 1, p. 57)		
285	Growth has no set limits in terms of population or resource use beyond which lies ecological disaster. The accumulation of knowledge and the development of technology can enhance the carrying capacity of the resource base. (last para, p. 57)		
286	An imposed programme of objectives for ecological sustainability would be politically impracticable. (last line, p. 57)		
287	The key concepts of sustainability are linked by equity. Human needs cannot be met unless resources are shared out more equally and equity involves sharing resources within current generations and sharing resources with future generations. (para 2, p. 58)		
288	A new era of economic growth would have very serious negative ecological implications. (para 3, p. 59)		
289	If development is to serve people it must not simply raise material standards but also improve the quality of their lives. (last para, p. 82)		
290	The "basic needs" approach of sustainable development is merely an extension of conventional economic development with its assumption that there is a simple relationship between the production of material goods and the fulfilling of human need. (para 1, p. 83)		
291	Since we have unlimited resources, we are able to meet the fundamental needs of the present generation without having to consider whether our activities might deny similar opportunities to		

	succeeding generations. (para 1, p. 89)		
292	We cannot assume that resources exist in sufficient quantity to continue to meet fundamental needs. It is therefore important to try to formulate principles for the sustainable use of natural resources. (para 2, p. 89)		
293	The most important resources are not natural but human, and the most important of these are humankind's ingenuity, resourcefulness and adaptability. (last para, p. 91)		
294	The principle underlying the sustainable use of renewable resources is clear. To ensure that succeeding generations have as much access to these as we have, we must utilise them at rates lower than, or at most equal to, the rates at which they regenerate. (para 2, p. 94)		
295	Our current dependence on fossil fuels and extracted minerals is an immediate and obvious challenge to any attempt to formulate a principle for their sustainable use. (para 4, p. 95)		
296	The principle of inter-generational equity requires us to manage our transitions to more sustainable systems without denying future generations the same ability to meet contingencies. (last line, p. 98)		
297	A sustainable policy on non-renewable resources does not require a complete ban on their consumption, but involves, wise, economical use so we leave as large stocks as possible for future generations. (para 3, p. 99)		
298	Only wastes that can be broken down by natural processes should be discharged into ecosystems where they are dispersed and assimilated. The principle for sustainability is that the rate of discharge of wastes must not exceed the rate at which these flows can be assimilated without the ecosystem suffering negative impacts. (para 2, p. 100)		
299	Global level ecosystems such as the atmosphere and oceans should be regarded as a special category of critical natural capital. Their impairment or degradation could lead to catastrophe for the human race, and probably for many other forms of life on earth as well. (para 3, p. 101)		
300	The precautionary principle offers a way of living with uncertainties about the limits and about the impacts of economic activity or new technologies on ecosystems. It states simply that we should avid risk and abandon or reject policies and practices that		

	could have unsustainable outcomes or negative impacts on ecosystems. (para 2, p. 109)		
301	If we are facing serious damage to global ecosystems, then a precautionary policy founded on technological pessimism (the assumption that technological solutions will not prevent ecological catastrophe) will lead to a more satisfactory outcome than one founded on technological optimism. (para 2, p. 109)		
302	Many rates of consumption or depletion of natural resources are all too plainly unsustainable. (para 1, p. 110)		
303	For a long time to come the answer to such questions as "How much natural capital is being consumed? How much pollution are we producing?" will be, very plainly, "Too much". (para 2, p. 11)		
304	The first priority in an unsustainable society is to reduce the ecological impacts of economic activity to the level at which they can be contained within the ecological boundary. No matter how efficient the economy, it is not sustainable unless it observes the constraints which follow from the fact that resources are finite. (para 1, p. 111)		
305	We live in a demographic dream-world, failing to recognise the negative impacts of our gross overpopulation on our nation's environments and resources, and on the planet as a whole. (para 3, p. 114)		
306	The most obvious obstacles to sustainable development are a lack of awareness of the issues and the political unacceptability of steps forward, together with the opposition of entrenched interests. (para 1, p. 129)		

307	The most hostile ideas toward sustainability involve a belief in progress, a view of the natural world as a resource to be exploited, and a belief in the special importance of scientific knowledge. (para 2, p. 129)		
308	New technologies create the possibilities for faster growth, more consumption of natural capital and more ambitious development programmes. (para 3, p. 130)		
309	Technological solutions tend to create problems in their wake. (para 2, p. 131)		
310	Nature is valueless except in so far as it can be used instrumentally as a resource. Valueless nature can be put to any cultural use we please. (para 1, p. 133)		
311	Economic growth and development are major features of an economic system that presents many impediments to sustainable development. (para 2, p. 142)		
312	The countries of the first world are generally too obsessed with their relative economic standing to promote a more equitable and sustainable economic order. (para 1, p. 144)		
313	Unless strictly regulated, the forces of the free market economic system work against a sustainable and equitable approach to meeting human needs. (para 3, p. 145)		
314	The free market economic system has many negative implications for sustainability because it imposes no constraints on depletion of natural capital and undermines self-reliance and local development initiatives. (last para, p. 144)		
315	Individually and collectively we share a capacity to refuse to face the seriousness of the environmental crisis. We deny the seriousness of the situation, afraid to admit to ourselves that prevailing practices are wrong and inappropriate. (line 1 and para 2, p. 149)		
316	The magnitude of the changes involved in any transition to a sustainable social and economic system should not be underestimated. (line 1, p. 151)		
317	There is a growing consensus that not simply this or that part of the present global development pattern needs to be corrected, but that the entire model of modern industrial development is awry. (para 2, p. 152)		

318	Sustainable development has clearly defined objectives – not of growth and aggrandisement through expansion, domination and competition, but of sufficiency, equity and security founded on co-operation rather than competitiveness; participation rather than token consultation, oppression or exclusion; empowerment rather than deprivation and dispossession; and self-reliance rather than dependence. (para3, p. 155)		
319	Of fundamental importance for any sustainable future will be a new respect for the natural world. (last para, p. 156)		
320	Instead of exploiting the natural resources provided by nature, we should respect the intrinsic value of the natural world and attempt to preserve its remnants. (line 1, p. 157)		
321	Sustainable development involves the transfer of power from those in authority to smaller groups. Only then can a start be made to provide education and training to raise awareness and allow people and communities to play an effective role in the political process. (para 2, p. 173)		
322	Governments are unlikely to commit sufficient resources to facilitating debate, empowerment and education. Progress towards sustainable development will depend on the actions of NGOs and committed individuals for whom campaigning and networking become particularly important. (last para, p. 175)		
323	Progress to more sustainable pathways depends on political change. (para 3, p. 177)		
324	Some of the disagreements about sustainability have been resolved by the adoption of intentionally meaningless or self-contradictory forms of words. (para 1, p. 186)		
25	The importance of the role of national governments in promoting sustainable development is paramount. All governments should integrate development and environment policies at all levels and in all sectors. (para 2, p. 187)		
326	Sustainable development is not just the concern of governments. People are acknowledged to have a role too. (para 2, p. 188)		
327	The most effective sustainable development planning evolves gradually through a participatory process that allows different social groups to debate		

	the gains and losses in reconciling development and environment. (para 2, p. 188)		
328	A national strategy for sustainable development is a participatory and cyclical process of planning and action to achieve economic, ecological and social objectives in a balanced and integrated manner. (para 2, p. 206)		
329	Of fundamental importance to sustainable development is participation, which means the full involvement at every stage of the process of all groups likely to be affected. (para 2, p. 207)		
330	Unlike the Commonwealth and States, local government in Australia has responded much more positively to the challenge of sustainable development. (para 2, p. 211)		
331	Local authorities face severe constraints on the extent to which they can move toward sustainable policies without higher government support. 9para 3, p. 211)		
332	The term "sustainable development" is so deliberately vague and inherently self-contradictory that an endless stream of academics and diplomats could spend many comfortable hours trying to define it without success. (para 1, p. 221)		
333	Like it or not, sustainable development is with us for all time. (para 1 , p. 221)		

334	True sustainability involves a form of democracy that transcends the nation-state and the next election and alters the meaning of "self-interest" and "sacrifice". (para 3, p. 221)		
335	Sustainable development guarantees civil rights and social justice to oppressed people the world over, so that they are allowed to consume resources in an equilibrium manner, and appreciate the intrinsic rights of nature. (para 3, p. 221)		
336	Sustainable development requires commitment of resources, notable technology, intellectual property generally, and cash, to impoverished and environmentally vulnerable regimes, many of which are run by politically unstable and inherently corrupt governments. (para 3, p. 221)		
337	Sustainability involves elimination of debt where debt is induced by unfair terms of trade and a historical legacy of exploitation. (line 1, p. 222)		
338	Sustainable development requires the establishment of a variety of public-private and non-governmental mechanisms for delivering resources, training and management techniques to areas and communities in need, in such a way as to be socially acceptable and democratising. (line 2, p. 222)		
339	Our institutions suit ruling elites and large commercial organisations, with their linked interests in political and economic power. (para 4, p. 222)		
340	Sustainable development confronts modern society at the very heart of its purpose. (para 3, p. 223)		
341	The agenda of sustainability is primarily an economic one, concerned particularly with how dominant economic interests can be maintained within ecological constraints. Last para, p. 229)		
342	Ecological sustainability is about saving the planet. Sustainable development is about meeting people's needs, today and in the future. (para 2, p. 230)		
43	National sustainable development strategies concentrate on the environmental aspects of sustainability, to the almost complete exclusion of any discussion of human need. (para 2, p. 230)		
344	Sustainable development is contested territory with its ownership disputed by forces with very different interests. Last para, p. 230)		
345	Sustainable development has to be what human		

	communities do themselves. It cannot be imposed "top-down". Instead it must evolve from people's responses to the changes in the world around them. (para 3, p. 231)		
346	Sustainability is not regarded seriously by those who count, namely those at the top of political structures and those who control the flows of national and international capital. (para 1, p. 233)		
347	The response to sustainable development represents a genuine aspiration by at least some individuals in senior levels of government for a better world order and an acknowledgement that adequate solutions to major problems are unlikely to emerge from within conventional development discourse. (para 1, p. 233)		
348	Many, perhaps all, first world governments, aware that there are few votes in either Third World issues or radical alterations to the status quo, are reluctant to mobilise their resources behind sustainable development. (para 2, p. 235)		
349	Sustainable development confronts, not just society, but each of us at the heart of his or her purpose. It invites us to give practical support to the values of social equity, human worth and ecological health. Last para, p. 235)		

The World Conservation Union. (1991). Caring for the Earth: A strategy for Sustainable Living. Author: Gland, Switzerland.			
350	Sustainability is based on change because values, economies and societies different from most that prevail today are needed if we are to care for the Earth and build a better quality of life for all. (line 1, p. 1)		
351	Humanity which exists as part of nature, has no future unless nature and natural resources are conserved. (Box, p. 1)		
352	Conservation cannot be achieved without sustainable development to alleviate the poverty and misery of hundreds of millions of people. (box, p. 1)		
353	Conservation is not the opposite of development. (para 2, p. 1)		
354	In the decade since 1980 the complexity of the problems we face has become clearer, and the need to act in a sustainable manner has become more pressing. (line 1, p. 2)		
355	The ethic for sustainable living is to help improve the condition of the world's people. (para 1, p. 3)		
356	We depend on the resources of the Earth to meet our basic and vital needs; if they are diminished or deteriorate we risk that our needs and those of our descendants will go unmet. Because we have been failing to care for the Earth properly and living unsustainably, that risk has become dangerously high. (para 2, p. 4)		
357	We can eliminate environmental risk by ensuring that the benefits of development are distributed equitably, and by learning to care for the Earth and live sustainably. (para 3, p. 4)		
358	Our civilisations are at risk because we are misusing natural resources and disturbing natural systems. (para 5, p. 4)		
359	Pollution of air, soil, fresh waters and the oceans has become a serious and continuing threat to the health of humans and other species. (para 9, p. 4)		
360	A vast increase in human numbers cannot be supported without doing irreversible damage to the Earth. (para 1, p. 5)		
361	Living sustainably must be a guiding principle for all the world's people. (para 4, p. 5)		

362	The Earth has its limits; with the best technology imaginable, they are not infinitely expandable. (para 5, p. 5)		
363	Local communities are the focus for much that needs to be done in making the change to living sustainably. (para 7, p. 5)		
364	Subject to the vital interests of the larger community, local communities must be enabled to manage the resources on which they depend and to have an effective voice in decisions that affect them. (para 7, p. 5)		
365	Much of what needs to be done if we are properly to care for the Earth is of global significance and requires a global response. (last para, p. 5)		
366	We need development that is both people-centred, concentrating on improving the human condition, and conservation based, maintaining the variety and productivity of nature. (para 2, p. 8)		
367	We have to stop talking about conservation and development as if they were in opposition, and recognise that they are essential parts of one indispensable process. (para 2, p. 8)		
368	Living sustainably depends on accepting a duty to seek harmony with other people and with nature. The guiding rules are that people must share with each other and care for the Earth. (last para, p. 8)		
369	Sustainable development is about a new approach to the future rather than a return to a simpler past. (last para, p. 8)		
370	While our survival depends on the use of other species, we need not and should not use them cruelly or wastefully. (para 3, p. 9)		
371	The real aim of development is to improve the quality of human life. (para 4, p. 9)		
372	If an activity is sustainable, for all practical purposes it can continue forever. (para 2, p. 10)		
373	Sustainable development means improving the quality of human life within the carrying capacity of supporting ecosystems. (para 5, p. 10)		
374	To adopt the ethic for living sustainably, people must re-examine their values and alter their behaviour. Society must promote values that support the new ethic and discourage those that are incompatible		

	with a sustainable way of life. (para 1, p. 11)		
375	Properly mandated, empowered and informed, local communities can contribute decisions that affect them and play an indispensable part in creating a securely-based sustainable society. (para 2, p. 11)		
376	If we are to achieve global sustainability a firm alliance must be established among all countries. (Last para, p. 11).		
377	Individual security is important, but people need to understand that it will not be attained solely through infinite growth in their personal level of consumption. (para 3, p. 13)		
378	We need sustainable development because it is morally right, and without it the future is in jeopardy and poverty, strife and tragedy will increase. (para 4, p. 13)		
379	Establishment of the sustainable ethic needs the support of the world's religions because they have spoken for centuries about the individual's duty of care for fellow humans and the reverence for divine creation. (para 6, p. 13)		
380	All the species and systems of nature deserve respect regardless of their usefulness to humanity. (para 1, p. 14)		

381	Everyone should aim to share fairly the benefits and costs of resource use, among different communities and interest groups, among regions that are poor and those that are affluent, and between present and future generations. (para 6, box, p. 14)		
382	Each generation should leave to the future a world that is at least as diverse and productive as the one it inherited. (para 6, box, p. 14)		
383	The purpose of development is to enable people to enjoy long, healthy and fulfilling lives. (line 1, p. 18)		
384	All local governments need to review their budgetary priorities, and many should redistribute the wealth they have so as to finance essential human development and environmental care. (para 3, p. 19)		
385	Sustainability will be impossible unless human population and resource demand level off within the carrying capacity of the Earth. (para 2, p. 43)		
386	Governments should adopt explicit policies to limit resource consumption and population, and build these into national development planning. (para 1, p. 47)		
387	Care for the Earth and sustainable living may depend upon the beliefs and commitment of individuals, but it is through their communities that most people can best express their commitment. (Line 1, p. 57)		
388	Many problems faced by the local community are caused by external factors and cannot be solved by local community action alone. (line 1, p. 58)		
389	Problems arise in implementing sustainable development because of conflicts within the community. Individual needs, perspectives and roles differ. There are variations in cohesion, sense of identity, consciousness of problems, and access to resources. (para 2, p. 58)		
90	Sustainable development requires actions that give communities greater control over their own lives, including secure access to resources and an equitable share in managing them; the right to participate in decisions; and education and training. (para 3, p. 58)		
391	Local governments should help set the agenda for human development. They should be full partners with central governments in decisions on policies,		

	programmes and projects that directly affect them, their environments and the resources on which they depend. (para 5, p. 59)		
392	Local governments are key units for environmental care. They are the unit of government that is best able to understand the day to day needs of their citizens, that represent them most directly, and with which citizens have most contact. (para 2, p. 60)		
393	Community participation helps ensure that sustainable development decisions are sound and that all parties will support them. (line 1, Box, p. 60)		
394	All communities should take action to care for their environment. They should be encouraged by local government to debate their environmental priorities and to develop local management strategies. Local governments should then help the community to concert their strategies into action. (para 1, p. 61)		
395	Communities should initiate and be involved in all stages of local environmental action, from setting objectives and designing activities to doing the work and evaluating results. (para 2, p. 62)		
396	Participation in sustainable development should be as broad as possible, involving all segments of the community, and emphasising that individual actions can make a difference. (para 2, p. 62)		
397	To achieve a sustainable society, central government must provide a national framework of institutions, economic policies, national laws and regulations, and an information base. Para 1, p. 64)		
398	Policies and programmes for sustainability must be based on scientific knowledge of the factors that they will affect, and be affected by. (para 2, p. 65)		
399	Central governments should set the creation of a sustainable society as an overall policy goal. (para 5, p. 65)		
400	Governments should incorporate a commitment to the principles of a sustainable society in the constitution or other fundamental definition of a nation's governance and policy. (para 4, p. 67)		
401	Sustainable urban development depends on new partnerships of local people, citizens' groups, businesses and governments. (para 6, p. 105)		
402	Sustainable urban development is only possible when local governments are given adequate powers, and development effective capabilities. (last line, p.		

	105)		
403	Local governments need to manage change in the context of an ecological approach so that cities can support more productive, stable and innovative economies while maintaining a high-quality environment, proper services for all sectors of the community, and sustainable resource use. (line 1, p. 106)		
Newman, P. (1998). <u>Local Sustainability: The Goals and Getting Started</u>. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
404	Sustainability is now core business for local authorities. (line 1, p. 1)		
405	Local authorities will need to prepare for a time when local communities will begin to hold them accountable when they find the goals and indicators point each year to a further loss of sustainability. (para 3, p. 5)		
406	In Australia we don't have the processes yet to really make a difference, particularly when they relate to issues over transport and land use. (para 6, p. 5)		
407	The key to getting started is a few people in a council forming an alliance with a few people from civil society and a few from local business. When they can see that everyone is going to gain by the sustainability agenda, it is time to get a process underway. (para 6, p. 10)		
408	The sustainability agenda is firmly part of the local agenda. (para 4, p. 11).		
Goode, S. (1998). <u>Sustainability – Myth or Miracle</u>. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
409	Change will continue. Development must continue. But there must be a balance achieved so that we can strive for improved social and economic opportunities and not sacrifice our ecological values. (para 8, p. 20)		
410	Councillors and council staff have neither the training nor time do more than cope with the incredible day to day pressures. The future is pretty much left to look after itself. (last para, p. 20)		
411	The reality is that there is a great deal of conflict in the City. Too many people feel alienated. The		

	Council is not seen as inclusive. It would be fair to say that neither conservationists nor development proponents feel that Council does a good job. (last para, p. 21)		
412	This Council has a sustainability vision. The officers have a direction for their efforts. But we are pretty much on our own. Para 1, p. 22)		
413	It's a funny thing about complex issues like "sustainability" – they mean different things to different people. (para 2, p. 24)		
414	Above all, I think that a sustainable city plan is about leadership. And good leaders allow enough time to bring people along with them. (last para, p. 26).		
Mouritz, M. (1998). <u>The Local Sustainability Movement: Rhetoric and Reality</u>. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
415	The concept of sustainability is replacing the concept of progress.		
416	Like other political ideas, we tend to agree with the need for sustainability but disagree over what it entails.		
417	Cities are conglomerations of people and artefacts wastefully using resources and polluting the environment.		
418	Cities are the economic, social and cultural hearts of modern society. They facilitate the exchange of information, friendship, material goods, culture, knowledge, insight, skills and also the exchange of emotional, psychological and spiritual support.		
419	The social, economic and cultural systems of humanity cannot escape the rules of abiotic and biotic nature.		
420	Now the time has come not to expect the Earth to produce more, but to expect humans to do more with what the Earth produces.		
421	Sustainable development has to become part of the culture of local government. It has to be part of the strategic focus. And it has to become part of the systems.		

Kins, I. (1998). Sustainable Economic Development. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
422	Let's not kid ourselves that this (sustainable development) process is a scientific and purely objective process. There is a subjective part to all of this. Therefore there is a real need to establish explicit values to guide the process, to be up front about the values that underpin the process.		
Dowling, R. (1998). Sustainable Tourist Accommodation: The Case of Eco Beach, Western Australia. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
423	The emphasis of sustainable development is that it is a form of managed economic growth that occurs within the context of sound environmental stewardship.		
Shaw, L., and Dingle, P (1998). Environmental Training for Sustainable Development. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
424	Education has been described as a key for real hope that the aspiration of sustainable development can be attained and it has also been highlighted as an important method for achieving conservation.		
425	Sustainability requires that an environmental ethic needs to be instilled into the workforce to ensure that all employees consider the effect of their actions and have the ability to detect possible environmental impacts and ameliorate or avoid potential damage.		
Bunny, B. (1998). Local Government – A Corporate Approach to Sustainability. Paper read at Planning for Sustainable Futures: National Conference. September 14th-18th, Mandurah, Western Australia.			
426	Increasing responsibility for a range of social, economic, and environmental issues has been handed down to local governments often without the resources to undertake these tasks adequately.		
427	The modern corporation that is planning to be a sustainable business in the long run, sees it in their interest to undertake ecologically sustainable development planning.		
Lemons, J., & Brown, D. A. (Eds.). (1995). Sustainability Development: Science, Ethics and Public Policy. Kluwer Academic Press: London.			
428	Leaders throughout the World have accepted the		

	concept of sustainable development as a way of reconciling potential conflicts between environmental protection and human development goals. (para 1, p. 1)		
429	A rapid deterioration of the global environment is threatening life on Earth and decisive political action is needed to ensure human survival. (para 2, p.1)		
430	For the first time in history, humanity must face the risk of unintentionally destroying life on Earth. (para 1, p. 2)		
431	Problems of poverty, population growth, industrial and social development, depletion of natural resources, and destruction of the environment are closely interrelated. (para 2, p. 2)		
432	Sustainable development is not an option but is an urgent requirement. (para 1, p.4)		
433	To change course, the governments of the World m must integrate environmental, economic and social programmes in a new historically unprecedented global partnership between the developed and developing worlds. (para 2, p. 4)		
434	Although the meaning of the concept of sustainable development can be generally understood, the definition is so vague that it is not helpful in providing a specific rule of action when there are conflicts between environmental, economic, or social goals. (para 2, p. 5)		
435	The concept of sustainable development's most important practical use is not in its ability to prescribe specific action but as an invitation to citizens and governments to begin a process that will fill in the missing details in specific programmes. (para 3, p. 5)		
36	If national governments are to take sustainability seriously, they must encourage local governments to become involved in Agenda 21 implementation. (para 2, p. 8)		
437	Local governments have the dominant role in matters than need to be considered in implementing sustainable development. (para 2, p. 8)		
438	The problems that must be faced when implementing sustainable development call into question much of the world view that has been dominant during the period of World industrialisation. (para 2, p. 9)		

439	There is an urgent need to increase scientific understanding of environmental problems before implementing sustainable development. (para 2, p. 11)		
440	Sustainable development problem-solving should look to technological solutions to problems such as those that reduce greenhouse gases through treatment of emissions. (para 1, p. 13)		
441	Sustainable development problem-solving should look to social solutions to problems such as those that reduce greenhouse gases through programmes that encourage energy conservation. (para 1, p. 13)		
442	Knowledge of scientific facts will lead to the solution of most environmental problems. (para 4, p. 14)		
443	Most broad environmental problems are not amenable to the application of the predictive science approach and such an approach is in fact embedded with numerous types of value-laden assumptions. (para 4, p. 15)		
444	In environmental matters, where facts are uncertain, values in dispute, stakes high, and decisions urgent, scientists need to follow methods that might not be appropriate in other scientific endeavours. (para 5, p. 15)		
45	Projections of the environmental or human health consequences of human activities are often extraordinarily speculative or incomplete. (para 2, p. 19)		
446	Decision-makers making sustainable development judgements often will be faced with pervasive scientific uncertainty at all stages of problem identification, analysis, and solution. (para 1, p. 20)		
447	Decisions initiated to protect the environment in the face of scientific uncertainty are irrational because they are without a scientific basis that compels or supports the decision. (para 4, p. 20)		
448	Many decision-makers will be reluctant to propose or approve sustainable development measures which might slow or conflict with economic development in situations where scientific uncertainty exists. (para 4, p. 20)		
449	In environmental decision-making, the burden of proof should be shifted so that proposed actions with the potential for serious consequences are assumed		

	harmful until proven benign. (para 1, p. 21)		
450	Those people advocating for sustainable development measures must demonstrate with a reasonable chance of certainty, that there is a scientific need for environmental protection and that their recommended solutions have a reasonable chance of success. (para, 2, p. 26)		
451	Decision-making about problems of sustainable development properly ought to be left to those people with expert knowledge. (para 4, p. 26)		
452	The problems of managing large-scale and complex problems of sustainable development are enormous and the public cannot be expected to grasp the many scientific and technical issues inherent in understanding And resolving the problems. (para 4, p. 26)		

453	While people in the community and local governmental representatives with different interests may review and comment on scientific and technical documents, they should not be brought into the actual decision-making process regarding the complex scientific dimensions of problems of sustainable development and environmental protection. (para 4, p. 26)		
454	Resolving scientific problems of sustainable development ought to be opened to citizen participation and be informed by concerns such as distributive justice, concepts of freedom, and centralised versus de-centralised decision-making. (last line, p. 26)		
455	Western ethical systems are at least in part responsible for the environmental crisis because of their failure to value anything other than human happiness or interests and the consequent devaluing of animals, plants, and ecosystems. (para 2, p. 46)		
456	Because of the urgency of the need for political and personal transformation to avert widespread environmental destruction in the next century, only a radical change in values can bring about the behavioural change needed to protect life on Earth. (last para, p. 46)		
457	The world's religions must become a major force in implementing a new sustainable development ethic. (first line, p. 47)		
458	Only a truly religious transformation can bring about the needed shift in behaviour, a cosmological paradigm shift that enables humans to see themselves as part of, rather than apart from, the web of life. (para 1, p. 47)		
459	Agenda 21 is a historically important but flawed attempt to move the international community toward solving the twin problems of environment and poverty. (para 5, p. 48)		
460	Agenda 21 follows a narrow anthropocentric approach to the twin problems of environment and development; that is, in Agenda 21 only human beings are of ultimate concern. Para 6, p. 48)		
461	The principle reason to protect bio-diversity is to maintain the enormous inventory of raw materials for eventual economic applications, for example, in biotechnology. (para 6, p. 48)		
462	The successes of Western democracies in achieving unparalleled levels of prosperity, lengthened life, and		

	unparalleled levels of prosperity, lengthened life, and stable social and political systems is strong evidence for economic policies that minimise government interference in market mechanisms. (para 3, p. 53)		
463	Non-human sentient beings and other environmental entities have a right to exist that transcends their use value to humans. (para 3, p. 57)		
464	Unless the developed nations assist the developing World economically or through the transfer of technology, the developing nations are unlikely to move on the path toward sustainable development. (para 3, p. 64)		
465	Perhaps the best hope for the greatest World-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour. (para 1, p. 66)		
466	Agenda 21 is notoriously vague. Areas of ambiguity, imprecision, or apparent self-contradictory recommendations weaken the force of the document. (last para, p. 66)		
467	In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over other economic or social considerations. (para 1, p. 67)		
468	In implementing sustainable development, environmental values should be considered and allocated efficiently with other values, including economic and development considerations. (para 1, p. 67)		
469	In implementing sustainable development, science and technology should develop in appropriate ways so that no conflict exists between environmental protection and economic development. (para 1, p. 67)		
470	In order to protect the environment, the precautionary approach should be widely applied to decision-making. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental damage. (para 5, p. 67)		
471	Application of the precautionary principle implies a shift of approach from giving contaminants the benefit of the doubt to giving the benefit of doubt to human health and the environment. (para 1, p. 68)		

472	The role of non-government organisations is critical to the success of Agenda 21. (para 3, p. 75)		
473	If Agenda 21 is to be comprehensively implemented, concerned citizens throughout the World will have to monitor and challenge national progress toward sustainable development. (para 3, p. 75)		
474	If governments are serious about sustainable development implementation, they should fund the expertise to support citizen involvement. (last para, p. 75)		
475	Because poverty is the underlying cause of environmental degradation, sustainable development can only occur when poor people are helped to become more affluent. (last para, p. 81)* Made up statement		
476	Where market or commercial values conflict with other types of values in matters of biological diversity, the latter should have precedence over the former. (para 1, p. 102)		
477	Humans must always be preferred to non-humans when conflicts between the interests of species exist. (para 1, p. 103)		

Carew-Reid, J., Prescott-Allen, R., Bass, S., and Dalal-Clayton, B. (1994). Strategies for National Sustainable Development: A Handbook for their Planning and Implementation. Earthscan Publications: London.			
478	The best sustainable development strategies are based on participation, building on good existing plans and processes, and with clear attention to environment and development priorities. (para 5, p. vii)		
479	Sustainable development will fail where it is prepared by small elite task forces without consultation, neglecting existing initiatives, and limited in scope. (para 5, p. vii)		
480	In implementing sustainable development, national policy processes need to be linked with local planning and action. (para 5, p. vii)		
481	Sustainable development means improving and maintaining the well-being of people and ecosystems. (par1, column 2, p. xiii)		
482	Sustainable development entails integrating economic, social, and environmental objectives, and making choices among them where integration is not possible. (para 1, column 2, p. xiii)		
483	Major obstacles to achieving sustainable development include lack of agreement on what should be done, resistance by interest groups who feel threatened by change, and uncertainty about costs and benefits of alternatives. (para 2, column 2, p. xiii)		
484	Sustainable strategies can help countries solve inter-related economic, social and environmental problems by developing their capacities to treat them in an integrated fashion. (para 1, column 1, p. xiv)		
485	Sustainable strategies can be controversial, take time to develop, and get results, and require special management skills. The can too easily be marginalised because of the scope of the challenges they face. (para 2, column 1, p. xiv)		
486	Most strategies for sustainability have focussed exclusively on environmental objectives. (para 1, column 1, p. 8)		
487	With a broad goal such as sustainable development, it is tempting to try to do everything. But strategies with to many objectives can get bogged down or break up into a mess of projects. (last line, c1, p. 8)		
488	Communication is the lifeblood of a sustainable		

	development strategy. Therefore communication needs to be planned carefully as an integral part of the strategy. (Point 6, c2, p. 9)		
489	A lack of development can be as great a threat to nature as reckless or misguided development. (para 1, c1, p. 14)		
490	People have struggled with what sustainable development means in practice, and how to achieve it. (para 4, c1, p. 14)		
491	A society is sustainable only if both the human condition and the condition of the ecosystem are satisfactory or improving. (para 2, c2, p. 14)		
492	In most societies, neither human well-being nor ecosystem well-being are being met. (para 4 and 5, c2, p. 14)		
493	Values based on respect for each other and the Earth are the foundation for a sustainable society. (para 2, c2, p. 16)		
Pearce, D. (1993). Blueprint 3: Measuring Sustainable Development. London: Earthscan.			
494	Sustainable development is more fashionable in 1999 than it was in 1989. (para 2, p. xiv)		
495	In truth, 'sustainability' has got carried too far. para 2, p. xiv)		
496	Sustainability is redundant in the face of a search for better, or even 'optimal' futures. para 2, p. xiv)		
497	Sustainability means making sure that substitute resources are made available as non-renewable resources become physically scarce. (para 1, p. 4)		
498	It is possible to have economic growth *and* to use up fewer resources. (para 2, p. 4)		
499	Gross-national-product and human well-being are inextricably linked. Failure to keep GNP high shows up in the misery of unemployment and in poverty. (para 2, p. 4)		
500	Anti-growth advocates are embarrassingly silent or unrealistic on how they would solve problems of poverty and unemployment. (para 2, p. 4)		
501	The idea is fanciful that economic growth in the 'North' should be sacrificed for the benefit of the 'South', as if not demanding goods and services in rich countries would somehow release them for poor countries. (para 2, p. 4)		

502	Advocates of lifestyle change involving the wholesale rejection of economic growth have been losing ground for some considerable time. (para 3, p. 4)		
503	There is a difference in emphasis between advocates of sustainability and modern environmentalists. The former believe in technological advance; the latter tend to be 'anti-technology'. (para 1, p. 5)		
04	We do not need to encourage sustainability. It will happen naturally. As non-renewable resources get scarce, so their prices will rise and substitutes will be encouraged. If there are no alternative non-renewables, the renewable technologies will be phased in 'naturally'. (para 2, p. 5)		
505	Worrying about sustainability because of a concern for future generations' well-being is not very relevant when resources are so large that they can be utilised for human well-being a very long way into the future. (para 3, p. 5)		
506	Resource-optimists can point to evidence of expanding resource discoveries and to declining trends in resource prices. This evidence indicates that no resources are becoming scarce in the first place. (para 3, p. 5)		
507	A sustainable future may well be awful. (para 4, p. 5)		
508	Sustainable development is not about bio-diversity and fashionable environmental issues, it is about improving the environment and well-being of people. (para 1, p. 6)		
509	The whole rationale for sustainable development is to raise the standard of living – and especially the standard of living of the least advantaged in society – while at the same time avoiding uncompensated future costs. (para 3, p. 7)		
510	Defining sustainable development is really not a difficult issue. (para 5, p. 7)		
511	Sustainable development is economic development that lasts. What is really being referred to is sustainable *economic* development. (para 6, p. 7)		
512	Sustainable development is continuously rising, or at least non-declining, consumption per capita, or GNP, or whatever the agreed indicator of development is.		

	(para 2, p. 8)		
13	Sustainable development has attracted the attention it has precisely because many people feel that the present generation is being 'unfair' to future generations by depleting major sources of future well-being. (para 2, p. 9)		
514	Sustainable development is more about changes in emphasis than a wholesale restructuring of decision-making. (last para, p. 10)		
515	The practices of current generations are not harming future generations. (box, p. 11)		
516	The well-being of future generations is not a moral concern to the present generation. (box, p. 11)		
517	The well-being of future generations is a moral concern, but is less important than the well-being of the poor now. (box, p. 11)		
518	Fears that the overall performance of the economy will be damaged by sustainable development are almost certainly unfounded. (para 1, p. 11)		
519	The 'high moral ground' stance combined with an irrational preference for regulations rather than market based approaches to sustainability simply builds up opposition; it does not defeat it. (point 1, p. 12)		
520	Sustainable development is about ensuring that some measure of human well-being is sustained over time. (para 1, p. 15)		
521	The requirement for sustainable development becomes one of passing on to the next generation an aggregate capital stock no less than the one that exists now. (last para, p. 15)		
522	The sustainability debate has exposed that sustainability approaches differ because they are linked to alternative environmental ideologies. (line 1, p. 20		
23	There is extensive substitutability of various forms of capital – man-made, human and natural. Environmental problems are not significant and are best dealt with via regulation. (para 2, p. 20)	Cornucopian	
524	Society's use of resources has become more and more efficient over time and the economic impact on the environment goes down each year. (para 1, p. 20)	accomodator	

525	Sustainable development requires more direct regulation and planning and the scale of economic activity must be reduced. (last para, p. 20)	ecocentric	
526	Society should be closely regulated to achieve supreme environmental ends and can be achieved through a spiritual revolution involving voluntary change in behaviour to reduce consumption. (first para, p. 21)	Deep green	
527	The stronger versions of sustainable development are politically contentious and moves to a strongly sustainable society will be resisted by many powerful groups. (para 1, p. 183)		
528	The institutions of government in Australia fail to co-ordinate public policies in ways that are compatible with all but the weakest forms of sustainable development. (para 1, p. 182)		
529	The notion of a 'sustainable' society is radical. (para 2, p. 184)		
530	The social dimension states simply, but powerfully, that a sustained society is also a truly democratic society with rights of expression, dissent, participation, self-reliance and equality of opportunity. (para 1, p. 185(		
531	Political and economic structures have to deliver social as well as environmental sustainability. This is the message that has still to be grasped by politicians, and, indeed, most citizens. (para 1, p. 185)		

532	The current political incentives are such that politicians have to be more concerned with generating policies that secure the short term goal of re-election, rather than tackling the inevitably fraught transition towards more sustainable development. (para 2, p. 185)		
533	Where there remains a conflict between the means of achieving sustainability and conflicting democratic wishes, the balance must lie with the perpetuation of democracy. (para 3, p. 185)		
534	Any shift to sustainability will inevitably be slow, taking generations, not years. (para 4, p. 185)		
535	Sustainable development is a process that must encompass every section of society and every role that we play: citizens and parents, children and students, civil servants and teachers, business leaders and employees. (para 2, p. 186)		
536	Governments can make many institutional changes to ensure that individuals act in ways that are more sustainable. (para 3, p. 187)		
537	Institutional change is a vital prerequisite for sustainable development. (para 3, p. 187)		
538	The institutional structure and procedures of government are ill-prepared for the challenge of implementing sustainability. (para 4, p. 187)		
539	Unsustainable development is built into the very fabric of government in Australia. (last para, p. 187)		
540	Rather than sustainable policy proceeding in rational steps towards defined objectives, it tends to be born out of a jumbled conflict between individual departments for resources and political power. (para 1, p. 189)		
541	It will not be necessary for Australia to develop new institutional machinery to translate the concept of sustainable development into reality. (para 3, p. 192)		
542	If individuals are to make informed choices about the future, they must be fully aware about the impact of their activities on the environment. (para 2, p. 200)		
543	Citizens must be able to scrutinise the activities of governments in order to ensure that the proposals for institutional change are properly implemented. All organisational reforms should be accompanied by a widening of guarantees of open information in		

	government. (para 2, p. 200)		
544	Openness and accountability are vital if the process of greening is to be purposeful and meaningful, rather than a cloak to mask practices that fail to conform with all but the weakest forms of sustainable development. (para 2, p. 200)		
545	Public access to environmental information is definitely improving. (para 3, p. 200)		
546	Ideally the transition from very weak to strong sustainability should take place across all aspects of policy, economy and society. We are still in the very weak stage at present. (para 2, p. 202)		

Productivity Commission. (1999). <u>Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies</u>. Commonwealth of Australia: Canberra.			
547	Important among sustainable guidelines is the need to improve the overall economic performance of the economy as a means of raising living standards for the Australian community. (para 2, p. xv)		
548	There is a lack of clarity regarding what sustainable development means for government policy. (para 4, p. xvi)		
548	Sustainable development is about short term and long term economic, social and environmental impacts. This implies an extremely broad policy agenda – one that is relevant to the activities of al Commonwealth departments and agencies. (para 5, p. xvi)		
549	The broad scope of the policy agenda associated with ESD implementation means both the significance and complexity of the 'problem' for policy makers varies widely. (para 6, p. xvi)		
550	The core objective for ESD is to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations. (Box, p. xvii)		
551	The core objective for ESD is to provide equity within and between generations. (box, p. xvii)		
552	The core objective for ESD is to protect biological diversity and maintain essential processes and life support systems. (box, p. xvii)		
553	Important guiding principles for ESD include the need for decision-making processes to effectively integrate long term and short term economic, environmental and social considerations. (box, p. xvii)		
54	Important guiding principles for ESD indicate that the lack of full scientific certainty should not be used as a reason for postponing action – known as the precautionary principle. (box, p. xvii)		
555	Progress in implementing ESD in Australia has been poor. (para 3, p. xviii)		
556	ESD remains as rhetoric rather than reality. (para 3, p. xviii)		
557	ESD has never been seriously implemented in		

	Australia. (para 3, p. xviii)		
558	Processes for implementing ESD appear to have been most effective where the ESD problem or concern has been bounded in some way – either by issue, by sector in the economy, or by geographical area. (last para, p. xviii)		
559	In departments and agencies whose core business is not directly linked to natural resource management or the environment, implementation of ESD is taking place to an extent that varies widely. (para 2, p. xix)		
560	Models of successful ESD implementation tend to offer high degrees of stakeholder involvement. (para 3, p. xix)		
561	Governments have an important leadership role in promoting ESD. (para 4, p. xix)		
562	There are a number of examples where Commonwealth programs and policies include mechanisms designed to increase general awareness of ESD principles. (para 4, p. xix)		
563	Impediments or constraints that limit the extent and quality of ESD implementation include a lack of clarity or understanding as to what constitutes ESD related policies. (para 1, p. xx)		
564	Impediments or constraints that limit the extent and quality of ESD implementation include deficiencies in intra- and inter-governmental co-ordination in policy making. (para 1, p. xx)		
65	Impediments or constraints that limit the extent and quality of ESD implementation include insufficient attention to longer-term sustainable development issues. (para 1, p. xx)		
566	There is a lack of clarity of what ESD actually means for government policy. (para 2, p. xx)		
567	The wide range of policy objectives that can be considered ESD related, and the lack of clarity as to what ESD implies for policy means that it may not be clear who is responsible for the consequences of particular policies that are related to different dimensions of ESD – economic, environmental and social. (para 3, p. xx)		
568	Despite worthwhile steps forward, it is not yet sufficiently clear whether many activities are becoming more or less sustainable. (para 2, p. xxi)		

569	ESD implementation is largely about good practice policy making. To the extent that they involve consideration of all costs and benefits – private and social – good policy making practices are consistent with achieving ESD objectives. (para 5, p. xxi)		
570	Monitoring of effectiveness of policies and programs aimed at implementing ESD does not appear to be undertaken routinely by departments and agencies. (para 5, p. xxii)		
571	There are currently no effective Commonwealth-State co-ordinating mechanisms for ESD. (para 3, p. xxiii)		
572	Lack of co-ordination within, and between governments is a cause for concern. (para 3, p. xxiii)		
573	A tendency to act on problems which are immediately visible, together with a shortage of required data and information on long-term problems, means that departments and agencies can fail to give adequate consideration to issues likely to be a problem in the long term. (last para, p. xxiii)		
74	Integration of the three elements of ESD has not occurred in some cases due to difficulties in identifying, assessing and ultimately measuring all the potentially significant policy impacts, such as may occur where visible short term economic benefits are recognised, but the social or environmental costs are not, as they are hidden and /or do not occur until well into the future. (para 1, p. xxiv(		
575	The key to improving ESD implementation by departments and agencies is improving policy development processes and explicitly accounting for the economic, environmental and social consequences of proposed policies and programs. (para 3, p. xxv)		
576	A significant impediment to improved ESD policy making practices is a failure to undertake the action of analysis – meaning that significant potential short and long term costs and benefits are not considered. (para 3, p. xxvi)		
577	Guidelines and institutional arrangements to strengthen the commitment to monitoring the state of the environment and natural resource management are somewhat limited. (para 5, p. xxviii)		

578	Encouraging the regular long term monitoring and review of the performance of policies and agencies with respect to the achievement of ESD objectives is important. (para 5, p. xviii)		
579	Performance measurement with respect to ESD related activities is generally poor. (para 6, p. xxix)		
580	There is considerable potential for the systematic collection of data and development of indicators related to government – Commonwealth, State and Local – activities and expenditure in specific ESD related areas, such as environment and natural resource management. (para 5, p. xxx)		
581	Australia requires a National Council for Sustainable Development – a broad based coalition of representatives from key stakeholder groups – to co-ordinate sustainable development. (p. xxii)		
582	A duty of care for ESD should require Commonwealth departments and agencies to take all reasonable and practical steps to minimise foreseeable and potentially significant adverse impacts on economic or social development, or on the environment. (para 6, p. xxxii)		
583	There is an ongoing challenge for governments to translate the principles of ESD into specific actions and outcomes. (para 2, p. xxxiii)		
584	Sustainable development arose from the widespread concern about the current and future social and environmental impacts of economic growth and development. (para 1, p. 1)		
585	The maximisation of human welfare is the main objective underpinning sustainable development. (para 4, p. 1)		
586	While the concept of 'sustainability' is based in science, ESD also has implications for the broader concerns of welfare and equity. (para 4, p. 2)		
587	Sustainable development is relevant to the activities of all Commonwealth departments and agencies to varying degrees. (last para, p. 2)		
588	While management of the natural environment has been a concern of governments for some time now, significant environmental problems still exist. (para 3, p. 3)		
589	Environmental concerns are an essential aspect of ESD, but they are not the only consideration. (para 2, p. 4)		

590	Achievement of ESD is a broad policy goal which aims to balance economic, environmental and social considerations in decision making in the long term interest of the whole society. (line 1, p. 7)		
591	ESD policy making is more complex than many other areas. (para 2, p. 7)		
92	There is considerable uncertainty about the direct impact of current economic activity on the future environment. (para 5, p. 8)		
593	ESD principles require that the total stock of assets passed on to future generations should be at least as great as what was inherited. (last para, p. 8)		
594	Sustainable development is a situation where a country's per capita aggregate capital stock is non decreasing over time. (para 2, p. 9)		
595	Substitution between human, man made and natural capital is possible and a decline in natural capital is acceptable provided this decline is balanced by an increase in human and man made capital. (para 3, p. 9)		
596	Natural resources that maintain essential life support services, such as the atmosphere and nutrient cycling processes are non-substitutable. (para 9, p. 9)		
597	The precautionary principle does not mean that all developments with uncertain impacts on the environment should not proceed. (last para, p. 10)		
598	The effective implementation of ESD requires participation by governments, business, industry and the community. (para 2, p. 12)		
599	A whole of government approach is needed to overcome intervention failures in implementing ESD due to poor government co-ordination. (para 3, p. 16)		
600	Overcoming co-ordination failure requires improving mechanisms for co-ordination between levels of government and between government departments and agencies. (line 1, p. 17)		
601	The Commonwealth has a duty, as all governments have, to act as a custodian of the environment for future generations. (para 5, p. 19)		
	The Commonwealth has an added responsibility to provide leadership to other governments in the		

02	provide leadership to other governments in the implementation of ESD principles by requiring its own agencies to adopt such principles. (para 3, p. 23)		
603	Currently, there is no effective Commonwealth/State co-ordination mechanism for ESD. (para 4, p. 23)		
604	Local governments have a considerable influence on environmental management – particularly with respect to implementation of ESD. (line 1, p. 24)		
605	There could be significant potential gains from more collaboration or sharing of experience and expertise in ESD implementation between, as well as within, different levels of government. (para 2, p. 25)		
606	The goal of sustainable development is to ensure that all development improves the quality of life, both now and in the future, without compromising sustainable ecological processes. (para 4, p. 27)		
607	Sustainable development has failed to have a significant impact in Australia. (para 2, p. 28)		
608	Sound application of ESD principles in policy formulation involves sharing environmental and sustainable development responsibilities between Commonwealth agencies and all levels of government. (para 5, p. 33)		
609	The Commonwealth cannot achieve ESD goals and objectives alone and partnerships with other levels of government, the private sector and the wider community are essential. (last para, p. 33)		
10	Good practice decision-making in relation to policies and programmes will recognise and account for all significant economic, environmental and social impacts additional to their primary goals. (para 4, p. 50)		
611	It is uncommon for ESD principles and objectives to be fully taken into account from initial policy development right through to the monitoring and review of programs developed. (last para, p. 63)		
612	There is still significant scope for many departments and agencies to better incorporate ESD principles in all phases of the decision-making process. (last line, p. 63)		
613	The emerging array of ESD policies is an encouraging start by governments even though there is still a great deal left to do in terms of		

	implementation and institutionalisation. (para 7, p. 64)		
614	Implementation of ESD is very challenging and can take many forms. (para 1, p. 71)		
615	A considerable amount of time is required to make significant progress toward a sustainable society. (para 1, p. 71)		
616	Promotion of ESD outcomes requires a long term focus, hence planning and management arrangements must also adopt a long term view, certainly beyond the time frame imposed by the political cycle. (last para, p. 73)		
617	Effective co-ordination within and between governments and stakeholders is important for the successful implementation of ESD. (para 3, p. 97)		
618	Governments – and in particular the Commonwealth Government – have important leadership roles in co-ordinating ESD policies. (last para, p. 97)		
619	Public involvement is generally best initiated as early as possible in the decision-making process. (para 3, p. 104)		
20	There can be clear benefits from involving the public in the policy making process, particularly when complex economic, environmental and social issues are being addressed. (para, 4, p. 104)		
621	One contributing factor in the variable and less than expected implementation of ESD is the absence of a steering committee committed to following through on the strategy. (para 3, p. 137)		
622	Not only governments, but business, industry, farmer groups and other stakeholders and the broader community need to do more to implement the ESD principles and objectives. (para 3, p. 140)		
HMSO. (1994). <u>Sustainable Development: The UK Strategy</u>. London: HMSO.			
623	We need a hard-headed approach to sustainability based on good science and robust economics. (para 4, p. 3)		
624	A society that does not grow cannot satisfy some of our basic human needs. (para 1, column 2, p. 5)		
625	We should not promote a shrinking economy as a basis for sustainability. (para 2, column 2, p. 5)		

626	Economic development is just as important a concept as environmental protection, and we have to find ways of achieving both together. (para 2, column 2, p. 5)		
627	Effective national strategies containing real commitments and targets and substantive measures to achieve them are essential in order to make progress on sustainable development. (point 7, p. 6)		
628	Sustainable development does not mean having less economic development: on the contrary, a healthy economy is better able to generate the resources to meet people's needs, and new investment and environmental improvement often go hand in hand. (point 12, p. 7)		
629	The market is the most effective mechanism for maintaining the momentum of development, sharing its benefits, and for shaping its course towards sustainability. (point 93, p. 16)		
630	Regulation plays an important role in protecting the environment, but regulation must be clear, fair and not excessive or economic activity will be unnecessarily hindered. (point 95, p. 16)		
631	Sustainable development requires changes in lifestyle from everyone. (point 101, p. 17)		
632	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now. (1.6, p. 27)		
33	Humanity does not face a future of ever increasing environmental decay and ever decreasing resources; instead the future promises economic growth based on policies that sustain and expand the environmental resource base. (1.8, p. 27)		
634	Economic investment and environmental protection – or improvement – often go hand in hand. (3.2, p. 32)		
635	There are many ways that economic activity can protect or enhance the environment. Energy efficiency measures, improved technology and techniques of management, better product design, waste minimisation and improved transport efficiency are examples. The challenge for sustainable development is promote ways to encourage environmentally friendly economic activity. (3.5, p. 32)		
636	A key objective of sustainable development is to		

	ensure that environmental costs and benefits of economic development are properly and fully taken into account in public and private sector decisions. (3.11, p. 32)		
637	Tackling poverty and promoting economic growth are imperative for sustainable development. (28.22, p. 192)		
638	Trade promotes growth and can help provide the economic and technical resources needed to protect the environment, while a sustainably managed environment provides the natural resources essential for this process of economic growth. (28.26, p. 192)		
639	Local Government's ability to innovate, to anticipate problems, to provide local leadership and processes for involving other groups, represents an important contribution towards the development of strategies for sustainability. (30.4, p. 200)		
640	There is a substantial amount of activity under way in local government to carry forward much of the action required in Agenda 21. (30.5, p. 200)		
41	Local authorities are beginning to define their own sustainable development strategies at the local level. (30.7, p. 201)		
642	The Commonwealth welcomes and supports the Local Agenda 21 initiative in local government. (30.10, p. 201)		
643	Environmental considerations need to be built into the services and functions discharged by local government. 930.14, p. 201)		
644	The vigorous and independent voluntary sector has a key role in developing strategies for sustainable development at local and national level. (31.1, p. 204)		
645	Science, engineering and technology have vital roles to play in achieving sustainable development. (37.1, p.229)		
646	Technological development should be challenged to demonstrate that it is sustainable as well as beneficial and that it offers an alternative to unsustainable practices. (37.4, p. 229)		
647	Sustainable development is already being promoted actively in many different ways at national and at local level, in business and in people's homes. (38.1, p. 235)		

Author. (1992). Report of the United Nations Conference on Environment and Development: Agenda 21. Available on the internet at: www.igc.apc.org/habitat/agenda21/ and www.gopher://gopher.un.org:70/00/conf/unced/English/a21_28.txt.			
648	Agenda 21 addresses the pressing problems of today and also aims at preparing the world for the challenges of the next century. (1.3)		
649	The implementation of Agenda 21 is first and foremost the responsibility of Governments. (1.3)		
650	Meeting the objectives of Agenda 21 will require a substantial flow of new and additional financial resources to developing countries. (1.4)		
651	Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. (principle 1)		
652	States have the right to exploit their own resources pursuant to their own environmental and development policies. (principle 2)		
653	States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States. (principle 2)		
654	The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations. (principle 3)		
655	Environmental protection should constitute an integral part of the development process and cannot be considered in isolation from it. (principle 4)		
656	Eradicating poverty is an indispensable requirement for sustainable development. (principle 5)		
657	All States should cooperate in a global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystems. (principle 7)		
58	All States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies. (principle 8)		
659	States should cooperate to strengthen capacity building by improving scientific understanding and by enhancing the development, adaptation, diffusion and transfer of technology. (principle 9)		

660	Environmental issues are best handled with the participation of all concerned citizens. (principle 10)		
661	States should support an open international economic system that would lead to economic growth as a way to better address the problems of environmental degradation. (principle 12)		
662	Environmental measures addressing global environmental problems should be based on international consensus. (principle 12)		
663	States should cooperate to prevent the relocation or transfer to other States of any activities or substances that cause severe environmental degradation. (principle 14)		
664	In order to protect the environment, the precautionary approach should be applied to prevent environmental degradation. (principle 15)		
665	Environmental impact assessment should be undertaken for proposed activities that are likely to have significant adverse impacts on the environment. (principle 17)		
666	Women have a vital role in environmental management and development. Their full participation is essential to achieve sustainable development. (principle 20)		
667	States should recognise and support the vital contribution and participation of indigenous people in environmental management and development. (principle 22)		
68	With regard to sustainable development issues, woman and youth need to be represented in decision-making, planning and implementation processes. (28.2, d, p. 1)		
669	All local authorities should enter into a dialogue with its citizens, local organisations and private enterprises and adopt a local Agenda 21 in order to implement sustainable development. (28.3, p. 2)		
670	Through consultation and consensus-building, local authorities can learn from citizens and local, civic, community, business and industrial organisations and acquire the information needed for formulating the best sustainable development strategies. (28.3, p. 2)		
671	Associations of local authorities should establish processes to increase the exchange of information,		

	experiences and technical assistance with regard to sustainable development. (28.5, p. 2)		
Levine, C. S. (1998). Reorienting for sustainable development: Support for a national science and technology policy. Journal of International Affairs, 51 (2), 675 688.			
672	Economic growth and environmental security require a national science technology policy that can provide the fundamental framework needed to produce a truly sustainable economy in the twenty-first century. (para 1, p. 1)		
673	Despite public enthusiasm for environmentally friendly growth the science community does not receive consistent or adequate political support. (para 2, p. 1)		
674	Public health concerns and environmental scarcity make the development of technologies that allow goods and services to be provided with less energy and resources an important priority. (last para, p. 2)		
675	For Australia to maintain or increase its share of the growing market for environmental goods and services, the government and private sector must emphasise and support sustainable technology. (par 2, p. 3)		
676	The accelerated rate of global climate change and the prospect of humankind outstripping the Earth's regenerative capacity are now threats to national security. (para 3, p. 3)		
677	Population pressures offset economic growth and lead to unsustainable resource demands and contribute to social disorder and mass dislocation. (para 3, p. 3)		
678	There is no concrete and quantifiable definition of sustainability. (para 5, p. 3)		
679	The Western World needs to reduce its per capita use of environmental resources by five to ten per cent in order to halt natural resource depletion. (last para, p. 3)		
680	Addressing the daunting challenge posed by sustainable development requires fundamental shifts in industrial and social modes of operation. (last para, p. 3)		
81	Strategies for sustainability require an expansion of the existing resource base through better environmental management and pollution reduction.		

	(last para, p. 3)		
682	Basis science and technological refinement may well be the only realistic means of achieving sustainability. (last para, p. 3)		
683	Science and technology are critical to sustainable models of growth. (para 3, p. 4)		
684	Technology and social organisation can both be managed and improved to make way for a new era of economic growth. (para 4, p. 4)		
685	There is clear evidence that economic strength and environmental protection can be mutually inclusive. (para 5, p. 4)		
686	The private sector should not be neglected in developing national sustainable development policy. (last para, p. 5)		
687	A widely accepted analytical framework for measuring sustainable development has yet to emerge. (para 4, p. 6)		
688	National accounting measures are central to effective planning for a sustainable future. (para 2, p. 7)		
International Council for Local Environmental Initiatives (ICLEI). (1997). Local Government Implementation of Agenda 21. Available on the internet at: www.iclei.org/las21/la21lgov.htm			
689	Local governments have demonstrated a deep commitment to the implementation of Agenda 21. (para 1, p. 3)		
690	The growing role of local governments in the implementation of Agenda 21 has been recognised by the Australian Commonwealth. (para 3, p. 3)		
691	The institutional and financial capacity of local governments to fulfil sustainable development mandates has not been sufficiently reviewed. (para 2, p. 3)		
692	The greatest impact on sustainable development by local government actions have been in the areas of institutional development, public participation and improved management systems. (para 3, p. 3)		
693	Few local governments have yet demonstrated their capacity to achieve dramatic improvements in social and environmental trends. (para 3, p. 3)		
694	Sustainable development strategies and projects of		

	local government have generally been isolated form overall municipal budgeting, local development planning, land use control, and economic development activities. (para 4, p. 3)		
695	Poor national-level regulation of economic activities is weakening the ability of local governments to hold local businesses and other institutions accountable for the negative environmental and social impacts of their activities. (para 2, p. 4)		
696	Cities are at the centre of the social and environmental ills of the industrialised World. (para 4, p. 6)		
697	Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation. (para 5, p. 6)		
698	The city should be the locus of sustainable development at the national and global level. (para 5, p. 6)		
699	Major responsibilities for sustainable urban development are in local government hands. (para 3, p. 7)		
700	Recent investments and efforts of local governments are not sufficient to reverse global trends in resource depletion, impoverishment, and economic dislocation, (para 2, p. 8)		
701	Growing national mandates and public expectations upon local governments are not being accompanied by the resources and powers required to fulfil them. (para 2, p. 8)		
702	The greatest impact of Local Agenda 21 during its first years has been to reform the process of governance at the local level so that key requirements of sustainable development can be factored into local planning and budgeting. (para 4, p. 11)		
703	The implementation of the Local Agenda 21 process requires local governments to decentralise governance, reform their current departmental structures, and change traditional operational procedures. (para 5, p. 11)		
704	Local governments play an important role in the enforcement of national environmental standards, but their efforts can only succeed if they are fully supported at other levels of government. (para 3, p. 26)		

705	Local governments should be responsible for services or functions that were traditionally the responsibility of national governments. (para 4, p. 26)		
706	The establishment and enforcement of national regulatory standards is a prerequisite to improved local government performance in a wide variety of sustainability issues. (para 5, p. 26)		
07	The opening of global markets is accelerating investments and development activities in cities by external actors who have little incentive to be accountable to local sustainability initiatives. (para 1, p. 27)		
708	Regulatory frameworks for sustainability should be designed to consist of two integrated elements: minimum enforceable standards and a framework of flexible compliance using voluntary agreements and programmes. (para 4, p. 28)		

Pell, D. J. (1996). The local management of planet Earth: Towards a 'major shift' of paradigm. Sustainable Development, 4, 138-148.			
709	Local authorities have been given a vital role in implementing sustainable development but most do not seem to have shifted their value positions significantly in light of calls for a major shift. (line 1, p. 138)		
710	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions. (para 3, p. 138)		
711	Very few local authorities seem to see the expectations needed for sustainable development as central or even major concerns. (para 4, p. 139)		
712	Central government must be prepared to take its environmental responsibilities seriously. It must be a partner and take a lead in implementing sustainable development. (para, 2, p. 142)		
713	Quality of life is more than the material standard of living. (para, 4, p. 142)		
714	Key decision-makers in local government consciously promoting sustainable development as the way forward are in the minority. (para 8, p. 142)		
715	Few of the key decision-makers in local authorities have accepted sustainable development values. (para 9, p. 142)		
716	In spite of much commendable activity, local authorities appear to have not yet begun to whole-heartedly motivate or lead their citizens towards green values using Agenda 21 as a policy vehicle. (para 2, p. 143)		
717	Local government has centred its environmental concern on a safe and pleasant living environment for people. (para 3, p. 143)		
18	Even if they are committed to sustainable development, success will depend on whether local authorities can gain the trust of their citizens in a climate where support is currently at a low ebb. (para 5, p. 143)		
719	Many councillors accept shallow greenness at a level of word (e.g., by expressing their concern for the environment) but this cannot be taken as conclusive evidence that they hold any deeper degree of green values. (para 5, p. 144)		

720	Much of the Australian public's concern about the environment is still relatively superficial. (para 6, p. 144)		
721	The more specific and costly any proposal to improve the environment seems to be, the more rapidly support dissipates. (para 6, p. 144)		
722	Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic. (para 7. P. 145)		
723	Many councillors and chief executive officers find the Agenda 21 challenge unattractive and unsatisfying in comparison with, say, local economic development. (para 7, p. 145)		
724	Humanity is on a collision course with the rest of Nature and a major shift in our behaviour will be needed if we are to avoid, or at least minimise, the consequences for our species. (para 6, p. 146)		
Campbell, S. (1996). Green cities, growing cities, just cities?: Urban planning and the contradictions of sustainable development. Journal of the American Planning Association, 62 (3), 296-312.			
725	It is open to question whether sustainable development is a useful model to guide planning practice. (line 1, p. 2)		
726	The more it stirs up conflict and sharpens debate, the more effective the idea of sustainability will be in the long run. (para 1, p. 2)		
727	The city is a location where production, consumption, distribution and innovation take place. (para 2, p. 3)		
728	The city is a consumer of resources and a producer of wastes. The city is in competition with Nature for scarce resources and land, and always poses a threat to Nature. (para 3, p. 3)		
729	The city is a location of conflict over distribution of resources, of services and of opportunities. (para 4, p. 3)		
730	Those at the bottom of society will find less economic opportunity if environmental protection mandates diminished economic growth. (para 3, p. 4)		
731	On a global scale, efforts to protect the environment will slow economic growth and exacerbate the		

	inequalities between rich and poor nations. (para 3, p. 4)		
732	Sustainable development means that developed nations are asking poorer nations to forego rapid development to save the World from global emergencies. (para 3, p. 4)		
733	There is a grim link between environmental preservation and poverty. Miners, lumberjacks and mill workers are right to mistrust environmentalists as elitists. (para 3, p. 4)		
734	The best way to distribute wealth more fairly is to increase the size of the economy so that society will have more wealth to redistribute. (para 3, p. 5)		
735	The best way to improve environmental quality is to expand the economy, thereby having more money with which to buy environmental protection. (para 3, p. 5)		
736	Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies. (para 3, p. 6)		
737	Actions speak louder than words, and though all endorse sustainability, few actually practice it. (para 3, p. 6)		
738	In the battle of big public ideas, sustainability has won; the idea has become an accepted, a given – not open to criticism. (para 3, p. 6)		
739	Sustainable development is as much an ideological as a scientific choice. (para 1, p. 7)		
740	There is a facile confidence that by adding the term "sustainable" to planning documents and tools we are doing sustainable planning. (para 1, p. 7)		
741	One can do much beneficial environmental work without ever devoting explicit attention to the concept of sustainability. (para 1, p. 7)		
742	We must voluntarily choose sustainable practices, since there are no immediate survival or market imperatives to do so. (para 3, p. 7)		
743	The basic premise of sustainable development is one that, like a balanced budget, is hard not to like. (last line, p. 8)		
744	The call for sustainable development seems to serve as a vehicle for sermonising about the moral and		

	spiritual corruption of the industrial world. (para 2, p. 9)		
45	Sustainable development plans prove to be glib wish lists of goals and suspiciously vague implementation steps. (para 3, p. 9)		
746	The future vision of a sustainable, steady-state, no-growth economy will relegate much of the developing world – and the poor within the industrialised world – to a state of persistent poverty. (para 3, p. 9)		
747	It is wishful thinking to assume that a sustainable economy will automatically ensure a socially just distribution of resources. (para 3, p. 9)		
748	One should avoid black-and-white views of sustainability. Western society is not all corrupt and wholly unsustainable – rather, it already does much to sustain itself. (last line , p. 9)		
Treanor, P. (1997). Why sustainability is wrong. E-design On line. Available on the internet at: www.web.inter.nl.net/users/paul.Treanor/sustainability.html			
749	Sustainable planning rests on an extreme degree of consensus that sustainability is right. There is no ethical basis for this consensus. (Abstract)		
750	The standard argument for recent sustainability policy – transgenerational responsibility – has no inherent ethical status. (abstract)		
751	Sustainability is generally accepted as a planning goal in Western Australia. (para 1, p. 1)		
752	Sustainability rests on a consensus that is unquestioned. (para 1, p. 1)		
753	One defining characteristic of sustainable policies is that they are highly "official". (para 3, p, 1)		
754	Sustainability policy is anthropocentric. It is aimed at human survival and future generations of humans: it is quite different from extremes of deep ecology. (para 2, p. 2)		
755	The extremes of deep ecology include a logical conclusion: expressed in the Voluntary Human Extinction Movement in the United States. (para 2, p. 3)		
756	The classification of sustainability as anthropocentric is only superficially valid. (para 4, p. 2)		

757	Those who support sustainability do not recognise the possibility of objection. (para 6, p. 2)		
758	Sustainability adherents act in accordance with one general principle: that it should be accepted without question by all persons. (para 1, p. 3)		
759	Sustainability requires implementation by the state, by the powerful, by elites. (last para, p. 3)		
760	Sustainability inevitably requires that power is retained by those people who already hold it. (last para, p. 3)		
761	Sustainability supporters are convinced of their own logic and right, and convinced that they are entitled to impose it on nations and on the World. (para 2, p. 4)		
762	The ideology that goes under the name "sustainability" is a radical conservatism. (line 1, p. 8)		
763	The central value of sustainability is not humanity at all: it is permanence. (last para, p. 8)		

Hart, S. L. (1997). Beyond greening: Strategies for a sustainable world. Harvard Business Review, 75 (1), p. 67-76.			
764	Many companies have accepted their responsibility to do no harm to the environment. (para 2, p. 67)		
765	Products and production processes are becoming cleaner and where such change is under way, the environment is on the mend. (para 2, p. 67)		
766	More and more companies are "going green" as they realise they can reduce pollution and increase profits simultaneously. (para 2, p. 67)		
767	Beyond greening lies an enormous challenge – the challenge is to develop a sustainable global economy: an economy that the planet is capable of sustaining indefinitely. (para 3, p. 67)		
768	We may be reaching ecological recovery in the developed world. (para 3, p. 67)		
769	Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainability. (para 5, p. 67)		
770	The achievement of sustainability will mean the creation of billions of dollars in products, services, and technologies that barely exist today. (para 2, p. 68)		
771	Companies are selling solutions to the World's environmental problems. (para 2, p. 68)		
772	The greening of the developed World has been at the expense of the environments in the emerging economies. (para 5, p. 68)		
773	Resource consumption is irrelevant because technological innovations have created substitutes for commonly used non-renewable resources. (para 6, p. 69)		
774	The greatest threat to sustainable development today is depletion of the World's *renewable* resources. (para 6, p. 69)		
75	Sustainable development constitutes one of the biggest opportunities for growth in the history of commerce. (para 4, p. 71)		
776	Monsanto is one company that is consciously developing new sustainable competencies. The bio-engineering of crops rather than the application of		

	chemical pesticides or fertilisers represents a sustainable path to food yields. (para 4, p. 73)		
777	Pollution prevention, product stewardship, and clean technology all move a company towards sustainability. (para 7, p. 73)		
778	For senior executives, embracing the quest for sustainability requires a leap of faith. (para 5, p. 75)		
779	Like it or not, the responsibility for ensuring a sustainable World falls largely on the shoulders of the World's enterprises, the economic engines of the future. (para 2, p. 76)		
780	Sustainability requires corporations to lead the way, helping to shape public policy and driving change in consumer's behaviour. (para 2, p. 76)		
781	In the final analysis, it makes good business sense to pursue strategies for a sustainable World. (last line, p. 76)		
Magretta, J. (1997). Growth through global sustainability: An interview with Monsanto's CEO, Robert Shapiro. Harvard Business Review, 75 (1), p. 79-88.			
782	Sustainable development is the term for the duel imperative – economic growth and environmental sustainability. (para 2, p. 79)		
783	We can't expect the rest of the World to abandon their economic aspirations just so we can continue to enjoy clean air and water. That is neither ethically correct nor likely to be permitted by the people in the developing World who expect the quality of their lives to improve. (para 2, p. 79)		
784	Far from being a soft issue grounded in emotion or ethics, sustainable development involves cold, rational business logic. (para 3, p. 81)		
785	New technology is the only alternative to one of two disasters: not feeding people – or ecological catastrophe. (para 4, p. 82)		
786	The key to sustainability lies in technology. (last para, p. 83)		
DesJardins, J. R. (1996). The new ecological order. The American Political Science Review, 90 (2), 403-404.			

797	The deep ecology inherent in the sustainable ideology poses real threats to democratic freedoms. (para 3, p. 403)		
798	Humans, and humans alone, have rights. (para 5, p. 403)		
799	The deeper ecological perspective of sustainable policy looks to the underlying causes of environmental woes. (para 2, p. 404)		
800	Only by undergoing radical transformations in personal, economic, environmental, social, and ideological structures can we hope to address the deeper causes of environmental problems. (para 2, p. 404)		
801	One can find misanthropic and antidemocratic tendencies among deep ecologists. (para 3, p. 404)		
802	The deep ecology view represents little more than a small minority view of sustainable development. (para 4, p. 404).		
Leach, M., Mearns, R., and Scoones, I. (1997). Environmental Entitlements: A Framework for Understanding the Institutional Dynamics of Environmental Change. Institute of Developmental Studies: Sussex.			
803	Sustainable development should be based on local-level solutions derived from community initiatives. Line 1, p. 1)		
804	The practical implementation of community-based sustainable development often falls short of expectations. (para 1, p. 1)		
805	Within the practical implementation of community-based sustainable development, there is a tendency (despite the rhetoric) for the intended beneficiaries to be treated as passive recipients of project activities. (para 2, p. 5)		
806	There is a tendency for community-based sustainable development projects to be too short-term in nature and over-reliant on expatriate expertise. (para 2, p. 5)		
807	There is a tendency for local sustainable development programmes to lack clear criteria by which to judge sustainability or success in meeting conservation or developmental goals. (para 2, p. 5)		
808	In most local sustainability programmes the interests of certain social groups have been consistently marginalised. (para 2, p. 5)		

809	Sustainable development assumptions have become stabilised and rendered unquestionable, so that they gain power and persistence in the project and policy arenas despite the frequent absence of empirical data to support them. (para 1, p. 8)		
810	It is striking the degree to which simplistic notions of community are being reinvented in the context of practical efforts towards community-based sustainable development. (para 1, p. 11)		
811	The science of ecology that has influenced the concept of sustainable development has been built upon notions of equilibrium, balance, harmony and functional order – these assumptions of balance and system regulation are open to dispute. (para 2, p. 12)		
812	The evidence for the idea of the 'balance of nature' has proved extremely limited. (para 3, p. 12)		
813	Many analyses of people-environment relations wrongly conceive of a simple, linear relationship between population and resource availability. (para 4, p. 14)		
814	Scarcity is the characteristic of people *not having* enough resources; it is not the characteristic of there *not being* enough resources. (para 1, p. 15)		
815	The environment debate has been dominated by a supply-side focus, often giving rise to Malthusian interpretations of resource scarcity, when in fact, resources are plentiful. (para 2, p. 15)		
Barry, J., & Proops, J. (n.d). Local Employment and Trading Systems: Linking Citizenship and Sustainability. Draft paper sent as a personal correspondence by e-mail from Professor John Proops and Dr John Berry, February, 1999.			
816	I would not describe myself politically as green. (item 1, appendix)		
817	I am not personally very concerned about the environment. (item 8, appendix)		
818	Multinationals are a grave threat to an environmentally sustainable society. (item 9, appendix)		
819	Development has gone too far in Western Australia. (item 11, appendix)		
820	The World can support a lot more people than it does at present. (item 18, appendix)		

21	People need not feel more concerned about global environmental problems because these are now under control. (item 19, appendix)		
822	The commonwealth and state government should take responsibility for legislating on environmental issues a great deal more than they do at present. (item 27, appendix)		
823	There's no doubt that technology is progress. (item 29, appendix)		
824	In the future people are going to have to lower their material standards of living due to resource shortages and other environmental pressures. (item 30, appendix)		
825	I believe that most future environmental problems will be solved by technology. (item 35, appendix)		

International Council for Local Environmental Initiatives (ICLEI). (1997). Local Agenda 21 Survey. Toronto, Canada: ICLEI World Secretariat.			
826	Local authorities should undertake a consultative process with their populations and achieve a consensus on a 'Local Agenda 21' for the community. (para 1, p. intro)		
827	Local governments are not using Local Agenda 21 to integrate social, economic and environmental planning; rather, the process is dominated by existing environmental planning approaches. (part III B 1)		
828	Local Agenda 21 activities are most advanced in countries where municipal association have established national or regional campaigns. (part IV A)		
829	Lack of financial support, lack of information, and lack of expertise are the three major obstacles to starting or implementing a Local Agenda 21 process. (part IV C)		
Bailey, R. (1995). Seven doomsday myths about the environment. The Futurist (January-February), 14-18.			
830	There is no scientific evidence to support the often-heard claim that there is a global ecological crisis threatening humanity and life on the entire Planet Earth. (para 2, p. 14)		
831	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about. (para 3, p. 3)		
832	As far as the global environment is concerned, there is a brilliant future for humanity and Planet Earth. (para 3, p. 14)		
833	Economic growth leads to less – not more – pollution. (column 3, p. 15)		
834	To counteract the seduction of the environmental apocalypse, scientists, policy makers, intellectuals, and businessmen must work to restore people's faith in themselves and in the fact of human progress. (last column, p. 18)		
835	History clearly shows that our energy and creativity will surmount whatever difficulties we encounter. (last column, p. 18)		

Dunlap. R. E. (n.d.). Ecologist versus exemptionalist: The Ehrlich – Simon debate. Social Science Quarterly, 200-203.			
836	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species. (para 2, p. 200)		
837	Human ingenuity is the only real limit on technological advancement and human progress. (para 2, p. 200)		
838	Ecological limits are real and efforts to extend such limits via technology are likely to create more problems than they solve. (last line, p. 200)		
839	The World is infinite and humans are essentially omnipotent. (para 1, p. 201)		
Maley, B. (1995). The ethics and politics of environmentalist deception. Policy (Autumn), 33-36).			
840	The natural World and species are under severe and immediate threat; there is an ecological 'crisis'. (point I, p. 33)		
841	Mankind is rapidly approaching the 'limits to growth' because of the depletion of mineral and natural resources, which will soon be exhausted. (point d, p. 33)		
842	The expanding human population with its voracious appetite for land and natural resources now threatens the very fabric of life on Earth. (para 3, p. 34)		
843	The technique of those pursuing environmentalist causes is one of making a startling and foreboding claim, without qualification and on flimsy or incomplete evidence, to draw unjustified conclusions, and then to use these conclusions as the basis for a call to political action. (para 10, p. 34)		
844	Gross overestimation or exaggeration of environmental problems has led to extravagant, costly and altogether inappropriate responses; responses that might well be counter productive in the long term. This has already happened in Australia. (para 7, p. 36)		
845	Scientific accuracy about the facts of environmental problems is of first importance. Only when we have this can we rationally consider the objectives to be aimed at and the institutional methods most likely to		

	achieve them efficiently and justly; taking account of the variety of human interests involved. (para 7, p. 36)		
846	All in all, the scientifically-reliable picture of the environmental 'crisis' is much, much less alarming than the general public and politicians are being led to believe. (last para, p. 37)		
847	There is reason to be more deliberate and measured in dealing with environmental problems, and reason to avoid grand, comprehensive proposals and policies of unknown impact and unintended consequences that will be difficult to unwind if and when their inappropriateness becomes evident. (last line, p. 37)		
Mann, C. (1991). Extinction: Are ecologists crying wolf? Science, 253 (8), 736-738.			
848	Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a solution. (para 2, p. 736)		
849	When it comes to the problem of bio-diversity, the widely touted estimates of future extinction rates have no empirical basis whatsoever. (column 3, p. 736)		

Beder, S. (1994). The hidden message within sustainable development. Social Alternatives, 13 (2), 8-17.			
850	Sustainable development is not about giving priority to environmental concerns, it is about incorporating environmental assets into the economic system to ensure the sustainability of the economic system. (para 1, p. 8)		
851	Economic growth provides the conditions in which protection of the environment can be achieved, and environmental protection is necessary to achieve growth that is sustainable. (column 3, p. 10)		
852	In some cases, it may be worthwhile paying the price of some environmental damage to ensure present and future economic benefits. (para 2, p. 11)		
853	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems. (column 3, p. 11)		
Maley, B. (1993). Demise much exaggerated. The Bulletin (August), 36-38.			
854	In the cause of preservation of species or bio-diversity, federal and state governments are closing off avenues of economic development that could have incalculable consequences for this and future generations. (para 3, p. 36)		
855	For a country whose economy and way of life depend so profoundly on the use of land and sea and the extraction of minerals, the negative implications of sustainable development policy are immense and have not so far been addressed. (column 2, p. 38)		
856	The great majority of Australians are prepared to make sacrifices for a pleasing environment and preservation of species, but the scope of measures being taken and their awesome future costs are out of all proportion to the problems. (column 2, p. 38)		
57	All of the evidence points to the fact that the richer a country and the more technologically advanced and innovative it is, the more likely it is to be environmentally sensitive and able to preserve or restore environments while still creating wealth. (column 2, p. 38)		
858	Since 1788, Australia has lost 20 species of mammals out of 300 known species, about 100 flowering plants out of about 24,000 species, about 10 bird species out of 850 and one reptile species		

	out of 700. Regrettable as any loss of species is, this record hardly justifies characterising ours as an Age of Extinction. (para 1, column 3, p. 38)		
859	The overwhelming majority of Australians love the wilderness, the landscape and the creatures that inhabit it. They are prepared to act unselfishly to protect them. That is the real source of legitimacy for government action to preserve them. (column 3, p. 38)		
860	On the basis of false figures and shameless exaggeration, far-reaching and hasty action has already been taken in the name of ecologically sustainable development. (column 3, p. 38)		
Papadakis, E. (1994). Development and the environment. Australian Journal of Political Science, 29 (special issue), 66-88.			
861	Many of the concerns expressed by the Greens have been accommodated by political elites. (para 1, p. 66)		
862	The community has become much more pro-environmentalist over the past five years. (para 2, p. 66)		
863	There is no fundamental conflict between development and environment and there is no need to choose between the two. (para 2, p. 68)		
864	In truth, while some conflicts will inevitably remain for Governments and communities to resolve, it is increasingly evident that the economic sustainability of Australia is dependent on the environmental sustainability of Australia. (para 3, p. 68)		
865	The drive for environmentally friendly industries and the protection of our environment is part of the economic drive – part of the international competitive drive in which Australia is engaged. (para 3, p. 68)		
866	There is now a convergence in environmental policies between the Labor and Liberal parties. (para 4, p. 68)		
867	When it comes to environmental policy, the gap between the Australian Labor Party and the Liberals appears to have become narrower and there is now no difference between the policies of the two major parties. (para 4, p. 69)		
868	Environmentalism is an ideology which has replaced socialism and environmental groups are a vehicle for		

	revolutionaries to subvert the political system. (para 6, p. 71)		
869	Jobs and environment. It doesn't have to be one or the other. Because the environment doesn't cost jobs it creates them. With the right priorities, we can have jobs and a healthy environment. (para 4, p. 78)		
870	There is no reason that we cannot have both high economic growth and a sustainable environment. (para 2, p. 79)		
Furedi, F. (1997). <u>Population and Development</u>. Polity Press: London.			
871	Population pressure in one part of the World, leading to environmental degradation, poses a danger to the rest of the globe. (para 1, p. 143)		
872	Population growth plays a prominent and probably predominant part in environmental problems. (para 3, p. 144)		
873	Too many cars, too many factories, too much pesticide, too little water, too much carbon dioxide – all can be traced easily to too many people. (para 1, p. 145)		
874	The World's population can be fed and there is no demographic time-bomb ticking away. (para 3, p. 145)		
875	Today, as the food mountains attest, the ability of the Earth to support its human inhabitants is not in question. (para 2, p. 149)		
876	The real price of food continues to fall and future population growth is unlikely to reverse this trend. (para 1, p. 150)		
877	There is no foreseeable limitation to the basic natural resources of food production. (para 1, p. 150)		
878	There are two reasons why environmentalist's predictions about the collapse of the Earth will not materialise. First, the natural ecological system is resilient. Second, human creativity overcomes the obstacles it encounters; human beings have been able to create and innovate when limits are reached. This state of affairs can continue indefinitely.		
879	More people at a given level of per capita consumption means more pressure on land, food, energy and a wide variety of other environmental resources. (para 3, p. 152)		

880	The link between population growth and environmental degradation is based on guess-work rather than empirical investigation. (para 3, p. 153)		
881	Environmental well-being is influenced by a complex range of factors. Neither is directly – positively nor negatively – determined by population growth. (para 3, p. 158)		
882	Even if we can feed the World so many times over, we cannot do it indefinitely since doing so means slowly undermining the goose that lays the golden egg – land and water. There is no obvious way out since there are no scientific solutions on the horizon that can boost output per portion of land. (para 2, p. 160)		
883	The search for limits seems to distract environmentalist thinkers from the far more creative search for solutions. Their fatalism regarding future innovation reveals that the real limit which preoccupies them is not so much that of land or of resources, but their own limited view of human potential. (para 1, p. 161)		
884	For those who are genuinely concerned with their environment the answer does not lie in population control. With more innovative forms of social organisation and technology, conservation measures can be mounted and new approaches found. (last para, p. 161)		
	Added statements		
885	One of the simplest and clearly incorrect notions of population and resource availability is captured in Paul Ehrlich's famous dictum: Impact = Population X Affluence (consumption) X Technology (I = PAT).		
886	I believe that most future environmental problems will be solved by human ingenuity.		
887	The goal of environmentalism is little less than the transformation of government, economy and society in the interest of what can properly be called the liberation of nature from human exploitation. (Arnold, 1999, para 1, p. 20)		
888	Ecological problems now plaguing planet Earth demand sweeping action to be taken before those problems cause irreparable damage to the ecosystem. (Zimmerman, 1991, para 1, p. 122)		
889	Humankind ought to play an active role in improving the human estate. (Zimmerman, 1991, para 3, p. 122)		

890	Humanity's very attempt to gain control of nature, an attempt that at one time looked so laudable and noble, may end up in a total loss of control, the cost of which may be the extinction of millions of species, including *Homo sapiens*. (Zimmerman, 1991, para 2, p. 123)		
891	Ecological problems will be resolved only if humankind abandons the anthropocentric humanism that spawns those problems. (Zimmerman, 1991, para 2, p. 124)		
892	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind. (Zimmerman, 1991)		
893	Local Agenda 21 has the potential to re-invigorate local decision-making, offering a new mandate for local democracy. (Counsell, 1999, para 2, p. 25)		
894	In most cases, Local Agenda 21 fails to impinge on mainstream planning. (Counsell, 1999, para 2, p. 25)		
895	The pro-development lobby has consistently been opposed to radical approaches to sustainable development. (Counsell, 1999, para 2, p. 25)		
896	While the Council is generally in favour of policy on sustainable development, the environmental lobby is seeking more radical approaches to planning systems. (Counsell, 1999, para 2, p. 25)		
897	Environmental damage matters because it translates into lost productivity.		
898	Economic development requires a strong policy of protecting the natural resource base.		
899	Carried to an extreme, offsetting all environmental damage could be stultifying to the economic and social systems.		
900	Implementation of sustainable development is the responsibility of national Governments and national strategies, plans, policies and processes are the principle mechanism for its delivery. (Kelly, 19992)		
901	There is little doubt that Australian jobs and the economy can benefit form the outcomes of sustainable development which offer opportunities for industry – provided industry has both the imagination and determination to act swiftly to grasp the opportunity. (Kelly, 1992, p. 11)		

902	Australia is quite clearly part of the international process in which the environment is becoming an essential element of mainstream decision-making. (Kelly, 1992, p.12)		
903	Strong, growing and diversified economies enhance the capacity for environmental protection. (Anonymous author)		
904	In order to achieve sustainable economic development there is a need for a country's international competitiveness to be maintained and enhanced in an environmentally sound manner. (Anonymous author)		
905	Measures adopted in implementing sustainable development policy should be cost-effective and not be disproportionate to the significance of the environmental problems being addressed. (Anonymous author)		
906	The overall implementation of the Inter-governmental Agreement on the Environment is a useful mechanism and has played a positive role. (IGCESD, 1995)		
907	The Inter-governmental Agreement on the Environment has played an important and positive role in developing a co-operative nation-wide approach to environmental protection. (IGCESD, 1995)		
908	Sustainable development requires the need to clarify the roles and responsibilities of the Commonwealth and States more precisely. (IGCESD, 1995)		
909	There is a need for a more explicit commitment from all parties on application of the principles of environmentally sustainable development. (IGCESD, 1995)		
910	The Inter-governmental Agreement on the Environment has failed to achieve any of its objectives, and the most effective means for the Commonwealth and States to pursue uniform environmental standards is to use Commonwealth powers and to strengthen Commonwealth leadership. (IGCESD, 1995)		
911	We cannot harm future generations whatever major environmental policy we adopt.		
912	There is little reason to believe that conventional economic growth will harm the interests of future generations.		

913	Without increasing affluence, there is not much hope of protecting the environment.		
914	We should forget about our descendants and improve things now. Our descendants will have to look out for their own interests, no doubt with more wisdom and skill than we currently possess.		
915	The whole package of green concern must rank as one of the greatest delusions of modern humanity.		
916	We should not be taken for a ride by the environmental movement's predictions that we are on the verge of an environmental catastrophe.		
917	Economic growth is the only way that the Third World will be able to develop the technology and wealth needed to handle their environmental problems.		
918	The argument regarding natural resource depletion is flawed in every respect.		
919	Society is faced with the choice between accepting some remote and unquantified possibility of climatic change in the longer run with its possible severe economic effects and the certain economic and social catastrophe if draconian policies are adopted to avoid it.		
920	The ecological problems of the Third World are a direct result of the low level of economic development those countries have achieved. They simply have not produced the technology necessary for environmental protection, nor have they accumulated the wealth to buy it from abroad.		
921	The best and only route for countries to overcome environmental problems is to become richer and more technologically advanced.		
922	By every objective measure, such as infant mortality, life expectancy, urban air quality, and food safety, the Australian people are healthier today and exposed to fewer and lesser hazards than ever in our history.		
923	The roots of environmental problems stem from the basic values which society has built, such as individualism, materialism, progress and growth. (Gigliotti, 1992, p. 15)		
924	Western values may have seemed appropriate in a period of extraordinary abundance and given the lack of sound ecological knowledge at the time, but they could prove disastrous for society as we reach		

	the ecological limits of the Earth. (Gigliotti, 1992, p. 15)		
925	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment. (Gigliotti, 1992, p. 15)		
926	Pro-environmental attitudes are beginning to filter into the business community. (Shetzer et al., 1991, p. 14)		
927	In the future, environmental concerns will be fundamental to the business philosophy of the emerging "green-capitalists". (Shetzer et al., 1991, p. 14)		
928	The opinion of contemporary business is predominantly pro-environmental. (Shetzer et al., 1991, p. 20)		
929	Business should bear the responsibility for environmental protection. (Shetzer et al., 1991, p. 20)		
930	The environmental movement is an elitist effort by the wealthy to preserve for their own benefit access to and maintenance of the natural environment. (Seligman, 1989, p. 170)		
931	Environmental protection or conservation is useful, only to the extent that peoples' welfare is affected or human needs are served. (Seligman, 1989, p. 172)		
32	The balance of nature is very delicate and easily upset. (NEP scale)		
933	When humans interfere with nature it often produces disastrous consequences. (NEP scale)		
934	Humans must live in harmony with nature in order to survive. (NEP scale)		
935	Humankind is severely abusing the environment. (NEP scale)		
936	We are approaching the limit of the number of people the Earth can support. (NEP scale)		
937	The Earth is like a spaceship with only limited room and resources. (NEP scale)		
938	There are limits to growth beyond which industrialised society cannot expand. (NEP scale)		

939	To maintain a healthy economy, we have to develop a "steady state" economy where industrialised growth is controlled. (NEP scale)		
940	Humankind was created to rule over the rest of nature. (NEP scale)		
941	Humans have the right to modify the natural environment to suit their needs. (NEP scale)		
942	Plants and animals exist primarily to be used by humans. (NEP scale)		
943	Humans need not adapt to the natural environment because they can make it to suit their needs. (NEP scale)		

Appendix D. Sources of statements in the concourse

Sources of statements for the communication concourse

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Appendix E: 5th level Q-sample analysis

This Appendix shows the reduced Q-sample of 120 statements that has been selected from the original 943 statements.

Anthropocentricism				
1	Priority solution	Environmental matters are a luxury, to be fitted in after we have sorted out other human problems like poverty and health (p.13, para 4).	Environmental priority	Low priority
637	Priority solution	Tackling poverty and promoting economic growth are imperative for sustainable development. (28.22, p. 192)	Economic priority	Decrease poverty
746	Priority solution	The future vision of a sustainable, steady-state, no-growth economy will relegate much of the developing world – and the poor within the industrialised world – to a state of persistent poverty. (para 3, p. 9)	Economic priority	Increase poverty
79	Priority solution	The satisfaction of human needs and aspirations is the major objective of development (last para, p. 43)	Social priority	Human needs
477	Priority solution	Humans must always be preferred to non-humans when conflicts between the interests of species exist. (para 1, p. 103)	Social priority	Human needs
585	Priority solution	The maximisation of human welfare is the main objective underpinning sustainable development. (para 4, p. 1)	Social priority	Well-being
735	Priority solution	The best way to improve environmental quality is to expand the economy, thereby having more money with which to buy environmental protection. (para 3, p. 5)	Common interest	Economic sense
820	Priority solution	The World can support a lot more people than it does at present. (item 18, appendix)	Population	No need for control
202	Priority solution	Economic growth will help provide the answers to all economic and environmental problems. (line 33, p. 510	Economic growth	Pro-technology
921	Priority solution	The best and only route for countries to overcome environmental problems is to become richer and more technologically advanced.	Economic growth	Pro-technology
383	Priority solution	The purpose of sustainable development is to enable people to enjoy long, healthy and fulfilling lives. (line 1, p. 18)	Definition of ESD	Mixed goals
798	Priority solution	Humans, and humans alone, have rights. (para 5, p. 403)	Morality	Anthropocentric
310	Priority solution	Nature is valueless except in so far as it can be used instrumentally as a resource. Valueless nature can be put to any cultural use we please. (para 1, p. 133)	Relationship to nature	Anthropocentric
Anthropocentricism				
450	Role of science and technology	Those people advocating for sustainable development measures must demonstrate with a reasonable chance of certainty, that there is a scientific need for environmental protection and that their recommended solutions have a	Awareness	Lack of certainty about problems

		reasonable chance of success. (para, 2, p. 26)		
451	Role of science and technology	Decision-making about problems of sustainable development properly ought to be left to those people with expert knowledge. (para 4, p. 26)	Awareness	Need for expert knowledge
846	Role of science and technology	All in all, the scientifically-reliable picture of the environmental 'crisis' is much, much less alarming than the general public and politicians are being led to believe. (last para, p. 37)	Role of information	Propaganda
853	Role of science and technology	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems. (column 3, p. 11)	Overcoming environmental problems	Pro-technology
836	Role of science and technology	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species. (para 2, p. 200)	Ingenuity	

Anthropocentricism				
731	Scope of problem	On a global scale, efforts to protect the environment will slow economic growth and exacerbate the inequalities between rich and poor nations. (para 3, p. 4)	Common interest	Economic sense
192	Scope of problem	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources. (line 1, p.33)	No limits	Infinite resources
291	Scope of problem	Since we have unlimited resources, we are able to meet the fundamental needs of the present generation without having to consider whether our activities might deny similar opportunities to succeeding generations. (para 1, p. 89)	No limits	Infinite resources
832	Scope of problem	As far as the global environment is concerned, there is a brilliant future for humanity and Planet Earth. (para 3, p. 14)	No limits	Limits not bases on facts
916	Scope of problem	We should not be taken for a ride by the environmental movement's predictions that we are on the verge of an environmental catastrophe.	No limits	Limits not bases on facts
855	Scope of problem	For a country whose economy and way of life depend so profoundly on the use of land and sea and the extraction of minerals, the negative implications of sustainable development policy are immense and have not so far been addressed. (column 2, p. 38)	View of development	Modernism is OK
697	Scope of problem	Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation. (para 5, p. 6)	Role of cities	Positive
831	Scope of problem	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about. (para 3, p. 3)	Overcoming environmental problems	Pro-technology

264	Scope of problem	In spite of the doomsday predictions made by proponents of the need for sustainability, human welfare is actually increasing, resources are now more plentiful than previously, the problem of energy scarcity has been solved by human ingenuity and pollution levels are declining. (para 2, p. 33)	Ingenuity	
515	Scope of problem	The practices of current generations are not harming future generations. (box, p. 11)	Futurity	
Anthropocentricism				
495	Implementation	In truth, 'sustainability' has got carried too far. para 2, p. xiv)	Desire for change	Low potential for ESD
745	Implementation	Sustainable development plans prove to be glib wish lists of goals and suspiciously vague implementation steps. (para 3, p. 9)	Ideology	
779	Implementation	Like it or not, the responsibility for ensuring a sustainable World falls largely on the shoulders of the World's enterprises, the economic engines of the future. (para 2, p. 76)	Pro ESD	Leadership role
769	Implementation	Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainability. (para 5, p. 67)	Involve business in ESD	

Resource conservation				
124	Priority solution	The overriding policy objective for sustainability must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse. (para 4, p. 227) See page 229	Environmental priority	Resource use
Resource conservation				
48	Role of science and technology	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. (para 3, p. 16).	Pollution control	Pro-technology
47	Role of science and technology	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. (para 1, p. 16).	Economic growth	Pro-technology
857	Role of science and technology	All of the evidence points to the fact that the richer a country and the more technologically advanced and innovative it is, the more likely it is to be environmentally sensitive and able to preserve or restore environments while still creating wealth. (column 2, p. 38)	Economic growth	Pro-technology
Resource conservation				
504	Scope of problem	We do not need to encourage sustainability. It will happen naturally. As non-renewable resources get scarce, so their prices will rise and substitutes will be encouraged. If there are no alternative non-renewables, the renewable technologies will be phased in 'naturally'. (para 2, p. 5)	ESD	Pro-technology
417	Scope of problem	Cities are conglomerations of people and artefacts wastefully using resources and polluting the environment.	Role of cities	Negative
313	Scope of problem	Unless strictly regulated, the forces of the free market economic system work against a sustainable and equitable approach to meeting human needs. (para 3, p. 145)	International co-operation	
Resource conservation				
335	Implementation	Sustainable development guarantees civil rights and social justice to oppressed people the world over, so that they are allowed to consume resources in an equilibrium manner, and appreciate the intrinsic rights of nature. (para 3, p. 221)	Social priority	3rd World equity
766	Implementation	More and more companies are "going green" as they realise they can reduce pollution and increase profits simultaneously. (para 2, p. 67)	Pro ESD	Less environmental harm
465	Implementation	Perhaps the best hope for the greatest world-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour. (para 1, p. 66)	Pressure for change	From below

243	Implementation	In essence, the individual and private household is at the core of sustainability for the planet which in turn means that the decision-making power at the level of private households needs to be recognised. (line 29, p. 120)	Interest groups	household
		Human welfare ecology		
482	Priority solution	Sustainable development entails integrating economic, social, and environmental objectives, and making choices among them where integration is not possible. (para 1, column 2, p. xiii)	Multiple goals for ESD	
597	Priority solution	The precautionary principle does not mean that all developments with uncertain impacts on the environment should not proceed. (last para, p. 10)	Precautionary principle	
2	Priority solution	There is a common interest between looking after the environment and looking after people (p.13, para 4).	Common interest	Environment - development link
870	Priority solution	There is no reason that we cannot have both high economic growth and a sustainable environment. (para 2, p. 79)	Common interest	Environment - development link
197	Priority solution	A prosperous economy depends on a healthy ecology. (line 31, p. 36)	Common interest	Economic sense
852	Priority solution	In some cases, it may be worthwhile paying the price of some environmental damage to ensure present and future economic benefits. (para 2, p. 11)	Common interest	Economic sense
939	Priority solution	To maintain a healthy economy, we have to develop a "steady state" economy where industrialised growth is controlled. (NEP scale)	Steady state economy	
551	Priority solution	The core objective for ESD is to provide equity within and between generations. (box, p. xvii)	Futurity	
176	Priority solution	Sustainable development is predominantly concerned with the protection of the rights and welfare of future generations (line 2, p. 15)	Futurity	
423	Priority solution	The emphasis of sustainable development is that it is a form of managed economic growth that occurs within the context of sound environmental stewardship.	Definition of ESD	Mixed goals
931	Priority solution	Environmental protection or conservation is useful, only to the extent that peoples' welfare is affected or human needs are served. (Seligman, 1989, p. 172)	Morality	Anthropocentric

		Human welfare ecology		
276	Scope of problem	Previous years of economic development, far from eliminating hunger and hardship, have coincided with an increase. More of the same kind of development will almost certainly increase the number of people suffering from extreme poverty. (para 2, p. 46)	Economic priority	Decrease poverty
351	Scope of problem	Humanity which exists as part of nature, has no future unless nature and natural resources are conserved. (Box, p. 1)	Relationship to nature	Ecocentric
764	Implementation	Many companies have accepted their responsibility to do no harm to the environment. (para 2, p. 67)	Pro ESD	Less environment harm
426	Implementation	Increasing responsibility for a range of social, economic, and environmental issues has been handed down to local governments often without the resources to undertake these tasks adequately.	Support for local level policy	Lack of funds
325	Implementation	The importance of the role of national governments in promoting sustainable development is paramount. All governments should integrate development and environment policies at all levels and in all sectors. (para 2, p. 187)	Government	
		Deep ecology		
467	Priority solution	In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over other economic or social considerations. (para 1, p. 67)	Environmental priority	High priority
824	Priority solution	In the future people are going to have to lower their material standards of living due to resource shortages and other environmental pressures. (item 30, appendix)	Consumption	Lifestyle change
380	Priority solution	All the species and systems of nature deserve respect regardless of their usefulness to humanity. (para 1, p. 14)	Bio-diversity	Green reasons for protection
848	Priority solution	Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a solution. (para 2, p. 736)	Bio-diversity	Real problem
320	Priority solution	Instead of exploiting the natural resources provided by nature, we should respect the intrinsic value of the natural world and attempt to preserve its remnants. (line 1, p. 157)	Relationship to nature	Ecocentric
552	Priority solution	The core objective for ESD is to protect biological diversity and maintain essential processes and life support systems. (box, p. xvii)	Bio-diversity	Issue for ESD
190	Priority	Nature needs to be preserved for its own sake	Morality	Ecocentric

	solution	and not just for the interests of human being. (line 27, p. 30)		
		Deep ecology		
449	Role of science and technology	In environmental decision-making, the burden of proof should be shifted so that proposed actions with the potential for serious consequences are assumed harmful until proven benign. (para 1, p. 21)	Precautionary principle	
362	Role of science and technology	The Earth has its limits; with the best technology imaginable, they are not infinitely expandable. (para 5, p. 5)	Carrying capacity	Finite Earth
68	Role of science and technology	The risks associated with economic growth increase faster than our abilities to manage them (para 4, p. 35).	Economic growth	Anti technology
838	Role of science and technology	Ecological limits are real and efforts to extend such limits via technology are likely to create more problems than they solve. (last line, p. 200)	Anti-progress	
925	Role of science and technology	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment. (Gigliotti, 1992, p. 15)	ESD	Anti-technology
302	Scope of problem	Many rates of consumption or depletion of natural resources are all too plainly unsustainable. (para 1, p. 110)	Consumption	All resources
311	Scope of problem	Economic growth and development are major features of an economic system that presents many impediments to sustainable development. (para 2, p. 142)	Development path	
203	Scope of problem	Despite technological progress and resource substitution, the scarcity of resources will determine the limits of economic growth. (line 24, p. 52)	Consumption	Finite resources
85	Scope of problem	Today's interventions in natural systems are more drastic in scale and impact, and more threatening to life-support systems both locally and globally. (last para, p. 44)	Life threatening hazards	Life support system
199	Scope of problem	A continuation of economic expansion will lead to the destruction of large parts of the world's life support system and is ultimately unsustainable. (line 11, p. 42)	Life threatening hazards	Life support system
430	Scope of problem	For the first time in history, humanity must face the risk of unintentionally destroying life on Earth. (para 1, p. 2)	Life threatening hazards	Life support system
840	Scope of problem	The natural World and species are under severe and immediate threat; there is an ecological 'crisis'. (point I, p. 33)	Life threatening hazards	Life support system

88	Scope of problem	A new era of economic growth would have very serious negative ecological implications. (para 3, p. 59)	Anti-progress	
819	Scope of problem	Development has gone too far in Western Australia. (item 11, appendix)	Anti-progress	
710	Scope of problem	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions. (para 3, p. 138)	Population	Need for control
205	Scope of problem	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems. (line 18, p. 55)	View of development	Modernism is the problem
890	Scope of problem	Humanity's very attempt to gain control of nature, an attempt that at one time looked so laudable and noble, may end up in a total loss of control, the cost of which may be the extinction of millions of species, including *Homo sapiens*. (Zimmerman, 1991, para 2, p. 123)	View of development	Modernism is the problem
892	Scope of problem	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind. (Zimmerman, 1991)	ESD	Anti-technology
818	Scope of problem	Multinationals are a grave threat to an environmentally sustainable society. (item 9, appendix)	Status quo	Anti ESD
358	Scope of problem	Our civilisations are at risk because we are misusing natural resources and disturbing natural systems. (para 5, p. 4)	View of development	Modernism is the problem
		Deep ecology		
456	Implementation	Because of the urgency of the need for political and personal transformation to avert widespread environmental destruction in the next century, only a radical change in values can bring about the behavioural change needed to protect life on Earth. (last para, p. 46)	Time span	Urgent
		Value neutral statements		
365	Priority solution	Much of what needs to be done if we are properly to care for the Earth is of global significance and requires a global response. (last para, p. 5)	International co-operation	
404	Priority solution	Sustainability is now core business for local authorities. (line 1, p. 1)	Implementation of LA21	High priority
711	Priority solution	Very few local authorities seem to see the expectations needed for sustainable development as central or even major concerns. (para 4, p. 139)	Implementation of LA21	Low priority
715	Priority	Few of the key decision-makers in local	Implementation	Low

	solution	authorities have accepted sustainable development values. (para 9, p. 142)	of LA21	priority
723	Priority solution	Many councillors and chief executive officers find the Agenda 21 challenge unattractive and unsatisfying in comparison with, say, local economic development. (para 7, p. 145)	Implementation of LA21	Low priority
166	Priority solution	Sustainable development has the force of political commitment at the highest levels of government. (line 13, p. 11)	Government	
346	Priority solution	Sustainability is not regarded seriously by those who count, namely those at the top of political structures and those who control the flows of national and international capital. (para 1, p. 233)	Government	
416	Priority solution	Like other political ideas, we tend to agree with the need for sustainability but disagree over what it entails.	Definition of ESD	Ambiguity
736	Priority solution	Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies. (para 3, p. 6)	Definition of ESD	Ambiguity
237	Scope of problem	There is a lack of awareness in the Western Australian Local Government community to the existence of local and international environmental standards. (last line, p. 111)	Level of LG commitment to ESD	Lack of awareness
410	Scope of problem	Councillors and council staff have neither the training nor time do more than cope with the incredible day to day pressures. The future is pretty much left to look after itself. (last para, p. 20)	Implementation of LA21	Low priority
388	Scope of problem	Many problems faced by the local community are caused by external factors and cannot be solved by local community action alone. (line 1, p. 58)	LA21	problem
39	Scope of problem	Unsustainable development is built into the very fabric of government in Australia. (last para, p. 187)	Government	
607	Scope of problem	Sustainable development has failed to have a significant impact in Australia. (para 2, p. 28)	Government	
668	Implementation	With regard to sustainable development issues, woman and youth need to be represented in decision-making, planning and implementation processes. (28.2, d, p. 1)	Interest groups	Women
620	Implementation	There can be clear benefits from involving the public in the policy making process, particularly when complex economic, environmental and social issues are being addressed. (para, 4, p. 104)	Interest groups	Wide scale groups

751	Implementation	Sustainability is generally accepted as a planning goal in Western Australia. (para 1, p. 1)	Ideology	
181	Implementation	The achievement of sustainability will depend to large degree on the pro-active and effective measures taken by local government. (line 21, p. 116)	Support for local level policy	Benefit of local practice - policy
130	Implementation	To become key agents of development, local governments need enhanced political, institutional, and financial capacity, notably access to more of the wealth generated in the city. (para 4, p. 248)	Support for local level policy	Lack of funds
330	Implementation	Unlike the Commonwealth and States, local government in Australia has responded much more positively to the challenge of sustainable development. (para 2, p. 211)	Level of LG commitment to ESD	Higher than C'wealth
437	Implementation	Local governments have the dominant role in matters than need to be considered in implementing sustainable development. (para 2, p. 8)	Implementation of LA21	High priority
479	Implementation	Sustainable development will fail where it is prepared by small elite task forces without consultation, neglecting existing initiatives, and limited in scope. (para 5, p. vii)	LA21	Problem
722	Implementation	Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic. (para 7. p. 145)	LA21	Problems
322	Implementation	Governments are unlikely to commit sufficient resources to facilitating debate, empowerment and education. Progress towards sustainable development will depend on the actions of NGOs and committed individuals for whom campaigning and networking become particularly important. (last para, p. 175)	Government	
561	Implementation	Governments have an important leadership role in promoting ESD. (para 4, p. xix)	Government	
689	Implementation	Local governments have demonstrated a deep commitment to the implementation of Agenda 21. (para 1, p. 3)	Government	
632	Implementation	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now. (1.6, p. 27)	Time span	Not urgent
155	implementation	NGOs and private community groups can often provide an efficient and effective alternative to public agencies in the delivery of programmes and projects. (para 4, p. 328)	NGOs	
472	Implementation	The role of non-government organisations is critical to the success of Agenda 21. (para 3, p.	NGOs	

		75)		
644	Implementation	The vigorous and independent voluntary sector has a key role in developing strategies for sustainable development at local and national level. (31.1, p. 204)	NGOs	
457	Implementation	The world's religions must become a major force in implementing a new sustainable development ethic. (first line, p. 47)	Religion	
631	Implementation	Sustainable development requires changes in lifestyle from everyone. (point 101, p. 17)	Attitudes	
900	Implementation	Implementation of sustainable development is the responsibility of national Governments and national strategies, plans, policies and processes are the principle mechanism for its delivery. (Kelly, 19992)	Co-operation	

Appendix F: 6th level Q-sample analysis

The next task was to further reduce the 120 statements to a Q-sample of 75 statements. The selected statements will allow for three statement from each of the ideological positions to be placed in each of the matrix cells (i.e., 25 cells X three statements per cell equals 75). This selection from the communication concourse was made on the basis of a five by five (i.e., 25 cell) matrix illustrated below. The vertical dimension represents a modified version of Eckersley's anthropocentricism - eco-centrism continuum with mid-points representing a resource-conservation and human-welfare-ecology (HWE) ideology. These mid-points are considered to represent a "shallow-ecological" orientation. Furthermore, two of Eckersley's value positions (animal liberationism and autopiotic intrinsic value theory) have been condensed under the rubric of a "deep ecology" world-view. I've also included a "value neutral" category for statements that are not conceptually linked to any one of the world-view positions.

The horizontal dimension is related to the range of possible content of "themes" that each statement represents. These themes have been characterised across five dimensions. Theme one represents the priority for SD solutions. The role played by science and technology in sustainable development problems and solutions to those problems represents theme two. The scale or scope of existing problems represents theme three. The last theme represents the role of various social actors in actual or possible sustainable development policy implementation. The last column represents a range of other relevant issues.

Ideological position	Theme for statements				
	Priority for SD solutions	Role of science in SD	Scale of SD problems	Implementation of SD	Other issues
Anthropocentric	1	2	3	4	5
RC	6	7	8	9	10
HWE	11	12	13	14	15
Deep ecology	16	17	18	19	20
Neutral	21	22	23	24	25

Anthropocentricism				
Cell One				
1 585	Priority solution	The maximisation of human welfare **ought to be** the main objective underpinning sustainable development. (para 4, p. 1)	Social priority	Well-being
2 735	Priority solution	The best way to improve environmental quality is to expand the economy, thereby having more money with which to buy environmental protection. (para 3, p. 5)	Common interest	Economic sense
3 202	Priority solution	Economic growth will help provide the answers to all economic and environmental problems. (line 33, p. 510	Economic growth	Pro-technology
Cell Two				
4 450	Role of science and technology	Those people advocating for sustainable development measures must demonstrate with a reasonable chance of certainty, that there is a scientific need for environmental protection and that their recommended solutions have a reasonable chance of success. (para, 2, p. 26)	Awareness	Lack of certainty about problems
5 853	Role of science and technology	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems. (column 3, p. 11)	Overcoming environmental problems	Pro-technology
6 836	Role of science and technology	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species. (para 2, p. 200)	Ingenuity	
Cell Three				
7 192	Scope of problem	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources. (line 1, p.33)	No limits	Infinite resources
8 831	Scope of problem	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about. (para 3, p. 3)	Overcoming environmental problems	Pro-technology
9 515	Scope of problem	The practices of current generations are not harming future generations. (box, p. 11)	Futurity	
Cell Four				
10 495	Implementation	In truth, 'sustainability' has got carried too far. (para 2, p. xiv)	Desire for change	Low potential for ESD

11 745	Implementation	Sustainable development plans prove to be glib wish lists of goals and suspiciously vague implementation steps. (para 3, p. 9)	Ideology	
12 769	Implementation	**Multinational** Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable **development**. (para 5, p. 67)	Involve business in ESD	Leadership role
Cell Five				
13 820	Other issues	The World can support a lot more people than it does at present. (item 18, appendix)	Population	No need for control
14 931	Other issues	Environmental protection or conservation is useful, only to the extent that peoples' welfare is **positively** affected or human needs are served. (Seligman, 1989, p. 172)	Morality	Anthropocentric
15 310	Other issues	Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit. (para 1, p. 133)	Relationship to nature	Anthropocentric
		Resource conservation		
Cell Six				
16 852	Priority solution	In some cases, it may be worthwhile paying the price of some environmental damage to ensure present and future economic benefits. (para 2, p. 11)	Common interest	Economic sense
17 631	Priority solution	Sustainable development requires changes in lifestyle from everyone **involving recycling, reusing and reducing the amounts of resources consumed**. (point 101, p. 17)	Attitudes	
18 124	Priority solution	The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse. (para 4, p. 227)	Environmental priority	Resource use
Cell Seven				
19 264	Role of science and technology	In spite of the doomsday predictions, human welfare is actually increasing, resources are now more plentiful than previously, the problem of energy scarcity has been solved by human ingenuity and pollution levels are declining. (para 2, p. 33)	Ingenuity	

20 48	Role of science and technology	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. **This is essential for sustainable development**. (para 3, p. 16).	Pollution control	Pro-technology
21 47	Role of science and technology	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. **The modern World is becoming more, not less sustainable**. (para 1, p. 16).	Economic growth	Pro-technology
Cell Eight				
22 358	Scope of problem	Our civilisation is put at risk **when we misuse or mismanage** natural resources and disturb natural systems. (para 5, p. 4)	View of development	Modernism is the problem
23 504	Scope of problem	We do not need to encourage **sustainable development**. It will happen naturally. As non-renewable resources get scarce, so their prices will rise and substitutes will be encouraged. If there are no alternative non-renewables, the renewable technologies will be phased in 'naturally'. (para 2, p. 5)	ESD	Pro-technology
24 416	Scope of problem	Like other political ideas, we tend to agree with the need for **resource conservation, social equality and pollution control** but disagree over what it entails.	Ambiguity about problem and solution	
Cell Nine				
25 465	Implementation	Perhaps the best hope for the greatest World-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour. (para 1, p. 66)	Pressure for change	From below
26 632	Implementation	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now. (1.6, p. 27)	Time span	Not urgent
27 472	Implementation	The role of non-government organisations (NGOs) is **most** critical to the success of **sustainable development**. (para 3, p. 75)	NGOs	
Cell Ten				
28 722	Other issues	Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic. (para 7. P. 145)	LA21	Problems
29	Other issues	As far as the global environment is concerned, there is a brilliant future for	No limits	Limits not based on

832		humanity and Planet Earth. (para 3, p. 14)		facts
30 417	Other issues	Cities are conglomerations of people and artefacts wastefully using resources and polluting the environment.	Role of cities	Negative
		Human welfare ecology		
Cell Eleven				
31 197	Priority solution	A prosperous economy depends on a healthy, **well-managed** ecology. (line 31, p. 36)	Common interest	Economic sense
32 2	Priority solution	There is a common interest between looking after the environment and looking after people (p.13, para 4).	Common interest	Environment - development link
33 423	Priority solution	The **main** emphasis of sustainable development **ought to be** a form of managed economic growth that occurs within the context of sound environmental stewardship.	Definition of ESD	Mixed goals
Cell Twelve				
34 857	Role of science and technology	All of the evidence points to the fact that the richer a country and the more technologically advanced and innovative it is, the more likely it is to be environmentally sensitive and able to preserve or restore environments while still creating wealth **and looking after human well-being**. (column 2, p. 38)	Economic growth	Pro-technology
35 921	Role of science and technology	The best and only route for countries to overcome environmental problems **and promote human well-being** is to become richer and more technologically advanced.	Economic growth	Pro-technology
36 764	Role of science and technology	**Private** companies **ought to** accept their responsibility to **use science and technology in order to minimise** harm the environment. (para 2, p. 67)	Pro ESD	Less environmental harm
	Cell Thirteen			
37 313	Scope of problem	Unless strictly regulated, the forces of the free market economic system work against a sustainable and equitable approach to meeting human needs. (para 3, p. 145)	International co-operation	
38 205	Scope of problem	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems. (line 18, p. 55)	View of development	Modernism is the problem

39 155	Scope of problem	Non-Government Organisations (NGOs) and private community groups can often provide an efficient and effective alternative to public agencies in the delivery of **health and environmental** programmes and projects. (para 4, p. 328)	NGOs	
Cell Fourteen				
40 426	Implementation	Increasing responsibility for a range of **sustainable development** issues has been handed down to local governments, often without the resources to undertake these tasks adequately.	Support for local level policy	Lack of funds
41 668	Implementation	With regard to sustainable development issues, woman, indigenous people and youth need to be represented in decision-making, planning and implementation processes. (28.2, d, p. 1)	Interest groups	Women
42 620	Implementation	There can be clear benefits from involving the public in the **sustainable development** policy-making process, particularly when complex economic, environmental, and social issues are being addressed. (para, 4, p. 104)	Interest groups	Wide scale groups
Cell Fifteen				
43 766	Other issues	More and more companies are "going green" as they realise they can reduce pollution, increase profits **and promote human well-being** simultaneously. (para 2, p. 67)	Pro ESD	Less environmental harm
44 736	Other issues	Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies. (para 3, p. 6)	Definition of ESD	Ambiguity
45 551	Other issues	The core objective for **sustainable development should be** to provide economic, environmental and social equity within and between generations. (box, p. xvii)	Futurity	
Deep ecology				
Cell Sixteen				
46 467	Priority solution	In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over **all** economic or social considerations. (para 1, p. 67)	Environmental priority	High priority

47 848	Priority solution	Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a **sustainable development** solution. (para 2, p. 736)	Bio-diversity	Real problem
48 552	Priority solution	The core objective for **sustainable development should be** to protect biological diversity and maintain essential processes and life support systems. (box, p. xvii)	Bio-diversity	Issue for ESD
Cell Seventeen				
49 846	Role of science and technology	All in all, the scientifically-reliable picture of the environmental 'crisis' is much, much **more** alarming than the general public and politicians are being led to believe. (last para, p. 37)	Role of information	Propagan da
50 449	Role of science and technology	In environmental decision-making, the burden of proof should be shifted so that proposed actions with the potential for serious consequences are assumed harmful until proven benign. (para 1, p. 21)	Precautionary principle	
51 925	Role of science and technology	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment. (Gigliotti, 1992, p. 15)	ESD	Anti-technolog y
Cell Eighteen				
52	Scope of problem	For the first time in history, humanity must face the risk of unintentionally destroying life on Earth.		
53 710	Scope of problem	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions. For the first time in history, humanity must face the risk of unintentionally destroying life on Earth. (para 1, p. 2) (para 3, p. 138)	Population	Need for control
54 892	Scope of problem	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind. (Zimmerman, 1991)	ESD	Anti-technolog y
Cell Nineteen				
55 819	Implementati on	**Economic, industrial and urban** development has gone too far in Western Australia. (item 11, appendix)	Anti-progress	

56 365	Implementation	Much of what needs to be done if we are properly to care for the Earth is of global significance and requires a global response. (last para, p. 5)	International co-operation	
57 456	Implementation	Because of the urgency of the need for political and personal transformation to avert widespread environmental destruction in the next century, only a radical change **to pro-environmental** values can bring about the behavioural change needed to protect life on Earth. (last para, p. 46)	Time span	Urgent
Cell Twenty				
58 380	Other issues	All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake. (para 1, p. 14) (190, line 27, p. 30)	Bio-diversity	Green reasons for protection
59 68	Other issues	The risks associated with economic growth increase faster than our abilities to manage them. It is true to say that Multinational **Corporations** are the gravest threat to an environmentally sustainable society. (item 9, appendix) (para 4, p. 35).	Economic growth	Anti technology
60 818	Other issues	Multinational **Corporations** are a grave threat to an environmentally sustainable society. (item 9, appendix)	Status quo	Anti ESD
		Neutral statements		
Cell Twenty-one				
61 404	Priority solution	**Implementing sustainable development** ought to be core business for Local **Government**. (line 1, p. 1)	Implementation of LA21	High priority
62 723	Priority solution	Many councillors and chief executive officers find **sustainable development** unattractive and unsatisfying in comparison with, say, local economic development. (para 7, p. 145)	Implementation of LA21	Low priority
63 166	Priority solution	Sustainable development has the force of political commitment at the highest levels of **the Commonwealth** Government. (line 13, p. 11)	Government	
Cell Twenty-two				
64 697	Role of science and technology	The precautionary principle means that all developments with uncertain impacts on the environment should not proceed.	Precautionary principle	Positive

65 479	Role of science and technology	Sustainable development will fail where it is prepared by small elite task forces without consultation, neglecting existing initiatives, and limited in scope. (para 5, p. vii)	LA21	Problem
66 697	Role of science and technology	Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation. (para 5, p. 6)	Role of cities	Positive
Cell Twenty-three				
67 715	Scope of problem	Few of the key decision-makers in local authorities have accepted sustainable development values. (para 9, p. 142)	Implementation of LA21	Low priority
68 237	Scope of problem	There is a lack of awareness in the Western Australian Local Government community to the existence of local and international environmental standards. (last line, p. 111)	Level of LG commitment to ESD	Lack of awarenes s
69	Scope of problem	Unsustainable development is built into the very fabric of Government in Australia.		
Cell Twenty-four				
70 437	Implementation	**The State** Government **should** have the dominant role in implementing sustainable development **in Western Australian**. (para 2, p. 8)		
71 437	Implementation	Local Governments **should** have the dominant role in matters that need to be considered in implementing sustainable development. (para 2, p. 8)	Implementation of LA21	High priority
72 900	Implementation	Implementation of sustainable development **ought to be** the responsibility of the **Commonwealth** Government and national strategies, plans, policies and processes **should be** the principle mechanism for its delivery. (Kelly, 19992)	Co-operation	
Cell Twenty-five				
73 457	Other issues	The world's religions must become a major force in implementing a new sustainable development ethic. (first line, p. 47)	Religion	
74 330	Implementation	Unlike the Commonwealth and **State** Government, Local Government in **Western** Australia has responded much more positively to the challenge of sustainable development. (para 2, p. 211)	Level of LG commitment to ESD	Higher than C'wealth
75 451	Other issues	Decision-making about problems of sustainable development properly ought to be left to those people with expert knowledge. (para 4, p. 26)	Awareness	Need for expert knowledge

Appendix G: 8th level Q-sample analysis

The task for the eight level analysis was to modify statements where necessary in order to have grammatical and logical consistency. For example, some statements refer to environmental sustainability, others to economic or ecological sustainability, while still more just refer to sustainable development. After modification of the remaining statements the next task is to pilot the Q-set with a number of volunteers. This process resulted the Q-sample being further reduced from 75 to a draft Q-set of 50 items. The fifty items were sampled in terms of two-items per cell from the matrix shown in Appendix 8.

Anthropocentricism				
Cell One				
1 585	Priority solution	The maximisation of human welfare **ought to be** the main objective underpinning sustainable development. (para 4, p. 1)	Social priority	Well-being
3 202	Priority solution	Economic growth will help provide the answers to all economic and environmental problems. (line 33, p. 510	Economic growth	Pro-technology
Cell Two				
5 853	Role of science and technology	Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems. (column 3, p. 11)	Overcoming environmental problems	Pro-technology
6 836	Role of science and technology	The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species. (para 2, p. 200)	Ingenuity	
Cell Three				
7 192	Scope of problem	Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources. (line 1, p.33)	No limits	Infinite resources
8 831	Scope of problem	Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about. (para 3, p. 3)	Overcoming environmental problems	Pro-technology
Cell Four				
10 495	Implementation	In truth, 'sustainability' has been carried too far. (para 2, p. xiv)	Desire for change	Low potential for ESD
12 769	Implementation	**Multinational** Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable **development**. (para 5, p. 67)	Involve business in ESD	Leadership role
Cell Five				
14 931	Other issues	Environmental protection or conservation is useful, only to the extent that peoples' welfare is **positively** affected or human needs are served. (Seligman, 1989, p. 172)	Morality	Anthropocentric
15 310	Other issues	Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human	Relationship to nature	Anthropocentric

		benefit. (para 1, p. 133)		
Resource conservation				
Cell Six				
17 631	Priority solution	Sustainable development requires changes in lifestyle from everyone **involving recycling, reusing and reducing the amounts of resources consumed.** (point 101, p. 17)	Attitudes	
18 124	Priority solution	The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse. (para 4, p. 227)	Environmental priority	Resource use
Cell Seven				
20 48	Role of science and technology	Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. **This is essential for sustainable development.** (para 3, p. 16).	Pollution control	Pro-technology
21 47	Role of science and technology	While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. **The modern World is becoming more, not less sustainable.** (para 1, p. 16).	Economic growth	Pro-technology
Cell Eight				
22 358	Scope of problem	Our civilisation is put at risk **when we misuse or mismanage** natural resources and disturb natural systems. (para 5, p. 4)	View of development	Modernism is the problem
24 416	Scope of problem	Like other political ideas, we tend to agree with the need for **resource conservation, social equality and pollution control** but disagree over what it entails.	Ambiguity about problem and solution	
Cell Nine				
25 465	Implementation	Perhaps the best hope for the greatest World-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour. (para 1, p. 66)	Pressure for change	From below
27 472	Implementation	The role of non-government organisations (NGOs) is **most** critical to the success of **sustainable development.** (para 3, p. 75)	NGOs	

Cell Ten				
28 722	Other issues	Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic. (para 7. P. 145)	LA21	Problems
26 632	Other issues	Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now. (1.6, p. 27)	Time span	Not urgent
Human welfare ecology				
Cell Eleven				
32 2	Priority solution	There is a common interest between looking after the environment and looking after people (p.13, para 4).	Common interest	Environment - development link
33 423	Priority solution	The **main** emphasis of sustainable development **ought to be** a form of managed economic growth that occurs within the context of sound environmental stewardship.	Definition of ESD	Mixed goals
Cell Twelve				
35 921	Role of science and technology	The best and only route for countries to overcome environmental problems **and promote human well-being** is to become richer and more technologically advanced.	Economic growth	Pro-technology
36 764	Role of science and technology	**Private** companies **ought to** accept their responsibility to **use science and technology in order to minimise** harm to the environment. (para 2, p. 67)	Pro ESD	Less environmental harm
Cell Thirteen				
9 515	Scope of problem	The **environmental** practices of current generations are harming future generations.	Futurity	
38 205	Scope of problem	Overall, the free market system can be considered the source of today's pending economic, political and environmental problems. (line 18, p. 55)	View of development	Modernism is the problem
Cell Fourteen				
41 668	Implementation	With regard to sustainable development issues, woman, indigenous people and youth need to be represented in decision-making, planning and implementation processes. (28.2, d, p. 1)	Interest groups	Women
42 620	Implementation	There can be clear benefits from involving the public in the **sustainable development** policy-making process, particularly when complex economic, environmental, and social issues are being addressed.	Interest groups	Wide scale groups

Cell Fifteen				
44 736	Other issues	Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies. (para 3, p. 6)	Definition of ESD	Ambiguity
45 551	Other issues	The core objective for **sustainable development should be** to provide economic, environmental and social equity within and between generations. (box, p. xvii)	Futurity	
		Deep ecology		
Cell Sixteen				
46 467	Priority solution	In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over **all** economic or social considerations. (para 1, p. 67)	Environmental priority	High priority
47 848	Priority solution	Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a **sustainable development** solution. (para 2, p. 736)	Bio-diversity	Real problem
Cell Seventeen				
49 846	Role of science and technology	All in all, the scientifically-reliable picture of the environmental 'crisis' is much, much **more** alarming than the general public and politicians are being led to believe. (last para, p. 37)	Role of information	Propagan da
51 925	Role of science and technology	The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment. (Gigliotti, 1992, p. 15)	ESD	Anti-technolog y
Cell Eighteen				
53 710	Scope of problem	We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions. For the first time in history, humanity must face the risk of unintentionally destroying life on Earth. (para 1, p. 2) (para 3, p. 138)	Population	Need for control
54 892	Scope of problem	The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind. (Zimmerman, 1991)	ESD	Anti-technolog y

Cell Nineteen				
55 819	Implementation	**Economic, industrial and urban** development has gone too far in Western Australia. (item 11, appendix)	Anti-progress	
57 456	Implementation	Because of the urgency of the need for political and personal transformation to avert widespread environmental destruction in the next century, only a radical change **to pro-environmental** values can bring about the behavioural change needed to protect life on Earth. (last para, p. 46)	Time span	Urgent
Cell Twenty				
58 380	Other issues	All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake. (para 1, p. 14) (190, line 27, p. 30)	Bio-diversity	Green reasons for protection
59 68	Other issues	Multinational **Corporations** are the gravest threat to an environmentally sustainable society. (item 9, appendix) (para 4, p. 35).	Economic growth	Anti technology
Neutral statements				
Cell Twenty-one				
61 404	Priority solution	**Implementing sustainable development** ought to be core business for Local **Government**. (line 1, p. 1)	Implementation of LA21	High priority
62 723	Priority solution	Many councillors and chief executive officers find **sustainable development** unattractive and unsatisfying in comparison with, say, local economic development. (para 7, p. 145)	Implementation of LA21	Low priority
63 166	Priority solution	Sustainable development has the force of political commitment at the highest levels of **the Commonwealth** Government. (line 13, p. 11)	Government	
Cell Twenty-two				
75 451	Role of science and technology	Decision-making about problems of sustainable development properly ought to be left to those people with expert knowledge. (para 4, p. 26)	Awareness	Need for expert knowledge
66 697	Role of science and technology	Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation. (para 5, p. 6)	Role of cities	Positive

Cell Twenty-three				
68 237	Scope of problem	There is a lack of awareness in the Western Australian Local Government community to the existence of local and international environmental standards. (last line, p. 111)	Level of LG commitment to ESD	Lack of awarenes s
69	Scope of problem	Unsustainable development is built into the very fabric of Government in Australia.		
Cell Twenty-four				
70 437	Implementati on	**The State** Government **should** have the dominant role in implementing sustainable development **in Western Australian**. (para 2, p. 8)		
72 900	Implementati on	Implementation of sustainable development **ought to be** the responsibility of **the Commonwealth** Government and national strategies, plans, policies and processes **should be** the principle mechanism for its delivery. (Kelly, 19992)	Co-operation	
Cell Twenty-five				
73 457	Other issues	The world's religions must become a major force in implementing a new sustainable development ethic. (first line, p. 47)	Religion	
74 330	Other issues	Unlike the Commonwealth and **State** Government, Local Government in **Western** Australia has responded much more positively to the challenge of sustainable development. (para 2, p. 211)	Level of LG commitment to ESD	Higher than C'wealth

Appendix H: Draft Q-set

The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies.
1 A PS

Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.
2 A PS

Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems.

3 A RS

The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species.

4 A RS

Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources.

5 A SP

Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about.

6 A SP

In truth, 'sustainability' has been carried too far.

7 A I

Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development.

8 A I

Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit.

9 A OI

Environmental protection or conservation is useful, only to the extent that peoples' welfare is positively affected or human needs are served.

10 A OI

Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed.

11 RC PS

The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse.
12 RC PS

Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development.

13 RC RS

While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable.
14 RC RS

Our civilisation is put at risk when we misuse or mismanage natural resources and disturb natural systems.

15 RC SP

Like other political ideas, we tend to agree with the need for resource conservation, social equality and pollution control but disagree over what it entails.

16 RC SP

Perhaps the best hope for the greatest World-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour.
17 RC I

The role of non-government organisations (NGOs) is most critical to the success of sustainable development.

18 RC I

Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now.

19 RC OI

Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic.

20 RC OI

The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship.

21 HWE PS

There is a common interest between looking after the environment and looking after people.

22 HWE PS

The best and only route for countries to overcome environmental problems and promote human well-being is to become richer and more technologically advanced.

23 HWE RS

Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.

24 HWE RS

The environmental practices of current generations are harming the interests of future generations.

25 HWE SP

Overall, the free market system can be considered the source of today's pending economic, political and environmental problems.

26 HWE SP

With regard to sustainable development issues, woman, indigenous people and youth need to be represented in decision-making, planning and implementation processes.

27 HWE I

There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed.

28 HWE I

The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations.

29 HWE OI

Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies.

30 HWE OI

Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution.

31 DE PS

In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over all economic or social considerations.

32 DE PS

The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment.

33 DE RS

All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe.

34 DE RS

We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions.

35 DE SP

The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind.

36 DE SP

Economic, industrial and urban development has gone too far in Western Australia.

37 DE I

Because of the urgency of the need for political and personal transformation to avert widespread environmental destruction in the next century, only a radical change to pro-environmental values can bring about the change needed to protect life on Earth.38 DE I

Multinational Corporations are the gravest threat to an environmentally sustainable society.

39 DE OI

All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake.

40 DE OI

Implementing sustainable development ought to be core-business for Local Government.

41 N PS

Sustainable development has the force of political commitment at the highest levels of the Commonwealth Government.

42 N PS

Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge.

43 N RS

Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation.

44 N RS

Few of the key decision-makers in positions of power have accepted sustainable development values.

45 N SP

Decision-makers involved in Government lack awareness about internationally accepted environmental policies and standards.

46 N SP

The State Government should have the dominant role in implementing sustainable development in Western Australian. (para 2, p. 8)

47 N I

Local Governments should have the dominant role in matters that need to be considered in implementing sustainable development.

48 N I

The world's religions must become a major force in implementing a new sustainable development ethic.

49 N OI

Implementation of sustainable development ought to be the responsibility of the Commonwealth Government and national strategies, plans, policies and processes should be the principle mechanism for its delivery.
50 N OI

Appendix I: Final Q-Set

The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies.

1

Because economic growth and new technology will provide answers to any environmental problems, concern about human population growth is irrelevant.

2

Instead of contributing to environmental problems, technology and industry now provide the solutions to those problems.

3

The exceptional characteristics of *Homo sapiens*, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species.

4

Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources.

5

Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about.

6

In truth, 'sustainability' has been carried too far.

7

Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development.

8

Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit.

9

Environmental protection or conservation is useful, only to the extent that peoples' welfare is positively affected or human needs are served.

10

Sustainable development requires changes in lifestyle from everyone involving recycling, reusing and reducing the amounts of resources consumed.

11

The overriding policy objective for sustainable development must be to reduce the amount of waste generated and to transform an increasing amount of waste into resources for use and reuse.

12

Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution. This is essential for sustainable development.

13

While economic growth has continued, the consumption of raw materials has held steady and even declined, and new technologies offer the promise of further efficiencies. The modern World is becoming more, not less sustainable.

14

Our civilisation is put at risk when we misuse or mismanage natural resources and disturb natural systems.

15

Like other political ideas, we tend to agree with the need for resource conservation, social equality and pollution control but disagree over what it entails.

16

Perhaps the best hope for the greatest World-wide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour.

17

The role of non-government organisations (NGOs) is most critical to the success of sustainable development.

18

Sustainable development is, inevitably, a long-term process, although it is important to start thinking and acting now.

19

Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic.

20

The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship.

21

There is a common interest between looking after the environment and looking after people.

22

The best and only route for countries to overcome environmental problems and promote human well-being is to become richer and more technologically advanced.

23

Private companies ought to accept their responsibility to use science and technology in order to minimise harm to the environment.

24

The environmental practices of current generations are harming the interests of future generations.

25

Overall, the free market system can be considered the source of today's pending economic, political and environmental problems.

26

With regard to sustainable development issues, women, indigenous people and youth need to be represented in decision-making, planning and implementation processes.

27

There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed.

28

The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations.

29

Sustainable development is so malleable as to mean many things to many people without requiring commitment to any specific policies.

30

Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution.

31

In implementing sustainable development, primacy should be given to ecosystem integrity and environmental considerations should get priority over all economic or social considerations.

32

The application of science and technology is the major driving force behind the increasingly negative effects of human actions on the global environment.

33

All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe.

34

We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions.

35

The whole ten-thousand-year history of civilisation has been one of decline and degeneration from the earlier, simpler lifestyle of humankind.

36

Economic, industrial and urban development has gone too far in Western Australia.

37

Only a radical change to pro-environmental values can bring about the change needed to protect life on Earth.

38

Multinational Corporations are the gravest threat to an environmentally sustainable society.

39

All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake.

40

Implementing sustainable development ought to be core-business for Local Government.

41

Sustainable development has the force of political commitment at the highest levels of the Commonwealth Government.

42

Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge.

43

Cities are the centre of social and economic creativity. There are tremendous ecological benefits to be gained from urbanisation.

44

Few of the key decision-makers in positions of power have accepted sustainable development values.

45

Decision-makers involved in Government lack awareness about internationally accepted environmental policies and standards.

46

The State Government should have the dominant role in implementing sustainable development in Western Australian.

47

Local Governments should have the dominant role in matters that need to be considered in implementing sustainable development.

48

The world's religions must become a major force in implementing a new sustainable development ethic.

49

Implementation of sustainable development ought to be the responsibility of the Commonwealth Government and national strategies, plans, policies and processes should be the principle mechanism for its delivery.
50

Appendix J: Community group contact database

219 people representing 102 local community and environmental groups were contacted with a request to participate in the study.

Number	Organisation
1	Independent Environmental Consultant (5 contacted)
2	Friends of Cockburn Wetlands Education Centre
3	Maylands Ratepayers and Residents Association
4	Swan Valley Nyungah Community
5	Friends of Kings Park
6	Bungendore Park Management Committee
7	Friends of Blue Gum Lake Reserve
8	Port Kennedy Land Conservation District Committee
9	Friends of Trigg Bushland
10	Friends of Milyu
11	Green Teams Project
12	Ribbons of Blue
13	Friends of North Fremantle Foreshore
14	Friends of Samson Park
15	ISTP, Murdoch University (5 Academics)
16	Roleystone Dieback Action group
17	Bugle Tree Creek Protection Society
18	Ellenbrook Conservation Group
19	South Perth Environmental Association
20	Friends of Shenton Bushland
21	Parkway Bush Preservation Group
22	Armadale Settlers' Common Management Committee
23	Friends of Yellagonga Regional Park
24	Friends of Queens Park Bushland
25	Greening WA
26	Coalition for Wanneroo's Environment
27	Marine and Coastal Community Network
28	Friends of Bold Park
29	Waterbird Conservation Group
30	Urban Bushland Council (WA)
31	WA Naturalists Club
32	Hume Road Wildlife Reserve Group
33	Guilderton Community Association
34	Roleystone Dieback Action group
35	APACE WA
36	Friends of Star Swamp Bushland
37	Kwinana Progress Association
38	Wildflower Society of WA
39	Wildflower Society (Murdoch)
40	Friends of Brixton Street Wetlands
41	Ellenbrook Conservation Group
42	WA Orchid Conservation Group
43	Creery Wetlands Support Group
44	Greenteach
45	Nature Reserves Preservation Group
46	Friends of Forrestdale
47	Wildflower Society (Perth)
48	Friends of Allen Park
49	Tree Society
50	Habitat Herdsman
51	Curtin University Academics (5)
52	Peel Preservation Group
53	Bassendean Preservation Group
54	WA Insect Study Society
55	Wooroloo Brook LCDC
56	Australian Trust for Conservation Volunteers

57	Bayswater Greenwork
58	Wetlands Conservation Society
59	Hovea Bush Regenerators Group
60	Australian Association of Bush Regenerators
61	Ecoscape
62	Greening WA
63	Mt Henry Peninsula Preservation Group
64	Agriculture WA
65	Ashburton Drive Primary School Wetland Sanctuary
66	Friends of Hollywood Reserve
67	Geening Leeming
68	Serpentine Bushland Group
69	Men of the Trees
70	Local Plants Group
71	Friends of Allen Park
72	Community Arts
73	Friends of Dianella Bushland
74	Friends of Hillview Community Bushland
75	John Forrest Senior High School
76	Parkerville Primary School
77	Canning River Residents EPA
78	Friends of Mary Carroll Park
79	Friends of Perth Airport Bushland
80	Friends of Perth Signal Hill
81	Friends of Hepburn Bushland
82	Crestwood Bushland Restoration Group
83	Geening Leeming
84	Greening Point Walter
85	Palmyra Community Association
86	Maylands Wetlands Group
87	Royal Australasian Ornithologists Union
88	Friends of Moore River Estuary
89	Solar Progress
90	National Trust
91	Biospherics
92	BikeWest
93	Friends of Ellis Brook
94	Department of Environmental Protection (5 employees)
95	Department of Commerce and Trade (2 employees)
96	Environmental Defenders Office
97	Environmental Weeds Action Network
98	Friends of Koondoola Bushland
99	Wildflower Society (Armadale)
100	Yunderup Delta Society
101	Quinns Rocks Environmental Group
102	Conservation Council of WA

Appendix K: Local Government contact database

164 local government councillors in 14 councils were contacted with an invitation to participate in the study. An additional 82 council employees were also invited to take part.

Number	Council	Councillors	Staff	Total
1	City of Armadale	14	4	18
2	City of Fremantle	13	6	19
3	City of Gosnells	12	7	19
4	City of Mandurah	12	6	18
5	City of Nedlands	13	5	18
6	City of Rockingham	10	5	15
7	City of Stirling	14	8	22
8	City of South Perth	12	6	18
9	City of Subiaco	13	5	18
10	Shire of Kalamunda	13	5	18
11	Shire of Serpentine-Jarrahdale	10	5	15
12	Town of Cambridge	9	4	13
13	Town of Claremont	10	6	16
14	Town of East Fremantle	9	5	14
15	Eastern Metro Region Council	NA	3	3
16	Western Australian Municipal Association	NA	2	2
TOTALS		164	82	246

Appendix L: Key informant interview transcripts

Stepping Stone Interviews

Interview One

Implementation

LRWAMA

Interviewer: The first set of cards we have here are the implementation cards. So, if you could just describe, perhaps, when you think about sustainable development in the implementation of sustainable development, what your own view is about who the important players are?

Well, my view is that the community has a large role, coming from a landcare background. The Community's role is really about placing pressure on the local government to pick up on this program and to run with it. So, while community provides the energy for it, local government puts in place and manages the framework.

But what's difficult with the framework is that it's a bit uncertain about what it means. My role is to provide education, to provide information about sustainable development for local government.

Interviewer: I see you've got these cards about individuals themselves promoting change. I guess, involving the public, involving women and indigenous people and then down there, at the other end, the negative end, you've got cards like that one that you've obviously said you don't agree with – card number 20 – "Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic" so that, I guess that...

It's really a contradiction isn't it? They can't do it on their own because they need the whole structure around it. You need a framework that you can implement large-scale change. It's all incremental, but you need to have a direction for it.

Interviewer: How do you feel about the role of – like we've got cards about the state government and about the commonwealth government – how do you feel – what do you feel that their role should be in this implementation of sustainable development policy?

Their current role is – the state government saying all the right things and making all the right noises, but not doing anything. They really haven't picked up their end of the detail as far as sustainable development, in my view. The federal government is very supporting, I mean they're pushing local agenda 21 programs quite strongly, providing a lot of support to organisations like Environment Australia. To do things like...

Interviewer: Financial resource, support, you mean?

Yeah, its resource support and policy support as far as helping to set up demonstration programs. Just recently, they offered the opportunity of a sum of money to set up a regional LA21 project here in WA, and also in Tasmania. So, they are providing opportunities that the state government – you can't drag them kicking.

Interviewer: What about local government? You were saying about, I guess, providing a leadership role within the community.

Yes. It is definitely a leadership role. I mean, but the contradiction is that the community has got to lead the local government to make the decision to participate. And if its not – and its usually not the whole of government just one or two councils - promotion to the council and that's where the idea gets started, or it might be a proactive officer who takes it on himself that manages the project. And that's a bit dangerous because people move on and people change.

But I mean, you know, that's the same as any program to do with environmental management too, really it's a process thing pushed by the minority rather than the majority, promoted to the community and they run with it. And LA21 - it's not much different. And LA21, one of the big problems with that is that it's all tied up with this green process. You don't.... There's no end point, you're not ending up with a final destination.

Interviewer: So, it's a process, rather than an end.

That's right. And also the processes are so flexible. LA21 keeps telling us its anything you want it to be. It's anything that you're doing already. And that's, you know, like ... contrast "Cities for Climate Protection" - they set up a program with very distinct goals and milestones that they've got to achieve, and timeframes and everything and there's a lot of ongoing support for it,

So its easy for local government to say "yes we ca do that, we can do our energy audits and do this and do that" and they've got little celebrations along the way. So they tend to pick that up more quickly. But the good thing about it is leading on to LA21.

Everyone can start to see the link and looking at their operations in a different way. That's what I've found, if you can get them on "Cities for Climate Protection".

Interviewer: Do you think LA21 will become more like that then – more like the "Cities for Climate Protection" programme? Will it will be a process that's a bit more, rather than being an amorphous thing, will it become a bit more structured sort of thing? The policy makers will decide what it is and then it will happen in the same sort of way?

I think, well they've already started to go down that track with the release of the new manual. They've set it – 5 action areas which are the equivalent of 5 milestones, except that the tasks in it are still very strategic, non-specific type stuff, but they're starting to step it out.

So, they're starting to look at process and how do you promote the process, but still maintain that flexibility that's so characteristics of LA21, the individual program.

Interviewer: It sounds to me like some of things you've been saying, you see it as more of a recruitment process, recruiting Councils, rather than a top-down process, driven by the community rather than driven by large scale organisations. Is that correct?

Yeah. I mean its being pushed very hard by the Federal Government, but the local government are quite keen to maintain that distance between them and the big government. There's, except that there's been some moves just recently to a national logo, a national LA21 program identity. So that we can market it because its so "nothing and everything" - its difficult to promote.

You need a map for these kind of things – a critical map – and we're not getting that in WA anyway. I mean 12 or 14 councils out of 144 is it? But it's a start. But the difficulty is promoting it. I mean, we've got 18/20 "Cities for Climate Protection" councils and that program has been running a lot shorter timeframe. And I think its because its got a stronger picture, a marketable structure and a process, and outcomes and also its got an identity.

Objectives of Sustainable Development

Interview one

LR

Interviewer: So now we've got the objective cards laid out. So, if you could give me some idea about what you think are your own views about what sustainable development is trying to achieve.

My view of sustainable development, I think its about reaching a balance. That's what I've always aimed to do is be inclusive, give everybody a chance to be involved and to have development but also environmental protection and social equity and that kind of stuff. I don't think you can have any one without any of the others, looking at all the different sides. So If you're protecting the environment, or working on community development issues, that you can't deny the environment or any of the others. I can see both sides of the coin.

Interviewer: So, environmental projects obviously have good – in your own view – good outcomes for people. Is that right?

Yeah – it's a good outcome for people but also good outcomes for the environment. There's always somewhere where you can have a win-win situation; not necessarily getting economic outcomes, but again coming from a land care background, you've got to try and have that environmental economic gain – I mean that's what you're always striving for but not always what you can achieve. So, there's some areas where you need to protect the environment at all costs, and there's some times where, really you can destroy families if you do go that way, so you've got to find a balance.

Interviewer: You mentioned before that the "Cities for Climate Protection" councils often implement it for economic benefits. Do you think that we're at a point that you'd be able to convince council that LA21 would have actually economic benefits as well as social and environmental benefits?

Not in dollar figures. You can't prove it. That's the same as LandCare which is basically LA21 in a rural context – that's how I see it. LA21 doesn't lend itself to cost benefit analysis. There are too many intangibles. Whereas "Cities for Climate Protection" - you look at your electricity bill and its going down. And without that it wouldn't be endorsed.

Interviewer: Could that not be written in terms of – I mean to me that sounds like a sustainable development policy in itself – so if that's the case with LA21, couldn't you have things like a traffic reduction scheme where you're showing people fuel savings?

I mean, they're working on sustainability indicators all the time. So, but, they are so – the use of indicators isn't widely adopted. Its like everything else, it needs to be promoted as the way to go. So, it's all sort of getting there. Environmental accounting. To try and place dollar values on intangibles or look at ways of measuring environmental costs. But I mean the processes are all starting to come together they just need more time to develop the concepts and the processes. Its actually, we're kind on the cusp of the environment awareness and environmental action. The decade of LandCare and the green movement sort of brought levels of awareness higher, so that most people are environmentally aware these days, where 20 years ago,

people didn't know. So, 20 years ago, or more, now they're looking at ways of "OK – how do we do it". So, they're at a development phase now.

Interviewer: So, that's quite a big step forward in itself really?

It's huge. Absolutely huge.

Interviewer: I mean you've go this card no 19 "sustainable development is a long term process and its important to start thinking about things now". What you've just said is that in fact people are thinking...

But I mean people haven't really seriously thought about how you really implement LandCare, environmental management, and sustainable development for the last 5 years. It's only been a concept since about 92.

Interviewer: A little bit before that, but that's when it was really formalised. It seemed to come onto the agenda in 92.

Not a long time – especially when we're talking about bureaucracy and shifting organisational change and institutional change – and that's the hardest. I mean some people take time. Paradigms can shift on, you know depending on a critical experience. But when you've got an organisation, enormously.

Interviewer: So, could you summarise then, what would be the key objective then for LA21? What is it trying to achieve?

I think it's a change in a way that organisations think. I think the people thinking have changed, individually for a lot of people. Its re-directing organisational behaviour to think more broadly and to take in all the different factors where decisions were made based on a very limited range of factors before. You want organisational decisions and organisational operations to take account of much more social, economic and environmental considerations. I mean that's what it all comes down do – organisational behaviour.

Interviewer: Just one more question about the objectives issue. In relation to card 19, which is "sustainable development is a long process, but its important

to start thinking about things now", can you jut tell me what your own view is about – like long term process is a pretty open-ended statement – what your own view be about how long we've got to actually get to where we have implemented sustainable development – five years, or 500 years, or 5000 years? Just give me some sense of the urgency there.

There is a sense of urgency. My own view is that, basically, it's going to take a global catastrophe to get people to think about it. It's really going to be something major. I really only see that political movement and willingness to actually fix a problem comes when millions are dying or the train goes off the track or – there needs to be a disaster. And that's kind of scary to me. But that's what I think. People are basically - the incremental change is happening because its comfortable and people will let problems build up until a disaster happens and then all of a sudden...And it made them uncomfortable enough to change, to do something about it.

Interviewer: So what sort of things are in your mind when you say about there might be a catastrophe, of what scale?

I don't know. I mean the greenhouse problem is a good one. Whole island nations disappearing. But we're talking thousands of years. There is going to be a point somewhere in the next few hundred years that people are going to say "oh hell its going to happen in so many hundreds of thousands of years – there's nothing we can do to stop it now". Even that's a bit removed, there might be – I've read too many science fiction books to – there's some pretty interesting catastrophe ideas as well. I read a book where all the population of the earth is under a huge dome and a pollution cloud travels the earth and you can't go outside because you'll be wiped it. I can see that off in the future. It's going to take something major.

Interviewer: If we do implement sustainable development – if the community are pushing for it to happen and people are becoming more aware and more knowledgeable – do you think there's a chance that it could be just implemented, without the need for some dramatic external push?

There's always a possibility, but I think, I mean we've got some pretty major environmental problems that we face. And these are major, major problems. But the little bit of money that the government is spending on the problem is not nearly as much as the community is spending on the problem, and its not nearly enough – I mean its only a drop in the ocean, to fix it, or stop it even. There's really not the political will to buckle down and make the hard changes, because it's not politically astute for them to make radical changes.

Interviewer: Do you think its just too short term for a government to be in power for three or four years, like why should we spend millions of dollars and...

..get kicked out in 2 and a half, three years time anyway. Yeah. Mind you I don't necessarily want a dictatorship to destroy the democracy that we've got. I'm coming from the comfortable incremental change place too. I'm not out there chaining myself to a bulldozer. A kind of apathy isn't it almost?

Role of science and technology

Interview one

LR

Interviewer: We've got the statements about science and technology laid out now. Most of the cards start at +2 and they go right the way down to –5; with 7 of the 10 cards being at the negative end. Can you just maybe make some comments about how you see science and technology and the role of scientists in sustainable development, LA21?

I see that science has a role to play, but its not going to solve the outcome, or be the outcome, in the end you need to change attitudes first, that's what we're doing with LA21. LA21 is not about technology – necessarily. It's about changing the way people think and the way organisations operate. You know the technology is a handy tool which ought to make the job easier. You can put the technology in place to save energy, but they want to have to want to save energy and do the right thing in the first place.

Interviewer: So it's a behaviour thing then?

Transforming the way people think. The whole environmental sustainable development movement is about changing the way people think about what they do and what they consume. Technology will help, but technology is not the answer. It's the end, rather than the means. Is that right? It's the means, rather than the end. Whatever. It's just a tool.

Interviewer: In the last session we were talking about the notion of catastrophe and there's a card here number 34 which talks about crisis. Have you got any thoughts about that? This card is saying that crisis is more critical than we've been led to believe by science and technology. Do you think that's the case?

It's a paradox. Science, it's a paradox. It created the problem – industry – that created problems; but its also part of the solution, and its also part of what's identifying the problem. Mind you, people know that things aren't quite right with the world. More faith than figures – they just get the general sense that things aren't quite right, or that quality of life isn't quite what it was 20 years ago. I talk to my grandma and she's not happy about the ways things are going in the world. I suppose it helps some people to handle those hard facts. It helps to really do something, but any morally or socially minded person would sense that anyway, and that should be the imperative. You feel in the pit of your stomach that things aren't quite right.

Scale of problems

Interview one

LR

Interviewer: We've got the scope of the problems cards now. If you could make a few comments about what you think about problems with sustainable development. Issues and solving them and those sorts of things.

Looking at my cards, I'm definitely not anthropocentric. I don't believe that humans are the be all and end all of what there is on the plant. So I think that's the overall concept that people value themselves much higher than anything else.

Interviewer: You think this would be more true – card number 40, it says "All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake". Is that your view?

Yes. I mean, yes. That's exactly right. What I'm trying to do is get a balance in the way that I'm doing it. Interested, other species have rights as well as humans do. I'd like to see co-existence. I mean, you can't make the human side go away, but you shouldn't let the other species go away either. It's not a dominant thing, it's a balanced type of thing. You can have both, everything about people when you get down to it.

Interviewer: Do you think its about good management perhaps?

I think that's what it is. I mean, I think that's what it needs. It definitely needs to be managed well. We're such in a pressure cooker situation that you need top quality management of environment areas, you know natural areas. But where we're falling down is the people stuff, the economic stuff. That becomes the higher priority than the priority of managing that area properly and maintaining. That's what I don't like to see. That the priorities aren't balanced. They are almost totally people. The needs of humans. And that's the attitude change that I see fundamentally wrong.

Interviewer: Do you think that change is happening? Because you said about knowledge and education over the last 20 years...

No. I think everything is still anthropocentric. A lot of LA21 is about community, but the emphasis is on the human community.

Interviewer: Can I just clarify that. That's how you think that most people think about it, or that's your own view or both?

That's my view of environmental work and sustainability work altogether. There's no balance and I don't think we can ever get that balance either. I think we have to be an entirely different creature to be truly balanced. I don't think that, the way that our system is set up, being a financial – economic, where everything is run by economics, that things will necessarily change and. Its just fairy tale stuff we're talking about. I mean its always going to come down to competing needs and human will. If they've got to make a living and they've got to live.

Interviewer: They give themselves priority really.

Yes exactly. What I'd like to see is that at least we manage to stop development as far as maintaining the best bits that we've got now and start to finally expand it. It's very difficult because basically the money thing will always win. Even if the type of work you can do is limited to the amount of money the federal government will provide or, will provided – it's all driven by the almighty dollar. Which is not right- not the right attitude. And that's why it all comes back to basically, its going to be a global threat before people will be willing to make the big sacrifice to either their lifestyle or how they live. That's what its going to take. We're basically brainwashed. Everybody's got a personal instinct but not a survival instinct.

Reasons for Adoption of LA21

Interview one

LR

Interviewer: I would like to ask you some questions about, I guess, a bit more specific about LA21 in Western Australia. The first question I would like to ask is, what sort of differentiates the councils, well the metropolitan ones that I've been working with, why do you think the ones that have adopted LA21 in the metropolitan area have done so? What's the reason behind it, and how have they come to arrive at a decision they have? What's been the major driver? And then secondly, why do you think the other councils in the metro

area haven't adopted LA21 perhaps? Whether you think that they're all uncommitted, what do you think is going on there?

I think the driving comes from the people within the council. There's a particular mix of attitudes that I've notice that you have particularly pro-sustainable development councillors. You can have really proactive officers but to pick LA21 you need a particular councillor that's open to the idea. Or who is willing to push it, or a combination of a group of councillors.

Interviewer: So that's a critical factor - having a councillor that's interested?

Yeah. Any issue will be driven by either one or more people. It's very, very rarely that you get a consensus on any issue at council. But, getting the right political support within a council for a program or an issue – that's what it's all about. And LA21, because of the uncertainty about what it is and how it works and how much it will cost and things like that, that put the doubt down in enough councillor's minds in Perth. I think to make it seem risky. Local government is a low risk situation or tends to be low risk. And they only pick things up when it's demonstrated by a peer that it works. Even if there was cost – that ultimately it's successful. They learn by the successes of their peers. And they turn very quickly on the failures. They really are an ultra conservative organisation. I don't know if that's starting to change, but also again, it comes back to the money. These are community members that are given the responsibility of spending a relatively large amount of money and it scares them. So, they're careful about it - that immediately makes them cautious about it.

Interviewer: That's may be not a bad thing though, is it?

Yeah. It's not. But then, it makes the job of getting that organisational change and using LA21 a whole lot more difficult. Its kind of a catch 22 really isn't it? You need radical change to get the rapid change in thinking.

Interviewer: So are we getting in WA, are we getting in your own view, a situation where we have councils that are seeing the LA21 benefits?

I think there have been a lot more younger councillors coming through now. And we've still got a very significant number of the older guys. It's a poor generalisation saying that they're all ultra conservative straight out of the 50-s, but a lot of them were taught how to be councillors differently. They come from a different background. And that's the same with the senior officers, the CEOs. There is a growing group of younger CEOs that are more willing to do some radical stuff – they have a different background as far as training goes. A lot of them are coming from business management type courses. Professional officers who have also been taught new, innovative techniques that perhaps the old guys just haven't come to terms with. They more came up through the ranks. Its also interesting that there's a big difference between rural and metropolitan. In the metropolitan you're getting the younger blokes coming through. Rural - they're farmers – you know. And that's the same with the councils too. Farmers, particularly at the moment, are conservative. They have a low risk operation. That's why I think you get the rural and the urban divide as well.

Interviewer: Apart from my understanding – apart from Mandurah which is – I wouldn't classify it as a rural town – we don't have any shires that have LA21. Jarrahdale, I suppose could be classed as semi-rural, but again its metropolitan region. And probably a lifestyle sense thing too – you've not got farmers with open farming. You've got people with smallholdings who are also working.

Certainly Jarrahdale is an exception in most respects – the way they go about their operations. They are actually, probably the most advanced as far as the integration. And this is looking at it from the outside not the inside.

Interviewer: Integration of LA21 and their activities?

No. Not LA21. I think it's just their attitude – they are more progressive.

Interviewer: Why is that do you think?

It thinks it's the people. It's a really innovative and highly energetic Environmental Officer that can explain anything to anybody. The office is making it easy for that group of councillors – who tend to be – you know my

impression is that group can be fairly green anyway and environmentally aware. That's made his job a little bit easier, but he has managed to work that system really well. They've been open to that. So, it's worked really well. He's also able to bring in an enormous amount of money through grants and other outside sources. So again, that makes everything work. He's integrating.

Interviewer: Is the critical issue then, to have either interested councillors, or knowledgeable Environmental Officers. Are those the key issues?

You need the political will and the technical expertise. When you get down to it. The political will – you can have the most proactive officer, but if the councillors are saying 'no' then nothing happens. So it's a critical combination – you can't have proactive councils if the officers just dawdle along because they're not interested at all. It's that combination and partnership.

Interviewer: What do you see as being the role of the Western Australian Municipal Assocation of promoting LA21 to councils?

To support LA21 very strongly through the environmental officer for the program. But the thing is whether it responds to the needs of its members, to the organisation. So we haven't – we've responded to a need – that's how it happens. We have had a group of councillors saying we want you to support us, we want technical support, information, whatever.

Interviewer: These are the LA21 adoptive councils?

Yes. And also others responding to federal government as well in so far as they're a government saying we'd like this promoted, this program is the way to go as far as implementing the national ESD. So, we're coming from both ends. But WAMA is ultimately a service organisation and we're responding to the need for LA21. It's also an advocacy role. We want to promote the idea because it is a responsible way of conducting business. It's kind of a double role. It's not something that WAMA initiated. WAMA is very careful about not telling their councils what to do, and it's not a regulatory body in any sense. It's a representative body. We represent our members. Our agenda is driven by our members. That's why its important that the community, the

councillors, who work for the community, people who work for WAMA - WAMA's goal is that the councils want LA21 to fly, and they also want state government to get involved so WAMA is working on getting state government involvement. So that's how it works – through the needs of our members or the requests of our members, sometimes demands of our members.

Interviewer: When you say state government, do you mean actual departments, like the Department of Environmental Protection?

DEP, Department of Commerce and Trade, depending on what aspects of sustainability you choose. I work for agriculture, I work with CALM, I work with all of them. LA21 is DEP and Commerce and Trade.

Interviewer: What's your own view about the way that they respond to LA21 initiatives?

They are willing to support us, but it's not big yet. It's more like "you come to us with a really great idea, and we'll look at helping you out with it". It's still not proactive. They have commissioned a big report and they would like us – local government – to take the lead. They would like to follow our lead. That's what we're working on at the moment this year – a proposal for the state government on how they're going to operate.

Interviewer: In an ideal world, what would you want the role of the DEP and the role of Commerce and Trade to be in relation to LA21?

Ultimately, we would like to see financial or employment support, policy support, that's a big thing. There's no policy environment as far as local government doing this on their own. We see a lot of potential with making those linkages - between local government and state government. There are a lot of things that local governments are doing that go against state government like planning policies. A lot of that gets in the way. Taxation policy gets in the way – if you're wanting to do something with vegetation, I think any land that is zoned conservation is subject to land tax. Quite enormous amounts too. Those kind of institutional impediments are something that state government can take away. That's the same with LA21 – we could really do with some help on some of the big issues like

greenhouse effects, which all comes under LA21 in the environment. But it also has a lot of implications for people's quality of life. And that's part of the problem with LA21 is the program being seen as a purely environmental program. We've very conscious of trying to maintain the balance between community development and economic development.

Interviewer: Have there been any council in your view that have taken on LA21, where it has actually been driven as an economic development policy or a social development policy?

Cottesloe is one example. Their program focuses on community development. They've done a virtual – you know when you have community consultation? Well, they've set it up as an Internet network – so if they've got an issue that they want to address, that's how they do it – they send the questionnaire to all their people registered on their Internet list. So they've taken quite a community development focus, and they have their leader "Caring for Cottesloe", a coastal activity - yearly now. And that's caring for the coastline – a real community activity. Subiaco has an EMS approach – which is still very environmental.

Interviewer: The reason I asked is that when you said, before that you need a councillor in LA21, this is my interpretation – not yours – but mine is that the councils that have pushed it have done so because they've got an environmental interest. Clearly you could have a LA21 policy that focussed on, perhaps, bringing companies to create employment, and fostering economic growth and tourism, that sort of stuff, as a way of making a community more financially right, there is no reason theoretically why you couldn't have an LA21 that is focussed just on economic development. Any thoughts about that?

A lot of them don't repackage that stuff. This is what we're trying to encourage by saying look, you're really doing LA21, you've just got to package it differently – streamline it a bit more.

Implementation

Interview two

JEDEP

Interviewer: What I would like to ask, is when you think about implementation of sustainable development, who do you think should be the main implementors if there are main ones and if you could give me some feedback if that is the case?

Okay well I guess what's driving most of my thoughts about this is card number 38 which is the urgent need to avert widespread environmental destruction. Quite marked changes in attitude. I guess if I look at these cards they are quite pessimistic in terms of pure decision-makers.

They have taken on board those things. I see it as the core business of the local government as they are the people closest to communities – people on the ground. Regardless of the present resources they have at the moment to do that job I think there is the most scope there for them to interact with the community.

There is a huge gulf in terms of implementation at the local government level. There is a huge gulf between that potential for those people to interact with the communities and what they can actually do at the moment. The cost to local government is the reason that I don't think that it is being implemented – potential cost is the bottom line. If you listen to their political masters - councillors, mayors within local government - their biggest concern is not to increase rates. So if it is unclear to those people at a political level and also people within the staff it is unclear if or even if there is financial bottom line benefits from implementing sustainable development. So it therefore falls on the wayside.

In some cases there is a bit of homework and a bit of foresight. That problem is also compounded by the fact that the political masters within local government are only there for 3 years or so. The advantage of catching long term benefits from sustainable planning is not taken into account. That is also

at higher levels of government as well and we experience that within our line of work. So not only is not a lot of thought given to financial benefits – bottom line it is also some of that information is limiting to even council staff. Even where there is short-term financial benefit as well. In terms of that's why I see large potential there for local government to get involved with their communities as well but that to me is the bottom line as to why it isn't happening.

On a wider scale there is a thing of human nature – environmental depreciation is slow. People don't notice it in their lifetime. But in geological time scales if you take the other end of the scale the effect we are having on the planet in my opinion is massive.

Interviewer: I might just start by asking when you talk about local government there at the positive end of the array do you see implementation of sustainable development as a sort of bottom up driven process in our society?

I see it as both. It gets onto the next series of cards. I see the need for the community to be educated informed and involved but I don't see it as bottom up. A lot of people see bottom up as let community groups look after bushland, let Greenpeace save the whale and I don't see that as a way forward for sustainable development because I work with community groups and I work with people and they are already burnt out trying to manage what little they've got with no recognition and support within government levels and agency levels.

There are no strategies - a lack of strategies, lack of co-ordination. I think bigger picture. I don't think there are substantial gains there. I think you will get clear benefits from a top down and bottom up approach.

I don't know whether that makes sense but by that I mean part of the top down approach would involve consulting and educating quite widely with the community. Making them aware of the issues and then being quite honest and open with the issues. Example being "Laiten Beach" as an example. You had tonnes of people down there and protesting Laiten Beach as in "don't

develop the beach because of its environmental issues". Now that's rubbish because there is no environmental issue in developing Laiten Beach.

In fact, it would be safer to put houses on there at the moment than the petro-chemical plants that are there at the moment. They are the ones that need education. What you have there is a social issue - how do people look at protecting their communities and that's the flip side. How lack of environmental education and lack of environmental understanding through the people have highjacked it and environmental issues being raised. It cost some people a lot of trauma trouble. So what I am saying is that it needs to be a ground up, it needs to be a bottom up but it does need to be supported with mechanisms and recognised. I don't see the way forward as individuals picking up the banner or multinational corporations. I mean they will have a role to play but I don't see that as the saviour.

Interviewer: So what about non-government groups?

I think they will have an important role there but I think their role stays the same which is pushing the envelope, flagging issues which I see as important but if there is nothing else behind them of limited value. Realistically – saving a whale if there were no Blue whales there tomorrow, ecosystems wouldn't fail. Perhaps in an argument but that's a social issue. I don't think the significant gains will come through them.

Objectives

Interview two

JE

Interviewer: So that's the implementation issue. Okay so we have the objective cards laid down now. So if you can just try and capture there what you think is about how you see the objectives of sustainable development being or what you think they are and perhaps offer some reasons for how you think about it?

I guess what one of the drivers probably sets a framework to it. Card 31 – "*Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution*" - that is not my core objective of sustainable development but what is behind that to me is that I am very comfortable with our standard of living at the moment. And all those other things from what we have already taken from the environment there is a background there for me there of well lets stop what we are doing and take check and be very careful of how we move forward from here.

From there my objectives of sustainable development are really quite clear and lay out in the first couple of cards. Pick card number 21 – "*The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship*". Now that relates closely to card number 29 – "*The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations". B*ut card 29 doesn't quite say what I want I mean.

The core objective of sustainable development is to provide economic and environmental social equity within and between generations. What I would have liked to have said behind card number 21 is that sustainable development means that you are not foregoing any opportunities in future stocks and benefits and flows that might be derived from the environment and that relates directly to maintaining the flow by diversity for me. So it's pretty self-sustainable there. I mean I have really taken the position here that you understand the environment first and when you are making a development decision you have to be comfortable with the best knowledge that your not taking future opportunities away and that does relate to that inter-generation equity. So I really don't have much more to add. Those are the sorts of thoughts and feelings that are driving that as well.

Interviewer: Have you got any comments about these two? Because you have two down here that stand out. Because they are all on there own really?

Yeah it's not protest by me but is quite clear in me that I place human welfare not hight on the priority. Particularly the furthering of human welfare and I am thinking of first world countries and I think I am being - I suppose it's not anthropocentric, it's ecocentric or whatever. I think in my situation I am quite happy with my standard of living to it is already maximised. These are very anthropocentric strategies, which I am personally very against. So that's why you will see anthropocentric statements - I'm guessing on mine - would be highly disagree.

Interviewer: We will see as we go - yes?

Yeah. That's why maximisation of human welfare does not place highly in my definition of sustainable development. Human welfare is certainly there and particularly when I think of third world countries but not in the first world. I have had my fill.

Interviewer: So is it about maintaining welfare in first world is that what you are saying? Like keeping it at the level that we have it at the moment or are you saying about going back a bit?

It is funny in the way that I think, sometimes I slip into the political game which is in terms of I think that I predict the way that we are going at the moment in that our standard of living and welfare will decline.

My measure of welfare is the number of whales that are left in the ocean and more direct things to me like air quality, water quality things that will directly affect my health and my children's health. I guess what I hope for is to keep our standard of living static. I guess you can get into an argument of what is our standard of living, a good standard of living to me is clean air and water and a wonderful environment. It's not a new car every seven years. That means very little to me. I guess when you ask me a question of what do you think of human welfare my human welfare for me are those environmental things. You can't get back what you lost so I do hope that it stays static. In the wider social economic scale of welfare I guess the best that we can hope for is for it to stay static in first world countries but I can't see that happening.

Interviewer: I suppose I should ask why do you think that is the case? What sort of issues are going to deteriorate? What sort of issues do you think are going to come along and make things worse for us? What sort of issues do you have in mind?

The ones that I have in mind are the basic – clean water, clean air.

Interviewer: So we will have less access to those – pay a higher price for those?

The higher price may well just be health. I think we will be paying a higher price for those because of the supplier and increasing demands. I will never see a blue whale in my life it is highly unlikely but I get value; there is an existence value for me that they are there. They say all these different species we are loosing every day, I have never heard of half of them but I would still argue that I am loosing, my standard of living is decreasing.

Interviewer: So that's the objective in terms of sustainable development is maintaining you vision of quality of life that encompasses with the things around?

I guess so but other things are no more taking away of future options. I mean that is a cliched example but the cure for cancer that comes from some obscure plant. Or clean air, which is to me a very real issue.

Role of science and technology

Interview two

JE

Interviewer: Moving onto the next issue theses are the statements about the role of science and technology play in implementing sustainable development. So I might just ask what you think are the roles of science and technology in terms of its involvement with sustainable development. Whether it's part of the solution or part of the problem. What are your thoughts?

I guess science and technology is part of the solution but it is sitting in the cart and it's not the horse. The social and particularly the political aspects of our society, the world population whatever they are the ones for me that need to drive or be the horse of sustainable development. Science and technology will play a part in that but at the moment it plays – I have set out the statement of "science and technology as a major driving force between increasingly negative effects of human actions on the global environment". I don't see it as the major driving force. What I mean by that is that it stems from a social and political basis. It is just that science and technology has offered greater scope on the environment. It is not scientists themselves sitting in their labs. It is not a professor designing large spray guns. Lang Hancock wanted to seriously propose to drop atomic bombs in the Pillbura so that he could mine there. I don't think that he, or Robert Oppenheimer who designed it knew the consequences. So really I guess that forms the basis of why I am so largely in the negative of science and technology. I see it as important with massive benefits to sustainable development but it is not the answer. I don't see technology keeping up with being able to solely promote the sustainable development. I guess I have at the top there that all the top private companies accept their responsibilities – science and technology to minimise the harm to the environment. They ought to but not on there own.

Interviewer: Do you think they actually can? Can they do that today?

Not at the moment no. I don't think so no because they are running a business, they're in competition and their bottom line is short term profit making and by short term I mean even over seven, twenty years whatever. Which is nothing in environmental time's scales. I don't think they have, perhaps they ought to be able to accept responsibility. I think that it is difficult for them to do so. The bottom cards for me are again reflecting a very anti-anthropocentric point of view. Particularly card number 4 there – "*The exceptional characteristics of Homo sapiens, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species*". I see economic growth providing new technology that will provide solutions to sustainable development and perhaps they are already there but

technology is being blocked from being implemented to promote sustainable development.

Interviewer: What kind of things are you thing about there.

I am out of my depth in terms of what technology is out there but I will use an example just to illustrate my point. A solar powered car or a car power by clean water I think there are those similar technologies out there but again it's the social and political landscape that is stopping that.

Interviewer: It is definitely a part of it you think?

Absolutely, particularly if we are going to maintain our life styles. For us to maintain our current lifestyles the part that technology might play is lead replacement petrol. Cleaner, lower pollution cars. There is a social and political, economic imperative, whatever to adopt those technologies. It's certainly one of the paths of sustainable development.

Interviewer: When you mentioned card number twenty four which you have right up there at the positive end – "Private companies ought to accept responsibility whatever", do you think that companies today I guess green companies are presenting there green corporate image. Do you think it is consumer demand driving companies to be more sustainably developed friendly?

I think it has promoted change. I think there has been substantial benefits but I think that it has been consumer perception not consumer demand that is driving it. I said this to someone - the environmental departments within large organisations and mining companies are practically next door to their PR people. It is an example that I think off the top of my head but perhaps this is a very clear indication that at the moment the "environmental responsibility" of these companies is being driven by this perception rather than driven by a genuine concern for sustainable development. Now that's not to say that you don't get some very real environmental benefits. Again I don't think that, that will ensure sustainable development and again sustainable development is for me no more losses in future opportunities.

Scope of problems

Interview two

JE

Interviewer: The last section of cards deal with the actual problems that sustainable development is attempting to overcome and what the scope of those problems are. If you can give me some insight into what you feel some of the problems that sustainable development is overcoming or what current problems we face. What do you feel about that?

I guess if I look at the highly negative cards in terms of problems we face the anthropocentric ones that nature has an unlimited simulation capacity and that humans alone have rights I think they are the biggest problems. The flip side of that is that the hardest ones as well is that we are living way beyond our capacity. By that I mean that not for the next hundred years. A couple of hundred years of living how we are is going to impact very seriously on all our social, economic, environmental future.

They are all kind of middle ones for me and I could argue either way. Where it says statement 36 at zero - "The whole then thousand year history civilisation declined generation from the earliest form of lifestyle" – there is two sides to that. We have a very impressive capacity to decrease – to not live sustainably the flip side is that we have through industrial development, we now have the capacity to live sustainably and enjoy a higher standard of living. Again I don't think it's people not the tools we are using. I don't have a lot, a lot to say really.

Interviewer: I was going to ask you perhaps what you think about this one what you feel about the difference of local as apposed to regional or this idea of global problems where you feel which is most crucial at the present time and which you feel that sustainable development strategies can actually tie up?

I am not sure how that relates to the cards sorry. Despite local environmental problems as a record...

Interviewer: Using that as a prompt really. How you feel about, like do you think the problems that we face are locally based or regionally based or globally based and of those three do you feel that we need to target the local ones or the global ones target the regional ones or what?

I guess all three in that it's local interacting globally. But any living thing has an impact on the environment, sustainable or not. So I don't really know. Because, as a person, the amount of ways that I produce my house has an impact on the environment. The lines are too blurred for me. When it gets back to those sorts of statements, I mean I have my ideas as to when the top down and bottom up approach starts and begins with, I think it begins with an educated form level of environmental interest. That can then drive but there is a catch 22, "why would you educate people to have environmental concern who will than cause a lot of trouble?"

Interviewer: If you were a politician you mean?

Yeah. So sorry if I was a bit sort of vague, I don't have much more to add on that.

Reasons for adoption of LA21

Interview two

JE

Interviewer: Moving on then the last issue that I would like just to think about is in relation to LA21 which is not being very widely endorsed by local governments in Perth. There is a handful about nine or ten of them local governments that have LA 21 policies and I was just wondering if you have any insights as to why those ten have got Local Agenda 21 and perhaps why the other 140 odd councils perhaps if you stick to the metropolitan ones, 120 or 125 haven't got gender 21 what do you think? What is driving those? Yeah what things are going on?

They are just the early adopters aren't they? Other than the grant I'm not sure to be honest I think what might be – I might be wrong depends on what sorts of grants or backing that they have. Whether it is National Heritage Trust or it is support for sustainable development.

Interviewer: So from higher levels of government?

Yeah. I mean basically I see the flip side as why they aren't because they can't. Its because they politicians can't realise the short term benefit from the long-term gain.

Interviewer: When you say politicians you mean the local council?

Perhaps to a certain extend it is very difficult to an accounting side for them to make the investment in future environmental benefits. I think that the bottom line is financial costs going down the line or it just can't be captured.

Interviewer: The benefits?

The benefits can't be captured like if I choose not drive my car I don't necessarily capture the benefits of cleaner air. The question you asked is why those councils put on people.

Interviewer: Not necessarily just put on people but one of the things is - why are the councils that are endorsing Agenda 21 - what is the essential criteria that they have that is lacking else where.

I feel that what they have is one maybe two people within the councils that are highly motivated anti-greed motivations, very passionate about their work and drive the change.

Interviewer: Do you think that those people would be councillors or more likely to be council staff. Like environmental officers or planning officers?

I am guessing that they would be council staff. I am very much making an assumption.

Interviewer: Like what would you feel that those councils have one or two people that are accepting the project?

Often I think of the sorts of people that drive changes are council staff. They are doing this within their other duties as required. I mean I'm not sure what Mandurah council is held up as a shinning light in terms of electronic process and you could put that down to one, there is another girl there as well who really drove it and did magnificent work. But now I am not sure of the outcome of that. My understanding of that is she did a lot of wonderful work. But it wasn't even really called duties and the policies that they developed. I don't think there were standard policies. I think a change of a less greener council can change it back so it is hardly systematic.

My feeling is that one or two motivated people are driving these things. They are putting in a shit load of extra time to pull it off. Or they have external funding. Councils are about providing a service to their ratepayer – rubbish, gardens whatever.

Interviewer: The last question that I have for you is about optimism and pessimism. Would you describe yourself when you think about how the planet is organised today and sustainable development and environmental crisis would you describe yourself as being fairly optimistic about the future or would you describe yourself as very pessimistic. What is your feeling about that?

In terms of environmental quality I think highly pessimistic. My measure there, is my living environment. Clean water, Clean air. But also things that are close to my heart environmental values, species diversities and wilderness areas. The opportunity to spend times with my own self on a beach, all those things. Within my lifetime it's difficult to decide as to whether there will be massive social destruction as a result of it. Things that are very important to me as in terms of my quality of life - my sensible being. But overall, very pessimistic about the future.

Implementation

Interview three

SEEMRC

Interviewer: Can you just talk through when you think about sustainable development - Who you think should be implementing it? Why you think that?

I think sustainable development is something that needs to be taken on by everybody within the community from individual members of the community to government and private industries. It can't be stressed by one point of view or one agency taking on that role. Basically why I have put the cards this way.

Interviewer: it sounds like everyone should be involved. Is that right? Why do you think that everybody needs to be involved?

Because sustainable development is a way of life. It is a way of doing business. It's your attitude to things around you and the things that you actually do. The individual in the home whether it be from composting to being more aware of energy efficiency in the home. It goes to private industries such as lead developers, building codes in houses, companies that build fencing or implementing strategies towards accountable development such as solar orientation in homes all that sort of stuff. The local government, the state government because they have the power and the resources.

Although I suppose they are limited to address that on a wider scale and also to take on that responsibility to serve the public and serve individuals throughout awareness and give them the resources and help them understand. Also help them implement their way of being sustainable on a daily basis.

No one person can address it. If a designer for a home is doing the right thing and another in the community wants to have energy inefficient homes then it's not going to work.

Interviewer: I might just talk about a couple of cards particularly the ones at the ends we will start with the most positive card you have is card number 28

which says "There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed". It seems to be about the benefits of involving the public particularly when it comes to social issues. What do you see as being some of those benefits?

I think benefits would be probably in the pocket. Of things visual and that's what the most benefit people would need to see to change their behaviour. They need to see something that actually saves them money

Interviewer: You mean economically?

I think that is probably the most important thing. People do things for money value where they like to see a financial saving. Whether it be saving of power on bills. That's the approach that we are trying to sell to the governments as well. Refitting lights – light globes and all that in the long term will save them money because that seems to be a driving force on a larger scale.

And I think that approach is consistent on an individual level as well. There are individuals as well that actually want to do something for the financial benefit. It takes the individual a lot of awareness perhaps and education to see the big picture benefits that don't necessarily influence them or have an impact on them.

Interviewer: So you also think that by implementing susceptible development those benefits would pull through for people?

I do yeah. I think the environmental element is a nice feeling. To see a patch of bushland saved that very few people actually do something about it. They will want that to happen.

Interviewer: So it's a nice idea there but without...

Unless it effects them in there own backyard on the individual basis, very few people change their ways. Or unless it's made really easy where it's not going to make their day to day life to difficult or too different then I don't see any change. Take recycling for instance, if you supply people with bins they will make the effort because it's not too much out of their normal routine to do

that but if they have to drop it off at a recycling station. I mean you have to inconvenience them as less as possible otherwise give them the financial benefit. The "feel good benefits", I don't think they drive people to make change. To change our behaviour anyway.

Interviewer: Down at the other end I suppose the most negative point of view is the minus three which is right at the end you have card number 43 – "Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge". That seems to be about decision making by experts. What kind of problem do you see with the process that is driven by experts?

I think it tends to be one sided it can be very narrow and it doesn't necessarily incorporate the wider community and their needs. It is based on mere science and facts not the social aspects associated with that which is important as well. That's like where I was talking about changing behaviour, where you need to make things as convenient as possible. Even if it is the right thing to do people might not necessarily do it because it's to hard. All those sorts of social things. Although it is important to have scientific knowledge, to have the facts. You need to raise the awareness in people and then consider their behavioural patterns and social patterns and the economic as facts offered as well.

Interviewer: In summary I just want to ask you to comment on this and make a statement. It seems that you are perhaps saying that sustainable development is more of a bottom driven process rather than a top down process. Do you think that I am right in saying that?

Yes to some degree. Though if it is totally bottom up individual and communities – I'm talking about bottom up don't really have the knowledge to drive that, they need to have that driven from that end, they need guidance as well. So they need to be given the resources, education, money whatever. To know, to firstly be made aware how they can change and then I suppose individuals need guidance and need to know that they are not the only ones fighting the battle. It needs to be possible technically to say "yes, my local

government is doing this or state government is doing this and this is how I can help".

Interviewer: Of those governments, we have three tiers of government in Australia, we have commonwealth, state and local government. Who do you think it is that has the leader or prominent leadership role for sustainable development out of those governments? In your eyes who should be leading the process of sustainable development?

I think local government should be doing it by getting down to the last, to the grass roots level because they have the most contact with the community. State government comes across as too remote, too separate from the community. People, individuals in the community don't tend to read state government documents and commonwealth documents. They tend to be read and not really acted on. I think local government, individuals in their local government doing something in their bushland or changing light globes in their street - they can see it themselves in their own little community and then they are more influenced to act on an individual basis. So I think although local government takes on a role of supporting the individual it also needs guidance from power. Through funding, resources all that sort of stuff.

Objectives of Sustainable development

Interview three

SE

Interviewer: So these ones, the second set of cards are about the objectives of sustainable development. So can you just give me some thoughts on this issue? These are about the objectives of sustainable development - what in your view is sustainable development trying to achieve?

Sustainable development is trying to achieve a very big picture type of stuff. It is not looking at any particular area such as some of these cards that are picked out here. The ones towards me would then focus more on human

welfare and don't take the whole picture, I guess which is sustainable development.

Interviewer: These are the cards at the negative end then, the ones you put at the negative end then?

Yeah the cards at the negative end tend to focus on the importance of sustainable development solely towards human beings. I totally disagree with that. That conveys only part of the whole picture that you get from sustainable development. Sustainable development should look at the flora the fauna, everything from the air that we breathe to the water that we have, the floor that we walk on. The importance of all of those, the whole eco system approach. I think that the objective is to look at the whole of the national environment and incorporate it into the way we live which incorporates the environment.

Interviewer: So I guess you mentioned economic, social and environmental ecology there. Are any of those issues have a primacy within sustainable development, in its objectives or are they all equal?

Environmental development is the more important, because as a result of the environment you have the economic benefits and social benefits. Like the social benefits being able to have recreation in natural areas is very important. That in itself is an economic benefit. You can't put a price on the social wellbeing of a person. The economic benefits such as tourism, having natural areas for tourism, recreation and that sort of stuff. People wanting to live in a nice area will pay extra money if they feel good about the environment. Generally people I think like to have a bit of balance between natural and built environment. It is like if you want to build in a coastal area. If you have views of the ocean you can actually make sure that people can pay a little bit more. As a result of the environment you live in has economic benefits to the individual. But if you take away those environmental benefits then the social and economic benefits will climb as well. So it's all hand in hand.

Interviewer: Can we just talk about the individual cards as well? One in particular that I'm interested in is the card number 19 which talks about

sustainable development as a long-term process. Now just in your own view when you say a long term process view what do you - how long are we talking there? When it comes to sustainable development do you think we have 5 years or 500 years or 5000 years?

To achieve the objective?

Interviewer: Yeah to either achieve or start doing it

I think we have a moment now to start address it. Because if you keep delaying it and saying it will be okay we will start doing it tomorrow you are making the situation worse and it becomes more economically unviable to go back and to start fixing the problems that are happening. I think that it is really important to start now but when you are dealing with behavioural change on an individual basis it takes a long time maybe-even generations. I think that is happening now where kids are much more aware of the environment than what the previous generation was. And it's now so much, a more use and conserve mentality that's coming through. The education part is very important but it takes a long time so that's why I think that it's a long-term process taking individual behaviour and that way of thinking. Saying you have to do this now, you have to do that now, otherwise its going to be to late. It is a very fragile process.

Interviewer: Do you think that we will arrive at a situation in your lifetime where you say we now have a sustainable way of life? Will it be while we are alive?

Yeah I think so. If we act now and we put our resources and energy into that now.

Interviewer: What is your feeling are you optimistic that it can be delivered?

Yeah I wouldn't be doing what I am doing now otherwise.

Interviewer: You can see things happening around you?

I can see the focus on the environment become more and more important. Kids talk about it in school they get taught about it in school. People practise

recycling in their homes, local government are taking on a lot more, in their funding structure anyway and a lot more responsibility in managing the environment. At a higher level the state government and commonwealth government - there is a lot more focus. It's just a matter of putting it into practise now. Although that is happening I believe on a greater level.

Science and technology

Interview three

SE

Interviewer: So now I have laid out the cards that relate to science and technology and modernism if you like. So if you could just give some views of what you think, I am not quite sure what these cards really say but perhaps that way thinking that the role of science and technology in your own view of what sustainable development is all about?

I think that the role of science and technology is very important to understand the facts and what is actually happening as a result of our actions. Say for example green house gas issues with those facts we can then address the problems and go about it in hopefully in the right manner and the science and technology are a vital part in that process that just I guess gives us the facts to do the research and find out what exactly is happening. It is very essential. I don't believe you can, like many of these companies from the negative areas with the statements. They suggest that it can be same in the future.

Interviewer: Where they say we will overcome our problems.

Because I don't believe we can do that. And the last card that is in relation to population growth. I mean you look at places like Africa and that, we have the science and technology and look what that is happening over there with the devastation of forestation and so forth. We have limited water. You can't solve all the problems with technology. Resources to help address those problems and stop them from happening further.

Interviewer: So good knowledge basically. If I can ask you just about a couple of these cards here. This card number thirty-four – "All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe". Do you think policy makers have an understanding of what is going on or what you believe to be going on with environmental problems that we face?

Yeah I think they basically do, then again you can write all the policies in the world on what we should be doing and all that I think that there is a lot of wasted effort as well within all levels of government and in individuals as well. I mean we all intend to do the right thing and want to be seen as doing the right thing but when it comes down to implementation which generally means money, time and resources, generally not a lot of commitment in the world to follow that through. So the policies can be very wishy-washy. About being economically beneficial I think that would be have to be a very important placement as well.

Interviewer: Well that leads nicely to this, the card that you have at the most accepting end - card number 24 which says that companies ought to accept their responsibility to use science and technology to minimise harm. Do you think that in your own sense that the private sector is starting to do that?

Very slowly, probably too slowly. I think that the government needs to take a stronger position on that and take a more authoritative approach I guess and actually implement penalties greater than what they do, because a lot of companies out there that don't even really care. They abuse whatever they have but there is not enough reprimand or penalties to stop the people from doing that.

Interviewer: I was just wondering because you sort of hear about some companies that seem to promote the idea that they have changed and become environmentally responsible. Precisely because of what you were saying that they realise that it is good business sense and I guess that kind of idea is becoming much louder these days than it used to. It actually makes sense to use less energy and minimise.

Alcoa for example, I think they are pretty good in what they do. They have accepted that responsibility more on a high profile from what I am aware than other companies. It is a good PR image; people value companies that do that. There are still a lot of companies that aren't doing the right thing and nothing is being done about it.

Interviewer: There is still a long way to go then?

Big time.

Problem issues

Interview three

SE

Interviewer: The last section of cards these are the problem issue cards. So perhaps if you can just start giving an overview or summary of what you think what kind of problems is sustainable development trying to overcome. What problems do we face now that sustainable development is being implemented?

I think there is a problem. I mean we need to re-evaluate and rethink the way we see sustainable development and I think we see it as a separate entity group. We are passed that we see the environment that we live in whether it be the social, economic and the natural environment that we live in, it is something that we can control. It is certainly so far from that. We see ourselves as human beings being so far from nature and all that when really we need to rethink and be more in tune with nature that we area a part of it and that we respect it and it respects us. Basically that is not our philosophy or not the people's philosophy - that is our essential problem. We feel like we can control it when really we are only one part of the whole picture and we can't control it.

Interviewer; If you can just talk about some of the cards like number 5 – "Nature has an unlimited capacity to absorb and assimilate pollution and can

provide a virtually inexhaustible stock of resources" - the one that you have at the most disagree point. It seems to me that card says we live in a world that has plenty of resources, or there is limits beyond which we are exceeding. Do you think that is a major motivator for pushing along sustainable development that kind of issue?

I certainly do. We have the mentality that we can keep using and abusing and say farmers – back in the middle of the century the government was handing out subsidies and tax benefits for farmers to clear the land because it was felt that it was and inexhaustible type of supply and that we could control that. It is only now that we realise the consequences of those actions. We can't just keep using and abusing as we have done in the past. Otherwise nature will fight back at some stage. Now we have a problem with salinity. Resources certainly aren't inexhaustible. On a larger scale from that even is deforestation you see what is happening in Africa. Again where there is changes in their climate and even here in Australia we are becoming a drier continent. I know we are moving up North but say in Africa for example it is become drier and there is less rainfall. We can't just keep going the way we are.

Reasons for adoption of LA21

Interview three

SE

Interviewer: The last area I would like to ask you some questions about is our local government, in particular. I guess I would like to get some insight into local government. You know as a policy, Local Agenda 21 is being implemented with some councils at the start. I was just wondering if you have any insight into what you think are critical issues why some councils haven't adopted. Possibly talk about what you think is holding back councils from not implementing LA21.

The first part of the question as to why some councils have, I believe within those councils there have been people in position's of power such as presidents or CEO's that are generally motivated and feel in their heart that it is the right thing to do and have driven it from within local government and have influenced. I think those people are very passionate about what they believe. There is only a handful, but I think that is what has been driving it from within.

Interviewer: So there is like a person inside that drives the LA21 process?

Most definitely. In the council's with LA21, CEO's from the ones that I am aware of that are passionate about it and believe it and have driven it from within to gain support from their council to do that. I see the major problem with other councils not getting involved in LA21 is total misconception and lack of understanding of what it is. It's too hard it's an unknown, it's very difficult to grasp the whole concept of LA 21. All it means is more money and more resources of which so many councils have very little to spend in that area.

Interviewer: So people in the non-adoptive see it as more of a problem.

Yeah I think so and the lack of understanding they just don't know what it means. "Sustainability" it's a very ambiguous word. I don't think particularly, it's the term to use. It tends to be "hands up in the air". It is just such a huge picture. I think to address that problem certainly training for individuals not necessarily community – I don't know maybe the community but I think people, positions of power CEO's, councillors need to go to seminars that happen and all that so they can be a driving force.

Interviewer: So more information is required?

Definitely more information.

Interviewer: Who do you think should be providing that information?

I think the Commonwealth definitely. It has to infiltrate down through from the highest power. It is the whole information approach, whole information

benefit. Local government is so constrained through resources. I know everyone is but it has to come from above.

Interviewer: So you say there should be a role for education, actually having some information seminars or some sort of council training?

Yes to even understand the term sustainability. From my experience people have such different interpretations it is so ambiguous it's basically to big a problem to tackle, it is easier just to push it aside and say it's too hard. Also addressing that problem not only training but also people in positions of power but also to make them see the benefits and mention that you need to bring back benefits to people to influence behavioural change and commitment. You need support from above individuals from the community need support from the local government. Local government needs support from the state and so forth and so forth. They need to see that big brother is also on their side and doing the same thing and helping and supporting.

Interviewer: When you mentioned about having the councils, that there is usually a critical person inside, do you think they are driven by a different set of values?

I do.

Interviewer: From the norm

Yeah I do. I think those people are generally passionate about doing the right thing. There are very few people that have that not only belief but also that drive to actually implement it and influence other people around them.

Implementation

Interview four

GRDEP

Interviewer: Okay, what we have here are the cards about implementation of sustainable development. Now I would just like you to give an overview as to why you have put these cards in the order you have for the issue to do with who needs to implement sustainable development. A couple I have noticed is that you have quite a big spread really but most of the cards are in the middle. So does that mean that you couldn't make up your mind about these issues?

I think that sustainable development should be coming from government. I think that is extremely important and I was also thinking that in order for it to be of benefit to us we need to have community involvement. So the way I was thinking about it is in terms of government moving the community. I guess I was a bit unsure about these in the middle but I put them in the middle because I agreed with them more that I did with the ones at the end.

Interviewer: This one in particular - about Multi-national corporations – you really don't agree with that at all?

No I don't because I don't think they are the organisations capable of promoting sustainable development. I think we as a community have much more control. In fact we control the multinational corporations if we want to.

Interviewer: So when you say about government at that end card number 50 – "Implementation of sustainable development ought to be the responsibility of the Commonwealth Government and national strategies, plans, policies and processes should be the principle mechanism for its delivery" - do you have a view of sustainable development that it requires kind of a top down approach?

Yeah it does for me I guess. If the people re-elected aren't taking part in sustainable development then it is either up to the public to then make it an issue with the government or then the government will just go on and do business without doing something.

Interviewer: What is your feeling about the community at the moment do you think they are pushing? Like do you think the community is actually pushing the government along?

I think some issues only. I think with the regional forest agreement we have proved that, we definitely pushed that. When you look at (?) they got tired of him and they pushed him out. That was a big push for the country.

Interviewer: I notice that you have that card right down there, the one about any government policy, but then you have this one which I suppose is not the most extremely disagreed one but one that seems to be saying that governments actually are committed to sustainable development.

No I don't think they are committed to sustainable development because if they were then I would have put them up that end. Not in this country, I don't think they are committed. If they were committed then plenty would be addressed. The regional forest agreement wouldn't have been such a huge disagreement if they were actually listening to the people.

Interviewer: Can I ask you about this card, it is really interested this one about religion number 49.

I suppose I should state that I am an atheist. But I believe that sustainable development if it is adopted by the major religions of the world i.e., the Catholic faith or whatever then I think it would be much easier to be implemented in many countries because they are a bunch of fools. Like for example just in our program in "Airwatch" getting into the Catholic schools is one of my hardest actions. You can't get into the Catholic faith it is all about domination of the world. I think they can have a narrow view. I mean when you look at the Catholic faith just their concentration on things like abortion issues and contraception, etc., they are a major force and I think that if they wanted to take up sustainable development then they could do, that's why I put it there.

Objectives

Interview four

GR

Interviewer: Well that's implementation. Can you just give us an overview of what you were thinking with the objectives of sustainable development, and then I might ask you some specific questions about the cards themselves?

Okay I guess now looking at it my main thought was the fact that we need to look after the environment and start actually doing it now because it's a long term goal. Because without that we cannot achieve economic growth. I think at the moment I think the environment is in a pretty bad way and that in terms of decisions, that you have to make decisions whether people like them or not. They have to be the right decisions for the environment because in the long term that will be the right decisions for the people. Is that okay?

Interviewer: Well it makes sense to you and that's the main thing. With that second card, card number nineteen – sustainable development is a long term process - in your own mind because that's one of the things that I have been thinking about, is how long do you think the long term process is in terms of if you were going to say – I guess it is sort of leading to how long have we got to change our ways before really bad things start to happen?

I think in terms of some things that we will see them – very negative results - before we die. We will actually notice huge environmental damage but then with other things that I think we will miss and I don't think we will be a part of. For example "greenhouse" is already having an effect and I think that will only get worse because the policies aren't supporting need for sustainable development in terms of preventing global warming. I guess that's why I believe it's a long-term process, it just has to be passed on from generation to generation.

Interviewer: So that seem to be quite a long term time. Talking about 500 years or what?

I think you always need to be looking after it, so there will always be a need for some sort of sustainable development to be occurring. That's what I was

thinking because I don't think we can just fix the problems over night. I don't think a lot of the solutions we need especially in terms of technology are even available yet. We don't understand that most of the fights behind our technology we have anyway. Until we have them to make that achievement I don't think we will ever get really sustainable.

Interviewer: So it sounded like what you said you have to look after the environment. You have down here which I guess is the lowest place saying that the main objective in sustainable policies and that seems to be different to what you say.

I guess I was thinking in terms of economics as well. I probably could have put that a bit earlier. I don't know if that should be the main objective. I think of human welfare as well but I also think of animal welfare. So I guess I am thinking not only of humans.

Interviewer: Yeah I mean you have that one there – common interest between looking after the environment and looking after people - which is kind of similar to what you are saying now – is that right?

I guess here in the main, you probably have to, to some extent you have to hold them accountable and I guess when you are looking after the environment they will be council in a lot of ways. But I think it is important that we keep the vegetation in the same state, and the animal life as well. Because without those we are not sustainable anyway. I think, I like them better.

Interviewer: Yeah well you have eight cards on the positive end and they are all very similar.

But I do believe in social equity so I guess it's a bit of a conflict there.

Science and technology

Interview four

GR

Interviewer: So now we have the science and technology cards layed out and we have ten cards. So I guess if I can ask the first question. It seems that you have in terms of these science statements a very negative view in that eight out of the ten cards in the minus end so what's going on there for you do you think?

I guess I am disappointed in science and I studied science. I guess to me science has let society down. Scientists are unable to communicate their thoughts at the best of times. I also think they are working for multinational companies and being manipulated by them. Their views are put out into society and they are often conflicting and that creates a lot of difficulty for the average person.

Interviewer: Because you get different scientists saying different things about sustainable development issues do you mean?

Yeah and you don't know why they are saying different things. It could be because they have found different things or whether because they have kind of led their scientific studies in that direction because a group is supporting them financially.

Interviewer: So scientists are no longer being objective in their research?

Yeah that's right. I guess also I don't believe that science provides all the answers unless their view takes into account everything that has an effect on the research that they are doing.

Interviewer: That card that you have right in the middle there card number 34 – "All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe" - you haven't placed that one very highly in the array. So do you have a view that the environmental crisis isn't particularly serious? When you have these ones here I would have thought you would have possibly placed that one further up.

It's hard because you like to believe that the scientific data that you are being fed has some credibility to it. So the information that we are being fed about

all the different global warmings, all the different things going on with the environment. I guess you have to believe in it to a certain extent. And I think one of the main reasons that the politicians and the public maybe do not take the same view of the information given even if it is alarming is the fact that they don't understand what they are talking about. That is a major problem, I see it that as a major problem in our society.

Interviewer: What informing people?

Informing people yeah and I think that politicians themselves are not informed correctly. Therefore they cannot inform the public because they do not understand the problems to the extent they probably should. Like for example our ministers for environment usually don't have an environmental background, they don't even have a science background so how can they understand the issues at hand.

Interviewer: But would you say like if you thought about your own view, would you say that your view of this thing the environmental crisis, would you say that you are more alarmed than most people in the public or less alarmed regarding the thing called the "environmental crisis"?

Well I guess that depends what you mean by alarmed. I'm concerned. I certainly think the general public is less concerned.

Interviewer: Less concerned than you are?

Yeah but that's only because of the fact that I work in the environmental field. I think because I am more aware of the issues than the general public and it's not until the general public are educated about those issues do they then start to take on the lessons and become concerned themselves.

Interviewer: Become concerned?

Yeah, become concerned and taking the responsibility of doing something about it and making the politicians therefore listen. I think education is important in that and that's where science fails a little because it is not always educating the public. It is either confusing them or sort of trying to - I guess bewilder them.

Interviewer: So these two cards you've got are the most rejected positions. One card – "Instead of contributing to environmental problems, technology and industry's provide solutions" and the most unfavourable one – "Because economic growth and technology provide answers to problems. Concern about the environment crisis is irrelevant". I guess those would be technologically kind of quite optimistic statements, my reading of them anyway and I guess you put them right at the most negative point. So you're not very optimistic that those things are true or you don't think those things are true yourself?

Technology has helped sometimes but I don't think there is a solution because I don't think we have understood the technology we have created. For example nuclear power stations - we use the technology - but do we truly understand it? We have seen the implications of it but we still don't know how to handle the waste or what we do in that sort of situation when you have a meltdown or whatever. So I don't know if it will answer the environmental problem we have.

Scope of problems

Interview four

GR

Interviewer: Well that is the science and technology cards. Okay the last ones are about the scope of the problems facing us in sustainable development. So do you think there is a bit of a storey here as well do you think? What is going on for you with these cards?

Yep I can tell you the story. I see our environment, our natural world as being extremely important to me and we need to preserve it because we don't know enough about it. I think our free market system is the root of all evil. So that's why I agree with statement - card number 26 – *"Overall, the free market system can be considered the source of today's pending economic, political and environmental problems".* I see it as a human solution that clearly isn't

working in our society. It creates poverty, it creates wealth and is non-sustainable I think. It doesn't take into account the environment. The way things are produced and free trade etc. It is all about consumers and I don't think we can sustain it.

Then I went into I guess again I think current environmental practises are harming us, what we are doing and the same with the development that is going on. I don't know if we are living beyond our carrying capacity of the planet so I sort of put that towards the middle. I don't know because at the moment we are sustaining it so there is arguments riding into there.

Interviewer: What about number 6 – "Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about" - do you think we have much to be optimistic about yourself?

When I was younger I was terribly disillusioned. I probably would have said no but after working in the environment field, I would have to say yes because if I said no I wouldn't be working here. Also I think we can make a difference after seeing some of the progress we have made over the last few years. I see that we can make an environmental change.

Interviewer: So we can turn things around?

Yeah well we might not be able to turn everything around but we can certainly stop some of the processes that we undertake at the moment. We can start doing things a lot better because we have a lot more knowledge now. I still don't like multinational corporations, again I associate them with the free market and so therefore when they are associated with something like the free market which has certain policies, practises, ideals I see them as being part of the problem.

I don't agree that sustainability has been carried to far. I don't think it has even started in some areas – I disagree with that one. I don't think the World has an unlimited capacity - I think we will exhaust it. We have already seen that in some areas. We are loosing land in Australia at the moment – salinity - and that's a difficult problem to solve. We already know that it is going to take a long time to be able to use again. So that would be my biggest grudge that I

really don't agree with number 9 – *"Humans and humans alone have rights. Nature is valueless except in so far as it can be used as a resource for human benefit".*

Interviewer: If you had a card that was your least favourite, what would it be?

Yeah that would be card number 9.

Can you remember seeing a card that would be your most favourite statement?

I do like number 40. Card number 40 – *"All the species and systems of nature deserve respect regardless of their usefulness to humanity. Nature needs to be preserved for its own sake".* It sort of sums up and I still agree with that one number 26 - *"Overall, the free market system can be considered the source of today's pending economic, political and environmental problems".* I guess these are the most emotional ones.

Implementation of LA21

Interview four

GR

Interviewer: Now that you have sort of looked at all the cards I just want to ask you some questions about local government because obviously I am interested about Local Agenda 21 and local government. I am just trying to get some insights into, actually no not very many local governments have formally adopted Local Agenda 21. So would you have any ideas yourself as to why? Like what problems or why you think local governments aren't becoming involved in LA21 – sustainable development?

I haven't given it a lot of thought. Oh a little bit of thought perhaps. The local government isn't accountable. Very often it is up to individuals within the community to make any issues they have come to the foreground. I think they are very insulated, the local councils. I think they need to be more open to the public and to have a certain number of people at every meeting before it can

run. In terms of accountability I think that is where it falls down so if you haven't got many residents in the area that are concerned about something like Local Agenda 21 then you will get very little reaction from the councillors themselves unless they have that as their main focus.

Interviewer: So you think that it is a personal interest sort of issue? That if you get a council that is interested in that, it will happen but if you have a council that has nobody interested then it won't happen. Is that right?

Yeah. I am thinking of our local council which is Melville. They have had so much conflict over the last few months. People are just sick of it.

Interviewer: About what issues?

Building codes and keeping the land for public use. And the Mayor wanted to do that and I think most of the public wants that as well. But they shared the conflict of interest because of the fact that the councils wanted to make money from it and sell it as land for housing. I am sure that if it was put to the public. It is such a big issue. I don't think they should have the total say.

Interviewer: The council you mean?

Yeah the council. Because that should have been an issue that was taken to the whole of the city of Melville in my eyes. Because it was to do with our land and that is our right and the have no right just to sell it off and I think that happens in a lot of councils. Some of the councillors have their own agendas and they are making money.

Interviewer: They have conflict of interest themselves you think?

Yeah and because there is little accountability they get away with it and that's why you see so many areas in Perth with new houses there that are going up. Because they can have that final say. I think they are way to powerful for that little accountability they have.

Interviewer: Finally just one more question in terms of yourself. Would you describe yourself as being optimistic about the future or would you describe yourself as being quite pessimistic?

I think overall that I would be optimistic. Mainly because if there's people, and I have met a lot of them here, who are willing to fight for the environment and they do make a difference then I believe they will be more action in the future.

Implementation

Interview five

JADEP

Interviewer: If you can just give an overview of how you feel about who should implement sustainable development and why you hold those views?

I think what it is pointing out here is that I don't believe that any one sector is responsible for sustainable development. But I do recognise that there has to be some leadership in that and that's where I placed some of the statements about government, especially commonwealth government and state government cards as being leaders in developing the strategies or the processes to implement sustainable development.

But my other cards recognise that you have to have a whole range of people from community groups, indigenous people, to keep a balance.

I definitely don't see that things like multinational corporations are the ones that are going to address these sustainable ability issues.

Most of the local government cards are in the middle and that's because I don't see local government as being a leader in the sustainability process.

Interviewer: Okay so you do think that they have a role?

I do think that they have a role but I think the role has to be defined and that all sectors have to work together because I think that at local government level you can have one local government working almost in opposition to another in terms of the sustainability issues.

I see it as having the big picture first and then local government down at the more micro level in implementing it. I see them as very important but I think they have to work together not as individual councils.

Interviewer: Can I ask you just about some of the individual cards? I guess number 46 and 46 where you have a position minus for them are to do with really whether people in government either endorse sustainability

development or have an awareness about it or are actually committed to it in some way. So do you think when you are talking about, I guess, commonwealth government having their strategies or role in promoting sustainable development do you feel politicians at that level and bureaucrats at that level already have knowledge and commitment to sustainable development?

Yeah I do. I think that some of these, one of them was lack of awareness of internationally excepted environmental policies and standards. I don't think they lack awareness. I think they know the theory and I think in general they support it but it's never an overriding priority when it comes to decision making. I think almost any intelligent person can take on board sustainability as a theory, and as something to accept. But when it comes to them making economic decisions and political decisions, sustainability is then pushed to the background and it's not an immediate thing by making a decision on that issue your not going to immediately effect sustainability one way or the other. So therefore it is never a key issue for them in decision making. That's why it is so hard to get effort being made all in the same direction because it's long term and it depends on so many groups acting together. They know about it but they are not prepared to use it as an issue to make decisions.

Interviewer: This card number 49, which you have right in the middle at zero point that is about religion becoming involved in sustainable development. Have you got any idea as to why you would have put that one there?

I don't have an opinion about it one way or the other because I don't see that in reality it has any effect one way or the other. I mean I think that if it is up to religion, I don't think that it is going to happen and I don't think the expectation should be that the multinational corporations are the only organisations. They are not the only ones that are able to achieve sustainable development. They are a small group. You are talking about particulars sectors, not that religion is a small group but it is a sector and it has to be more than just a sector. That is why I didn't agree with this one "Sustainable development has the force of political commitment at the level of the commonwealth government".

It doesn't have commitment but they know all the right words to say but it doesn't actually push the decisions they make one way or the other I think.

Interviewer: If you were looking around yourself today, who do you think is the main in reality the main proposer or implementer of doing sustainable development work at the moment in WA are there any groups or sectors that you think are outstanding?

I think it depends which issue you are looking at when it comes to sustainable development. I mean government can be seen as being reasonably pro-active in terms of waste management but I suppose then even theoretical air quality but then they go and build roads and encourage the very large trucks in the city. I think in certain areas of the community is very strong on things like waste management but only to recycling but they don't change their buying patterns or anything.

Interviewer: So it is a bit "issue based" at the moment. It's like issues which are part of sustainable development are being pushed with other issues that aren't part of it. Is that how you see it?

Yes and issues which are part of sustainable development that people can do easily without causing themselves to much hassle they will get involved in and it will make them feel good. The easier issues where the behaviours at a government level eg., supplying recyclable bins, I think that is why recycling has been one of the big issues that has been tackled. Because you can fairly easily set systems in place and then regulations like the waste levy fees for charging for dumping, recycle bins they are not hard solutions. But things like air quality the solutions are hard. Spending billions and billions of dollars on public transport, disallowing people to use their cars making it harder. Sustainability the issues that have been tackled are the easy issues.

Objectives of Sustainable development

Interview five

JA

Interviewer: The next set of cards are about the objectives to do with sustainable development. Mostly I would say it looks like you would look at these issues quite favourably. So have you got any comments why you have done this pattern with these cards?

The two obvious ones down here at the most negative end are card number 1 – "*The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies*". And card number 10 – *"Environmental protection or conservation is useful, only to the extent that peoples' welfare is positively affected or human needs are served".* For me, both of them focus on the fact that it's human welfare that is taken into consideration and the reason for sustainability which I don't think is the direction that sustainability has to happen regardless not just because it is going to make human life better which it is. But that is why that is out there, the purpose here is only to help human need and I don't think that is the whole point of sustainable development. I think in a lot of ways some of the solutions are going to go against human needs, things that people think they want and they are going to have to stop wanting those things or stop using those things to help sustainability. The rest of them are I think are fairly obvious statements it is a long-term process.

Interviewer: That is the one I was going to ask you about that I thought was in the last set but it is actually in this set. I was going to ask you the question; you have that as the main at the plus five positions. So when it says a long-term process what is your time scale? A few years or thousands of years?

It depends on which issue you are looking at but in terms of things like dry land salinity I mean who knows how long it is going to be. In terms of the air quality you don't know what advances are going to happen in the future so you don't know whether they are going to have a positive effect on air quality or if they are going to have a greater negative effect on air quality. So I see it as being long term process as in some of the solutions are long term some of the things will be ongoing and there will be new issues occurring and you will be tackling that on a sustainable development basis and that new issue may be something we don't even know about now. So it's not only long term we

aren't gong to get the end of 50 years and fixed up all our problems or the end of 100 years and fixed up all our problems. Sustainable development is going to have to be a way of life.

Interviewer: So an endless process perhaps?

Yes an endless process. Part of life will be creating some of these environmental problems identifying them and working through as to how can we use sustainability to get back to a reasonable balance. I don't see those as being – "Oh we know all the issues now and once we fix them up they will all be gone". I don't think that is the case at all. I think they will be different in different generations. You look at the smog in London I mean that got really bad but they have actually done something about it but they haven't fixed it up. They still have problems and they still have to work on it. Even if they say we have reduced lead down to acceptable levels in the air in a lot of capital cities around the world. But now there is volatile organic chemicals are becoming a problem and I don't see solutions to that. Human nature is always to create ongoing problems just by the fact you are producing new chemical forms and processes and they are going to give you new issues to deal with. The rest of them are fairly straight forward they are all stating positive things that you can do and it points out that sustainability involves the whole community. Everybody has to get involved in this and I suppose I agreed weakly with core objective for sustainable development should be to provide economic environmental and social equity within and between generations. That is a nice thought but we don't have equity now so.

Interviewer: That's card number 29 – "The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations".

I agree weakly with that - in theory it sounds great but.

Interviewer: I guess I mean for me that would be pretty much the standard definition for sustainable development – is that what you mean?

Yeah but in actual fact it is one of those things where, it is a bit like saying in salinity it should be an equity between generations but in actual fact if you

want to tackle salinity things like getting farmers off their land and not using it is a real issue and it may not be equitable but it's a good solution. It is a bit of a motherhood statement, which in some ways stops things happening you can't solve the problem of equity issues. But that's about all.

Interviewer: Card number 31 – "Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution". How serious a problem would you count that in terms of, you are obviously concerned about a range of problems where would that be positioned in your overall adversity?

In terms of all other issues it is probably not my highest priority but it was particular statement about that particular issue and that is probably in my pinion very correct. Bio-diversities, numbers if you look at that statement, environment reports and that, I mean species are diminishing at a very rapid rate so the only way you can stop that happening is by actually stopping disturbing the land. But it is not a major issue with me but it probably should be. Because I think that a lot of the reduction in bio-diversity you don't see and it doesn't really have an impact where as things like salinity and air quality or water quality I mean they have a big impact on you.

Science and technology

Interview five

JA

Interviewer: So in this selection you dealing with the roles of science and technology when implementing sustainable development. So would you like to just describe what your view is about the issue with science and technology?

I think what most of these cards seem to be saying is that science and technology was the answer to solving all these problems all these ecological and environmental problems and that if you have science and technology then you don't have to worry to much. While I believe to a certain point, and there

are a couple of statements here that I do think that emerging technologies do offer higher productivity and increased efficiency and decrease pollution. I do believe that some of it, it's true, it's not the whole answer though.

I think that science and technology has a part to play and that where the solution to a problem can be solved that way it's great but there are other strategic things that you can look at. Like whether or not you need to use those materials or put that into a process that you then have to clean up so what comes out is effecting the environment. I think that science and technology can provide lots of solutions like if we can produce a cleaner car that's really good use of it. But there are also things like the way the whole community works and acts is that their processes and actions can also be modified to achieve that end as well. All these statements sort of added up to science and technology is the place for it to happen. The other thing is that science and technology is also the cause of all this, all the problems.

Interviewer: Within these statements?

Yes. There the two sort of comments that they were making and of course things like waste behaviour is not really science and technology that is causing the problem it's peoples consumer behaviour and wanting to fulfil their needs and their wants and all those sorts of things that are the issues not so much science and technology creating the problem. So I see science and technology as only part of the picture so only part of the answer and you can't just rely on the fact that if you've got a problem and ecological problem often science can't solve that problem for you and you have to find other ways.

Interviewer: Do you think as I guess just sort of a general issue do you feel that general science and the science and application technology are more beneficial to human wellbeing or environmental problem solving or are is the application of science and technology more damaging to health or environmental social issues?

In general and that's because of my background I mean I'm a science-trained person. I think that it is actually beneficial. It supplies a lot of things in our lives that we really enjoy using and supplies a great deal of convenience and all

sorts of things but it can create problems. But I think science is beneficial. I mean I wouldn't want to go back to being a cave man. I would much prefer to live now. I am actually quite positive about science I am not a negative person about science. So that is why I don't see that you should hang all the blame on science and technology and I don't think that you should look to science and technology to overcome problems which are basically problems of social, political or other economic basis to them.

Interviewer: That's a pretty good summary I think.

Yeah well I won't go through each card but they do seem to fall into those two categories.

Problem Issues

Interview five

JA

Interviewer: So the last issue is to do with problems that sustainable development is involved with, what problems we face and what problems do we need to overcome. So in terms of problems can you just outline your views about what you thinking about some of that?

Lots of these are about real dooms day sort of comments that we are sort of taking the planet to the brink of destruction things like that.

Interviewer: Do you think that's true yourself?

I am just wondering why I put *"We are living beyond the carrying capacity of our planet. Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions".* Yeah, I suppose that is why I agree with it. I mean our population for the planet is large and you would have to look at big cities as plague proportions. I think we have environmental problems. I think they are often site specific even though that site may be quite large. But you can't ignore things like the ones that I think

are really worrying are things like greenhouse, something that can effect the whole planet.

Interviewer: But that's a global problem.

The global problems are probably the most scariest because if somebody really messes up a specific site be it a country or a city and leads to its destruction it doesn't necessarily mean there is destruction to the whole planet. But things like global problems are really starting to worry me because number one they are effecting everyone and the survival of the planet. Number two is that there is not a lot you can do about it. You don't have a lot of control over something like that.

Interviewer: How do you think we deal with doing, I guess as a sustainable development position say like global warming is obviously a big issue that worries a lot of people. How do you think we are actually doing in dealing with it at the moment?

Well that the fact that the world recognises that there is a problem then you have a whole heap of nations come together to discuss the problem to try and modify the problem and try and modify their behaviour even though countries like Australia spend their time trying to say why they shouldn't do it I think that is a really positive thing. But I don't know I think that the whole political and economic pressures are so great that environment... I don't think that people will make radical decisions until the environmental crisis is a crisis and at the moment I don't think that people recognise that it's a crisis and I don't whether you would describe it as a crises at this point and time. But because these things are so long term, while people recognise the problems and are discussing it I think environmental problems are very secondary to social economic and political problems and at the end of the day the decision makers are going to be sacrificing environmental changes if they need to. You are talking about environmental issue and your talking about the RFA, there is jobs competing with environment and so getting decision making there is really, really hard because the political decision about jobs is far more immediate that the decision to save the forest. At the end of day most of these come down to political decisions and keeping people in jobs.

Interviewer: So you think that the crisis has to become a fairly bleak and obvious situation before people will act?

Yes and I think that a lot of peoples views are that when something gets to a crisis situation and when people act. So I think in terms of if we are heading down that road and I am not totally convinced we are, because we are trying to rectify things as we go along. If we are going down that road I think what will happen is it will be like the Romans. A whole civilisation will disappear and be wiped out and they may have been trying to fix up the problem but they may not be able to fix up the problem so therefore the population numbers will drop and hard times will come about and I think you have seen that happen in countries like Ethiopia that used to be fertile and now it is nothing more than barren desert. Civilisations come and go and the inevitable that we do to. Now whether it is environmental or something like a nuclear thing or whether it is a global thing. We all go through another ice age or we all drown under the rising seas.

Interviewer: A global thing in terms of a natural process?

Yeah like having another ice age.

Interviewer: So you where saying there about the end of our civilisation as a result of natural processing or human generated processes. Do you think that sustainable development as a strategy can help resolve the problem, is that the goal to overcome those problems?

I think the only goal of sustainable development and why people actually tend to use it is a very selfish reason and that is that by sustainable development they see that their going to have ongoing resources and so keep on doing the things they are doing.

I don't think it is an illogical reason. It just makes common sense that if you have a business it is better to keep the business buying and making money for you every year than to make a million dollars in the first and second year and then make nothing after that. So I think the motivation for sustainable development in most cases is common sense. People are saying we want to keep on rolling on we want to keep on having these resources, we want to be

able to do these things, we want to be able to keep on using the land to produce our food, we want to be able to breathe the air. So sustainable development makes sense for your own self-preservation. I think that is the motivation.

Interviewer: Is that when you say that about other people is that your own view as well?

It makes sense doesn't it? Things haven't actually come to an end and I don't think any action is totally selfless so it would be my motivation to but that is what I think sustainability is all about. It's maintaining humans needs and they sort of say that somewhere that's the jest of it that is why you do it. Maintain the human population being able to keep on doing what they are doing. I think that is the selling point of sustainability. If you were doing it for an altruistic reason like improving bio-diversity or the good of the planet then nobody would be interested. That is the selling point.

Reasons for Local Government and LA21

Interview five

JA

Interviewer: Well that is pretty much it for the statements. I was just trying to get some insight into maybe you would know or you would have thought about local government now. As you know there is a policy called Local Agenda 21 and one of the things I'd like to know, have you got any thoughts on why the Councils that have implemented Local Agenda 21 have and why the ones that haven't, haven't?

Not from experience. I don't know. I think that it probably depends on the motivation of the players. Some people have taken it up like all the environmental stuff some people have taken it up and are motivated and enthused about it and it also makes them feel good and they can see that there are positive things that they can do, and they have been able to enthuse that particular local council so you have corporations in other councils where

you haven't got a motivator or councils where there are much more immediate issues or their just not interested.

Local agenda 21 came from the Rio Conference in '92 and I think that for some of it, it is just too old and a lot of people just don't even know what it is all about. But I haven't really spoken to anybody in local council so I don't really know. A lot of environmental things need to be pushed by motivators, you need a person or people who guide the Local Agenda 21. Some have that and have taken it up and some haven't.

Interview six

SF LGC

Implementation

Interviewer: So perhaps if you can just start by telling me when you think about sustainable development and the implementation policies can you sort of give an overview of which different groups should be involved?

Well I think these things have to be happening in unison so it should be core business. And local government and the state government should have the dominant role. It should also, I mean they both have dominate roles. I wouldn't put one above the other - I think it has to be done together. I am pretty surprised that I have put this card 17 – "Perhaps the best hope for the greatest worldwide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour" - I don't actually agree with that. That is clearly not enough and the card doesn't say how many motivated individuals so I wouldn't agree with that now.

I feel that we need it happening as core business and local government and state government. I think there is no way it can happen through just individuals, some individuals thinking about it and some not. It needs to be happening both through local government and state government and also right through the whole business community. It is absolutely vital from the mines of the North through to the tree plantations of the South that those businesses are thinking all about sustainable practise as well local government and state government.

So it is an across the board approach but it's not enough to leave it to, I don't believe that we have enough time to allow slow happening by individuals on an individual basis without bringing it right through to the business of government.

Interviewer Okay. When you have those cards number 41 – "Implementing SD ought to be core business for local government" and 47 "The State government should have the dominant role in implementing SD in WA".

They're both in the plus four area. The one about the local government and the state government - can you maybe just outline what is the relationship there. For example I am thinking do you see local government as being implementors of the policies and say the state government as being the financers like getting the resources to local government or something else?

Well a lot of it is just in policies. If it is to do with land use it is to do with state government having state policies to do with land use that local government should then follow on with. So you have to have the two things happening together. Local government has to be happy about it but it is no good if the state government policy is to do with things like land use and don't reflect the thoughts about use of public transport, where we should be increasing population on transport lines.

They just have to work together. There is not really a separating out of who should start first. I think it is happening more at a local level than at the state government level, but within the state government a lot of the agencies are working very hard on that so in the end it ends up being the political people of state government that need to take it on board. Which is probably the stumbling block at the moment.

Interviewer: That is interesting because you have got this card number 42 right down at minus five which is "Sustainable development has the force of political commitment at the highest levels of the Commonwealth Government".

That's where the downfall is in the actual politicians. The agencies I deal with are all on the right track.

Interviewer: You mean the people working in them?

Yeah. I think the problem is that the politicians don't actually read some of these things – reports - and learn about them. I mean just the items in the paper today about there should be a sort of trigger when projects are emitting an excessive amount of green house gasses and there is the head of the country party saying no you can't do that we have to protect economic development. He has probably never read or understood anything about sustainable development. The process in actually educating politicians is a

really important component of it. You can get all these agencies doing all the hard work. Even work that has been done on sustainable land practises when that actually came to the politicians debate it all got scrapped, yet all the work was there, the scientific proof.

Interviewer: At a state and commonwealth level do you mean, that's what it sounds like to me?

Yeah at a state and commonwealth level. I don't think that it's the same as local government at all. I don't think the stumbling block is the councillors at all. I think that it is there back to once again often lack of knowledge and understanding. There is often not an opportunity for people to learn about a better way to carry on business. It takes quite a long time to read books and tune into those sorts of things and for the media to promote it. Anything to do with sustainability are considered not exciting if we can have a personal drama instead. So there is no education of the public in any meaningful way. I mean it would be great if the media would take on responsibility to be involved in some education. I know I went to see the editor of the West Australian and to talk about their role in accepting some responsibility in education. But they on one hand admit that the only information that individuals get about things that are wrong whether they are crisis or whatever is from the newspaper but they seem to be still like that's not their job that's just entertainment. They say information and entertainment but they don't seem to feel that they have a definite responsibility to think about that.

Interviewer: It sounds like that a shame.

I think we are heading in the right direction with local government pushing state government. It is definitely coming from local government in WA with the state government now saying what do you want us to do, that we want to do. But they are not the leaders. They are really turning to local government and saying how can we help. Which is great that perhaps we can then ask them for help but we need them to be in all their agencies and all the things they do from road building to management of the land to think about sustainability. It is just a different way of thinking and it needs to be happening at both those levels.

Interviewer: So I have asked other people this question do you see in your own view that sustainable development a top down kind of government driven process? Or is it a bottom up community, driven by individual motivated people who think it is important push it along.

That's how it is happening but it is a very slow way to go. You need a few enlightened leaders who can see that's the way to go even though the majority of the population might not be at that point yet. It is an increasing awareness that is occurring but I would say that "no it is not enough to be coming from the bottom up". The time has come when there is enough people in that area to say we now need leadership, we now need leaders in state government to start implementing it and the state government agencies and policies that they have so it is definitely not enough to be just from the bottom up. It would take to long.

Interviewer: So there needs to be real political commitment?

Absolutely the time has come. There has been enough information around, enough push from bottom; there should be enough enlightened leaders around by now to be able to implement what is needed from the top.

Science and Technology

Interview six

SF

Interviewer: Yeah so we were just talking about science and technology and what the role of science and technology is.

Yes I think it is something that hasn't been really thought about and I think it does offer some very useful things. I think there are some things that we are never going to be able to do in a sustainable way and we are actually going to need science and technology to help us out. Maybe in the end there are, given things like developing the right technology for the use of cars – I would love to see a reduction in cars but that is never going to be possible. It's

going to be science and technology hopefully that would really get to a stage of being able to produce a car that has minimal impact.

Interviewer: Like zero emissions?

Yes and it's the same with waste management. We need to work out ways to recycle the waste on our own properties, we need to use products that weren't packaged. But the latest science and technology wants as much waste as you can get it and they don't want it separated. So the new waste companies that want to come into Perth actually want as much waste as possible and from that they produce electricity. So this it a bit of a contradiction.

Interviewer: This is for incineration?

Yeah for the incineration, gas to produce power. So maybe if we can't head down one path because it's to hard maybe this is going to be another alternative. I guess my main worry is that science does just continue on inventing things that maybe of no use or are harmful to the community, harmful to the environment long term – if we can invent lets keep going lets not stop.

I think genetic engineering is a perfect example, I think that should be looked at quite differently. We should think of good farm management practises rather than how we are going to produce more crops. I think that is the wrong approach. If it can be invented lets go for it that's how humans are made and I don't agree with that. We need to promote the right science and technology, make decisions about that and if we are capable of inventing or producing something that might now be a good idea lets now do it. Lets actually be able to say no we're not interested in that, but we would like to put our scientists working on other things.

Problem Issues

Interview six

SF

Interviewer: Okay thanks a lot. So these are the last set of cards to do with problem issues. Problems that sustainable development is trying to overcome. What problems is sustainable development trying to overcome? Like what are things it's trying to improve? And secondly what problems does sustainable development face when we kind of actually make it happen? Can I get your views on those issues?

Once again I think it is to do with disturbing the balance. It's realising those things that we do have other side effects. Everything you do has side effects so it's thinking about those and looking how you could do it in way that has less detrimental side effects. Whether they are environmental or social.

So the problems that I guess we face with sustainability is becoming aware of those so it is to do with knowledge and understanding what repercussions and things are from building a wider road. Building a wider road might make it nice and easy for people to get somewhere quicker. But the impact it has in that it has been found to create more traffic and the environmental effects of more traffic on the environment and socially whether it is pleasant to be around to more accidents. Getting people to think about everything they do and the repercussions so that you end up not compromising one for the other and I think that is how it was done in the past. That it was okay to have a fantastic economic opportunity to develop something and because is was so fantastic and going to make so much money we could actually not worry about the environment or the social impact. But sustainability is about having those three parts in balance not conflict. So it's a change no longer compromising one or two of them, saying something should not go ahead. No economic project from a mine or even practises of mining should be thought about. At the moment a lot of he mining practises are not good socially. They are having all sorts of effects on people. So it's that thought that knowledge getting people to think about the side effects in everything that we do. What was the other thing that you wanted me to talk about?

Interviewer: Yeah, what problems do people actually face when they are trying to implement sustainable development?

Well it's traditional views of the fact that economic growth is the most important thing. And it's always been that sort of approach to the bottom line. It is really what matters so if you are trying to implement something that is good for sustainability it's the bottom line approach that is the problem. But with good sustainability of course you should be able to show that the bottom line has improved. But you actually have to then put some figures on environmental things - either degradation or improvements. So you actually have to put your figures differently to come up with that result. Other problems would be lack of thought, history - the way we have just done things progressively without thinking about things impact and the overriding importance placed on economic consideration above all else.

Local Agenda 21

Interview six

SF

Interviewer: Can I ask you a couple of questions specifically about your experience in local government as a councillor. I guess one of the things I am really interested in is what you feel, we have some councils in Perth and some that haven't, what do you feel is the thing that has made the councils that have local agenda 21 actually have it? Like why have they and only they done it? Why haven't other councils endorsed Local Agenda 21?

Because there is no requirement under, which I would like to see by say state government to do it. It's always been up to the individuals to do it. So I think in all councils there has been that one person. They might have moved on and someone might have come in their place. But it's generally been one person, sometimes a group like say in Subiaco there is a group of councillors that have felt it was important. So it's not, it's always come through the actions of one or more individuals that have bought it forward. That's not to say there aren't councillors carrying out very good sustainability or being very considerate of sustainability when they are doing the things they do. I think there are a number of councillors in Perth, places like South Perth that I think

so much what they do is really good but they haven't talked about the Local Agenda 21 structure at all.

Interviewer: So almost doing Local Agenda 21 but not following it – not calling it that?

Yes that's right. And I guess I have said to them the only point of you doing it is that it then helps the councillors who are trying to promote it. Then maybe in their councils they could practise LA21. It's a way to bring about sustainability is to actually set up agenda 21 process where you have serious committees thinking about what's happening throughout the council and that is the really unsustainable ones that need to do it more than the ones that are going along OK.

Interviewer: You might be doing good work but by actually giving it the name of LA21, bringing it relevance.

The LA21 committee at WAMA - it also provides a sort of networking. It provides a connection with other councils, it supports the other councils. So I think the councils that are going well with sustainable development as helpful as they are, are having to formalise a crisis and that is core business for them. But basically it has gone into councils through the actions of individuals and it wasn't known about so much. I guess now that it is becoming much more main-stream that won't always be the case it will be a group of people being alert to it. There are workshops in local government and there are conferences now about it. Still people turning up and saying "what's this mean, I don't know what it means". They are still learning, when they learn about it they say "yes across the board we should be looking at the way we do things thinking about sustainability".

Interviewer: So correct me if I am wrong. Do you think that there has been some knowledgeable individuals or interested motivated individuals, councillors that they are crucial or have been up to now crucial in getting LA 21 talked about within the councils where it has actually happened?

There is a variety of circumstances. That's the case in Nedlands. When I first asked Nedlands about it they didn't know anything about it and I went onto

council purely on that platform of setting LA21 in Nedlands. So in other councils it has just been the environmental officer, generally when I met the other focused councils that formed the LA21 advisory group there was only a couple of councils. Mainly officers that have become interested and see it as a way of improving councils decisions so they have been responsible for getting it implemented. In each council you can usually pin point a person or an officer or councillor who has initiated it and.

Interviewer: Another question I am really interested in your response to is when you think about the Department of Environmental Protection what would you like to see the DEP actually do in terms of helping councils like your council with it's program or councils generally when they implement LA21?

There are two things I would like. First of all a formal acknowledgment by the state government of the importance of local communities doing LA21 and environmental plans. I think in NSW it's now a requirement that sustainability plans maybe its just environmental management plans but they are a requirement.

Interviewer: The same way we have a requirement on town planning schemes?

Absolutely. That would be wonderful and if we can't make it to that point, I at least would like a letter of encouragement from state government that even would help validate the process for some councillors. To say that it is something that state government is encouraging and requesting that all local governments look at as part of there overall state strategies to encourage local governments which is what they have just said in response to the environment. The information is out and that is exactly just what they said and a way for them to formalise it would be to write to all the councils.

Interviewer: This is coming from the Minister for Local Government do you mean or from the DEP?

No from the state government, you know the response to the state of environment report page 5. I mean just after population and something else it talks about LA21. Have you seen that one?

Interviewer: Yes.

So when I read that - I think the actions I would like to see is formalising of that even if it is only just a letter to follow up on that to all councils.

Interviewer: Sorry yes that's what I meant. Would that come from the Minister for Local Government or from the Minister for the Environment?

Well it would be fantastic if it came from Paul (Minister for Local Government). I mean he doesn't even want to know about it. So I tried when I first got on council to go and see him about it but he's not interested. And I don't know if he knows anything about it at all, quite possibly he doesn't. I think someone mentioned it to him at some dinner or something and he didn't seem to have any understanding of it at all. Anyway that would be wonderful but that shows where the problem stands if the Minister for Local Government doesn't even know about it and here we are encouraging local government. So that would be fantastic if he understood and supported it. But even in the mean time I think the fact that it's in the response to the *State of the Environment Report* it should be done and then the next thing would be resources which is very difficult for local councils. And they do whinge and complain and say "well its the state government process or the federal government process" and I know in our councils to have a dedicated office as perhaps work on a regional basis to help with our *Cities for Climate Protection* program or our *Travelsmart* program. We at the moment rely on volunteers. We can't get funds through council. Council at this stage struggle with finding funds for declining infrastructure. These sort of things have been sort of the pushed by the mayor to say that every bit of money needs to go to the declining infrastructure and it is very hard to get these sorts of programs up and running and so some have volunteers. I guess what I would find useful is, would be an officer for the western suburbs. That's because these things *Travelsmart* and *CCP* - a lot of the strategies need direction

Interviewer: Just for the tape CCP is Cities for Climate Protection

So that's what we would like would be a resource officer. We need to also make sure that I guess the state government is progressing it. They need to

put particular resources to officers there that are helping state agencies to look at all their practices and getting that happening throughout. So it is a change in mind set. And when that is done as normal practise we won't need that. But to go from what we are at the moment to that point, to do that we do.

Interviewer: So would it be useful for Nedlands to have an officer that is funded by DEP?

Well that's what we would need. Within the council or working for the DEP, in relationship for the councils, something like that.

Well if they are working and I am suggesting jointly because I don't think, I mean I definitely have the work for one person to work full time because we are trying to get so many programs under way. They are all just sitting there waiting to be done and we are not progressing nearly fast enough because we have done all the basic work and now we actually need an officer to help us move on. I think Nedlands could use one full time but I don't think that is probably not likely but then everyone feels so. A regional officer. Maybe working with the DEP because in the end I think that it is a partnership we need to be promoting and carrying out projects that the state government is doing. Whether it is *Airwatch* or *TravelSmart*. I mean they are state programs that we are trying to tap into. So I would not have a problem with them working from the DEP because I think that it is a partnership situation. What are the chances?

Interviewer: I don't know but it would be written in the report so, that's why I am asking you. Yeah well that's it.

Interview seven

DW CC

Implementation

Interviewer: Can ask you, can you just give us some sort of overview of what you think about in terms of implementation of sustainable development. Who should do it and why they should be involved?

I guess it's all levels of government and the community and business I think everyone has a role in it. I probably emphasise the community and local government probably because that's where most of my work occurs and I can see them playing an important role. Local government is right at the forefront. A lot of them would not know what sustainable development was. It would just be something that they could incorporate it into their resume and it hasn't left any significant change in how they operate and make decisions. The idea that sustainability needs to be a corporate led issue, federal government or state government isn't right.

Interviewer: Do you see one of those levels of government that are having a lead role at this point in time.

I guess given the current political climate I would pin my hopes on local government in that because they are supposedly closer to the community it's easier for them to be influenced by the local community and to raise awareness within the local community. I guess in Australia the commonwealth play a key role in promoting ESD at least on the Labor side. It's gone no where since the change of government. But on the whole there is all the work from ESD working groups and developing some sort of national frame work which is very good at laying out principals but it seemed to not go onto changes and decision making processes.

Local government through local agenda 21, local conservations strategies and the like are starting to do more work in the area and that is where most of the activity seems to be happening. In amongst local councils and through places like Environment Australia and of course NGO's have been involved in that to

some extent or in groups like the Conservation Council. At least they raise sustainability as a key issue in reference to particular projects or to state or national government strategies/polices, questioning how sustainability is featured.

Interviewer: Do you think that role has been quite successful? In getting sustainable development back on the agenda?

Well it is still a concept that is spoken about. I mean wouldn't say it is always on the table when you hear about discussion of the State of Australia and sort of focuses on economic management issues like that. Sustainability is not heard, or if they talk about sustainability, they talk about sustainable in the long term which is totally disconnected I think from the immediacy of sustainable development. But without the actual NGO's it may well have slipped off the table.

Interviewer: One question that I have asked other people is would you see your own view about implementation of sustainable development that it is pretty much a bottom up driven process or that it is a top down from government to state government to local and then getting people to change? Which kind of direction do you see that process?

I guess it needs to be both but probably more likely to be bottom up because I see participation at the community level and each community being involved in decision making is critical. But it is sustainability so it can't simply be top down because it wouldn't work and yet you need that commitment as far as leadership goes as well. But basically I think it is bottom up or local government people to drive the idea. Also I think that is a reflection of how things are now which is why what I have got comment number 42 way up at minus four.

Interviewer: That says sustainable development has a force of commitment at the highest levels of commonwealth government.

So I put it up there because I think "no it doesn't", "yes it should but no it doesn't it is not current reality". It wasn't even on the Labor agenda when most of the action was happening at national level or, wasn't even there but I

think it was closer to that than it is even now. Partly I think that is because of the political climate that ESD is sort of less important. Environmental issues seem to be less important and the focus in more on economic management.

Interviewer: Have you got any comments, I guess just on we talked about the highest levels of government and local government have you got any comments on perhaps what you think the role of either the state government as in the politicians or the state government as seen by the Department of Environmental Protection or Commerce and Trade or the Waters and Rivers Commission. What do you see as being their role? Either now and also the second question would be if I was to ask you what is your view that they should be doing?

It then raises the question of what are the different roles of government because sustainability is a pretty all embracing concept, how we make decisions, how we do things so you are then looking at what should the balance of power be between local state and national.

I guess I probably see more power going to local. Whether it is local as it is now or local as in regional government which is an idea that some people have floated. A government based on bio-regions whether that is river basins or some other ecological unit. Try to organise government on that level whether that will happen I don't know but that would be ideal and that is where ecologically most concepts should happen. But local government has a role because it has the range of actions and those services through its work and it's connection through local communities. So it has an important role.

State government because they have so much regulatory power at the moment obviously need to be in there. That's using sustainability when you're applying a test to development so EPA or planning agencies and reviewing development proposals. Or in terms of policies say where Commerce and Trade directs it's effort they could then accept it's promoting resource development which might increase green house or it might instead of doing that put effort into what we might call green industries. Where promoting green technology on that service base industries are even, areas like recycling or remeadiating contaminated sites or revegetation or changing

agriculture that sort of sustainability that's bio-technology or land management industries almost so state government has a role. Then nationally the federal government there, their role relates to co-ordination and the fact that they have the financial power. They raise the most revenue out of all levels of government.

Interviewer: So do think that their main role perhaps should be as a resourcing?

Yes I guess it's resourcing and probably policy leadership and that's got to be reflected in how we think about economic management but maybe as well as being concerned about the CPI of interest rates, we need some other progress indicators. We actually talk about sustainability indicators and the state of the environment reporting has a bit more profile to actually use that through a new policy that if we are going backwards whether its say equality or whether it's loss of top soil in agricultural areas or bio-diversity. That is actually seen to be important and that we use what we are finding out about the state of the environment to review policies, review the way things are happening. Now I guess that's state, federal even local I mean state environmental reporting has increased and is happening at all levels.

The other positive ones are clear benefits from public involvement so the key public involvement is important. Because unless a large number of people have some awareness of the idea and support the idea then it's not going to get far as something that is seen as important by a small group whether that's in NGOs or in particularly community groups and that's fine but that's not going to change thing. Things will change if there is a community which says sustainability is important so that people have some idea of what that means. They might not think about it in quite those terms but sort of quality of life. The environment is sort of leading the issue, those sorts of concepts are important for people then I think that sort of flows onto it being on the political agenda as well and also some business culture I think. What the community thinks and what employees think has some influence on how organisations operate. Whether they are in business or NGOs or government. Multinationals question 1 at minus two – because the debate and I think Paul Guilding used

to hit Greenpeace Australia and his philosophy is that multinationals will save the day. "They are the ones with power and global reach to be able to achieve change". I can see merit in that, certainly they are increasing in power and we are increasingly moving towards a much more globalised economy in society so they have a role but they are also quite far removed and still think that at the local level is probably the most important and of that it has to be global but it needs to be real it needs to be grass roots.

Interviewer: Do you see multinational corporations as an example Alcoa which lots of people say that it has a green image and that they are doing some really good conservation work do you see that the corporations are changing their mould or is it just PR kind of thing?

People do say that it is green washed, it's corporations wanting to promote a green image of themselves that they are more, seen to be good citizens in the community eye and that they are more likely to get government or community support for particular projects. There are a lot of organisations like Alcoa doing their own environmental reporting like they are reporting on as well as financial performance like customer service are also reporting on environmental performance I think that is a good thing. That is being led by the big businesses. I guess they can see it's important that they have the capacity to do that. Yes they have a role, it's hard to see that they are fundamentally changing the way that they did business and I think the whole idea that sustainability implies that you do need some fundamental changes but time will tell I guess with that one.

Interviewer: I was just wondering, I wonder whether you would, I guess, you get mission statements and stuff like environmental management plans, whether that translates into anything meaningful. Have you a view on that?

I think that it is all pointing in the right direction and suggesting that if a change is happening or people see the change is necessary, the problem is the context in which they are working. They are still private organisations whose role is to generate a profit for the shareholders.

Exactly and how that they generate the profit well then the current way that we measure things and sort of organise ourselves it's basically exploiting natural resources or exploiting people. I guess you can do that in a good way or a bad way but we are still sort of drawing down non-renewables, we are probable overusing renewable resources say fisheries for example there is a lot of problems around the world with poor fisheries management.

We are taking to much out so if you still have this profit which is based on increasing consumption of resources well that's a problem because it doesn't square with the sustainability. Because it's not sustainable because the consequences, loss of natural capital you're loosing bio-diversity, the area for habitat is diminishing, the quality of habitat is being impacted by pollution. The ability of the environment to sustain us, you would probably argue is diminishing it's not increasing and it's not staying the same either. So until we can find a way of providing a way of people's livelihoods and wellbeing in way that maintains the environment that sustains us, that's sustainability but we're not there.

So these multinationals or any other business is still working, profit through consumption that's how they survive. That's the challenge of sustainability and it's for all of us to try and work out what the future should be.

Objectives

Interview seven

DW

Interviewer: So if I could just ask you in you own kind of view point not necessarily just expressed here but overall can you give me a summary of what you see the objective of sustainable development is actually trying to achieve?

The question that lots of people grapple with so that we end up with statements that everyone agrees with but are not always very useful is that sustainable development, sustainability being sort of meeting the needs of the

current generation. Not removing choices for a future generation, which is good I think that sounds good but what does that actually mean? I think that means maintaining natural capital so bio-diversity and the ability of the environment to support us so that the whole thing of the ecological process will maintain a livable world which includes us.

Then I guess the other thing with sustainability, people talked about it being the point at which the economy, society and environment come together and I see that's important too. I would probably give priority to the environment. Because I think that keeps everything else going but you need to obviously have some regard for the economy but for the economy to be sustainable you need to count things in different ways and make a living in different ways and use resources in different ways. Then again with society with people we need to have regard to issues of equity and I think that's important. That also relates to disparity and resource consumption. If you are using too much and there's a masses in poverty who have too little so there is some sort of balancing out there. So we could all live in ways that don't erode natural capital which means that we have enough in economic terms, it means that everyone else has enough too, so there is some equity and there is also equity in terms of participating and making decisions as well. I think that is a part of sustainability too. People can participate in shaping what happens.

Interviewer: Some of the statements you've placed obviously reflect that we have a common interest between the state of the environment and the people.

Some people would challenge that and it sort of relates partly to what's at the other end of the spectrum that the utilitarian view of things that looking after the environment is, the only point of it is to basically serve the needs of people. Which sometimes we certainly use that argument because people often don't appreciate things in there own right. That they will conserve an area of habitat because it has a steady value or it is important to recreation that is often their main motivation. The fact that it is important to keep things that, it's almost a rights thing that. Why should we just appropriate everything for us and that we will keep species and areas of landscape or manage ocean resources in a way that meets our needs with complete disregard for the

needs of any other species or creatures with which we share the earth. That we put our needs above everything else. Sort of do you take an anthropocentric view of the world or do you take what you might call an ecocentric view of the world. I probable tend a bit more to the ecocentric but rather than us being at the top of some pinnacle it's more a web and we are part of that web. We sort of try and live in a way which doesn't disrupt or deplete other species. So I guess that's the reason for me putting that up there that yes, I – the utility is often an argument that conservationists will use but it's not the only reason for doing it.

Sustainable development is a long-term process. Sustainability is almost replacing economic growth as the dominant goal of society it is sort of against economic growth as this idea of progress through material wealth is what it is all about and increasing GNP and increasing profit of a particular company or industry sector to shift away from that, working towards that goal to work towards sustainability and we need some measures for that. Which might be environmental also quality of air or water resources, it might be social, levels of poverty. Where the people have a sense of community, people feel they are involved in shaping their own lives and work and also economic things. Measures to do with equity. But that idea is sustainability becomes what we focus on and work towards instead of material wealth and to do that it is long term because we are changing around.

Interviewer: I might ask you that specifically. In your own view how long do you see that – long terms is a fairly open ended statement. So is five years long term or fifty years or five hundred years or five thousand years perhaps? Do you see this happening in your own lifetime?

Yeah, in one sense it is never ending but it's ongoing just as this notion of seeking a public progress. Well I guess that's sort of linked in with the industrial revolution and that means the production of organisation of business and the sort of work that people do and the sorts of things that government do are sort of all tied in with that. So of course turning it around is a big challenge so it might probably, fifty years I would hope that we would have made some significant change in the fifty years time frame. But even then the

whole notion of sustainability is something that keeps going on. You can't sort of say "Okay we're sustainable now we will go on and do something else". Sustainability is inherently the concept that it is maintaining a way of being that is good for people and the environment that's forever.

Number four – "bio-diversity is a key" because it is part of natural capital. It's irreplaceable and making lots of decisions now that are irreversible and I don't think it's justified whether that bushland is lost for agricultural expansion or for housing. It is also unnecessary in some cases. Because we are doing things because it's the way that we have always done them. But there are other ways of accommodating people or increasing agricultural production instead of diminishing bio-diversity.

So thirty-two is at four so – "priority to ecosystem integrity" because that's the thing that keeps us going. If you undermine that it's like we are on a space ship and we rely on the oxygen supply, oxygen supply is the most important goal so ecosystem integrity is in the same respect on a planetary scale.

"Changes in lifestyle" that is eleven at number two – reducing resource consumption is critical and it's like being involved in thinking about what resources we use and participating in recycling and reuse. That's a learning process for people and I think starting to change the way that you think about things. That's what you do when you go shopping or how you organise things in your household and again when you sit down to a meal, all of that. It helps bring back that cultural change. The core objective should be equity between generations. Well I think that in some regard, but future generations, we always have to look at the inequities between what we do and what people in future society or other societies.

Twenty-one at minus two- Sustainable development, they are basically saying it should - equating it to managed economic growth. The problem with that would be that I think the whole notion of economic growth is flawed. You would either have to redefine it radically or instead of talking about economic growth talk about sustainability and use particular measures as meaning. But this whole idea of economic growth or increasing GDP or increasing profits if you are looking at a company scale I just think that is one of the reasons we

are in our current situation that's a problematic way of measuring progress, it's a goal that we shouldn't have.

Interviewer: Okay thanks.

Science and technology

Interview seven

DW

Interviewer: Okay so now we have the science and technology statements layed out. So that's the viewpoint so I guess one of things that I'm interested in is what peoples views are broadly about science and technology. Then I guess secondly how that impacts in terms of promoting sustainable development. Whether you think that science and technology has a role in that or whether it hasn't or what that role would be. So broadly if you could just give me some thoughts and feelings about those sorts of issues.

The role of science and technology in sustainability. I guess science being important for us to understand the state of the environment. To provide some sort of objective measure of where things are at. Sort of stocktaking and measuring, going backward and forwards and picking up sustainability indicators.

Also some solutions will be technical. I tend to think that it is not a matter of science and technology saving the day. I think it is more a matter of how we organise ourselves and the values that we hold. I think it's a cultural basis of the problem not, there is no technical fix which will transform us into a sustainable society. That's not going to happen. It will be the goals that we hold and what we see to be important and therefore how we do things that's going to make that transition possible. Science and technology will help of course. The card number four at minus five – "knowledge of technology makes us above all other species that we don't need to be concerned about ecological constraints" - I disagree with that sort of notion. Sustainability, it almost questions the concept in that case it has no meaning if you thought

that we were these dominant species that ruled the planet. Science and technology is a problematic role because it's been very much the agent of change and this whole notion of economic progress is bound up in knowledge called innovation. Often adopting technology just because it is new or possible or because it has commercial value without regard to environmental consequences. If we thought more critically about the consequences of things we might manage technology and we would have different priorities. Instead of putting money into creating – manipulating seeds, multinationals that provides seed also provides plant stock also provides the fertilisers and herbicide from everything that goes with it. They provide a package deal that might benefit them but it's questionable if there is much environmental good out of that. It would be better to invest scientific resources and finding means of production, which less rely on resources. That you didn't need as many herbicides that you had in the crop management. But the ecological approach to managing production instead of a multinational, energy intensive pest warfare type approach. That example is effective. There is a problem where scientific research is directed and where the money goes. Things that are in the public interest often get less than the things that are in the commercial interest.

Interviewer: What you have said there that is card number 13 here which you have towards the middle of the array so it is "emerging technology offers the promise of higher productivity and increased efficiency and decrease pollution is essential to sustainable development". I guess if that statement were true and I don't know if you believe that it is but if you do believe that emerging technologies do offer those things then would it also follow that, that is essential for the sustainable development?

I guess I think that we could do things better and that there is innovation which has come out of scientific research which would be beneficial but the way that the card reads it is almost as if innovation is critical to us becoming sustainable. I think "yes that it will help" but I don't think it is critical because through a lot of wisdom in our past that we can draw on. People used to get by using pure resources, people used to reuse and recycle a lot more than we do now. But there are cultures that some people would describe as backward

but they're sort of using animal waste or human waste in productive ways instead of being something that we output to the environment, which becomes pollution. So that is looking at other was of using resources, using resources less. I think that there is a lot in our past that traditional societies that have other ways of doing things. Things we already know when it comes back to our value system and organisation I think rather than needing some new technology to do it. There is existing technology which is more appropriate than high tech things that industry and government are chasing after.

Scale of problems

Interview seven

DW

Interviewer: This is a card that I have been asking virtually everybody a question about – in terms of the environmental crisis, I guess that I am trying to get a sense for what people actually think the scale of problems are that we face. Also what kind of problems people are actually thinking about when they use the term environmental crisis. What are the actual issues that we face?

Basically are people getting a scientifically reliable picture? Because some industries will say things aren't as bad. Whereas people make out that they are and then they will use scientific evidence to back that up or by the same token environment groups, people lobbying to protect the place or a species or arguing against a particular project will use scientific evidence to support their case. So yes I think science provides us with facts but science is also value laden, as when how is the science being done, by whom is it being done? Then of course it is just an interpretation. Okay you have these numbers or what do they mean. How important are they, what thing do you draw from it and that depends on your values.

Environmental crisis, I guess major issues would be things like global warming. So I don't think that there is any doubt. Concentrations of greenhouse gasses in the atmosphere are increasing. It is a matter of

whether you think that matters or not. To some people it does to some it doesn't. I think based on what we know it does matter, we think that it will lead to changes in climate at a rate that will impact the ecosystem and impact on ourselves so yep that's a problem.

Biodiversity I don't think there is much doubt that we are in phase of species depletion and that we are loosing habitat and that can't be a good thing. There is resource consumption but that sort of comes back to energy use so greenhouse and impacts on landscapes where things have been dug up from, carted through or disposed of to become pollution. But obviously there is a whole mix of environmental issues that are of concern. But it sort of comes back to the way in which we use resources. Whether that's land in it's own right that we use, whether it's water, it's fisheries. The problems sort of stem from the way in which we use resources. It's how we manage them, the quantities that we use, and the uses to which we are putting them. How they are distributed between people. Number 14 at minus three – I am not sure if the consumption of resources is steady or declined I would have thought that the material that we use in our economy has actually increased. Just looking at motor vehicles for example the fuel efficiency in motor vehicles has been pretty steady for several decades there has been no major advance to make vehicles much more energy efficient. I t has been pretty marginal the level of change. The number of vehicles has increased, the level of vehicle uses has increased, we are using more fuel and more in the way of energy resources. But maybe there are things that we can achieve through a technological change that we use less. Energy efficient light bulbs or things like that for example.

Interviewer: Okay lets set up the next lot.

Problem issues

Interview seven

DW

Interviewer: So if I can just ask you what you think in terms of what problems sustainable development is trying to overcome what problems is it facing in it's implementation and those sorts of issues.

Key problem is the amount of resources consumption. The value we place on resources including land. An example of that is urban growth of land which is used for future development. It is not seen to have value as a green field site. They seem to be not having any constraints, that is starting to change of course. Maintaining biodiversity as bushland but that's becoming a problem for developers. But we haven't fundamentally changed development patterns of Perth. In terms of sustainability, through other ways to grow that wouldn't threaten bushland for example we don't have to continue growing outwards. But we haven't made that change.

Interviewer: So what alternative were you thinking about there?

Making more intensive use of existing urban land, high-density development and encouraging development on already cleared land. Promoting regional development. We have several towns that are experiencing depopulation, businesses are closing, population has dwindled. It has sort of a spiralled effecting on many rural towns. So to try and reverse that I think living in a country town I think some people would appreciate there aren't jobs and if medical facilities aren't available then people aren't going to go there. So attacking some of those problems would be a better way to manage growth instead of simply clearing several hectares of bushland and more low-density car based development on the fringes of the city.

The card that "Nature has an unlimited capacity to absorb waste and provide resources". I guess that has been the view that we felt collectively for some time and it is partly why we are in the state that we are. That maybe when population was very small you might be able to argue that or I would have put that you would even have localised problems with pollution and accessing resources. Certainly in the current day and age knowing that nature can't absorb all the waste that we put out hence problems of global warming because of the amount of greenhouse gasses that we are putting out. Local and regional air pollution because of pollution going into the air.

Contamination of ground water impacts on coastal water quality. In terms of resources would be the depletion of fish stocks. Wood as well. There are competing interests as to how forests should be used. Whether they are simply for timber resource or if they are more than that. It's a statement which is contestable even scientifically, the idea that nature has a lot of capacity to absorb waste doesn't stand up and some scientists that I have spoken to have noted the assimilative capacity which is the idea that the environments and whether they would say that's a coastal water. So Perth's coastal water they could take waste up to a certain point, I still see that idea as being a problematic one because it accepts our coastal waters as a receptacle for our waste and arguably we should aim for no pollution. That waste in that case, I know of limited capacity being raised with wastewater. Well we could use that waste water say for irrigating horticultural areas or irrigating grassed open spaces or we could shift from say large capital intensive centralised waste facilities to more localised waste treatment systems so you make better use of that resource at a local level. Or you do away with water because what's water doing except carrying waste. You can have composting toilets or vacuum systems as well. But the idea that you can keep on putting waste into the environment without impact is flawed.

Interviewer: It is interesting to see that even here that although the two factors are distinctly different that the statements that we are looking at, five, nine and seven are also fairly. I mean they are not as extremely rejected as the first factor but they are all statements that not anybody agrees with really.

Card number seven of mine at minus four, "Sustainability has been carried to far", well I wouldn't have thought that we have really seen a lot change. It is a term that has come up and I guess it is something that decision-makers need to contend with increasingly. But that it has been carried too far - we have only just got started. We keeping talking about the economic growth and that sort of thing – for a very long period of time has been the goal it has been the currency of political debate. Of what we read in the newspapers and what we see on TV and hear on radio, people obviously get tired of that. It has been carried to far, some of us argue that but that statement almost seems to be something that I expect to hear from a minister or a senior bureaucrat who is

sort of fed up of hearing about it. Number nine at minus four – "Humans and humans alone have rights" - there are a few other cards earlier on which are the similar sort of thing. Utilitarian view and from the anthropocentric view that we are all that matters. I disagree with that. I think that we share the space with other species and we should have regard for them as well. In fact that is almost in our self-interest. There might be a species that you might not get value from in that it won't give us food or fibre but it is part of the web of life that sort of keeps us going. I think that is almost utilitarian. And that "Multinational corporations are the gravest threat to environmentally sustainable society" - that is thirty-nine at minus two. Multinationals, sustainability is an opportunity for them to be doing good things and fostering change. By the same token they could be working against it with the power that they have and the political influence can be seen to undermine grassroots and community action. It is a little bit ambivalent but I think their record has been that they are more likely to be a barrier to sustainability rather than all for it.

Interviewer: How about some of these let me ask about some of these. The ones in the middle.

Number nine – "All species of systems nature deserve respect regardless of their utility for us". "Environmental practises for current generations are harming the interests of future generations" - that is twenty-five at five. I think that is why we have the current debate. You have global warming which potentially means that species will disappear. Land which is now productive for agriculture might not be, all that the radical disruption to settlements or to industry then that is obviously going to impact to our kids and their kids. And that if species are disappearing because of us then that limits the options for future generations. If vast areas of habitat are destroyed for farmland or housing well that is irreversible. Obviously it limits what is available to the people that will follow us.

Local Government

Interview seven

DW

Interviewer: Can I maybe go on and ask you know about the local government issues, which I am particularly interested in. Like your view about Local Agenda 21. What you think is going on. I guess the first question is that as you know there aren't many council's that have adopted Local Agenda 21. Actually can I maybe ask you first why do you think that is the case?

The public level of awareness would be people don't know of it or even more important is that mangers don't see it as being important. When I read the strategic plans put out by some councils the sort of concepts and images that are the priorities that are reflected by the economic growth. It is almost sort of treating the council as a business that they are about the provision of services and fostering of growth in the areas that they manage.

Interviewer: So like all people are for more council revenue - that sort of thing?

That is what they are working towards. If there is any mention of the environment at all then it's sort of secondary to the other subjects. I think that it is understanding too. One of the professions represented in local government are their engineers or their planners and for some of them the environment is sort of a bit of a marginal issue which I think that you have little regard for. It's a constraint and you sort of work around it and take on certain conditions on a project and take an account of it in a fairly marginal sort of way.

Instead of seeing sustainability as being the goal it's more a side issue that we need to make sure that it's considered. Say the developments okay and we'll set aside a little bit of bushland. So they are not sort of taking it on board.

Interviewer: So it sounds like you are saying that there is a bit of a cultural issue there of who actually works in councils.

And even as far as elected members go I think a lot of them – it's probably a thing that they don't sort of have a lot of awareness of or haven't thought of it much. I mean what dialogue is there in the general community about sustainability? Not a lot. It is not really a concept that regularly comes into the media and people aren't exposed to it a lot. It is obviously talked about more now than say 20 years ago. Environmental issues are of concern too - more people now than in the past. Although there is obviously ebbs and flows if you did opinion polls and ...But I guess it isn't a cultural dimension elected members and bureaucrats but it doesn't have priority so it doesn't get done.

Interviewer: In your experience of local government – councils, council staff and council rules in the councils that actually have Local Agenda 21. Or even just your experience with your own council what do you think has been crucial in getting those councils, the few councils to actually endorse that and get it on the table and start to make it happen?

Because I am sort of thinking where it is happening, I mean say Fremantle, I am not sure if they actually have a Local Agenda 21 but they are doing things that are consistent with the notion of Local Agenda 21 and I see them as a more progressive council and I think that it reflects the community better. If they have a fairly diverse community - probably increasingly affluent people are choosing to go to Fremantle because the lifestyle is good it is a good place to live. It is also the heritage there the fact that you sort of have an urban system that which is arguably more sustainable in density and street layout and things like that compared to an outer suburb area which has been designed in a way that is wasteful of energy that has little regard for bushland. Even if they have the opportunity to keep bushland they are tending not to take advantage of that where as Fremantle they are actually going to some effort to manage the little bushland that they have. So that the councils which I think are more progressive in their thinking which might reflect.

Interviewer: Do you mean the councillors?

I would say both probably a reflection of the community but that leads onto councillors and staff. The other thing that I think is champions or key opinion leaders. I think that it would be interesting to look at each council that is

working Local Agenda 21, where did they come from? Why did they start? Probably trace that to particular individuals that hold the environment to be important and whether that is from a personal involvement in local activity or having gone to a conference or something and being exposed to these ideas and seeing how they apply locally.

Interviewer: So when you say "champion" do you think there has to be a key person that is basically got some knowledge about LA21 and agreement with knowledge of LA21?

Probably to get it started - of course if all of that is held from one person then of course that person leads on and they don't stand or aren't re-elected to council that goes somewhere else and that is lost so that needs to expand and become a shared value.

Interviewer: What is your feeling there about where we are at. I guess we have been trying LA 21 for four or five years now in nine or ten councils. Do you feel that it's become a part of the culture or that it is still at that sort of embryonic stage where you just have a few people pushing it and keeping it on the agenda?

It seems to be at a fairly early stage. One of the problems with Local Agenda 21 is "what does it mean"? It is hard for people to understand what it is about. I know with water issues over at the old Wanneroo, we worked on a local conservation strategy although we never ended up with a strategy. We tended to talk about these high level principals and the turnover on the committee was quite high because people could understand and more tangible things on the ground things they want to see action happen. I believe we would have used our energy and time much better if we focused on recommending action on particular issues. Say energy use, well this is what we can do to promote sustainability by addressing energy use. We could have come up easily with some practical actions. Whether it's in the council vehicle fleet or energy use of council buildings how many suburbs are planned, energy use in homes, so issues of insulation that should be reflected in the guidelines or develop a requirement which the council opposes when someone comes and says I want to put up this building. There are a whole

range of things that could be done. Sure, you would need some training and awareness raising for that to be taken up. But had we spent more time dealing with nuts and bolts instead of vague ideas and principals then we would have got somewhere.

Interviewer: So this was for a conservation strategy not a Local Agenda 21 strategy?

Well it sort of flowed on to Local Agenda 21 and we spoke about Local Agenda 21 and the council ended up engaging consultants that are studying and that came back but that was, the results that came out of that were fairly much at the level of principals and I think it talked a little bit about the operation of council operations. But it didn't go far I don't think. Neither Joondalup nor Wanneroo who have done much with it because of lack of understanding and lack of commitment. If people don't understand it, if they don't think that it is important then it doesn't happen. The fact that they are from one council which you ended up with two new local governments when there was an opportunity to put in place all these things, reorganise bureaucracy. Incorporate these ideas into there strategic planning and it didn't happen. Joondalup has recently engaged a LA 21 officer so quite what they will do I am not sure. It is hard to see that they identify this as a major thing that they are going to work towards. It is not reflected in the decisions that they are making about particular issues or in their corporate plans.

Interviewer: The last question that I will ask you is quite a specific question. What would you see that the Department of Environmental Protection could actually do to bolster the promotion of LA 21 in local government?

Thinking back to Victoria, the state government understood, I think they may have worked with what is now Environment Australia which used to be the Local Conservation Association of Victoria. So there was some training and putting together of resources materials and they also provided money like seed money to councils. I think there may have only been four or five councils to take on a conservation officer. Which meant the councils took on a person the state government was paying their wage for and they would have required a council contribution. They had a person on staff that had to

develop a strategy and help implement it and I think that most of the councils have continued on that once this start has been made because you have this person there. There has to be some sort of dialogue that local staff and councils hopefully they would run some sort of committee and awareness raising and consultation process to this plan and that in implementing this plan that you try and involve all parts of council and community in doing that. So you had a person that could make that change and things start to happen by providing that seed money and having those resources there. Whether it's a booklet or case studies or something written for councillors that is concise but understandable this is what Local Agenda 21 means. But it requires a tangible thing, but maybe a resource booklet, maybe seed money so that you had LA 21 officers in local government. Limited number like demonstration projects and go from there. Another idea to start things off would be to have a round table and bring together some of these people that have been interviewed people from state, local government, NGOs - bring them together and talk and come up with something from that. Something like requiring local and state environment reporting would be a good idea to.

Interviewer: Because some of the local governments are doing that now – State of the Environmental Reporting.

For example I think under the heritage act, local governments have to have a register for heritage and they were required to within a certain period of time I think it was in five years to put that register together. Now if you required local councils to do a local environmental report then I think you would need to promote some guidance on what that would have to involve then some would probably do it willingly, some would be reluctant some would say they couldn't afford it with their resourcing but what it would mean is that you would then have this information base to inform action.

Interviewer: Provide priorities?

You hope that could be a stimulus to LA 21. It would certainly be a great support to have that and use that to pick out what the key issues are in that local area and to figure out what to do. For some councils it would probably be better to work together - say western suburbs because they are relatively

small and maybe because of value and there is a benefit for all organisations of councils if you could use it to do that. I guess the other thing is I am thinking is how do you get to key elected members or to key people in the bureaucracy. The CEO and the council and the director of planning and the director of Tech services and maybe if these things are coming up in the journals that they read or in the conferences that they attend or hold a breakfast and there is a guest speaker and you sort of laugh at that sort of thing but they want to go to them to get exposed to the ideas and then there is dialogue about them and hopefully that will support those other things too, so that would be good to see. But if all the discussion and talking that they are exposed to is about managing the budget or promoting local economic growth...

Interviewer: Then they are never getting out of their comfort zone are they?

So you need to introduce this idea into their thinking.

Stumbling Block interviews

Implementation

Interview eight

MEDEP

Interviewer: Okay what I would like to do is talk about these implementation of sustainable development cards. As you can see most of these cards you seem to disagree with. You have only got 3 cards that you indicate that you agree with and the other fourteen cards you have indicated that you disagree with but they are pretty much in the middle. So can you just talk about these ones? What do they tell you?

These cards I guess they are implementation cards and to be honest with you when I sorted them, these cards are the ones that I feel least bothered about. As you can see most of them are in the middle around about the zero point. I don't feel particularly strongly about any of them really. I guess my main point I would make is I certainly agree with the idea expressed by the card that it is really up to the people that have some knowledge about it. We need people with some expert knowledge making decisions. But who implements sustainable development itself, I guess my view is that we need a top down approach involving governments. Good scientific advice being given to government, and then the politicians making rational decisions. Probably the commonwealth government need to become involved in implementing sustainable development. But you need to have people that know about it and have knowledge about it. I wouldn't say that particularly a person in the community has the knowledge that they need to be able to do it. I think definitely the order for me would be the commonwealth government giving money, providing resources. The state government also having money and resources to implement sustainability development. At the same time I guess one of the problems is that we can clearly see that because it is such a sort of malleable context that it just means that anything to anybody really. It needs everybody to be involved state government, local government non government groups and people in their own homes in that kind of order. So a

top down approach really. I wouldn't say that it should be core business for local government particularly. I don't feel to strongly about that myself. I definitely don't think that sustainable development has the force of political commitment within government at this time. I think because it is a malleable concept it is stupid really. People like to talk about it because its nice but if they really have a clear view as to what it is I am not sure. The issue about religion card number 49 again I am not really favourably inclined to religion anyway so I don't really see that religion has a role to play. In particularly strategic decision making. So those are my feelings really about this issue and about the implementation as you can see my main feeling is that it is not a priority for me.

Objectives

Interview eight

ME

Interviewer: These nine cards are about objectives about sustainable development and what it is trying to achieve. Why have you arranged them like this?

Now I guess for me personally I think that all strategic policies that impact people on the planet need to have a people focus. People are the most important things in my life and I very much count myself as being a humanist. And I am sure that in any vision of sustainable development that I hold then the principal really for doing it is to maximise human welfare. That involves for me having good health, good education, high incomes, good access to multiple resources, clean water and clean air. Anything – any condition that humans would find less than our Western lifestyle - I do think it is intolerable. And it is really up to sustainable development then if it can maximise human welfare then that's what it needs to be doing.

Interviewer: Are you saying that sustainable development is "people first, environment second"?

I guess my range as you can see here goes right from the most plus end or plus three right through to minus five. Most of the cards are around about the positive end for me. In fact of them seven out of nine actually make it into the positive array. So I agree with most of them. The ones that I disagree with, clearly I disagree with – the idea that we're endangering the Planet. I disagree that we must not clear any more land. Also I disagree with sustainable development requires changes in lifestyle. Other than improving people's lifestyles by providing a higher standard of living for more people – poor people in the third world. So I don't agree that we need to reduce to reuse or any of those sorts of things. I believe fundamentally that we have plenty of resources. The issue is how we manage those resources to make if you like 'the world a cleaner place for people to live in'.

For me it is intolerable for people to live in highly polluted environments if it has bad outcomes on their health and welfare. So in that sense I do believe that there is a common interest between looking after the environment and looking after people. Does that answer your question?

But the priority has to be promoting policies that firstly look at the people. Like if we are going to have clean air, we need to have clean air not because it's nice for animals but because it's good for people. So that's my view of implementing sustainable development and the objectives. And I do very much believe that if we are going to have good environment protection that the environment protection is useful only to the extent that people's welfare is served by that protection. We shouldn't be doing it just because it's good for nature in some sort of weird kind of subjective way.

Interviewer: What is your time frame for implementing sustainable development?

I guess sustainable development is a long term process and that would be a question people should think about. How long is that process? My view is probably it is a very long-term process. We don't have any immediate problems on the horizon and really I think we do live in a sustainable world as now. I think we always have done really. Obviously the world changes but most of the time humanity has changed for the better and I think that will

continue in the future. But I think the kind of processes we are talking about are at least in the order of hundreds of thousands of years that we have got for even moderately serious problems. In terms of things like global warming or whatever. People talk about if it is really real. As a problem I am not sure. So that's my view of the objectives of sustainable development in a summary I would say it is definitely about promoting human wealth and wellbeing those sorts of issues.

Role of science and technology

Interview eight

ME

Interviewer: Moving onto the next issue is what role do we have for science and technology in implementing or promoting sustainable development?

This is an issue that is really interesting to me personally and you can see that my array goes from plus five right at the most positive end right through to minus five so I have the full range. However only two of the nine cards that relate to the roles of science and technology in promoting sustainable development only two of those cards are at the negative end. So again most of those cards I agree with in the same way as the objectives I earlier on agreed with.

This for me is the core issue.

Interviewer: In what way?

What I would suggest is that I don't agree with any notions that suggest the world has limits to what humans can achieve. I don't think there is any basis, the traditional view for sustainable development of one where limit is essential. Why would you want to promote sustainable development if there weren't limits?

So I am not sure if I agree with the whole concept anyway – the concept as seen from an "environmentalist" viewpoint. The idea that we are going to run

out of resources or that we are going to pollute the planet and die or any of those populations coming out exceeding the carrying capacity of the planet. All those sorts of things I won't have a bar of that. The reason for that is that humans themselves have the ability to solve all of our problems whether they be social, economic, environmental all those type of problems.

I think if you look at the historical trend what you will see quite clearly, if you go over the historical pattern of development, over any period. If you look at 200 years since the industry revolution, 2000 years since ancient roman society, 200,000 years since humans started to appear on the planet. Then what you will see is an upward sweep of progress. People now live longer than they used to, the technology that we utilise today in most ways have less negative consequences than technology did in the past. We have better management of our resources today.

Not that I am saying that our resources are going to run out anyway. But the way we management them, the way we control pollution – all for the better. My idea is that what sustainable development is really. It needs to be that third world countries - very poor nations, the best way that they can achieve sustainable development or a better future is to become like we are in western countries. High levels of technology, high levels of science. Use their resources in very, very high quality ways of doing so. We really need to use our science and technology to help them join the global market.

Interviewer: So what do you see as a role for multinationals?

Like the last statements here that I really believe in quite firmly. Things like economic growth is required to overcome problems, it is only when you get to certain level of growth that the economy has enough money that you can actually have experts to manage the ecology. Which I think that people don't take notice of. The technologies that are coming around like the internet, Bio-engineering, genetic engineering – really do offer us the promise of increasing productivity, increasing efficiency by which we produce things, increasing equality by which we distribute those things to people because obviously we must create the resources to go around. Also decreasing the impact that previous community techniques had on the world.

Interviewer: What do you mean by that comment?

I don't believe that – as I have indicated down here in my minus five card, that the environmental crisis is a real problem. I don't actually think there is such a thing as environmental crisis. In actual fact I think that some environmental problems are not problems at all. And I also quite strongly doubt that science and technology has a negative impact on the environment. Actually, the opposite is true. I think that it has quite a positive impact on the environment. So that is my view on science and technology.

Interviewer: But what about multinationals – what is their role.

I think a positive one. The big companies are putting their money and resources into development of new ways of working, new techniques. Look at steel making, the steel plants – furnaces are much less polluting. Agriculture using less toxic pesticides than before, and targeted better with genetic modification of the crops. All leading to lower impacts. Oil companies reducing flaring of gases. All these thinks save the environment and make more money. So companies have an incentive to get smarter.

Scope of problems

Interview eight

ME

Interviewer: Moving onto the last area which is about problems or I guess issues to do with why we want to implement sustainable development, what problems we are trying to overcome or what is the solutions to those problems. What is your view about these issues?

I guess this is the most cynical of all my view points. I guess, in summary I think we don't have any major global environmental problems as such. We could clean up. We have economic problems and we have distribution problems and we have equality problems but we don't have global environmental problems. I don't think that we have global environmental

problems and again the problem we do have are the global requirements of equality and equity and distribution and we have people in the west who are incredibly rich and we have third world who are incredibly poor.

In my view sustainability is one in which those people in those third world countries become as rich and as affluent as we are in the first world countries. And that all people throughout the world have equal benefits from the way that we manage to make things really – to produce. When we could have the capacity to solve all those social problems that those people face. I also think that people in third world where they do have severely degraded environments they do so precisely because they're so poor. And the worst part is, they're kept poor precisely because of a lack of transfer of our knowledge and our scientific methods.

Interviewer: Can you summarise that view?

So I guess to summarise the cards – I do think that our planet has an unlimited capacity to provide resources to us. I don't think that there are any resource limits in any meaningful ways. I do believe that if even we were polluting the planet to some extreme levels which is what is promoted by the green people then the world can assimilate those pollution's on a global level.

Although I do believe clearly that we have local environmental problems that require good management. So cities like Mexico City, those problems require managing. Or like the great lake where you have water pollution problems. In western Australia where you have salinity, again those things are local problems and they require local original solutions.

But I don't believe collectively that we face this thing called a "global problem". The things that I have at the positive end, I do firmly believe that cities are the way of the future. I do believe that there are ecological benefits for people to live in urban areas. Cities are far more resource efficient – transport, crating new ideas, that kind of thing. Moving onto the other end of the scale, I don't think that economic development has gone to high in Western Australia. I think we could do a lot more, we have an enormous amount of land. I think we could do with a lot more people here to develop our land. I definitely don't

believe that we as a society in Australia or in the planet are living beyond our means. I definitely don't think that this idea that our modern society is worse than before and that people would be better living in a simple rural community is complete nonsense.

Interviewer: What is the reason for your belief?

I mean in actual fact again if you look at historical trends people live longer they are healthier, they are more educated they have their health care they have access to more resources they can keep their homes they can wash up and cook. Those are all things that through the application of knowledge. So as far as I'm concerned the problems we face are pretty much under control.

Interviewer: You mean that the future is bright?

There is no reason I can see to actually stop the processes that have been bought in. I think we are pretty much self sustaining. Our economy sustains itself. We have plenty of resources we need to have. I guess sustainable development is one issue into that about equalising distribution but that to me is about making the third world richer. Rather than making the first world poorer like the third world. That is it really it, those are my views.

Interviewer: There is a lot there, can you summarise your view of sustainable development?

In terms of what sustainable development is itself, I can't say that I feel really strongly inclined with the whole concept. Then again I think it is rather a meaningless kind of idea in some way. I can completely see how it has come about because if you held the view around limits in nature, then clearly you need to do something to overcome those limits and partly that would be sustainable development. As I said earlier I don't actually believe that there are limits and if there are no limits why do you need to have sustainable development? Living within the constraints of those limits is meaningless if they don't actually exist. That is my real sense of the issue.

Reasons for Adoption of LA21

Interview eight

ME

Interviewer: Can you tell me why you think that not many Councils have adopted LA21?

I think to start with, a lot would argue that they're all ready doing "sustainable development". You know, a lot now have environmental plans, environmental positions, some policies. Some have "Cities for Climate Protection". That kind of thing.

I also think a lot of people probably think it's a load of rubbish. It's not particularly well packaged. I mean, would you buy a product called "LA21"? It tells you nothing about the product. I think a title like "Caring for Cottesloe" – now that means something to someone, but LA21. It's not an easy sell. So knowledge is a factor in the low take up.

It certainly hasn't seen the light of day in the DEP. People talk about sustainable development, but there is no resourcing coming from the state government to help local government. I'm also not sure that local government is the place for it to happen. LA21 in the local community – it's only ever going to achieve a limited amount and that's probably why people don't get enthusiastic. That's probably why no serious state funds have come down to promote LA21. There's also bigger issues with a clearer "problem focus". The regional forest agreement. Salinity. That kind of thing seems to get the money and political support form both commonwealth and state.

There certainly are some people who are enthusiastic though. I can think of a few case study examples where one or two individuals have put LA21 on the local council agenda. Nedlands would be one. Jarrahdale and Mandurah. I'd say that the LA21 is not part of the "system" though. If and when people move on it will go with them. That's my feeling at the moment.

Implementation

Interview nine

ERCOM

Interviewer: I'd like to talk about the implementation of sustainable development. So, can you talk about the issue of implementing sustainable development? What do you think?

Well what I've done here is lay the cards to represent my view. First up, and top priority is the need for business to be involved – card number 8 is exactly right – that exactly what I'd say *"Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development".* I think that because to me, they are already sustainable. I can think of so many businesses that are doing good things – Alcoa reforesting the mine sites in the Darling Range. Woodside doing good stuff with its wind farms and tree farms near Esperance. I just think that we know so much more about production today. No one wants to live in a messed up environment so the big companies are cleaning up their acts. It's the little ones that are more of a problem. They can't afford to pay. And ones in the third World. Look at China or Russia. Because they don't have the capital to invest they've got old, outdated polluting technology. In Australia, we generate more wealth and can afford to pay to protect our environment.

I also think that decisions should be left to experts. Again, big companies can pay for good research – the latest research. The Commonwealth also has a role there – you know CSIRO, the DEP etc. I can't believe some of the rubbish that is spouted about these days. You know, petrol will run out, water will run out, air quality getting worse. All the facts point the other way. There's more cars today because fuel is so cheap – because there is so much of it. It will be worthless soon as the scientists get fuel cell technology sorted out.

Interviewer: You mentioned the Commonwealth there?

I think the Government does have a role. You know, paying for researching, regulating the offenders in business, and there are some like that. We need to weed them out so only good companies with good values of environmental protection remain. That's a role for government – enforcing the laws that protect us form rogues and pirates.

Interviewer: Pirates?

You know, cheap operators who cut corners, cut costs, pollute the environment and move on. The government can regulate that area quite strongly.

Interviewer: I notice you've also got card number 18 – "The role of NGOs is most critical to the success of sustainable development" at the positive end of your array. How does that fit with your views?

Well, it seems a bit of a contradiction. I guess I see it like this – although many of those green groups are dead wrong on a lot of issues, like the greenhouse stuff for example, and particular running out of resources – they're important for lobbying so that government keeps it's eye on the environment. I do think that some companies would bend the rules if they weren't being looked over. Not the big ones, not now, but medium sized and ones coming into Australia that don't have our culture. I think the old "rip it up, ship it out" kind of attitude is gone in Australia. But overseas those NGO groups do a good job as a barometer – keeping an eye out. Like Shell, maybe in Nigeria – not a good record, but a very corrupt government there as well. So that's that.

Interviewer. Any thing else, what about this end [points to negative end of array]?

Oh, no big deal. I'm not religious and see them lot as being part of our problems. Family planning wise and just generally backward looking. I also don't think we need a radical change in values – not environmental values anyway. Perhaps more of a socialist value – sharing the benefits of the big companies. I mean we're just so rich now that it's inexcusable for there to be poor people. Coming back to the big companies, they really should be doing

more to help the Africans. The genetic food issue and better farming practices for the third world. It should be done to make the world a better place. The others are just in the middle. I don't really care one way or the other. You know, women and children involved, well yeah OK, involving the public, again, sounds OK but not a big deal.

Objectives

Interview nine

ER

Interviewer: These cards are about objectives about sustainable development and what it is trying to do. What do they tell you – what are you saying here?

This one sums it up really nicely – "The maximisation of human welfare is the main objective" – card one in the very first place. Everything about environmental protection should be about looking after people. There is just so many problems that we face that people should come first. It annoys me, to be honest, you see those Koala bear suits collecting money to save this or save that, whales, koalas whatever. It annoys me that young people like that are wasting their energy when they could be helping people. Poor kids in the city. Refugees. People in Africa who could really do with a hand. So that's it for me. We need to make the world a better place for people as a priority, then look after the animals. This one – number 29 – that's also a priority.

Interviewer: Number 29 says, *"The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations"*. Why do you say it's a priority?

Well because it's firstly important to have a better distribution of wealth. In the world today there is no valid reason for anyone anywhere to be poor. Even in India, Pakistan, they could have a lifestyle like you and me no problem. Also, it's important that we pass on a richer world than the one left to us – and we will so long as we don't go backwards. I believe that we're better off because of the advances made by our forebears. And I believe that advances

happening today should be passed forward. Take genetic engineering – that could be the biggest breakthrough ever known – feed the world, fight disease, the whole lot. But it's in danger from the backward looking green lobby. Imagine if they'd said stop the industrial revolution, it's going to pollute the environment. We'd still be living in garrets with candles and tallow, bad teeth, poor food and no transport. Progress has been tremendous and we need to pass it on to the next generation. Well that's my view anyway.

Interviewer: Have you got a timeframe for a sustainable future?

Look you're probably getting the impression that I don't want a sustainable world. I know myself that my view is probably different to other people you've interviewed. But I do believe in sustainable development. It's just about sustaining development involving a continuously growing, better-educated world.

Interviewer: When you say "continuously growing" – do you mean people?

No, not population, not numbers, I mean richer people, more affluent, better quality of life, probably less people I expect. Sustainable development is about creating a fairer share for everyone. A better world. It's not just about environmental protection. That will come from making the world more affluent.

Interviewer: How so?

Simply because rich people get to travel and they come to value the environment more. They can also afford the time and resources, energy needed to protect it. Look at the backpacking scene – people being able to routinely travel the planet – and make complaints about bad things happening. We know so much more nowadays.

One last point, I totally reject that number 32, and the number 31. I know that's the standard rhetoric "primacy to the environment", "biodiversity in danger" blah blah blah. I've talked to people that believe that stuff. We should never give priority to environment over people. There's not even a

need in Australia. Just fly over it – it's so damn big we could fit 100 million of us if we could get the water!

Role of science and technology

Interview nine

ER

Interviewer: Ok, if I can move on to the next issue of science and technology in implementing or promoting sustainable development. What role do you see?

Well, looking at the layout, they're opposites really. Card number 3 – "Instead of contributing to problems, industry solves them" and at the other end – card 33 – "The application of science is the major driving force behind negative impacts".

Interviewer: Just for the tape – statement 3 is at the positive end and 33 at the negative.

Yeah, yeah that's right.

Interviewer: So what's going on there?

Well, as I've said earlier. We're more sustainable now that before because we use science and technology to solve our problems. Again, genetic engineering is one where we can overcome food shortages – potential famines by always having enough food. Science is the answer, but many people see it as the problem. It's the other way round.

Interviewer: Can you tell me about card number 4 – "The exceptional characteristics of Homo sapiens, particularly our knowledge and technology exempt us from the ecological limits that constrain other species". Why did you put that at plus 5 position?

Again, there is just so much evidence that as the world as progressed we've made it better. Think about Christopher Columbus setting off in those little

ships. Captain Cook sailing to Australia. Now you fly in a Jumbo in one day what took three years. And have gin and tonic with smoked salmon for lunch! I just think that we can overcome problems we face by using our brains. I don't see why that should suddenly stop. If it did, if people get stupid, that's when I'll really get worried.

Scope of problems

Interview nine

ER

Interviewer: In the area about problems that sustainable development is trying to overcome – what it faces - What is your view about these issues?

This one was difficult. I don't actually think we have many problems as set out in these terms. These seem to be more about environmental problems. I think – and I've indicated here that "there is a record of enormous environmental progress and much to be optimistic about". That's so true. But most of these, I don't agree with. Number 36, 37, they're dead wrong.

Interviewer: Number 37 says "Economic, industrial and urban development has gone too far in WA" and 36 – the least favoured card says "The whole ten thousand year history of civilisation has been one of decline and degeneration from an earlier simpler lifestyle of humankind".

Yeah, they're both utter rubbish! We need more development not less in WA. And we certainly had a simpler life – it was certainly shorter anyway. Look at us now, living longer than ever before because we've got good food, basic hygiene, health care and a cleaner environment. All that "back to nature" stuff is actually dangerous. That's how Pol Pot started – get the city dwellers back in the fields and look what happened in Cambodia. It's a dangerous and backward view. Again, that's my opinion.

Reasons for Adoption of LA21

Interview nine

ER

Interviewer: I'm not sure if you know, but can you tell me why you think that not many Councils have adopted sustainable development? Do you know about LA21?

I'm not sure. I don't know about this LA21 is it?

Interviewer: Yes, I'll explain off tape. Tape stopped to explain about LA21. Tape starts. So any information about sustainable development?

Well, to me the whole thing is muddled. I can understand how some councillor would get confused. There are cards in here about it being, what was the word? "Malleable". Well that's it exactly. I know I've got one view about it and I know others that have a different view – many of my friends. So how can a councillor expect to make a decision – it's not cut and dried. Look at the controversy over "greenhouse". Some saying it will happen and others that it won't. Other than that, I don't know. Does that help?

Interviewer: Yes, thank you.

It's probably resources as well. You know? Lack of resources. Shires don't seem very cashed up over here, and probably conservative values. I'm guessing because I don't know, but councillors are often in it for themselves. They buy a block and want rezoning so they get elected for that kind of thing. Or else to stop something that bothers them – you know a prison next door or what have you. Don't quote me on that. I'm sure many are also quite sincere and want to do good things for the community. I know one or two who is like that – very committed to the community kind of thing.

Implementation

Interview ten

LC

Interviewer: I would just like you to explain an overview of your card arrangement of who and why you think should implement sustainable development.

Okay my general feelings are that the individuals can't do anything and that small community groups can't do anything that is actually going to have an effect. So therefore larger organisations and the state government should be leading a lot of this because they have the power to encourage people to do these things through tax, through spending money on things. I believe we need the experts to actually lead the way, because a lot of group's get mislead by the opinions by certain individuals and those individuals are not always correct.

Interviewer: Who were you thinking about there?

No particular group. It just seems that the person that shouts loudest seems to be getting the more attention and cause things to happen. I suppose a good example there is the Brent Spar situation with Shell. Green Peace and everybody got angry about Brent Spar being dumped in the North Sea when actually it was significantly more dangerous for them to take it apart offshore. And the North Sea would have been a very good solution as far as the experts were concerned and where as the Green Peace and the public sort of ignored the experts just because it was a popular thing to support Greenpeace. So I think that the experts should be involved and I think government bodies should be involved because they actually have the power to influence a lot of people. People don't do anything unless they are actually encouraged. We all say we want to save the world and everything but we still don't recycle or we still drive around in our cars and things like that and until we actually get penalised for driving around in our cars we won't stop doing it.

Interviewer: So it sounds to me like you are saying that it should be a top down sort of process from government through into the community. Not necessarily the other way around. Is that right?

Yes. It's the top leading it but obviously you have to get everyone on board and you can't just make them do it. So that's why they have to be clever about the incentives and the motivation they give us to do it and then whether they set up local communities which you have to support or the government and funded by the government. Then the local government or local communities could probably get the actual individuals going but I don't think smaller groups can do it on there own because it's such a global thing individuals certainly can't do it.

Interviewer: Do you think it's actually necessary? Like yourself when you think about these issues, like the whole concept of sustainable development do you think it is a necessary concept to have at this point and time?

I think we always have to be aware of it. That we always have to be considering are we doing some damage and being realistic about it as to whether we can actually still take the resources but not cause the damage or what is it we are actually bothered about. Are we bothered about our own lives or are we bothered about the planet. So I think it is still worth considering all the time and maybe not to take to far.

Interviewer: Can I just ask you about the cards at the extreme ends first. I noticed you put the card about religion down, right down here at the minus four which is the furthest one in this certain card. Do you have a reason for doing that?

Probably because personally I don't respect religion. I just feel that religious groups just cause more trouble than anything. They never actually do any good and to me religion – sustainable development, environmental issues are just not linked.

Interviewer: Then down at the other end, I am particularly interested in that card number is it 43 – "Decision-making about problems of sustainable

development properly ought to be left to those people with expert scientific knowledge".

I think they have to be involved and they have to be the people that identify where we actually have got. That's why I put – *"Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge" down there.*

Interviewer: The scientists you mean? The scientists as policy makers almost or what?

It would actually be the ones that are deciding where there is a problem through science, taking into account the damage that we are doing and what we could, whether it is actually damaged and how we can repair it. I think we should be consulting the experts instead of people just making their own opinions not based on the evidence. We have to have the experts evidence and then I suppose the people have to decide what it is they value. The experts can't say right we do care more about the planet than we do about humans or vice versa. So they maybe aren't policy makers but we need them there as experts to guide us.

Objectives

Interview nine

LC

Interviewer: I think that is about it for the implementation. Okay so this is the second series of cards about the objectives about sustainable development not what it's about but what it is trying to achieve. So I guess it would appear that you agree with more of these cards than you disagree with. Would you like to just describe in your own opinion what the objectives of sustainable development are perhaps even what they ought to be.

I feel that the objectives of sustainable development are like a long-term benefit. It's about a long-term process. It is not just reacting to things that are

happening at the moment, but considering are we protecting the earth for a long-term process but at the same time that we are answering for as well. That our generations answering for as well. Everybody wants to be protecting for the future the next generation. But we also need to look at the humans today that they are benefiting. Sustainable development for me is about related to human factors not just the plants. The whole objective is about enabling humans to live not just necessarily just plants to live. Obviously it would be nice if we didn't concrete the whole earth over and things like that. At the same time we have to do things that enable us to have a good life to eat and to develop. Looking at the cards an obvious perception that I've got is that it is about actually growing it's not about stopping here and making sure we don't disturb it anymore, it's about actually developing and growing and making the most out of all the resources that we have got. You don't know what benefits your going to get out of doing some research or developing a piece of land.

Interviewer: So what you said there is that you don't see it as being going back to a simple lifestyle. Am I correct in thinking that?

No we have to keep moving forward, we have to keep finding new cures for things and finding new resources and ways to use those resources. But obviously at the same time maybe get in the balance so that we don't make is a horrible place to live and we don't harm the atmosphere or the land so badly so that we can't live here anymore. A perfect example of that is where the salt is effecting a lot of the land in WA. You have to start doing something about that because sooner or later the land is just going to become infertile there and that's no good for us.

Interviewer: So are you surprised that you put these two cards here, card number 1 and card number 10 at minus one and minus two given that you obviously sorted 50 cards at a time from what you said?

Maybe I haven't thought about doing this a bit after doing this question. I definitely think that it is all about humans that count in the long run not just the planet. So maybe I am surprised that they are not further up. Not considered

more important particularly this number one maximisation of human welfare should be the main objective.

Interviewer: It sounds like that is sort of what you were saying.

At the same time I don't want humans to be greedy. I don't want us to just do it for, in it just for striping the air it should be for things that we actually do need. We can't use this excuse doing it just humans, we can't use that to allow large companies just to make lots of money out of it when it isn't something that we really need.

Interviewer: How do you feel about, I know you have it down as one of your least favourites number 31 saying that bio-diversity is such danger in Australia. Do you not agree that bio-diversity is endangered in Australia in particular?

I don't think it is. Not that we have to completely stop developing. There are certain issues like the salt that you have to think about. But to actually sort of stop development completely and just stay as we are just seems a bit drastic. There are always solutions to our problems. I feel that the "greeny" people are sort of maybe accentuating the risks of the state that we are in a bit too much. It's really not so bad.

Interviewer: Do you think that's in and attempt to stop development by those people?

In an attempt stop development and progress, yeah.

Science and technology

Interview ten

LC

Interviewer; Well that is the objective side. Okay so the next set of cards is about the roles of science and technology in the issue of sustainable

development. So can you offer some kind of narrative explanation for these cards?

I think the cards demonstrate that I see science and technology as a very positive thing and that a lot of benefits come out of science and technology and research in general. I think overall we have more benefits come out of science and technology than we do bad aspects. Normally we find a solution to the bad aspects anyway. Quite often when people are looking for something that is quite negative they actually discover a very positive outcome. They find a new drug or something like that. So research in general is very good and I certainly don't see it as a negative thing that is harming the world in the big picture. Obviously some times there are some negative aspects but generally they get solved in the long run. I think that that's where the money should be spent on science and technology to come up with more efficient ways to doing things or better ways of using these resources and not causing waste and stuff like that.

Interviewer: You see a definite role from what your saying by the sounds of it in science and technology leaning forwards with sustainable development directions and sustainable development.

Yep definitely. Again it is the role of the expert, getting involved and giving their opinion on what's the best way to do something and how can you do it without causing more harm and what will the benefits be in the long-term.

Interviewer: Can I just ask you about a couple the cards perhaps. Card number 34 that you have in the position of minus two, which says, "the scientific reliable picture is much more alarming than people are led to believe". Do you think that, for me you have put that in and said you don't believe that is the case? So do you think that the picture of what's being said is not particularly real or just being made up in some way.

I think there are certain aspects that are not desirable but I think the global picture isn't as bad as a lot of the green groups make out. Maybe some of the situations are bad but they are not too serious. They can be solved basically through science, through regulations. The Fishing situation that we will out

strip the sea of all its fish and all of that through careful regulation we can ensure that we continue with good fish supplies through our generation. That's through science and technology being involved in understanding how they breed and all that rather than just saying let us stop fishing completely. That doesn't do anybody any good, as I said before we have to keep growing so lets do it in a way that enables us to keep going.

Interviewer: So it sounds like you are saying that basically sustainable development is just about good management really. Is that right?

Definitely. Basically ensuring that we get what we need to survive but also leaving enough so that it continues to be there. Any gardener or farmer knows that when your ploughing the soil that you leave enough nutrients in the soil that it is going to be able to give you fruit and vegetables in the up coming years.

Scale of problems

Interview ten

LC

Interviewer: I'll stop it there and set out the next cards. Okay so we are at the last set of cards now dealing with the problems relating to sustainable development or reasons why we should do it in the first place. So can you just offer some sort of summary for why you have arranged these cards the way you have.

I suppose these cards that are in the negative end are showing that I don't agree that we are going too far or that we should stop production and that we should stop all use of resources and all that. I don't believe that we are living beyond our capacity of the planet or anything like that.

Everyday we see solutions to problems. We see science creating new ways to produce food and for us to support the lifestyles that we choose and make the most of our resources and all that. So basically I don't agree that things

are like the history of civilisation has been one of decline. I think everything has improved. We live longer, we have better food, we have less diseases.

At the positive end the one I have at the positive end is about species and systems and nature deserving respect regardless of its usefulness to humanity. So even though I don't think we have gone too far I still believe that nature is important so it goes back to having that stewardship role that we have to continue to develop. There is no point being here unless we continue to grow and discover the benefits of science and what the earth has to offer us, but at the same time nature is important. Nature is important and it is good to have those around. So I don't recommend that we concrete the world or anything like that or completely destroy it. We have to take a long-term view of this sort of thing and ensure the future generations as well. That they can survive and have just as good a lifestyle as we have.

Interviewer: So you get out and interact with nature yourself?

Definitely. I think most importantly that is good for peoples stress levels. Help them to live a more relaxed lifestyle getting away from it sometimes. So I still see nature should be there for humans that it is still a use for them and I don't think it is totally there just for natures sake. We get a benefit from them. Also who knows what plants may find the cure for aids or something.

LA21

Interview ten

LC

Interviewer: Our last section I wanted to ask you about was local government. I don't know if you know much about this but there is a policy called Local Agenda 21 which is a sustainable development policy. Now not many local governments in Perth - only about ten out of thirty actually have LA21. I was just wondering if you have any thoughts as to why local governments either would adopt a policy like that or why they haven't.

I would have to say that I haven't really heard of that the agenda so I am not aware of them actually doing anything in this area or who's doing and who's not then.

Interviewer: That's Okay thanks a lot.

Appendix M: Interview content analysis

2						
3			Implementation			
4						
5	1 Implementation of SD	T	Interview One			
6	1 Implementation of SD	T	LRWAMA			
7	1 Implementation of SD	Q	Interviewer:The first suit of cards we have here are the implementation cards			
8	1 Implementation of SD	Q	So, if you could just describe, perhaps, when you think about sustainable development in the implementation of sustainable development, what your own view is about who the important players are?			
9	1 Implementation of SD	A	Well, my view is that the community has a large role, coming from a landcare background	Facilitator	Community	Lobby
10	1 Implementation of SD	A	The Community's role is really about placing pressure on the local government to pick up on this program and to run with it	Facilitator	Community	Lobby
11	1 Implementation of SD	A	So, while community provides the energy for it, local government puts in place and manages the framework	Facilitator	Government	Local
12	1 Implementation of SD	A	But what's difficult with the framework is that it's a bit uncertain about what it means	Barrier	Concept	Ambiguous
13	1 Implementation of SD	A	My role is to provide education, to provide information about sustainable development for local government	-	-	-
14	1 Implementation of SD	Q	Interviewer: I see you've got those cards about individuals themselves promoting change	-	-	-
15	1 Implementation of SD	Q	I guess, involving the public, involving women and indigenous people and then down there, at the other end, the negative end, you've got cards like that one that you've obviously said you don't agree with – card number 20 – "Relying on 'community involvement', let alone bottom-up motivation for the shift to a sustainable society is unrealistic" so that, I guess that...	-	-	-
16	1 Implementation of SD	A	Its really a contradiction isn't it	-	-	-
17	1 Implementation of SD	A	They can't do it on their own because they need the whole structure around it	Facilitator	Multi Sectors	TopDown
18	1 Implementation of SD	A	You need a framework that you can implement large scale change	Facilitator	Multi Sectors	TopDown
19	1 Implementation of SD	A	Its all incremental, but you need to have a direction for it	Facilitator	Multi Sectors	TopDown
20	1 Implementation of SD	Q	Interviewer: How do you feel about the role of – like we've got cards about the state government and about the commonwealth government – how do you feel – what do you feel that their role should be in this implementation of sustainable development policy?	-	-	-
21	1 Implementation of SD	A	Their current role is – the state government saying all the right things and making all the right noises, but not doing anything	Barrier	Government	State
22	1 Implementation of SD	A	They really haven't picked up their end of the detail as far as sustainable development, in my view	Barrier	Government	State
23	1 Implementation of SD	A	The federal government is very supporting, I mean they're pushing local agenda 21 programs quite strongly, providing a lot of support to organisations like Environment Australia	Facilitator	Government	Federal
24	1 Implementation of SD	A	To do things like...	-	-	-
25	1 Implementation of SD	Q	Interviewer: Financial resource, support, you mean?	-	-	-
26	1 Implementation of SD	A	Yeah, its resource support and policy support as far as helping to set up demonstration programs	Facilitator	Government	Federal
27	1 Implementation of SD	A	Just recently, they offered the opportunity of a sum of money to set up a regional LA21 project here in WA, and also in Tasmania	Facilitator	Government	Federal
28	1 Implementation of SD	A	So, they are providing opportunities that the state government – you can't drag them kicking	Barrier	Government	State
29	1 Implementation of SD	Q	Interviewer: What about local government?You were saying about, I guess, providing a leadership role within the community	-	-	-
30	1 Implementation of SD	A	Yes	Facilitator	Government	Local
31	1 Implementation of SD	A	It is definitely a leadership role	Facilitator	Government	Local
32	1 Implementation of SD	A	I mean, but the contradiction is that the community has got to lead the local government to make the decision to participate	Facilitator	Community	Lobby
33	1 Implementation of SD	A	And if its not – and its usually not the whole of government just one or two councils - promotion to the council and that's where the idea gets started, or it might be a proactive officer who takes it on himself that manages the project	Facilitator	Government	Champion
34	1 Implementation of SD	A	And that's a bit dangerous because people move on and people change	Barrier	LocGov-Champion	Change
35	1 Implementation of SD	A	But I mean, you know, that's the same as any program to do with environmental management too, really it's a process thing pushed by the minority rather than the majority, promoted to the community and they run with it	Facilitator	Community	Lobby
36	1 Implementation of SD	A	And LA21 - its not much different	Facilitator	Community	Lobby
37	1 Implementation of SD	A	And LA21, one of the big problems with that is that its all tied up with this green process	Barrier	Concept	Ambiguous
38	1 Implementation of SD	A	You don't...	-	-	-
39	1 Implementation of SD	A	there's no end point, your not ending up with a final destination	Barrier	Concept	Not Immediate
40	1 Implementation of SD	Q	Interviewer: So, it's a process, rather than an end	-	-	-
41	1 Implementation of SD	A	That's right	Barrier	Concept	Ambiguous
42	1 Implementation of SD	A	And also the processes are so flexible	Barrier	Concept	Ambiguous
43	1 Implementation of SD	A	LA21 keeps telling us its anything you want it to be	Barrier	Concept	Ambiguous
44	1 Implementation of SD	A	Its anything that you're doing already	Barrier	Concept	Ambiguous
45	1 Implementation of SD	A	And that's, you know, like ... contrast "Cities for Climate Protection" - they set up a program with very distinct goals and milestones that they've got to achieve, and timeframes and everything and there's a lot of ongoing support for it,	Barrier	Concept	Ambiguous
46	1 Implementation of SD	A	So its easy for local government to say "yes we can do that, we can do our energy audits and do this and do that" and they've got little celebrations along the way	Barrier	Concept	Ambiguous
47	1 Implementation of SD	A	So they tend to pick that up more quickly	Barrier	Concept	Ambiguous
48	1 Implementation of SD	A	But the good thing about it is leading on to LA21	Facilitator	Initiatives	OthProg
49	1 Implementation of SD	A	Everyone can start to see the link and looking at their operations in a different way	Facilitator	Initiatives	OthProg
50	1 Implementation of SD	A	That's what I've found, if you can get them on "Cities for Climate Protection"	Facilitator	Initiatives	OthProg
51	1 Implementation of SD	Q	Interviewer: Do you think LA21 will become more like that then – more like the "Cities for Climate Protection" programme? Will it will be a process that's a bit more,rather than being an amorphous thing, will it become a bit more structured sort of thing?	-	-	-
52	1 Implementation of SD	Q	The policy makers will decide what it is and then it will happen in the same sort of way?	-	-	-
53	1 Implementation of SD	A	I think, well they've already started to go down that track with the release of the new manual	Facilitator	Government	Federal
54	1 Implementation of SD	A	They've set it – 5 action areas which are the equivalent of 5 milestones, except that the tasks in it are still very strategic, non-specific type stuff, but they're starting to step it out	Facilitator	Government	Federal
55	1 Implementation of SD	A	So, they're starting to look at process and how do you promote the process, but still maintain that flexibility that's so characteristics of LA21, the individual program	Facilitator	Government	Federal
56	1 Implementation of SD	Q	Interviewer: It sounds to me like some of things you've been saying, you see it as more of a recruitment process, recruiting Councils, rather than a top-down process, driven by the community rather than driven by large scale organisations	-	-	-
57	1 Implementation of SD	Q	Is that correct?	-	-	-
58	1 Implementation of SD	A	Yeah	-	-	-
59	1 Implementation of SD	A	I mean its being pushed very hard by the Federal Government, but the local government are quite keen to maintain that distance between them and the big government	Barrier	Government	Local
60	1 Implementation of SD	A	There's, except that there's been some moves just recently to a national logo, a national LA21 program identity	Facilitator	Government	Federal
61	1 Implementation of SD	A	So that we can market it because its so "nothing and everything" - its difficult to promote	Barrier	Concept	Ambiguous

Row	Int#	Topic	Type	Text	Cat 1	Cat 2	Cat 3
62	1	Implementation of SD	A	You need a map for these kind of things – a critical map – and we're not getting that in WA anyway	Barrier	Concept	Ambiguous
63	1	Implementation of SD	A	I mean 12 or 14 councils out of 144 is it?But it's a start	Barrier	Concept	Ambiguous
64	1	Implementation of SD	A	But the difficulty is promoting it	Barrier	Concept	Ambiguous
65	1	Implementation of SD	A	I mean, we've got 18/20 "Cities for Climate Protection" councils and that program has been running a lot shorter timeframe	Barrier	Concept	Ambiguous
66	1	Implementation of SD	A	And I think its because its got a stronger picture, a marketable structure and a process, and outcomes and also its got an identity	Barrier	Concept	Ambiguous
67	1	**Objectives of SD**	T	**Objectives of Sustainable Development**	-	-	-
68	1	**Objectives of SD**	T	**Interview one**	-	-	-
69	1	Objectives of SD	Q	Interviewer: So now we've got the objective cards laid out	-	-	-
70	1	Objectives of SD	Q	So, if you could give me some idea about what you think are your own views about what sustainable development is trying to achieve	-	-	-
71	1	Objectives of SD	A	My view of sustainable development, I think its about reaching a balance	Objective	Balance	Env-Econ-Soc
72	1	Objectives of SD	A	That's what I've always aimed to do is be inclusive, give everybody a chance to be involved and to have development but also environmental protection and social equity and that kind of stuff	Objective	Balance	Env-Econ-Soc
73	1	Objectives of SD	A	I don't think you can have any one without any of the others. looking at all the different sides	Objective	Balance	Env-Econ-Soc
74	1	Objectives of SD	A	So if you're protecting the environment, or working on community development issues, that you can't deny the environment or any of the others	Objective	Balance	Env-Econ-Soc
75	1	Objectives of SD	A	I can see both sides of the coin	Objective	Balance	Env-Econ-Soc
76	1	Objectives of SD	Q	Interviewer: So, environmental projects obviously have good – in your own view – good outcomes for people	-	-	-
77	1	Objectives of SD	Q	Is that right?	-	-	-
78	1	Objectives of SD	A	Yeah – it's a good outcome for people but also good outcomes for the environment	Objective	Balance	Env-Econ-Soc
79	1	Objectives of SD	A	There's always somewhere where you can have a win-win situation; not necessarily getting economic outcomes, but again coming from a land care background, you've got to try and have that environmental economic gain – I mean that's what you're always striving for but not always what you can achieve	Objective	Balance	Env-Econ-Soc
80	1	Objectives of SD	A	So, there's some areas where you need to protect the environment at all costs, and there's some times where, really you can destroy families if you do go that way, so you've got to find a balance	Objective	Balance	Env-Econ-Soc
81	1	Objectives of SD	Q	Interviewer: You mentioned before that the "Cities for Climate Potection" councils often implement it for economic benefits	-	-	-
82	1	Objectives of SD	Q	Do you think that we're at a point that you'd be able to convince council that LA21 would have actually economic benefits as well as social and environmental benefits?	-	-	-
83	1	Objectives of SD	A	Not in dollar figures	Barrier	Concept	Ambiguous
84	1	Objectives of SD	A	You can't prove it	Barrier	Concept	Ambiguous
85	1	Objectives of SD	A	That's the same as LandCare which is basically LA21 in a rural context – that's how I see it	Barrier	Concept	Ambiguous
86	1	Objectives of SD	A	LA21 doesn't lend itself to cost benefit analysis	Barrier	Concept	Ambiguous
87	1	Objectives of SD	A	There are too many intangibles	Barrier	Concept	Ambiguous
88	1	Objectives of SD	A	Whereas "Cities for Climate Protection"- you look at your electricity bill and its going down	Barrier	Concept	Ambiguous
89	1	Objectives of SD	A	And without that it wouldn't be endorsed	Barrier	Concept	Ambiguous
90	1	Objectives of SD	Q	Interviewer: Could that not be written in in terms of – I mean to me that sounds like a sustainable development policy in itself – so if that's the case with LA21, couldn't you have things like a traffic reduction scheme where you're showing people fuel savings?	-	-	-
91	1	Objectives of SD	A	I mean, they're working on sustainability indicators all the time	Barrier	Concept	Ambiguous
92	1	Objectives of SD	A	So, but, they are so – the use of indicators isn't widely adopted	Barrier	Concept	Ambiguous
93	1	Objectives of SD	A	Its like everything else, it needs to be promoted as the way to go	Barrier	Concept	Ambiguous
94	1	Objectives of SD	A	So, its all sort of getting there	Barrier	Concept	Ambiguous
95	1	Objectives of SD	A	Environmental accounting	Barrier	Concept	Ambiguous
96	1	Objectives of SD	A	To try and place dollar values on intangibles or look at ways of measuring environmental costs	Barrier	Concept	Ambiguous
97	1	Objectives of SD	A	But I mean the processes are all starting to come together they just need more time to develop the concepts and the processes	Status	ParadigmShift	Prepare
98	1	Objectives of SD	A	Its actually, we're kind on the crisp of the environment awareness and environmental action	Status	ParadigmShift	Prepare
99	1	Objectives of SD	A	The decade of LandCare and the green movement sort of brought levels of awareness higher, so that	Facilitator	Initiatives	OthProg
100	1	Objectives of SD	A	most people are environmentally aware these days, where 20 years ago, people didn't know	Status	ParadigmShift	Aware
101	1	Objectives of SD	A	So, 20 years ago, or more, now they're looking at ways of "OK – how do we do it"	Status	ParadigmShift	Prepare
102	1	Objectives of SD	A	So, they're at a development phase now	Status	ParadigmShift	Prepare
103	1	Objectives of SD	Q	Interviewer: So, that's quite a big step forward in itself really?	-	-	-
104	1	Objectives of SD	A	Its hugh - absolutely huge.	Status	ParadigmShift	Prepare
105	1	Objectives of SD	Q	Interviewer: I mean you've go this card no 19 "sustainable development is a long term process and its important to start thinking about things now"	-	-	-
106	1	Objectives of SD	Q	What you've just said is that in fact people are thinking...	-	-	-
107	1	Objectives of SD	A	But I mean people haven't really seriously thought about how you really implement LandCare, environmental management, and sustainable development for the last 5 years	Barrier	Concept	Ambiguous
108	1	Objectives of SD	A	Its only been a concept since about 92	Barrier	Concept	Ambiguous
109	1	Objectives of SD	Q	Interviewer:A little bit before that, but that's when it was really formalised	-	-	-
110	1	Objectives of SD	Q	It seemed to come onto the agenda in 92	-	-	-
111	1	Objectives of SD	A	Not a long time – especially when we're talking about bureaucracy and shifting organisational change and institutional change – and that's the hardest	?		
112	1	Objectives of SD	A	I mean some people take time	?		
113	1	Objectives of SD	A	Paradigms can shift on, you know depending on a critical experience	?		
114	1	Objectives of SD	A	But when you've got an organisation, enormously	?		
115	1	Objectives of SD	Q	Interviewer: So, could you summarise then, what would be the key objective then for LA21?What is it trying to achieve?	-	-	-
116	1	Objectives of SD	A	I think it's a change in a way that organisations think	Objective	Industry	Behaviour
117	1	Objectives of SD	A	I think the people thinking have changed, individually for a lot of people	Status	ParadigmShift	Aware
118	1	Objectives of SD	A	Its re-directing organisational behaviour to think more broadly and to take in all the different factors where decisions were made based on a very limited range of factors before	Objective	Industry	Behaviour
119	1	Objectives of SD	A	You want organisational decisions and organisational operations to take account of much more social, economic and environmental considerations	Objective	Balance	Env-Econ-Soc
120	1	Objectives of SD	A	I mean that's what it all comes down do – organisational behaviour	Objective	Industry	Behaviour
121	1	Objectives of SD	Q	Interviewer: Just one more question about the objectives issue	-	-	-
122	1	Objectives of SD	Q	In relation to card 19, which is "sustainable development is a long process, but its important to start thinking about things now", can you just tell me what your own view is about – like long term process is a pretty open-ended statement – what your own view be about how long we've got to actually get to where we have implemented sustainable development – five years, or 500 years, or 5000 years?Just give me some sense of the urgency there	-	-	-
123	1	Objectives of SD	A	There is a sense of urgency	Status	ParadigmShift	Act
124	1	Objectives of SD	A	My own view is that, bascially, its going to take a global catastrophe to get people to think about it	Barrier	Attitudes	Apathy
125	1	Objectives of SD	A	Its really going to be something major	Barrier	Attitudes	Apathy
126	1	Objectives of SD	A	I really only see that political movement and willingness to actually fix a problem comes when millions are dying or the train goes off the track or – there needs to be a disaster	Barrier	Attitudes	Apathy
127	1	Objectives of SD	A	And that's kind of scary to me	Barrier	Attitudes	Apathy
128	1	Objectives of SD	A	But that's what I think	Barrier	Attitudes	Apathy

Row	Int #	Title	Type	Text		Cat1	Cat 2	Cat 3
129	1	Objectives of SD	A	People are basically- the incremental change is happening because its comfortable and people will let problems build up until a disaster happens and then all of a sudden. And it made them uncomfortable enough to change, to do something about it		Barrier	Attitudes	Apathy
130	1	Objectives of SD	Q	Interviewer: So what sort of things are in your mind when you say about there might be a castrophe, of what scale?				
131	1	Objectives of SD	A	I don't know		-	-	-
132	1	Objectives of SD	A	I mean the greenhouse problem is a good one		Barrier	Attitudes	Apathy
133	1	Objectives of SD	A	Whole island nations disappearing		Barrier	Attitudes	Apathy
134	1	Objectives of SD	A	But we're talking thousands of years		Barrier	Attitudes	Apathy
135	1	Objectives of SD	A	There is going to be a point somewhere in the next few hundred years that people are going to say "oh hell its going to happen in so many hundreds of thousands of years – there's nothing we can do to stop it now"		Barrier	Attitudes	Apathy
136	1	Objectives of SD	A	Even that's a bit removed, there might be – I've read too many science fiction books to – there's some pretty interesting catastrophe ideas as well		Barrier	Attitudes	Apathy
137	1	Objectives of SD	A	I read a book where all the population of the earth is under a huge dome and a pollution cloud travels the earth and you can't go outside because you'll be wiped it		Barrier	Attitudes	Apathy
138	1	Objectives of SD	A	I can see that off in the future		Barrier	Attitudes	Apathy
139	1	Objectives of SD	A	Its going to take something major		Barrier	Attitudes	Apathy
140	1	Objectives of SD	Q	Interviewer: If we do implement sustainable development – if the community are pushing for it to happen and people are becoming more aware and more knowledgeable – do you think there's a chance that it could be just implemented, without the need for some dramatic external push?		-	-	-
141	1	Objectives of SD	A	There's always a possibility, but I think, I mean we've got some pretty major environmental problems that we face	?	Barrier	Attitudes	Apathy
142	1	Objectives of SD	A	And these are major, major problems	?	Barrier	Attitudes	Apathy
143	1	Objectives of SD	A	But the little bit of money that the government is spending on the problem is not nearly as much as the community is spending on the problem, and its not nearly enough – I mean its only a drop in the ocean, to fix it, or stop it even	?	Barrier	Attitudes	Apathy
144	1	Objectives of SD	A	There's really not the political will to buckle down and make the hard changes, because its not politically astute for them to make radical changes		Barrier	Government	NS
145	1	Objectives of SD	Q	Interviewer: Do you think its just too short term for a government to be in power for three or four years, like why should we spend millions of dollars and …		-	-	-
146	1	Objectives of SD	Q	get kicked out in 2 and a half, three years time anyway		-	-	-
147	1	Objectives of SD	A	Yeah	?			
148	1	Objectives of SD	A	Mind you I don't necessarily want a dictatorship to destroy the democracy that we've got	?			
149	1	Objectives of SD	A	I'm coming from the comfortable incremental change place too	?	Barrier	Attitudes	Apathy
150	1	Objectives of SD	A	I'm not out there chaining myself to a bulldozer	?	Barrier	Attitudes	Apathy
151	1	Objectives of SD	A	A kind of apathy isn't it almost?	?	Barrier	Attitudes	Apathy
152	**1**	**Role of science and technology**	**T**	**Role of science and technology**		-	-	-
153	**1**	**Role of science and technology**	**T**	**Interview one**		-	-	-
154	1	Role of science and technology	Q	Interviewer: We've got the statements about science and technology laid out now		-	-	-
155	1	Role of science and technology	Q	Most of the cards start at +2 and they go right the way down to –5; with 7 of the 10 cards being at the negative end		-	-	-
156	1	Role of science and technology	Q	Can you just maybe make some comments about how you see science and technology and the role of scientists in sustainable development, LA21?		-	-	-
157	1	Role of science and technology	A	I see that science has a role to play, but its not going to solve the outcome, or be the outcome, in the end you need to change attitudes first, that's what we're doing with LA21		S&T	Subordinate	Attitudes
158	1	Role of science and technology	A	LA21 is not about technology – not necessarily		S&T	Subordinate	Attitudes
159	1	Role of science and technology	A	Its about changing the way people think and the way organisations operate		S&T	Subordinate	Attitudes
160	1	Role of science and technology	A	You know the technology is a handy tool which ought to make the job easier		S&T	Subordinate	Attitudes
161	1	Role of science and technology	A	You can put the technology in place to save energy, but they want to have to want to save energy and do the right thing in the first place		S&T	Subordinate	Attitudes
162	1	Role of science and technology	Q	Interviewer: So it's a behaviour thing then?		-	-	-
163	1	Role of science and technology	Q	Transforming the way people think		-	-	-
164	1	Role of science and technology	A	The whole environmental sustainable development movement is about changing the way people think about what they do and what they consume		S&T	Subordinate	Attitudes
165	1	Role of science and technology	A	Technology will help, but technology is not the answer		S&T	Subordinate	Attitudes
166	1	Role of science and technology	A	It's the end, rather than the means		S&T	Subordinate	NS
167	1	Role of science and technology	A	Is that right?Its the means, rather than the end		S&T	Subordinate	NS
168	1	Role of science and technology	A	Whatever		S&T	Subordinate	NS
169	1	Role of science and technology	A	It's just a tool		S&T	Subordinate	NS
170	1	Role of science and technology	Q	Interviewer: In the last session we were talking about the notion of castrophe andthere's a card here number 34 which talks about crisis		-	-	-
171	1	Role of science and technology	Q	Have you got any thoughts about that		-	-	-
172	1	Role of science and technology	Q	This card is saying that crisis is more critical than we've been led to believe by science and technology		-	-	-
173	1	Role of science and technology	Q	Do you think that's the case?		-	-	-
174	1	Role of science and technology	A	It's a paradox	?			
175	1	Role of science and technology	A	Science, it's a paradox	?			
176	1	Role of science and technology	A	It created the problem – industry – that created problems; but its also part of the solution, and its also part of what's identifying the problem		S&T	Negative	Environment
177	1	Role of science and technology	A	Mind you, people know that things aren't quite right with the world		S&T	Subordinate	Intuition
178	1	Role of science and technology	A	More faith than figures – they just get the general sense that things aren't quite right, or that quality of life isn't quite what it was 20 years ago		S&T	Subordinate	Intuition
179	1	Role of science and technology	A	I talk to my grandma and she's not happy about the ways things are going in the world		S&T	Subordinate	Intuition
180	1	Role of science and technology	A	I suppose it helps some people to handle those hard facts		S&T	Subordinate	Intuition
181	1	Role of science and technology	A	It helps to really do something, but any morally or socially minded person would sense that anyway, and that should be the imperative		S&T	Subordinate	Intuition
182	1	Role of science and technology	A	You feel in the pit of your stomach that things aren't quite right		S&T	Subordinate	Intuition
183	**1**	**Problem issues**	**T**	**Problem issues**		-	-	-
184	**1**	**Problem issues**	**T**	**Interview one**		-	-	-
185	1	Problem issues	Q	Interviewer: We've got the scope of the problems cards now		-	-	-
186	1	Problem issues	Q	If you could make a few comments about what you think about problems with sutainable development		-	-	-
187	1	Problem issues	Q	Issues and solving them and those sorts of things		-	-	-
188	1	Problem issues	A	Looking at my cards, I'm definitely not anthroprocentric		Objective	Social	NotPriority
189	1	Problem issues	A	I don't believe that humans are the be and end all of what there is on the plant		Objective	Social	NotPriority
190	1	Problem issues	A	So I think that's the overall concept that people value themselves much higher than anything else		Objective	Social	NotPriority
191	1	Problem issues	Q	Interviewer: You think this would be more true – card number 40, it says "All the species and systems of nature deserve respect regardless of their usefulness to humanity		-	-	-
192	1	Problem issues	Q	Nature needs to be preserved for its own sake"		-	-	-
193	1	Problem issues	Q	Is that your view?		-	-	-
194	1	Problem issues	A	Yes		Objective	Balance	Env-Econ-Soc
195	1	Problem issues	A	I mean, yes		Objective	Balance	Env-Econ-Soc
196	1	Problem issues	A	That's exactly right		Objective	Balance	Env-Econ-Soc
197	1	Problem issues	A	What I'm trying to do is get a balance in the way that I'm doing it		Objective	Balance	Env-Econ-Soc
198	1	Problem issues	A	Interested, other species have rights as well as humans do		Objective	Balance	Env-Econ-Soc

Row	Int #	Topic	Type	Text	Cat 1	Cat 2	Cat 3
199	1	Problem issues	A	I'd like to see co-existence	Objective	Balance	Env-Econ-Soc
200	1	Problem issues	A	I mean, you can't make the human side go away, but you shouldn't let the other species go away either	Objective	Balance	Env-Econ-Soc
201	1	Problem issues	A	Its not a dominant thing, it's a balanced type of thing	Objective	Balance	Env-Econ-Soc
202	1	Problem issues	A	You can have both, everything about people when you get down to it	Objective	Balance	Env-Econ-Soc
203	1	Problem issues	Q	Interviewer: Do you think its about good management perhaps?	-	-	-
204	1	Problem issues	A	I think that's what it is	Objective	Balance	Env-Econ-Soc
205	1	Problem issues	A	I mean, I think that's what it needs	Objective	Balance	Env-Econ-Soc
206	1	Problem issues	A	It definitely needs to be managed well	Objective	Balance	Env-Econ-Soc
207	1	Problem issues	A	We're such in a pressure cooker situation that you need top quality management of environment areas, you know natural areas	Objective	Balance	Env-Econ-Soc
208	1	Problem issues	A	But where we're falling down is the people stuff, the economic stuff	Objective	Social	NotPriority
209	1	Problem issues	A	That becomes the higher priority than the priority of managing that area properly and maintaining	Objective	Social	NotPriority
210	1	Problem issues	A	That's what I don't like to see	Objective	Social	NotPriority
211	1	Problem issues	A	That the priorities aren't balanced	Objective	Social	NotPriority
212	1	Problem issues	A	They are almost totally people	Objective	Social	NotPriority
213	1	Problem issues	A	The needs of humans	Objective	Social	NotPriority
214	1	Problem issues	A	And that's the attitude change that I see fundamentally wrong	Objective	Social	NotPriority
215	1	Problem issues	Q	Interviewer: Do you think that change is happening?Because you said about knowledge and education over the last 20 years..	-	-	-
216	1	Problem issues	A	No	Objective	Social	NotPriority
217	1	Problem issues	A	I think everything is still anthroprocentric	Objective	Social	NotPriority
218	1	Problem issues	A	A lot of LA21 is about community, but the emphasis is on the human community	Objective	Social	NotPriority
219	1	Problem issues	Q	Interviewer: Can I just clarify that	-	-	-
220	1	Problem issues	Q	That's how you think that most people think about it, or that's your own view or both?	-	-	-
221	1	Problem issues	A	That's my view of environmental work and sustainability work altogether	Status	Pessimistic	Balance
222	1	Problem issues	A	There's no balance and I don't think we can ever get that balance either	Status	Pessimistic	Balance
223	1	Problem issues	A	I think we have to be an entirely different creature to be truly balanced	Status	Pessimistic	Balance
224	1	Problem issues	A	I don't think that, the way that our system is set up, being a financial – economic, where everything is run by economics, that things will necessarily change and	Status	Pessimistic	Balance
225	1	Problem issues	A	Its just fairy tale stuff we're talking aboub	Status	Pessimistic	Balance
226	1	Problem issues	A	I mean its always going to come down to competing needs and human will	Status	Pessimistic	Balance
227	1	Problem issues	A	If they've got to make a living and they've got to live	Status	Pessimistic	Balance
228	1	Problem issues	Q	Interviewer: They give themselves priority really	-	-	-
229	1	Problem issues	A	Yes exactly	-	-	-
230	1	Problem issues	A	What I'd like to see is that at least we manage to stop development as far as maintaining the best bits that we've got now and start to finally expand it	Objective	Balance	Env-Econ-Soc
231	1	Problem issues	A	Its very difficult because basically the money thing will always win	Barrier	Initiatives	Cost
232	1	Problem issues	A	Even if the type of work you can do is limited to the amount of money the federal government will provide or, will provided – its all driven by the almighty dollar	Barrier	Initiatives	Cost
233	1	Problem issues	A	Which is not right- not the right attitude	Barrier	Initiatives	Cost
234	1	Problem issues	A	And that's why it all comes back to basically, its going to be a global threat before people will be willing to make the big sacrifice to either their lifestyle or how they live	Barrier	Attitudes	Apathy
235	1	Problem issues	A	That's what its going to take	Barrier	Attitudes	Apathy
236	1	Problem issues	A	We're basically brainwashed	Barrier	Attitudes	Apathy
237	1	Problem issues	A	Everybody's got a personal instinct but not a survival instinct	Barrier	Attitudes	Apathy
238	**1**	**Reasons for LA21**	**T**	**Reasons for LA21**	-	-	-
239	**1**	**Reasons for LA21**	**T**	**Interview one**	-	-	-
240	1	Reasons for LA21	Q	Interviewer: I would like to ask you some questions about, I guess, a bit more specific about LA21 in Western Australia	-	-	-
241	1	Reasons for LA21	Q	The first question I would like to ask is, what sort of differentiates the councils, well the metropolitan ones that I've been working with, why do you think the ones that have adopted LA21 in the metropolitan area have done so?What's the reason behind it, and how have they come to arrive at a decision they have?What's been the major driver? And then secondly, why do you think the other councils in the metro area haven't adopted LA21 perhaps?Whether you think that they're all uncommited, what do you think is going on there?	-	-	-
242	1	Reasons for LA21	A	I think the driving comes from the people within the council	Facilitator	Government	Champion
243	1	Reasons for LA21	A	There's a particular mix of attitudes that I've notice that you have particularly pro-sustainable development councillors	Facilitator	Government	Champion
244	1	Reasons for LA21	A	You can have really proactive officers but to pick LA21 you need a particular councillor that's open to the idea	Facilitator	Government	Champion
245	1	Reasons for LA21	A	Or who is willing to push it, or a combination of a group of councillors	Facilitator	Government	Champion
246	1	Reasons for LA21	Q	Interviewer: So that's a critical factor - having a councillor that's interested?	-	-	-
247	1	Reasons for LA21	A	Yeah	-	-	-
248	1	Reasons for LA21	A	Any issue will be driven by either one or more people	Facilitator	Government	Champion
249	1	Reasons for LA21	A	Its very, very rarely that you get a consensus on any issue at council	Facilitator	Government	Champion
250	1	Reasons for LA21	A	But, getting the right political support within a council for a program or an issue – that's what its all about	Facilitator	Government	Champion
251	1	Reasons for LA21	A	And LA21, because of the uncertainty about what it is and how it works and how much it will cost and things like that, that put the doubt down in enough councillor's minds in Perth	Barrier	Concept	Ambiguous
252	1	Reasons for LA21	A	I think to make it seem risky	Barrier	Concept	Ambiguous
253	1	Reasons for LA21	A	Local government is a low risk situation or tends to be low risk	Barrier	Government	Local
254	1	Reasons for LA21	A	And they only pick things up when its demonstrated by a peer that it works	Facilitator	Initiatives	OthProg
255	1	Reasons for LA21	A	Even if there was cost – that ultimately its successful	Facilitator	Initiatives	OthProg
256	1	Reasons for LA21	A	They learn by the successes of their peers	Facilitator	Initiatives	OthProg
257	1	Reasons for LA21	A	And they turn very quickly on the failures	Barrier	Government	Local
258	1	Reasons for LA21	A	They really are an ultra conservative organisation	Barrier	Government	Local
259	1	Reasons for LA21	A	I don't know if that's starting to change, but also again, it comes back to the money	Barrier	Government	Local
260	1	Reasons for LA21	A	These are community members that are given the responsibility of spending a relatively large amount of money and it scares them	Barrier	Government	Local
261	1	Reasons for LA21	A	So, they're careful about it - that immediately makes them cautious about it	Barrier	Government	Local
262	1	Reasons for LA21	Q	Interviewer: That's may be not a bad thing though, is it?	-	-	-
263	1	Reasons for LA21	A	Yeah	-	-	-
264	1	Reasons for LA21	A	Its not	-	-	-
265	1	Reasons for LA21	A	But then, it makes the job of getting that organisational change and using LA21 a whole lot more difficult ?			
266	1	Reasons for LA21	A	Its kind of a catch 22 really isn't it? You need radical change to get the rapid change in thinking ?			
267	1	Reasons for LA21	Q	Interviewer: So are we getting in WA, are we getting in your own view, a situation where we have councils that are seeing the LA21 benefits?	-	-	-
268	1	Reasons for LA21	A	I think there have been a lot more younger councillors coming through now	Facilitator	Government	Champion
269	1	Reasons for LA21	A	And we've still got a very significant number of the older guys	Barrier	Government	Local
270	1	Reasons for LA21	A	It's a poor generalisation saying that they're all ultra conservative straight out of the 50-s, but a lot of them were taught how to be councillors differently	Barrier	Government	Local
271	1	Reasons for LA21	A	They come from a different background	Barrier	Government	Local
272	1	Reasons for LA21	A	And that's the same with the senior officers, the CEOs	Barrier	Government	Local

Row	Int #	Topic	Type	Text		Cat1	Cat2	Cat3
273	1	Reasons for LA21	A	There is a growing group of younger CEOs that are more willing to do some radical stuff – they have a different background as far as training goes		Facilitator	Government	Champion
274	1	Reasons for LA21	A	A lot of them are coming from business management type courses		Facilitator	Government	Champion
275	1	Reasons for LA21	A	Professional officers who have also been taught new, innovative techniques that perhaps the old guys just haven't come to terms with		Facilitator	Government	Champion
276	1	Reasons for LA21	A	They more came up through the ranks		Facilitator	Government	Champion
277	1	Reasons for LA21	A	Its also interesting that there's a big difference between rural and metropolitan		Facilitator	Government	Champion
278	1	Reasons for LA21	A	In the metropolitan you're getting the younger blokes coming through		Facilitator	Government	Champion
279	1	Reasons for LA21	A	Rural - they're farmers – you know		Barrier	Government	Rural
280	1	Reasons for LA21	A	And that's the same with the councils too		Barrier	Government	Local
281	1	Reasons for LA21	A	Farmers, particularly at the moment, are conservative		Barrier	Government	Rural
282	1	Reasons for LA21	A	They have a low risk operation		Barrier	Government	Rural
283	1	Reasons for LA21	A	That's why I think you get the rural and the urban divide as well		Barrier	Government	Rural
284	1	Reasons for LA21	Q	Interviewer: Apart from my understanding – apart from Mandurah which is – I wouldn't classify it as a rural town – we don't have any shires that have LA21		-	-	-
285	1	Reasons for LA21	A	Jarrahdale, I suppose could be classed as semi-rural, but again its metropolitan region	?			
286	1	Reasons for LA21	A	And probably a lifestyle sense thing too – you've not got farmers with open farming	?			
287	1	Reasons for LA21	A	You've got people with small holdings who are also working	?			
288	1	Reasons for LA21	A	Certainly Jarrahdale is an exception in most respects – the way they go about their operations	?			
289	1	Reasons for LA21	A	They are actually, probably the most advanced as far as the integration	?			
290	1	Reasons for LA21	A	And this is looking at it from the outside not the inside	?			
291	1	Reasons for LA21	Q	Interviewer: Integration of LA21 and their activities?		-	-	-
292	1	Reasons for LA21	A	No		-	-	-
293	1	Reasons for LA21	A	Not LA21		-	-	-
294	1	Reasons for LA21	A	I think its just their attitude – they are more progressive		-	-	-
295	1	Reasons for LA21	Q	Interviewer: Why is that do you think?				
296	1	Reasons for LA21	A	It think it's the people				
297	1	Reasons for LA21	A	Its a really innovative and highly energetic Environmental Officer that can explain anything to anybody		Facilitator	Government	Champion
298	1	Reasons for LA21	A	The officer is making it easy for that group of councillors – who tend to be – you know my impression is that group can be fairly green anyway and environmentally aware		Facilitator	Government	Champion
299	1	Reasons for LA21	A	That's made his job a little bit easier, but he has managed to work that system really well		Facilitator	Government	Champion
300	1	Reasons for LA21	A	They've been open to that		Facilitator	Government	Champion
301	1	Reasons for LA21	A	So, its worked really well		Facilitator	Government	Champion
302	1	Reasons for LA21	A	He's also able to bring in an enormous amount of money through grants and other outside sources		Facilitator	Government	Champion
303	1	Reasons for LA21	A	So again, that makes everything work		Facilitator	Government	Champion
304	1	Reasons for LA21	A	He's integrating		Facilitator	Government	Champion
305	1	Reasons for LA21	Q	Interviewer: Is the critical issue then, to have either interested councillors, or knowledgeable Environmental Officers		-	-	-
306	1	Reasons for LA21	A	Are those the key issues?		Facilitator	Government	Champion
307	1	Reasons for LA21	A	You need the political will and the technical expertise		Facilitator	Government	Champion
308	1	Reasons for LA21	A	When you get down to it		Facilitator	Government	Champion
309	1	Reasons for LA21	A	The political will – you can have the most proactive officer, but if the councillors are saying 'no' then nothing happens		Facilitator	Government	Champion
310	1	Reasons for LA21	A	So it's a critical combination – you can't have proactive councils if the officers just dawdle along because they're not interested at all		Facilitator	Government	Champion
311	1	Reasons for LA21	A	It's that combination and partnership		Facilitator	Government	Champion
312	1	Reasons for LA21	Q	Interviewer: What do you see as being the role of the Western Australian Municipal Assocation of promoting LA21 to councils?				
313	1	Reasons for LA21	A	To support LA21 very strongly through the environmental officer for the program		Facilitator	Government	WAMA
314	1	Reasons for LA21	A	But the thing is whether it responds to the needs of its members, to the organisation		Facilitator	Government	WAMA
315	1	Reasons for LA21	A	So we haven't – we've responded to a need – that's how it happens		Facilitator	Government	WAMA
316	1	Reasons for LA21	A	We have had a group of councillors saying we want you to support us, we want technical support, information, whatever		Facilitator	Government	WAMA
317	1	Reasons for LA21	Q	Interviewer: These are the LA21 adoptive councils?				
318	1	Reasons for LA21	A	Yes		-	-	-
319	1	Reasons for LA21	A	And also others responding to federal government as well in so far as they're a government saying we'd like this promoted, this program is the way to go as far as implementing the national ESD		Facilitator	Government	WAMA
320	1	Reasons for LA21	A	So, we're coming from both ends		Facilitator	Government	WAMA
321	1	Reasons for LA21	A	But WAMA is ultimately a service organisation and we're responding to the need for LA21		Facilitator	Government	WAMA
322	1	Reasons for LA21	A	Its also an advocacy role		Facilitator	Government	WAMA
323	1	Reasons for LA21	A	We want to promote the idea because it is a responsible way of conducting business		Facilitator	Government	WAMA
324	1	Reasons for LA21	A	It's kind of a double role		Facilitator	Government	WAMA
325	1	Reasons for LA21	A	It's not something that WAMA initiated		Facilitator	Government	WAMA
326	1	Reasons for LA21	A	WAMA is very careful about not telling their councils what to do, and its not a regulatory body in any sense		Facilitator	Government	WAMA
327	1	Reasons for LA21	A	It's a representative body		Facilitator	Government	WAMA
328	1	Reasons for LA21	A	We represent our members		Facilitator	Government	WAMA
329	1	Reasons for LA21	A	Our agenda is driven by our members		Facilitator	Government	WAMA
330	1	Reasons for LA21	A	That's why its important that the community, the councillors, who work for the community, people who work for WAMA - WAMA's goal is that the councils want LA21 to fly, and they also want state government to get involved so WAMA is working on getting state government involvement		Facilitator	Government	State
331	1	Reasons for LA21	A	So that's how it works – through the needs of our members or the requests of our members, sometimes demands of our members		Facilitator	Government	WAMA
332	1	Reasons for LA21	Q	Interviewer: When you say state government, do you mean actual departments, like the Department of Environmental Protection?		-	-	-
333	1	Reasons for LA21	A	DEP, Department of Commerce and Trade, depending on what aspects of sustainability you choose		-	-	-
334	1	Reasons for LA21	A	I work for agriculture, I work with CALM, I work with all of them		-	-	-
335	1	Reasons for LA21	A	LA21 is DEP and Commerce and Trade		-	-	-
336	1	Reasons for LA21	Q	Interviewer: What's your own view about the way that they respond to LA21 initiatives?		-	-	-
337	1	Reasons for LA21	A	They are willing to support us, but its not big yet	?	Status	ParadigmShift	Aware
338	1	Reasons for LA21	A	Its more like "you come to us with a really great idea, and we'll look at helping you out with it"	?	Status	ParadigmShift	Aware
339	1	Reasons for LA21	A	It's still not proactive	?	Status	ParadigmShift	Aware
340	1	Reasons for LA21	A	They have commissioned a big report and they would like us – local government – to take the lead	?	Status	ParadigmShift	Aware
341	1	Reasons for LA21	A	They would like to follow our lead	?	Status	ParadigmShift	Aware
342	1	Reasons for LA21	A	That's what we're working on at the moment this year – a proposal for the state government on how they're going to operate	?	Status	ParadigmShift	Aware
343	1	Reasons for LA21	Q	Interviewer: In an ideal world, what would you want the role of the DEP and the role of Commerce and Trade to be in relation to LA21?		-	-	-
344	1	Reasons for LA21	A	Ultimately, we would like to see financial or employment support, policy support, that's a big thing		Barrier	Concept	Ambiguous
345	1	Reasons for LA21	A	There's no policy environment as far as local government doing this on their own		Barrier	Concept	Ambiguous

Row	Int	Topic	Type	Text		Cat 1	Cat 2	Cat 3
346	1	Reasons for LA21	A	We see a lot of potential with making those linkages - between local government and state government There are a lot of things that local governments are doing that go against state government like planning policies		Barrier	Concept	Ambiguous
347	1	Reasons for LA21	A	A lot of that gets in the way		Barrier	Concept	Ambiguous
348	1	Reasons for LA21	A	Taxation policy gets in the way – if you're wanting to do something with vegetation, I think any land that is zoned conservation is subject to land tax		Barrier	Concept	Ambiguous
349	1	Reasons for LA21	A	Quite enormous amounts too		Barrier	Concept	Ambiguous
350	1	Reasons for LA21	A	Those kind of institutional impediments are something that state government can take away		Barrier	Concept	Ambiguous
351	1	Reasons for LA21	A	That's the same with LA21 – we could really do with some help on some of the big issues like greenhouse effects, which all comes under LA21 in the environment		Barrier	Concept	Ambiguous
352	1	Reasons for LA21	A	But it also has a lot of implications for people's quality of life		Barrier	Concept	Ambiguous
353	1	Reasons for LA21	A	And that's part of the problem with LA21 is the program being seen as a purely environmental program		Barrier	Concept	Ambiguous
354	1	Reasons for LA21	A	We've very conscious of trying to maintain the balance between community development and economic development		Barrier	Concept	Ambiguous
355	1	Reasons for LA21	Q	Interviewer: Have their been any councils in your view that have taken on LA21, where it has actually been driven as an economic development policy or a social development policy?		-	-	-
356	1	Reasons for LA21	A	Cottesloe is one example	?			
357	1	Reasons for LA21	A	Their program focusses on community development	?			
358	1	Reasons for LA21	A	They've done a virtual – you know when you have community consultation? Well, they've set it up as an internet network – so if they've got an issue that they want to address, that's how they do it – they send the questionnaire to all their people registered on their internet list	?			
359	1	Reasons for LA21	A	So they've taken quite a community development focus,and they have their leader "Caring for Cottesloe", a coastal activity - yearly now	?			
360	1	Reasons for LA21	A	And that's caring for the coastline – a real community activity	?			
361	1	Reasons for LA21	A	Subiaco has an EMS approach – which is still very environmental	?			
362	1	Reasons for LA21	Q	Interviewer: The reason I asked is that when you said, before that you need a councillor in LA21, this is my interpretation – not yours – but mine is that the councils that have pushed it have done so because they've got an environmental interest		-	-	-
363	1	Reasons for LA21	Q	Clearly you could have a LA21 policy that focussed on, perhaps, bringing companies to create employment, and fostering economic growth and tourism, that sort of stuff, as a way of making a community more financially right, there is no reason theoretically why you couldn't have an LA21 that is focussed just on economic development		-	-	-
364	1	Reasons for LA21	Q	Any thoughts about that?		-	-	-
365	1	Reasons for LA21	A	A lot of them don't repackage that stuff	?	Barrier	Concept	Ambiguous
366	1	Reasons for LA21	A	This is what we're trying to encourage by saying look, you're really doing LA21, you've just got to package it differently – streamline it a bit more	?	Barrier	Concept	Ambiguous
367	**2**	**Implementation of SD**	**T**	**Implementation of Sustainable Development**		-	-	-
368	**2**	**Implementation of SD**	**T**	**Interview two**		-	-	-
369	**2**	**Implementation of SD**	**T**	**JEDEP**		-	-	-
370	2	Implementation of SD	Q	Interviewer: What I would like to ask, is when you think about implementation of sustainable development, who do you think should be the main implementors if there are main ones and if you could give me some feedback if that is the case?		-	-	-
371	2	Implementation of SD	A	Okay well I guess what's driving most of my thoughts about this is card number 38 which is the urgent need to avert widespread environmental destruction	?			
372	2	Implementation of SD	A	Quite marked changes in attitude	?			
373	2	Implementation of SD	A	I guess if I look at these cards they are quite pessimistic in terms of pure decision-makers	?			
374	2	Implementation of SD	A	They have taken on board those things	?			
375	2	Implementation of SD	A	I see it as the core business of the local government as they are the people closest to communities – people on the ground		Facilitator	Government	Local
376	2	Implementation of SD	A	Regardless of the present resources they have at the moment to do that job I think there is the most scope there for them to interact with the community		Facilitator	Government	Local
377	2	Implementation of SD	A	There is a huge gulf in terms of implementation at the local government level		Barrier	Government	Local
378	2	Implementation of SD	A	There is a huge gulf between that potential for those people to interact with the communities and what they can actually do at the moment		Barrier	Government	Local
379	2	Implementation of SD	A	The cost to local government is the reason that I don't think that it is being implemented – potential cost is the bottom line		Barrier	Initiatives	Cost
380	2	Implementation of SD	A	If you listen to their political masters - councillors, mayors within local government - their biggest concern is not to increase rates		Barrier	Initiatives	Cost
381	2	Implementation of SD	A	So if it is unclear to those people at a political level and also people within the staff it is unclear if or even if there is financial bottom line benefits from implementing sustainable development		Barrier	Concept	Ambiguous
382	2	Implementation of SD	A	So it therefore falls on the wayside		Barrier	Concept	Ambiguous
383	2	Implementation of SD	A	In some cases there is a bit of homework and a bit of foresight	?			
384	2	Implementation of SD	A	That problem is also compounded by the fact that the political masters within local government are only there for 3 years or so		Barrier	Government	Local
385	2	Implementation of SD	A	The advantage of catching long term benefits from sustainable planning is not taken into account		Barrier	Government	Local
386	2	Implementation of SD	A	That is also at higher levels of government as well and we experience that within our line of work		Barrier	Government	NS
387	2	Implementation of SD	A	So not only is not a lot of thought given to financial benefits – bottom line it is also some of that information is limiting to even council staff		Barrier	Concept	Ambiguous
388	2	Implementation of SD	A	Even where there is short-term financial benefit as well		Barrier	Concept	Ambiguous
389	2	Implementation of SD	A	In terms of that's why I see large potential there for local government to get involved with thier communities as well but that to me is the bottom line as to why it isn't happening		Barrier	Initiatives	Cost
390	2	Implementation of SD	A	On a wider scale there is a thing of human nature – environmental depreciation is slow		Barrier	Concept	Not Immediate
391	2	Implementation of SD	A	People don't notice it in there lifetime		Barrier	Concept	Not Immediate
392	2	Implementation of SD	A	But in geological time scales if you take the other end of the scale the effect we are having on the planet in my opinion is massive		Barrier	Concept	Not Immediate
393	2	Implementation of SD	Q	Interviewer: I might just start by asking when you talk about local government there at the positive end of the array do you see implementation of sustainable development as a sort of bottom up driven process in our society?				
394	2	Implementation of SD	A	I see it as both		Facilitator	Multi Sectors	JointEffort
395	2	Implementation of SD	A	It gets onto the next series of cards		-	-	-
396	2	Implementation of SD	A	I see the need for the community to be educated informed and involved but I don't see it as bottom up		Facilitator	Community	Educated
397	2	Implementation of SD	A	A lot of people see bottom up as let community groups look after bushland,Let green peace save the whale and I don't see that as a way forward for sustainable development because I work with community groups and I work with people and they are already burnt out trying to manage what little they've got with no recognition and support within government levels and agency levels		Barrier	LittleEffect	Community
398	2	Implementation of SD	A	There are no strategies - a lack of strategies, lack of co-ordination		Barrier	Government	NS
399	2	Implementation of SD	A	I think bigger picture		Facilitator	Multi Sectors	JointEffort
400	2	Implementation of SD	A	I don't think there are substantial gains there		Facilitator	Multi Sectors	JointEffort
401	2	Implementation of SD	A	I think you will get clear benefits from a top down and bottom up approach		Facilitator	Multi Sectors	JointEffort

402	2 Implementation of SD	A	I don't know whether that makes sense but by that I mean part of the top down approach would involve consulting and educating quite widely with the community	Facilitator	Community	Educated
403	2 Implementation of SD	A	Making them aware of the issues and then being quite honest and open with the issues	Facilitator	Community	Educated
404	2 Implementation of SD	A	Example being "Leighton Beach" as an example	Barrier	NGOs	Misdirected
405	2 Implementation of SD	A	You had tonnes of people down there and protesting Leighton Beach as in "don't develop the beach because of it's environmental issues"	Barrier	NGOs	Misdirected
406	2 Implementation of SD	A	Now that's rubbish because there is no environmental issue in developing Leighton Beach	Barrier	NGOs	Misdirected
407	2 Implementation of SD	A	In fact, it would be safer to put houses on there at the moment than the petro chemical plants that are there at the moment	Barrier	NGOs	Misdirected
408	2 Implementation of SD	A	They are the ones that need edcation	Facilitator	Community	Educated
409	2 Implementation of SD	A	What you have there is a social issue - how do people look at protecting their communities and that's the flip side	Barrier	NGOs	Misdirected
410	2 Implementation of SD	A	How lack of environmental education and lack of environmental understanding through the people have highjacked it and environmental issues being raised	Barrier	NGOs	Misdirected
411	2 Implementation of SD	A	It cost some people a lot of trauma trouble	Barrier	NGOs	Misdirected
412	2 Implementation of SD	A	So what I am saying is that it needs to be a ground up, it needs to be a bottom up but it does need to be supported with mechanisms and recognised	Facilitator	Government	NS
413	2 Implementation of SD	A	I don't see the way forward as individuals picking up the banner	Barrier	LittleEffect	Community
414	2 Implementation of SD	A	Or multinational companies, I mean they will have a role to play but I don't see that as the saviour	Barrier	LittleEffect	Industry
415	2 Implementation of SD	Q	Interviewer: So what about non-government groups?	-	-	-
416	2 Implementation of SD	A	I think they will have an important role there but I think their role stays the same which is pushing the envelope, flagging issues which I see as important but if there is nothing else behind them of limited value	Facilitator	NGOs	Lobby
417	2 Implementation of SD	A	Realistically – saving a whale if there were no Blue whales there tomorrow, ecosystems wouldn't fail	Barrier	LittleEffect	NGOs
418	2 Implementation of SD	A	Perhaps in an argument but that's a social issue	Barrier	LittleEffect	NGOs
419	2 Implementation of SD	A	I don't think the significant gains will come through them	Barrier	LittleEffect	NGOs
420	**2 Objectives of SD**	T	**Objectives of Sustainable Development**	-	-	-
421	**2 Objectives of SD**	T	**Interview two**	-	-	-
422	2 Objectives of SD	Q	Interviewer: So that's the implementation issue	-	-	-
423	2 Objectives of SD	Q	Okay so we have the objective cards laid down now	-	-	-
424	2 Objectives of SD	Q	So if you can just try and capture there what you think is about how you see the objectives of sustainable development being or what you think they are and perhaps offer some reasons for how you think about it?	-	-	-
425	2 Objectives of SD	A	I guess what one of the drivers probably sets a frame work to it	-	-	-
426	2 Objectives of SD	A	Card 31 – "Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution" - that is not my core objective of sustainable development but what is behind that to me is that I am very comfortable with our standard of living at the moment	Objective	Social	NotPriority
427	2 Objectives of SD	A	And all those other things from what we have already taken from the environment there is a background there for me there of well lets stop what we are doing and take check and be very careful of how we move forward from here	Objective	Balance	Env-Econ-Soc
428	2 Objectives of SD	A	From there my objectives of sustainable development are really quite clear and lay out in the first couple of cards	Objective	Balance	Env-Econ-Soc
429	2 Objectives of SD	A	Pick card number 21 – "The main emphasis of sustainable development ought to be a form of managed economic growth that occurs within the context of sound environmental steward-ship"	Objective	Balance	Env-Econ-Soc
430	2 Objectives of SD	A	Now that relates closely to card number 29 – "The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations"	Objective	Balance	Env-Econ-Soc
431	2 Objectives of SD	A	But card 29 doesn't quite say what I want I mean	Objective	Balance	Env-Econ-Soc
432	2 Objectives of SD	A	The core objective of sustainable development is to provide economic and environmental social equity within and between generations	Objective	Balance	Env-Econ-Soc
433	2 Objectives of SD	A	What I would have liked to have said behind card number 21 is that sustainable development means that you are not foregoing any opportunities in future stocks and benefits and flows that might be derived from the environment and that relates directly to maintaining the flow by diversity for me	Objective	Equity	
434	2 Objectives of SD	A	So it's pretty self-sustainable there	Objective	Equity	
435	2 Objectives of SD	A	I mean I have really taken the position here that you understand the environment first and when you are making a development decision you have to be comfortable with the best knowledge that your not taking future opportunities away and that does relate to that inter-generation equity	Objective	Equity	
436	2 Objectives of SD	A	So I really don't have much more to add	Objective	Equity	
437	2 Objectives of SD	A	Those are the sorts of thoughts and feelings that are driving that as well	Objective	Equity	
438	2 Objectives of SD	Q	Interviewer: Have you got any comments about these two? Because you have two down here that stand out			
439	2 Objectives of SD	Q	Because they are all on there own really?	Objective	Social	NotPriority
440	2 Objectives of SD	A	Yeah it's not protest by me but is quite clear in me that I place human welfare not hight on the priority	Objective	Social	NotPriority
441	2 Objectives of SD	A	Particularly the furthering of human welfare and I am thinking of first world countries and I think I am being - I surpose it's not anthropocentric, it's egopacentric or whatever	Objective	Social	NotPriority
442	2 Objectives of SD	A	I think in my situation I am quite happy with my standard of living to it is already maximised	Objective	Social	NotPriority
443	2 Objectives of SD	A	These are very anthropocentric strategies, which I am personally very against	Objective	Social	NotPriority
444	2 Objectives of SD	A	So that's why you will see anthropocentric statements - I'm guessing on mine - would be highly disagree	Objective	Social	NotPriority
445	2 Objectives of SD	Q	Interviewer: We will see as we go - yes?	-	-	-
446	2 Objectives of SD	A	Yeah	Objective	Social	NotPriority
447	2 Objectives of SD	A	That's why maximisation of human welfare does not place highly in my definition of sustainable development	Objective	Social	NotPriority
448	2 Objectives of SD	A	Human welfare is certainly there and particularly when I think of third world countries but not in the first world	Objective	Social	NotPriority
449	2 Objectives of SD	A	I have had my fill	Objective	Social	NotPriority
450	2 Objectives of SD	Q	Interviewer: So is it about maintaining welfare in first world is that what you are saying? Like keeping it at the level that we have it at the moment or are you saying about going back a bit?	-	-	-
451	2 Objectives of SD	A	It is funny in the way that I think, sometimes I slip into the political game which is in terms of I think that I predict the way that we are going at the moment in that our standard of living and welfare will decline	Objective	Social	NotPriority
452	2 Objectives of SD	A	My measure of welfare is the number of whales that are left in the ocean and more direct things to me like air quality, water quality things that will directly affect my health and my children's health	Objective	Env	Knock-on
453	2 Objectives of SD	A	I guess what I hope for is to keep our standard of living static	Objective	Social	NotPriority
454	2 Objectives of SD	A	I guess you can get into an argument of what is our standard of living, a good standard of living to me is clean air and water and a wonderful environment	Objective	Env	Knock-on
455	2 Objectives of SD	A	It's not a new car every seven years	Objective	Social	NotPriority
456	2 Objectives of SD	A	That means very little to me	Objective	Social	NotPriority

457	2 Objectives of SD	A	I guess when you ask me a question of what do you think of human welfare my human welfare for me are those environmental things	Objective	Env	Knock-on
458	2 Objectives of SD	A	You can't get back what you lost so I do hope that it stays static	Objective	Social	NotPriority
459	2 Objectives of SD	A	In the wider social economic scale of welfare I guess the best that we can hope for is for it to stay static in first world countries but I can't see that happening	Objective	Social	NotPriority
460	2 Objectives of SD	Q	Interviewer: I surpose I should ask why do you think that is the case?What sort of issues are going to deteriorate?What sort of issues do you think are going to come along and make things worse for us? What sort of issues do you have in mind?	-	-	-
461	2 Objectives of SD	A	The ones that I have in mind are the basic – clean water, clean air	Objective	Env	Knock-on
462	2 Objectives of SD	Q	Interviewer: So we will have less access to those – pay a higher price for those?	-	-	-
463	2 Objectives of SD	A	The higher price may well just be health	Objective	Env	Knock-on
464	2 Objectives of SD	A	I think we will be paying a higher price for those because of the supplier and increasing demands	Objective	Env	Knock-on
465	2 Objectives of SD	A	I will never see a blue whale in my life it is highly unlikely but I get value, there is an existence value for me that they are there	Objective	Env	Knock-on
466	2 Objectives of SD	A	They say all these different species we are loosing every day, I have never heard of half of them but I would still argue that I am loosing, my standard of living is decreasing	Objective	Env	Knock-on
467	2 Objectives of SD	Q	Interviewer: So that's the objective in terms of sustainable development is maintaining you vision of quality of life that encompasses with the things around?	-	-	-
468	2 Objectives of SD	A	I guess so but other things are no more taking away of future options	Objective	Equity	
469	2 Objectives of SD	A	I mean that is a cliched example but the cure for cancer that comes from some obscure plant	Objective	Equity	
470	2 Objectives of SD	A	Or clean air, which is to me a very real issue	Objective	Equity	
471	**2 Role of science and technology**	T	**Role of science and technology**	-	-	-
472	**2 Role of science and technology**	T	**Interview two**	-	-	-
473	2 Role of science and technology	Q	Interviewer: Moving onto the next issue theses are the statements about the role of science and technology play in implementing sustainable development	-	-	-
474	2 Role of science and technology	Q	So I might just ask what you think are the roles of science and technology in terms of its involvement with sustainable development	-	-	-
475	2 Role of science and technology	Q	Whether it's part of the solution or part of the problem	-	-	-
476	2 Role of science and technology	Q	What are your thoughts?	-	-	-
477	2 Role of science and technology	A	I guess science and technology is part of the solution but it is sitting in the cart and it's not the horse	S&T	Subordinate	Soc-Pol
478	2 Role of science and technology	A	The social and particularly the political aspects of our society, the world population whatever they are the ones for me that need to drive or be the the horse of sustainable development	S&T	Subordinate	Soc-Pol
479	2 Role of science and technology	A	Science and technology will play a part in that but at the moment it plays – I have set out the statement of "science and technology as a major driving force between increasingly negative effects of human actions on the global environment"	S&T	Subordinate	Soc-Pol
480	2 Role of science and technology	A	I don't see it as the major driving force	S&T	Subordinate	Soc-Pol
481	2 Role of science and technology	A	What I mean by that is that stems from a social and political basis	S&T	Negative	Environment
482	2 Role of science and technology	A	It is just that science and technology has offered greater scope on the environment	S&T	Negative	Environment
483	2 Role of science and technology	A	It is not scientists themselves sitting in their labs	S&T	Negative	Environment
484	2 Role of science and technology	A	It is not a professor designing large spray guns	S&T	Negative	Environment
485	2 Role of science and technology	A	Lang Hancock wanted to seriously propose to drop atomic bombs in the Pilbara so that he could mine there	S&T	Negative	Environment
486	2 Role of science and technology	A	I don't think that he, or Robert Oppnheimer who designed it knew the consequences	S&T	Negative	Environment
487	2 Role of science and technology	A	So really I guess that forms the basis of why I am so largely in the negative of science and technology	S&T	Negative	Environment
488	2 Role of science and technology	A	I see it as important with massive benefits to sustainable development but it is not the answer	S&T	Subordinate	NS
489	2 Role of science and technology	A	I don't see technology keeping up with being able to solely promote the sustainable development	S&T	Subordinate	NS
490	2 Role of science and technology	A	I guess I have at the top there that all the top private companies accept their responsibilities – science and technology to minimise the harm to the environment	Objective	Industry	Behaviour
491	2 Role of science and technology	A	They ought to but not on there own	Facilitator	Multi Sectors	JointEffort
492	2 Role of science and technology	Q	Interviewer: Do you think they actually can? Can they do that today?	-	-	-
493	2 Role of science and technology	A	Not at the moment no	-	-	-
494	2 Role of science and technology	A	I don't think so no because they are running a business, they're in competition and their bottom line is short term profit making and by short term I mean even over seven, twenty years whatever	Barrier	Initiatives	Cost
495	2 Role of science and technology	A	Which is nothing in environmental time's scales	Barrier	Concept	Not Immediate
496	2 Role of science and technology	A	I don't think they have, perhaps they ought to be able to accept responsibility	Barrier	Concept	Not Immediate
497	2 Role of science and technology	A	I think that it is difficult for them to do so	Barrier	Concept	Not Immediate
498	2 Role of science and technology	A	The bottom cards for me are again reflecting a very anti-anthropocentric point of view	-	-	-
499	2 Role of science and technology	A	Particularly card number 4 there – "The exceptional characteristics of Homo sapiens, particularly our knowledge and technology, exempt us from the ecological limits which constrain other species"	-	-	-
500	2 Role of science and technology	A	I see economic growth providing new technology that will provide solutions to sustainable development and perhaps they are already there but technology is being blocked from being implemented to promote sustainable development	S&T	Subordinate	Soc-Pol
501	2 Role of science and technology	Q	Interviewer: What kind of things are you thing about there	-	-	-
502	2 Role of science and technology	A	I am out of my depth in terms of what technology is out there but I will use an example just to illustrate my point	S&T	Subordinate	Soc-Pol
503	2 Role of science and technology	A	A solar powered car or a car power by clean water I think there are those similar technologies out there but again it's the social and political landscape that is stopping that	S&T	Subordinate	Soc-Pol
504	2 Role of science and technology	Q	Interviewer: It is definitely a part of it you think?	-	-	-
505	2 Role of science and technology	A	Absolutely, particularly if we are going to maintain our life styles	S&T	Subordinate	Soc-Pol
506	2 Role of science and technology	A	For us to maintain our current lifestyles the part that technology might play is lead replacement petrol	S&T	Subordinate	Soc-Pol
507	2 Role of science and technology	A	Cleaner, lower polution cars	S&T	Subordinate	Soc-Pol
508	2 Role of science and technology	A	There is a social and political, economic imperative, whatever to adopt those technologies	S&T	Subordinate	Soc-Pol
509	2 Role of science and technology	A	It's certainly one of the paths of sustainable development	S&T	Subordinate	Soc-Pol
510	2 Role of science and technology	Q	Interviewer: When you mentioned card number twenty four which you have right up there at the positive end – "Private companies ought to accept responsibility whatever", do you think that companies today I guess green companies are presenting there green corporate image	-	-	-
511	2 Role of science and technology	Q	Do you think it is consumer demand driving companies to be more sustainably developed friendly?	-	-	-
512	2 Role of science and technology	A	I think it has promoted change	Facilitator	Community	Lobby
513	2 Role of science and technology	A	I think there has been substantial benefits but I think that it has been consumer perception not consumer demand that is driving it	Facilitator	Community	Lobby
514	2 Role of science and technology	A	I said this to someone - the environmental departments within large organisations and mining companies are practically next door to their PR people	Facilitator	Community	Lobby
515	2 Role of science and technology	A	It is an example that I think off the top of my head but perhaps this is a very clear indication that at the moment the "environmental responsibility" of these companies is being driven by this perception rather than driven by a genuine concern for sustainable development	Facilitator	Community	Lobby
516	2 Role of science and technology	A	Now that's not to say that you don't get some very real environmental benefits	-	-	-

517	2 Role of science and technology	A	Again I don't think that will ensure sustainable development and again sustainable development is for me no more losses in future opportunities	Objective	Equity	
518	2 Problem issues	T	Problem issues	-	-	-
519	2 Problem issues	T	Interview two	-	-	-
520	2 Problem issues	Q	Interviewer: The last section of cards deal with the actual problems that sustainable development is attempting to overcome and what the scope of those problems are	-	-	-
521	2 Problem issues	Q	If you can give me some insight into what you feel some of the problems that sustainable development is overcoming or what current problems we face	-	-	-
522	2 Problem issues	Q	What do you feel about that?	-	-	-
523	2 Problem issues	A	I guess if I look at the highly negative cards in terms of problems we face the anthropocentric ones that nature has an unlimited simulation capacity	Environment	Problems	LimitedResources
524	2 Problem issues	A	And that humans alone have rights I think they are the biggest problems	Objective	Social	NotPriority
525	2 Problem issues	A	The flip side of that is that the hardest ones as well is that we are living way beyond our capacity	Environment	Problems	LimitedResources
526	2 Problem issues	A	By that I mean that not for the next hundred years	Environment	Problems	LimitedResources
527	2 Problem issues	A	A couple of hundred years of living how we are is going to impact very seriously on all our social, economic, environmental future	Environment	Problems	LimitedResources
528	2 Problem issues	A	They are all kind of middle ones for me and I could argue either way	-	-	-
529	2 Problem issues	A	Where it says statement 36 at zero - "The whole ten thousand year history civilisation declined generation from the earliest form of lifestyle" – there is two sides to that	-	-	-
530	2 Problem issues	A	We have a very impressive capacity to decrease – to not live sustainably the flip side is that we have through industrial development, we now have the capacity to live sustainably and enjoy a higher standard of living	S&T	Important	SOL
531	2 Problem issues	A	Again I don't think it's people not the tools we are using	S&T	Important	SOL
532	2 Problem issues	A	I don't have a lot, a lot to say really	-	-	-
533	2 Problem issues	Q	Interviewer: I was going to ask you perhaps what you think about this one what you feel about the difference of local as apposed to regional or this idea of global problems where you feel which is most crucial at the present time and which you feel that sustainable development strategies can actually tie up?	-	-	-
534	2 Problem issues	A	I am not sure how that relates to the cards sorry	-	-	-
535	2 Problem issues	A	Despite local environmental problems as a record	-	-	-
536	2 Problem issues	Q	Interviewer: Using that as a prompt really	-	-	-
537	2 Problem issues	Q	How you feel about, like do you think the problems that we face are locally based or regionally based or globally based and of those three do you feel that we need to target the local ones or the global ones target the regional ones or what?	-	-	-
538	2 Problem issues	A	I guess all three in that it's local interacting globally	-	-	-
539	2 Problem issues	A	But any living thing has an impact on the environment, sustainable or not	-	-	-
540	2 Problem issues	A	So I don't really know	-	-	-
541	2 Problem issues	A	Because, as a person, the amount of ways that I produce my house has an impact on the environment	-	-	-
542	2 Problem issues	A	The lines are to blurred for me	-	-	-
543	2 Problem issues	A	When it gets back to those sorts of statements, I mean I have my ideas as to when the top down and bottom up approach starts and begins with, I think it begins with an educated form level of environmental interest	Facilitator	Community	Educated
544	2 Problem issues	A	That can then drive but there is a catch 22, "why would you educate people to have environmental concern who will than cause a lot of trouble?"	Barrier	Government	Individuals
545	2 Problem issues	Q	Interviewer: If you were a politician you mean?	-	-	-
546	2 Problem issues	A	Yeah	-	-	-
547	2 Problem issues	A	So sorry if I was a bit sort of vague, I don't have much more to add on that	-	-	-
548	3 Reasons for LA21	T	Reasons for LA21	-	-	-
549	2 Reasons for LA21	T	Interview two	-	-	-
550	2 Reasons for LA21	Q	Interviewer: Moving on then the last issue that I would like just to think about is in relation to LA21 which is not being very widely endorsed by local governments in Perth	-	-	-
551	2 Reasons for LA21	Q	There is a handful about nine or ten of them local governments that have LA 21 policies and I was just wondering if you have any insights as to why those ten have got Local Agenda 21 and perhaps why the other 140 odd councils perhaps if you stick to the metropolitan ones, 120 or 125 haven't got gender 21 what do you think?What is driving those? Yeah what things are going on?	-	-	-
552	2 Reasons for LA21	A	They are just the early adopters aren't they?Other than the grant I'm not sure to be honest I think what might be – I might be wrong depends on what sorts of grants or backing that they have	Facilitator	Government	Federal
553	2 Reasons for LA21	A	Whether it is National Heritage Trust or it is support for sustainable development	Facilitator	Government	Federal
554	2 Reasons for LA21	Q	Interviewer: So from higher levels of government?	-	-	-
555	2 Reasons for LA21	A	Yeah	-	-	-
556	2 Reasons for LA21	A	I mean basically I see the flip side as why they aren't because they can't	-	-	-
557	2 Reasons for LA21	A	Its because they politicians can't realise the short term cost from the long-term gain	Barrier	Concept	Not Immediate
558	2 Reasons for LA21	Q	Interviewer: When you say politicians you mean the local council?	-	-	-
559	2 Reasons for LA21	A	Perhaps to a certain extend it is very difficult to an accounting side for them to make the investment in future environmental benefits	Barrier	Initiatives	Cost
560	2 Reasons for LA21	A	I think that the bottom line is financial costs going down the line or it just can't be captured	Barrier	Initiatives	Cost
561	2 Reasons for LA21	Q	Interviewer: The benefits?	-	-	-
562	2 Reasons for LA21	A	The benefits can't be captured like if I choose not drive my car I don't necessarily capture the benefits of cleaner air	Barrier	Concept	Not Immediate
563	2 Reasons for LA21	A	The question you asked is why those councils put on people	-	-	-
564	2 Reasons for LA21	Q	Interviewer: Not necessarily just put on people but one of the things is - why are the councils that are endorsing Agenda 21 - what is the essential criteria that they have that is lacking else where	-	-	-
565	2 Reasons for LA21	A	I feel that what they have is one maybe two people within the councils that are highly motivated anti-greed motivations, very passionate about their work and drive the change	Facilitator	Government	Champion
566	2 Reasons for LA21	Q	Interviewer: Do you think that those people would be councillors or more likely to be council staff	-	-	-
567	2 Reasons for LA21	A	Like environmental officers or planning officers?	-	-	-
568	2 Reasons for LA21	A	I am guessing that they would be council staff	Facilitator	Government	Champion
569	2 Reasons for LA21	A	I am very much making an assumption	-	-	-
570	2 Reasons for LA21	Q	Interviewer: Like what would you feel that those councils have one or two people that are accepting the project?	-	-	-
571	2 Reasons for LA21	A	Often I think of the sorts of people that drive changes are council staff	Facilitator	Government	Champion
572	2 Reasons for LA21	A	They are doing this within their other duties as required	Facilitator	Government	Champion
573	2 Reasons for LA21	A	I mean I'm not sure what Mandurah council is held up as a shinning light in terms of electronic process and you could put that down to one, there is another girl there as well who really drove it and did magnificent work	Facilitator	Government	Champion
574	2 Reasons for LA21	A	But now I am not sure of the outcome of that	Facilitator	Government	Champion
575	2 Reasons for LA21	A	My understanding that it is she did a lot of wonderful work	Facilitator	Government	Champion
576	2 Reasons for LA21	A	But it wasn't even really called duties and the policies that they developed	Facilitator	Government	Champion
577	2 Reasons for LA21	A	I don't think were standard policies I think a change of a less greener council can change it back so it is hardly systematic	Facilitator	Government	Champion
578	2 Reasons for LA21	A	My feeling is that one or two motivated people are driving these things	Facilitator	Government	Champion
579	2 Reasons for LA21	A	They are putting in a shit load of extra time to pull it off	Facilitator	Government	Champion

580	2 Reasons for LA21	A	Or they have external funding	Facilitator	Initiatives	Inc-Financial
581	2 Reasons for LA21	A	Councils are about providing a service to their ratepayer – rubbish, gardens whatever	Facilitator	Initiatives	Inc-Financial
582	2 Reasons for LA21	Q	Interviewer: The last question that I have for you is about optimism and pessimism	-	-	-
583	2 Reasons for LA21	Q	Would you describe yourself when you think about how the planet is organised today and sustainable development and environmental crisis would you describe yourself as being fairly optimistic about the future or would you describe yourself as very pessimistic	-	-	-
584	2 Reasons for LA21	Q	What is your feeling about that?	-	-	-
585	2 Reasons for LA21	A	In terms of environmental quality I think highly pessimistic	Status	Pessimistic	NS
586	2 Reasons for LA21	A	My measure there, is my living environment	Status	Pessimistic	NS
587	2 Reasons for LA21	A	Clean water, Clean air	Status	Pessimistic	NS
588	2 Reasons for LA21	A	But also things that are close to my heart environmental values, species diversities and wilderness areas	Status	Pessimistic	NS
589	2 Reasons for LA21	A	The opportunity to spend times with my own self on a beach, all those things	Status	Pessimistic	NS
590	2 Reasons for LA21	A	Within my lifetime it's difficult to decide as to whether there will be massive social destruction as a result of it	Status	Pessimistic	NS
591	2 Reasons for LA21	A	Things that are very important to me as in terms of my quality of life - my sensible being	Status	Pessimistic	NS
592	2 Reasons for LA21	A	But overall, very pessimistic about the future	Status	Pessimistic	NS
593	**3 Implementation of SD**	T	**Implementation of Sustainable Development**	-	-	-
594	**3 Implementation of SD**	T	**Interview three**	-	-	-
595	**3 Implementation of SD**	T	**SEEMRC**	-	-	-
596	3 Implementation of SD	Q	Interviewer: Can you just talk through when you think about sustainable development - Who you think should be implementing it? Why you think that?	-	-	-
597	3 Implementation of SD	A	I think sustainable development is something that needs to be taken on by everybody within the community from individual members of the community to government and private industries	Facilitator	Multi Sectors	JointEffort
598	3 Implementation of SD	A	It can't be stressed by one point of view or one agency taking on that role	Facilitator	Multi Sectors	JointEffort
599	3 Implementation of SD	A	Basically why I have put the cards this way	Facilitator	Multi Sectors	JointEffort
600	3 Implementation of SD	Q	Interviewer: it sounds like everyone should be involved	-	-	-
601	3 Implementation of SD	Q	Is that right? Why do you think that everybody needs to be involved?	-	-	-
602	3 Implementation of SD	A	Because sustainable development is a way of life	Facilitator	Multi Sectors	JointEffort
603	3 Implementation of SD	A	It is a way of doing business	Facilitator	Multi Sectors	JointEffort
604	3 Implementation of SD	A	It's your attitude to things around you and the things that you actually do	Facilitator	Multi Sectors	JointEffort
605	3 Implementation of SD	A	The individual in the home whether it be from composting to being more aware of energy efficiency in the home	Facilitator	Community	Involvement
606	3 Implementation of SD	A	it goes to private industries such as lead developers, building codes in houses, companies that build fencing or implementing strategies towards accountable development such as solar orientation in homes all that sort of stuff	Facilitator	Industry	Operations
607	3 Implementation of SD	A	The local government...	Facilitator	Government	Local
608	4 Implementation of SD	A	... the state government because they have the power and the resources	Facilitator	Government	State
609	3 Implementation of SD	A	Although I surpose they are limited to address that on a wider scale and also to take on that responsibility to serve the public and serve individuals throughout awareness and give them the resources and help them understand	Facilitator	Multi Sectors	TopDown
610	3 Implementation of SD	A	Also help them implement their way of being sustainable on a daily basis	Facilitator	Multi Sectors	TopDown
611	3 Implementation of SD	A	No one person can address it	Barrier	LittleEffect	Community
612	3 Implementation of SD	A	If a designer for a home is doing the right thing and another in the community wants to have energy inefficient homes then it's not going to work	Barrier	LittleEffect	Community
613	3 Implementation of SD	Q	Interviewer: I might just talk about a couple of cards particularly the ones at the ends we will start with the most positive card you have is card number 28 which says "There can be clear benefits from involving the public in the sustainable development policy-making process, particularly when complex economic, environmental, and social issues are being addressed"	-	-	-
614	3 Implementation of SD	Q	It seems to be about the benefits of involving the public particularly when it comes to social issues	-	-	-
615	3 Implementation of SD	Q	What do you see as being some of those benefits?	-	-	-
616	3 Implementation of SD	A	I think benefits would be probably in the pocket	Facilitator	Initiatives	Inc-Financial
617	3 Implementation of SD	A	Of things visual and that's what the most benefit people would need to see to change their behaviour	Facilitator	Initiatives	Inc-Observ
618	3 Implementation of SD	A	They need to see something that actually saves them money	Facilitator	Initiatives	Inc-Financial
619	3 Implementation of SD	Q	Interviewer: You mean economically?			
620	3 Implementation of SD	A	I think that is probably the most important thing	Facilitator	Initiatives	Inc-Financial
621	3 Implementation of SD	A	People do things for money value where they like to see a financial saving	Facilitator	Initiatives	Inc-Financial
622	3 Implementation of SD	A	Whether it be saving of power on bills	Facilitator	Initiatives	Inc-Financial
623	3 Implementation of SD	A	That's the approach that we are trying to sell to the governments as well	Facilitator	Initiatives	Inc-Financial
624	3 Implementation of SD	A	Refitting lights – light globes and all that in the long term will save them money because that seems to be a driving force on a larger scale	Facilitator	Initiatives	Inc-Financial
625	3 Implementation of SD	A	And I think that approach is consistent on an individual level as well	Facilitator	Initiatives	Inc-Financial
626	3 Implementation of SD	A	There are individuals as well that actually want to do something for the financial benefit	Facilitator	Initiatives	Inc-Financial
627	3 Implementation of SD	A	It takes the individual a lot of awareness perhaps and education to see the big picture benefits that don't necessarily influence them or have an impact on them	Facilitator	Initiatives	Inc-Financial
628	3 Implementation of SD	Q	Interviewer: So you also think that by implementing susceptible development those benefits would pull through for people?	-	-	-
629	3 Implementation of SD	A	I do yeah ?	-	-	-
630	3 Implementation of SD	A	I think the environmental element is a nice feeling ?	-	-	-
631	3 Implementation of SD	A	To see a patch of bushland saved that very few people actually do something about it ?	-	-	-
632	3 Implementation of SD	A	They will want that to happen ?	-	-	-
633	3 Implementation of SD	Q	Interviewer: So it's a nice idea there but without...	-	-	-
634	3 Implementation of SD	A	Unless it effects them in there own backyard on the individual basis, very few people change their ways	Facilitator	Initiatives	Inc-Observ
635	3 Implementation of SD	A	Or unless it's made really easy where it's not going to make their day to day life to difficult or too different then I don't see any change	Barrier	Initiatives	Inconvenient
636	3 Implementation of SD	A	Take recycling for instance, if you supply people with bins they will make the effort because it's not too much out of their normal routine to do that but if they have to drop it off at a recycling station.	Facilitator	Initiatives	EasyChange
637	3 Implementation of SD	A	I mean you have to inconvenience them as little as possible otherwise give them the financial benefit	Facilitator	Initiatives	EasyChange
638	3 Implementation of SD	A	The "feel good benefits", I don't think they drive people to make change	Facilitator	Initiatives	Extrinsic
639	3 Implementation of SD	A	To change our behaviour anyway	Facilitator	Initiatives	Extrinsic
640	3 Implementation of SD	Q	Interviewer: Down at the other end I surpose the most negative point of view is the minus three which is right at the end you have card number 43 – "Decision-making about problems of sustainable development properly ought to be left to those people with expert scientific knowledge"	-	-	-
641	3 Implementation of SD	Q	That seems to be about decision making by experts	-	-	-
642	3 Implementation of SD	Q	What kind of problem do you see with the process that is driven by experts?	-	-	-
643	3 Implementation of SD	A	I think it tends to be one sided it can be very narrow and it doesn't necessarily incorporate the wider community and their needs	Barrier	Experts	Decisions

644	3 Implementation of SD	A	It is based on mere science and facts not the social aspects associated with that which is important as well		Barrier	Experts	Decisions
645	3 Implementation of SD	A	That's like where I was talking about changing behaviour, where you need to make things as convenient as possible		Facilitator	Initiatives	EasyChange
646	3 Implementation of SD	A	Even if it is the right thing to do people might not necessarily do it because it's too hard		Barrier	Initiatives	Inconvenient
647	3 Implementation of SD	A	All those sorts of social things		Barrier	Initiatives	Inconvenient
648	3 Implementation of SD	A	Although it is important to have scientific knowledge, to have the facts		Facilitator	Experts	Facts
649	3 Implementation of SD	A	You need to raise the awareness in people and then consider their behavioural patterns and social patterns and the economic as facts offered as well		Facilitator	Community	Educated
650	3 Implementation of SD	Q	Interviewer: In summary I just want to ask you to comment on this and make a statement		-	-	-
651	3 Implementation of SD	Q	It seems that you are perhaps saying that sustainable development is more of a bottom driven process rather than a top down process		-	-	-
652	3 Implementation of SD	Q	Do you think that I am right in saying that?		-	-	-
653	3 Implementation of SD	A	Yes to some degree		-	-	-
654	3 Implementation of SD	A	Though if it is totally bottom up individual and communities – I'm talking about bottom up don't really have the knowledge to drive that, they need to have that driven from that end, they need guidance as well		Facilitator	Multi Sectors	JointEffort
655	3 Implementation of SD	A	So they need to be given the resources, education, money whatever		Facilitator	Multi Sectors	JointEffort
656	3 Implementation of SD	A	To know, to firstly be made aware how they can change and then I surpose individuals need guidance and need to know that they are not the only ones fighting the battle		Facilitator	Multi Sectors	JointEffort
657	3 Implementation of SD	A	It needs to be possible technically to say "yes, my local government is doing this or state government is doing this and this is how I can help"		Facilitator	Multi Sectors	JointEffort
658	3 Implementation of SD	Q	Interviewer: Of those governments, we have three tiers of government in Australia, we have commonwealth, state and local government		-	-	-
659	3 Implementation of SD	Q	Who do you think it is that has the leader or prominent leadership role for sustainable development out of those governments? In your eyes who should be leading the process of sustainable development?		-	-	-
660	3 Implementation of SD	A	I think local government should be doing it by getting down to the last, to the grass roots level because they have the most contact with the community		Facilitator	Government	Local
661	3 Implementation of SD	A	State government comes across as too remote, too separate from the community		Barrier	Government	State
662	3 Implementation of SD	A	People, individuals in the community don't tend to read state government documents and commonwealth documents		Barrier	Government	State
663	3 Implementation of SD	A	They tend to be read and not really acted on		Barrier	Government	State
664	3 Implementation of SD	A	I think local government, individuals in their local government doing something in their bushland or changing light globes in their street - they can see it themselves in their own little community and then they are more influenced to act on an individual basis		Facilitator	Government	Local
665	3 Implementation of SD	A	So I think although local government takes on a role of supporting the individual it also needs guidance from power	?	Facilitator	Government	Federal
666	3 Implementation of SD	A	Through funding, resources all that sort of stuff	?	Facilitator	Government	Federal
667	**3 Objectives of SD**	**T**	**Objectives of Sustainable Development**		-	-	-
668	**3 Objectives of SD**	**T**	**Interview three**		-	-	-
669	3 Objectives of SD	Q	Interviewer: So these ones, the second set of cards are about the objectives of sustainable development		-	-	-
670	3 Objectives of SD	Q	So can you just give me some thoughts on this issue		-	-	-
671	3 Objectives of SD	Q	These are about the objectives of sustainable development - what in your view is sustainable development trying to achieve?		-	-	-
672	3 Objectives of SD	A	Sustainable development is trying to achieve a very big picture type of stuff		Objective	Balance	Env-Econ-Soc
673	3 Objectives of SD	A	It is not looking at any particular area such as some of these cards that are picked out here		Objective	Balance	Env-Econ-Soc
674	3 Objectives of SD	A	The ones towards me would then focus more on human welfare and don't take the whole picture, I guess which is sustainable development		Objective	Balance	Env-Econ-Soc
675	3 Objectives of SD	Q	Interviewer: These are the cards at the negative end then, the ones you put at the negative end then?		-	-	-
676	3 Objectives of SD	A	Yeah the cards at the negative end tend to focus on the importance of sustainable development solely towards human beings		Objective	Social	NotPriority
677	3 Objectives of SD	A	I totally disagree with that		Objective	Social	NotPriority
678	3 Objectives of SD	A	that conveys only part of the whole picture that you get from sustainable development		Objective	Social	NotPriority
679	3 Objectives of SD	A	Sustainable development should look at the flora the fauna, everything from the air that we breathe to the water that we have, the floor that we walk on		Objective	Balance	Env-Econ-Soc
680	3 Objectives of SD	A	The importance of all of those, the whole eco system approach		Objective	Balance	Env-Econ-Soc
681	3 Objectives of SD	A	I think that the objective is to look at the whole of the national environment and incorporate it into the way we live which incorporates the environment		Objective	Balance	Env-Econ-Soc
682	3 Objectives of SD	Q	Interviewer: So I guess you mentioned economic, social and environmental ecology there		-	-	-
683	3 Objectives of SD	Q	Are any of those issues have a primacy within sustainable development, in its objectives or are they all equal?		-	-	-
684	3 Objectives of SD	A	Environmental development is the more important, because as a result of the environment you have the economic benefits and social benefits		Objective	Env	Knock-on
685	3 Objectives of SD	A	Like the social benefits being able to have recreation in natural areas is very important		Objective	Env	Knock-on
686	3 Objectives of SD	A	That in itself is an economic benefit		Objective	Env	Knock-on
687	3 Objectives of SD	A	You can't put a price on the social wellbeing of a person		Objective	Env	Knock-on
688	3 Objectives of SD	A	The economic benefits such as tourism, having natural areas for tourism, recreation and that sort of stuff		Objective	Env	Knock-on
689	3 Objectives of SD	A	People wanting to live in a nice area will pay extra money if they feel good about the environment		Objective	Env	Knock-on
690	3 Objectives of SD	A	Generally people I think like to have a bit of balance between natural and built environment		Objective	Env	Knock-on
691	3 Objectives of SD	A	It is like if you want to build in a coastal area		Objective	Env	Knock-on
692	3 Objectives of SD	A	If you have views of the ocean you can actually make sure that people can pay a little bit more		Objective	Env	Knock-on
693	3 Objectives of SD	A	As a result of the environment you live in has economic benefits to the individual		Objective	Env	Knock-on
694	3 Objectives of SD	A	But if you take away those environmental benefits then the social and economic benefits will climb as well		Objective	Env	Knock-on
695	3 Objectives of SD	A	So it's all hand in hand		Objective	Env	Knock-on
696	3 Objectives of SD	Q	Interviewer: Can we just talk about the individual cards as well?One in particular that I'm interested in is the card number 19 which talks about sustainable development as a long-term process		-	-	-
697	3 Objectives of SD	Q	Now just in your own view when you say a long term process view what do you - how long are we talking there?When it comes to sustainable development do you think we have 5 years or 500 years or 5000 years?		-	-	-
698	3 Objectives of SD	A	To achieve the objective?		-	-	-
699	3 Objectives of SD	Q	Interviewer: Yeah to either achieve or start doing it		-	-	-
700	3 Objectives of SD	A	I think we have a moment now to start address it		Objective	ActNow	
701	3 Objectives of SD	A	Because if you keep delaying it and saying it will be okay we will start doing it tomorrow you are making the situation worse and it becomes more economically unviable to go back and to start fixing the problems that are happening		Objective	ActNow	
702	3 Objectives of SD	A	I think that it is really important to start now but when you are dealing with behavioural change on an individual basis it takes a long time maybe-even generations		Objective	ActNow	
703	3 Objectives of SD	A	I think that is happening now where kids are much more aware of the environment than what the previous generation was		Status	ParadigmShift	Aware
704	3 Objectives of SD	A	And it's now so much, a more use and conserve mentality that's coming through		Status	ParadigmShift	Act

Row	Int #	Category	Type	Text	Cat 1	Cat 2	Cat 3
705	3	Objectives of SD	A	The education part is very important but it takes a long time so that's why I think that it's a long-term process taking individual behaviour and that way of thinking	Objective	Perpetual	
706	3	Objectives of SD	A	Saying you have to do this now, you have to do that now, otherwise its going to be to late	Objective	ActNow	
707	3	Objectives of SD	A	It is a very fragile process	Objective	ActNow	
708	3	Objectives of SD	Q	Interviewer: Do you think that we will arrive at a situation in your lifetime where you say we now have a sustainable way of life? Will it be while we are alive?	-	-	-
709	3	Objectives of SD	A	Yeah I think so	Status	Optimistic	Future
710	3	Objectives of SD	A	If we act now and we put our resources and energy into that now	Objective	ActNow	
711	3	Objectives of SD	Q	Interviewer: What is your feeling are you optimistic that it can be delivered?	-	-	-
712	3	Objectives of SD	A	Yeah I wouldn't be doing what I am doing now otherwise	Status	Optimistic	Future
713	3	Objectives of SD	Q	Interviewer: You can see things happening around you?	-	-	-
714	3	Objectives of SD	A	I can see the focus on the environment become more and more important	Status	ParadigmShift	Aware
715	3	Objectives of SD	A	Kids talk about it in school they get taught about it in school	Status	ParadigmShift	Aware
716	3	Objectives of SD	A	People practise recycling in their homes, local government are taking on a lot more, in their funding structure anyway and a lot more responsibility in managing the environment	Status	ParadigmShift	Act
717	3	Objectives of SD	A	At a higher level the state government and commonwealth government - there is a lot more focus	Status	ParadigmShift	Prepare
718	3	Objectives of SD	A	It's just a matter of putting it into practise now	Status	ParadigmShift	Prepare
719	3	Objectives of SD	A	Although that is happening I believe on a greater level	Status	ParadigmShift	Act
720	3	**Role of science and technology**	T	**Role of science and technology**	-	-	-
721	3	**Role of science and technology**	T	**Interview three**	-	-	-
722	3	Role of science and technology	Q	Interviewer: So now I have laid out the cards that relate to science and technology and modernism if you like	-	-	-
723	3	Role of science and technology	Q	So if you could just give some views of what you think, I am not quite sure what these cards really say but perhaps that way thinking that the role of science and technology in your own view of what sustainable development is all about?	-	-	-
724	3	Role of science and technology	A	I think that the role of science and technology is very important to understand the facts and what is actually happening as a result of our actions	S&T	Important	Facts
725	3	Role of science and technology	A	Say for example green house gas issues with those facts we can then address the problems and go about it in hopefully in the right manner and the science and technology are a vital part in that process that just I guess gives us the facts to do the research and find out what exactly is happening	S&T	Important	Facts
726	3	Role of science and technology	A	It is very essential	S&T	Important	Facts
727	3	Role of science and technology	A	I don't believe you can, like many of these companies from the negative areas with the statements ?			
728	3	Role of science and technology	A	They suggest that it can be same in the future	S&T	Subordinate	NS
729	3	Role of science and technology	Q	Interviewer: Where they say we will overcome our problems	-	-	-
730	3	Role of science and technology	A	Because I don't believe we can do that	S&T	Subordinate	NS
731	3	Role of science and technology	A	And the last card that is in relation to population growth	S&T	Subordinate	NS
732	3	Role of science and technology	A	I mean you look at places like Africa and that, we have the science and technology and look what that is happening over there with the devastation of forestation and so forth	S&T	Subordinate	NS
733	3	Role of science and technology	A	We have limited water	S&T	Subordinate	NS
734	3	Role of science and technology	A	You can't solve all the problems with technology	S&T	Subordinate	NS
735	3	Role of science and technology	A	resources to help address those problems and stop them from happening further	S&T	Subordinate	NS
736	3	Role of science and technology	Q	Interviewer: So good knowledge basically	-	-	-
737	3	Role of science and technology	Q	If I can ask you just about a couple of these cards here	-	-	-
738	3	Role of science and technology	Q	This card number thirty four – "All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe"	-	-	-
739	3	Role of science and technology	Q	Do you think policy makers have an understanding of what is going on or what you believe to be going on with environmental problems that we face?	-	-	-
740	3	Role of science and technology	A	Yeah I think they basically do, then again you can write all the policies in the world on what we should be doing and all that I think that there is a lot of wasted effort as well within all levels of government and in individuals as well	Barrier	Government	NS
741	3	Role of science and technology	A	I mean we all intend to do the right thing and want to be seen as doing the right thing but when it comes down to implementation which generally means money, time and resources, generally not a lot of commitment in the world to follow that through	Barrier	Government	NS
742	3	Role of science and technology	A	So the policies can be very wishy washy	Barrier	Concept	Ambiguous
743	3	Role of science and technology	A	About being economically beneficial I think that would be have to be a very important placement as well	Barrier	Initiatives	Cost
744	3	Role of science and technology	Q	Interviewer: Well that leads nicely to this, the card that you have at the most acceptive end card number 24 which says that companies ought to accept their responsibility to use science and technology to minimise harm	-	-	-
745	3	Role of science and technology	Q	Do you think that in your own sense that the private sector is starting to do that?	-	-	-
746	3	Role of science and technology	A	Very slowly, probably too slowly	Barrier	Industry	Anti-SD
747	3	Role of science and technology	A	I think that the government needs to take a stronger position on that and take a more authoritative approach I guess and actually implement penalties greater than what they do, because a lot of companies out there that don't even really care	Barrier	Industry	Anti-SD
748	3	Role of science and technology	A	They abuse whatever they have but there is not enough reprimand or penalties to stop the people from doing that	Barrier	Industry	Anti-SD
749	3	Role of science and technology	Q	Interviewer: I was just wondering because you sort of hear about some companies that seem to promote the idea that they have changed and become environmentally responsible	-	-	-
750	3	Role of science and technology	A	Precisely because of what you were saying that they realise that it is good business sense and I guess that kind of idea is becoming much louder these days than it used to	Facilitator	Community	Lobby
751	3	Role of science and technology	A	It actually makes sense to use less energy and minimise	Facilitator	Community	Lobby
752	3	Role of science and technology	A	Alcoa for example, I think they are pretty good in what they do	Facilitator	Community	Lobby
753	3	Role of science and technology	A	They have accepted that responsibility more on a high profile from what I am aware than other companies	Facilitator	Community	Lobby
754	3	Role of science and technology	A	It is a good PR image; people value companies that do that	Facilitator	Community	Lobby
755	3	Role of science and technology	A	There are still a lot of companies that aren't doing the right thing and nothing is being done about it	Barrier	Industry	Anti-SD
756	3	Role of science and technology	Q	Interviewer: There is still a long way to go then?	-	-	-
757	3	Role of science and technology	A	Big time	-	-	-
758	3	**Role of science and technology**	T	**Problem issues**	-	-	-
759	3	**Problem issues**	T	**Interview three**	-	-	-
760	3	Problem issues	Q	Interviewer: The last section of cards these are the problem issue cards	-	-	-
761	3	Problem issues	Q	So perhaps if you can just start giving an overview or summary of what you think what kind of problems is sustainable development trying to overcome	-	-	-
762	3	Problem issues	Q	What problems do we face now that sustainable development is being implemented?	-	-	-
763	3	Problem issues	A	I think there is a problem			
764	3	Problem issues	A	I mean we need to re-evaluate and rethink the way we see sustainable development and I think we see it as a separate entity group	Barrier	Attitudes	Control
765	3	Problem issues	A	We are passed that we see the environment that we live in whether it be the social, economic and the natural environment that we live in, it is something that we can control	Barrier	Attitudes	Control
766	3	Problem issues	A	It is certainly so far from that	Barrier	Attitudes	Control
767	3	Problem issues	A	We see ourselves as human beings being so far from nature and all that when really we need to rethink and be more intune with nature that we area a part of it and that we respect it and it respects us	Barrier	Attitudes	Control

768	3 Problem issues	A	Basically that is not our philosophy or not the people's philosophy - that is our essential problem	Barrier	Attitudes	Control
769	3 Problem issues	A	We feel like we can control it when really we are only one part of the whole picture and we can't control it	Barrier	Attitudes	Control
770	3 Problem issues	Q	Interviewer: If you can just talk about some of the cards like number 5 – "Nature has an unlimited capacity to absorb and assimilate pollution and can provide a virtually inexhaustible stock of resources" - the one that you have at the most disagree point	-	-	-
771	3 Problem issues	A	It seems to me that card says we live in a world that has plenty of resources, or there is limits beyond which we are exceeding	Barrier	Attitudes	NatureUnlimited
772	3 Problem issues	Q	Do you think that is a major motivator for pushing along sustainable development that kind of issue?	-	-	-
773	3 Problem issues	A	I certainly do			
774	3 Problem issues	A	We have the mentality that we can keep using and abusing and say farmers – back in the middle of the century the government was handing out subsidies and tax benefits for farmers to clear the land because it was felt that it was and inexhaustible type of supply and that we could control that	Barrier	Attitudes	NatureUnlimited
775	3 Problem issues	A	It is only now that we realise the consequences of those actions	Status	ParadigmShift	Aware
776	3 Problem issues	A	We can't just keep using and abusing as we have done in the past	Objective	ActNow	
777	3 Problem issues	A	Otherwise nature will fight back at some stage	Environment	Problems	NoControl
778	3 Problem issues	A	Now we have a problem with salinity	Environment	Problems	LimitedResources
779	3 Problem issues	A	Resources certainly aren't inexhaustible	Environment	Problems	LimitedResources
780	3 Problem issues	A	On a larger scale from that even is deforestation you see what is happening in Africa	Environment	Problems	LimitedResources
781	3 Problem issues	A	Again where there is changes in their climate and even here in Australia we are becoming a drier continent	Environment	Problems	LimitedResources
782	3 Problem issues	A	I know we are moving up North but say in Africa for example it is become drier and there is less rainfall	Environment	Problems	LimitedResources
783	3 Problem issues	A	We can't just keep going the way we are	Objective	ActNow	
784	**3 Reasons for LA21**	T	**Reasons for LA21**			
785	**3 Reasons for LA21**	T	**Interview three**	-	-	-
786	3 Reasons for LA21	Q	Interviewer: The last area I would like to ask you some questions about is our local government, in particular	-	-	-
787	3 Reasons for LA21	Q	I guess I would like to get some insight into local government	-	-	-
788	3 Reasons for LA21	Q	You know as a policy, Local Agenda 21 is being implemented with some councils at the start	-	-	-
789	3 Reasons for LA21	Q	I was just wondering if you have any insight into what you think are critical issues why some councils haven't adopted	-	-	-
790	3 Reasons for LA21	Q	Possibly talk about what you think is holding back councils from not implementing LA21	-	-	-
791	3 Reasons for LA21	A	The first part of the question as to why some councils have, I believe within those councils there have been people in position's of power such as presidnets or CEO's that are generally motivated and feel in their heart that it is the right thing to do and have driven it from within local government and have influenced	Facilitator	Government	Champion
792	3 Reasons for LA21	A	I think those people are very passionate about what they believe	Facilitator	Government	Champion
793	3 Reasons for LA21	A	There is only a handful, but I think that is what has been driving it from within	Facilitator	Government	Champion
794	3 Reasons for LA21	Q	Interviewer: So there is like a person inside that drives the LA21 process?	-	-	-
795	3 Reasons for LA21	A	Most definitely	Facilitator	Government	Champion
796	3 Reasons for LA21	A	In the councils with LA21, CEO's from the ones that I am aware of that are passionate about it and believe it and have driven it from within to gain support from their council to do that	Facilitator	Government	Champion
797	3 Reasons for LA21	A	I see the major problem with other councils not getting involved in LA21 is total misconception and lack of understanding of what it is	Barrier	Concept	Ambiguous
798	3 Reasons for LA21	A	It's too hard it's an unknown, it's very difficult to grasp the whole concept of LA 21	Barrier	Concept	Ambiguous
799	3 Reasons for LA21	A	All it means is more money and more resources of which so many councils have very little to spend in that area	Barrier	Initiatives	Cost
800	3 Reasons for LA21	Q	Interviewer: So people in the non-adoptive see it as more of a problem	-	-	-
801	3 Reasons for LA21	A	Yeah I think so and the lack of understanding they just don't know what it means	Barrier	Concept	Ambiguous
802	3 Reasons for LA21	A	"Sustainability" it's a very ambiguous word	Barrier	Concept	Ambiguous
803	3 Reasons for LA21	A	I don't think particularly, it's the term to use	Barrier	Concept	Ambiguous
804	3 Reasons for LA21	A	It tends to be "hands up in the air"	Barrier	Concept	Ambiguous
805	3 Reasons for LA21	A	It is just such a huge picture	Barrier	Concept	Ambiguous
806	3 Reasons for LA21	A	I think to address that problem certainly training for individuals not necessarily community – I don't know maybe the community but I think people, positions of power CEO's, councillors need to go to seminars that happen and all that so they can be a driving force	Facilitator	Government	Champion
807	3 Reasons for LA21	Q	Interviewer: So more information is required?	-	-	-
808	3 Reasons for LA21	A	Definitely more information	Facilitator	Government	Champion
809	3 Reasons for LA21	Q	Interviewer: Who do you think should be providing that information?	-	-	-
810	3 Reasons for LA21	A	I think the Commonwealth definitely	Facilitator	Government	Federal
811	3 Reasons for LA21	A	It has to infiltrate down through from the highest power	Facilitator	Multi Sectors	TopDown
812	3 Reasons for LA21	A	It is the whole information approach, whole information benefit	Facilitator	Multi Sectors	TopDown
813	3 Reasons for LA21	A	Local government is so constrained through resources	Barrier	Government	Local
814	3 Reasons for LA21	A	I know everyone is but it has to come from above	Facilitator	Multi Sectors	TopDown
815	3 Reasons for LA21	Q	Interviewer: So you say there should be a role for education, actually having some information seminars or some sort of council training?	-	-	-
816	3 Reasons for LA21	A	Yes to even understand the term sustainability	Facilitator	Government	Champion
817	3 Reasons for LA21	A	From my experience people have such different interpretations it is so ambiguous it's basically to big a problem to tackle, it is easier just to push it aside and say it's too hard	Barrier	Concept	Ambiguous
818	3 Reasons for LA21	A	Also addressing that problem not only training but also people in positions of power but also to make them see the benefits and mention that you need to bring back benefits to people to influence behavioural change and commitment	Facilitator	Government	Champion
819	3 Reasons for LA21	A	You need support from above individuals from the community need support from the local government	Facilitator	Multi Sectors	TopDown
820	3 Reasons for LA21	A	Local government needs support from the state and so forth and so forth	Facilitator	Multi Sectors	TopDown
821	3 Reasons for LA21	A	They need to see their big brother is also on their side and doing the same thing and helping and supporting	Facilitator	Multi Sectors	TopDown
822	3 Reasons for LA21	Q	Interviewer: When you mentioned about having the councils, that there is usually a critical person inside, do you think they are driven by a different set of values?	-	-	-
823	3 Reasons for LA21	A	I do	Facilitator	Government	Champion
824	3 Reasons for LA21	Q	Interviewer: From the norm	-	-	-
825	3 Reasons for LA21	A	Yeah I do	Facilitator	Government	Champion
826	3 Reasons for LA21	A	I think those people are generally passionate about doing the right thing	Facilitator	Government	Champion
827	3 Reasons for LA21	A	There are very few people that have that not only belief but also that drive to actually implement it and influence other people around them	Facilitator	Government	Champion
828	**4 Implementation of SD**	T	**Implementation of Sustainable Development**	-	-	-
829	**4 Implementation of SD**	T	**Interview four**	-	-	-
830	**4 Implementation of SD**	T	**GRDEP**	-	-	-
831	4 Implementation of SD	Q	Interviewer: Okay, what we have here are the cards about implementation of sustainable development	-	-	-
832	4 Implementation of SD	Q	Now I would just like you to give an overview as to why you have put these cards in the order you have for the issue to do with who needs to implement sustainable development	-	-	-

833	4 Implementation of SD	Q	A couple I have noticed is that you have quite a big spread really but most of the cards are in the middle	-	-	-
834	4 Implementation of SD	Q	So does that mean that you couldn't make up your mind about these issues?	-		-
835	4 Implementation of SD	A	I think that sustainable development should be coming from government	Facilitator	Government	NS
836	4 Implementation of SD	A	I think that is extremely important and I was also thinking that in order for it to be of benefit to us we need to have community involvement	Facilitator	Community	Involvement-NS
837	4 Implementation of SD	A	So the way I was thinking about it is in terms of government moving the community	Facilitator	Multi Sectors	TopDown
838	4 Implementation of SD	A	I guess I was a bit unsure about these in the middle but I put them in the middle because I agreed with them more that I did with the ones at the end	-	-	-
839	4 Implementation of SD	Q	Interviewer: This one in particular - about Multi-national corporations – you really don't agree with that at all?	-	-	-
840	4 Implementation of SD	A	No I don't because I don't think they are the organisations capable of promoting sustainable development	Barrier	Industry	Anti-SD
841	4 Implementation of SD	A	I think we as a community have much more control	Facilitator	Community	Lobby
842	4 Implementation of SD	A	In fact we control the multinational corporations if we want to	Facilitator	Community	Lobby
843	4 Implementation of SD	Q	Interviewer: So when you say about government at that end card number 50 – "Implementation of sustainable development ought to be the responsibility of the Commonwealth Government and national strategies, plans, policies and processes should be the principle mechanism for its delivery" - do you have a view of sustainable development that it requires kind of a top down approach?	-	-	-
844	4 Implementation of SD	A	Yeah it does for me I guess	Facilitator	Multi Sectors	TopDown
845	4 Implementation of SD	A	If the people re-elected aren't taking part in sustainable development then it is either up to the public to then make it an issue with the government or then the government will just go on and do business without doing something	Facilitator	Community	Lobby
846	4 Implementation of SD	Q	Interviewer: What is your feeling about the community at the moment do you think they are pushing?Like do you think the community is actually pushing the government along?	-	-	-
847	4 Implementation of SD	A	I think some issues only	Facilitator	Community	Lobby
848	4 Implementation of SD	A	I think with the regional forest agreement we have proved that, we definitely pushed that	Facilitator	Community	Lobby
849	4 Implementation of SD	A	When you look at (?) they got tired of him and they pushed him out	Facilitator	Community	Lobby
850	4 Implementation of SD	A	That was a big push for the country	Facilitator	Community	Lobby
851	4 Implementation of SD	Q	Interviewer: I notice that you have that card right down there, the one about any government policy, but than you have this one which I surpose is not the most extremely disagreed one but one that seems to be saying that governments actually are committed to sustainable development	-	-	-
852	4 Implementation of SD	A	No I don't think they are committed to sustainable development because if they were then I would have put them up that end	Barrier	Government	NS
853	4 Implementation of SD	A	Not in this country, I don't think they are committed	Barrier	Government	NS
854	4 Implementation of SD	A	If they were committed then plenty would be addressed	Barrier	Government	NS
855	4 Implementation of SD	A	The regional forest agreement wouldn't have been such a huge disagreement if they were actually listening to the people	Barrier	Government	NS
856	4 Implementation of SD	Q	Interviewer: Can I ask you about this card. It is really interested this one about religion number 49	-	-	-
857	4 Implementation of SD	A	I surpose I should state that I am an atheist	-	-	-
858	4 Implementation of SD	A	But I believe that sustainable development if it is adopted by the major religions of the world ie the Catholic faith or whatever then I think it would be much easier to be implemented in many countries because they are a bunch of fools	Barrier	LittleEffect	Religion
859	4 Implementation of SD	A	Like for example just in our program in "Airwatch" getting into the Catholic schools is one of my hardest actions	Barrier	LittleEffect	Religion
860	4 Implementation of SD	A	You can't get into the Catholic faith it is all about domination of the world	Barrier	LittleEffect	Religion
861	4 Implementation of SD	A	I think they can have a narrow view	Barrier	LittleEffect	Religion
862	4 Implementation of SD	A	I mean when you look at the Catholic faith just their concentration on things like abortion issues and contraception, etc , they are a major force and I think that if they wanted to take up sustainable development then they could do, that's why I put it there	Barrier	LittleEffect	Religion
863	4 Objectives of SD	T	Objectives of Sustainable Development	-	-	-
864	4 Objectives of SD	T	Interview four	-	-	-
865	4 Objectives of SD	Q	Interviewer: Well that's implementation	-	-	-
866	4 Objectives of SD	Q	Can you just give us an overview of what you were thinking with the objectives of Sustainable development, and then I might ask you some specific questions about the cards themselves?	-	-	-
867	4 Objectives of SD	A	Okay I guess now looking at it my main thought was the fact that we need to look after the environment and start actually doing it now because it's a long term goal	Objective	Perpetual	
868	4 Objectives of SD	A	Because without that we cannot achieve economic growth	Objective	Env	Knock-on
869	4 Objectives of SD	A	I think at the moment I think the environment is in a pretty bad way and that in terms of decisions, that you have to make decisions whether people like them or not	Objective	Social	NotPriority
870	4 Objectives of SD	A	They have to be the right decisions for the environment because in the long term that will be the right decisions for the people	Objective	Env	Knock-on
871	4 Objectives of SD	A	Is that okay?	Objective	Env	Knock-on
872	4 Objectives of SD	Q	Interviewer: Well it makes sense to you and that's the main thing	-	-	-
873	4 Objectives of SD	Q	With that second card, card number nineteen – sustainable development is a long term process - in your own mind because that's one of the things that I have been thinking about, is how long do you think the long term process is in terms of if you were going to say – I guess it is sort of leading to how long have we got to change our ways before really bad things start to happen?	-	-	-
874	4 Objectives of SD	A	I think in terms of some things that we will see them – very negative results - before we die	Status	Pessimistic	NS
875	4 Objectives of SD	A	We will actually notice huge environmental damage but then with other things that I think we will miss and I don't think we will be a part of	Status	Pessimistic	NS
876	4 Objectives of SD	A	For example "greenhouse" is already having an effect and I think that will only get worse because the policies aren't supporting need for sustainable development in terms of preventing global warming	Status	Pessimistic	NS
877	4 Objectives of SD	A	I guess that's why I believe it's a long-term process, it just has to be passed on from generation to generation	Objective	Perpetual	
878	4 Objectives of SD	Q	Interviewer: So that seem to be quite a long term time	-	-	-
879	4 Objectives of SD	Q	Talking about 500 years or what?	-	-	-
880	4 Objectives of SD	A	I think you always need to be looking after it, so there will always be a need for some sort of sustainable development to be occurring	Objective	Perpetual	
881	4 Objectives of SD	A	That's what I was thinking because I don't think we can just fix the problems over night	Objective	Perpetual	
882	4 Objectives of SD	A	I don't think a lot of the solutions we need especially in terms of technology are even available yet	Objective	Perpetual	
883	4 Objectives of SD	A	We don't understand that most of the fights behind our technology we have anyway	Objective	Perpetual	
884	4 Objectives of SD	A	Until we have them to make that achievement I don't think we will ever get really sustainable	Objective	Perpetual	
885	4 Objectives of SD	Q	Interviewer: So it sounded like what you said you have to look after the environment	-	-	-
886	4 Objectives of SD	Q	You have down here which I guess is the lowest place saying that the main objective in sustainable policies and that seems to be different to what you say	-	-	-
887	4 Objectives of SD	A	I guess I was thinking in terms of economics as well	Objective	Social	NotPriority
888	4 Objectives of SD	A	I probably could have put that a bit earlier	Objective	Social	NotPriority
889	4 Objectives of SD	A	I don't know if that should be the main objective	Objective	Social	NotPriority
890	4 Objectives of SD	A	I think of human welfare as well but I also think of animal welfare	Objective	Social	NotPriority
891	4 Objectives of SD	A	So I guess I am thinking not only of humans	Objective	Social	NotPriority

892	4 Objectives of SD	Q	Interviewer: Yeah I mean you have that one there – common interest between loking after the environment and looking after people - which is kind of similar to what you are saying now – is that right?	-	-	-
893	4 Objectives of SD	A	I guess here in the main, you probably have to, to some extent you have to hold them accountable and I ? guess when you are looking after the unvironment they will be council in a lot of ways			
894	4 Objectives of SD	A	But I think it is important that we keep the vegetation in the same state, and the animal life as well	Objective	Balance	Env-Econ-Soc
895	4 Objectives of SD	A	Because without those we are not sustainable anyway	Objective	Env	Knock-on
896	4 Objectives of SD	A	I think, I like them better	Objective	Env	Knock-on
897	4 Objectives of SD	Q	Interviewer: Yeah well you have eight cards on the positive end and they are all very similar	-	-	-
898	4 Objectives of SD	A	But I do believe in social equity so I guess it's a bit of a conflict there	Objective	Env	Knock-on
899	**4 Role of science and technology**	**T**	**Role of science and technology**	-	-	-
900	**4 Role of science and technology**	**T**	**Interview four**	-	-	-
901	4 Role of science and technology	Q	Interviewer: So now we have the science and technology cards laid out and we have ten cards	-	-	-
902	4 Role of science and technology	Q	So I guess if I can ask the first question	-	-	-
903	4 Role of science and technology	Q	It seems that you have in terms of these science statements a very negative view in that eight out of the ten cards in the minus end so what's going on there for you do you think?	-	-	-
904	4 Role of science and technology	A	I guess I am disappointed in science and I studied science	S&T	Negative	Obscure
905	4 Role of science and technology	A	I guess to me science has let society down	S&T	Negative	Obscure
906	4 Role of science and technology	A	Scientists are unable to communicate their thoughts at the best of times	S&T	Negative	Obscure
907	4 Role of science and technology	A	I also think they are working for multinational companies and being manipulated by them	S&T	Negative	Manipulated
908	4 Role of science and technology	A	Their views are put out into society and they are often conflicting and that creates a lot of difficulty for the average person	S&T	Negative	Obscure
909	4 Role of science and technology	Q	Interviewer: Because you get different scientists saying different things about sustainable development issues do you mean?	-	-	-
910	4 Role of science and technology	A	Yeah and you don't know why they are saying different things	S&T	Negative	Manipulated
911	4 Role of science and technology	A	It could be because they have found different things or whether because they have kind of led their scientific studies in that direction because a group is supporting them financially	S&T	Negative	Manipulated
912	4 Role of science and technology	Q	Interviewer: So scientists are no longer being objective in their research?	-	-	-
913	4 Role of science and technology	A	Yeah that's right	S&T	Negative	Manipulated
914	4 Role of science and technology	A	I guess also I don't believe that science provides all the answers unless their view takes into account everything that has an effect on the research that they are doing	S&T	Subordinate	NS
915	4 Role of science and technology	Q	Interviewer: That card that you have right in the middle there card number 34 – "All in all, the scientifically-reliable picture of the environmental 'crisis' is much more alarming than the general public and politicians are being led to believe" - you haven't placed that one very highly in the array	-	-	-
916	4 Role of science and technology	Q	So do you have a view that the environmental crisis isn't particularly serious?When you have these ones here I would have thought you would have possibly placed that one further up	-	-	-
917	4 Role of science and technology	A	It's hard because you like to believe that the scientific data that you are being fed has some credibility to it	Barrier	Concept	Ambiguous
918	4 Role of science and technology	A	So the information that we are being fed about all the different global warmings, all the different things going on with the environment	Barrier	Concept	Ambiguous
919	4 Role of science and technology	A	I guess you have to believe in it to a certain extent	Barrier	Concept	Ambiguous
920	4 Role of science and technology	A	And I think one of the main reasons that the politicians and the public maybe do not take the same view of the information given even if it is alarming is the fact that they don't understand what they are talking about	Barrier	Concept	Ambiguous
921	4 Role of science and technology	A	That is a major problem, I see it that as a major problem in our society	Barrier	Concept	Ambiguous
922	4 Role of science and technology	Q	Interviewer: What informing people?			
923	4 Role of science and technology	A	Informing people yeah and I think that politicians themselves are not informed correctly	Barrier	Concept	Ambiguous
924	4 Role of science and technology	A	Therefore they cannot inform the public because they do not understand the problems to the extent they probably should	Barrier	Concept	Ambiguous
925	4 Role of science and technology	A	Like for example our ministers for environment usually don't have an environmental background, they don't even have a science background so how can they understand the issues at hand	Barrier	Concept	Ambiguous
926	4 Role of science and technology	Q	Interviewer: But would you say like if you thought about your own view, would you say that your view of this thing the environmental crisis, would you say that you are more alarmed than most people in the public or less alarmed regarding the thing called the "environmental crisis"?	-	-	-
927	4 Role of science and technology	A	Well I guess that depends what you mean by alarmed	-	-	-
928	4 Role of science and technology	A	I'm concerned	-	-	-
929	4 Role of science and technology	A	I certainly think the general public is less concerned	Barrier	Attitudes	Apathy
930	4 Role of science and technology	Q	Interviewer: Less concerned than you are?	-	-	-
931	4 Role of science and technology	A	Yeah but that's only because of the fact that I work in the environmental field	Facilitator	Community	Educated
932	4 Role of science and technology	A	I think because I am more aware of the issues than the general public and it's not until the general public are educated about those issues do they then start to take on the lessons and become concerned themselves	Facilitator	Community	Educated
933	4 Role of science and technology	Q	Interviewer: Become concerned?	-	-	-
934	4 Role of science and technology	A	Yeah, become concerned and taking the responsibility of doing something about it and making the politicians therefore listen	Facilitator	Community	Lobby
935	4 Role of science and technology	A	I think education is important in that and that's where science fails a little because it is not always educating the public	S&T	Negative	Obscure
936	4 Role of science and technology	A	It is either confusing them or sort of trying to - I guess bewilder them	S&T	Negative	Obscure
937	4 Role of science and technology	Q	Interviewer: So these two cards you've got are the most rejected positions	-	-	-
938	4 Role of science and technology	Q	One card – "Instead of contributing to environmental problems, technology and industry's provide solutions" and the most unfavourable one – "Because economic growth and technology provide answers to problems	-	-	-
939	4 Role of science and technology	Q	Concern about the environment crisis is irrelevant"	-	-	-
940	4 Role of science and technology	A	I guess those would be technologically kind of quite optimistic statements, my reading of them anyway and I guess you put them right at the most negative point	-	-	-
941	4 Role of science and technology	Q	So you're not very optimistic that those things are true or you don't think those things are true yourself?	-	-	-
942	4 Role of science and technology	A	Technology has helped sometimes but I don't think there is a solution because I don't think we have understood the technology we have created	S&T	Negative	Environment
943	4 Role of science and technology	A	For example nuclear power stations - we use the technology - but do we truly understand it?We have seen the implications of it but we still don't know how to handle the waste or what we do in that sort of situation when you have a meltdown or whatever	S&T	Negative	Environment
944	4 Role of science and technology	A	So I don't know if it will answer the environmental problem we have	S&T	Negative	Environment
945	**4 Problem issues**	**T**	**Problem issues**	-	-	-
946	**4 Problem issues**	**T**	**Interview four**	-	-	-
947	4 Problem issues	Q	Interviewer: Well that is the science and technology cards	-	-	-
948	4 Problem issues	Q	Okay the last ones are about the scope of the problems facing us in sustainable development	-	-	-
949	4 Problem issues	Q	So do you think there is a bit of a story here as well do you think?What is going on for you with these cards?	-	-	-
950	4 Problem issues	A	Yep I can tell you the story	-	-	-

Row	Text	Type	Text	Cat 1	Cat 2	Cat 3
951	4 Problem issues	A	I see our environment, our natural world as being extremely important to me and we need to preserve it because we don't know enough about it	Environment	Problems	NoUnderstanding
952	4 Problem issues	A	I think our free market system is the root of all evil	Objective	Social	NotPriority
953	4 Problem issues	A	So that's why I agree with statement - card number 26 – "Overall, the free market system can be considered the source of today's pending economic, political and environmental problems"	Objective	Social	NotPriority
954	4 Problem issues	A	I see it as a human solution that clearly isn't working in our society	Objective	Social	NotPriority
955	4 Problem issues	A	It creates poverty, it creates wealth and is non-sustainable I think	Objective	Social	NotPriority
956	4 Problem issues	A	It doesn't take into account the environment	Objective	Social	NotPriority
957	4 Problem issues	A	The way things are produced and free trade etc	Objective	Social	NotPriority
958	4 Problem issues	A	It is all about consumers and I don't think we can sustain it	Objective	Social	NotPriority
959	4 Problem issues	A	Then I went into I guess again I think current environmental practises are harming us, what we are doing and the same with the development that is going on ?			
960	4 Problem issues	A	I don't know if we are living beyond our carrying capacity of the planet so I sort of put that towards the middle	-	-	-
961	4 Problem issues	A	I don't know because at the moment we are sustaining it so there is arguments riding into there	-	-	-
962	4 Problem issues	Q	Interviewer: What about number 6 – "Despite local environmental problems, there is a record of enormous environmental progress and much to be optimistic about" - do you think we have much to be optimistic about yourself?	-	-	-
963	4 Problem issues	A	When I was younger I was terribly disillusioned	-	-	-
964	4 Problem issues	A	I probably would have said no but after working in the environment field, I would have to say yes because if I said no I wouldn't be working here	Status	Optimistic	Future
965	4 Problem issues	A	Also I think we can make a difference after seeing some of the progress we have made over the last few years	Status	Optimistic	Future
966	4 Problem issues	A	I see that we can make an environmental change	Status	Optimistic	Future
967	4 Problem issues	Q	Interviewer: So we can turn things around?	-	-	-
968	4 Problem issues	A	Yeah well we might not be able to turn everything around but we can certainly stop some of the processes that we undertake at the moment	Status	Optimistic	Future
969	4 Problem issues	A	We can start doing things a lot better because we have a lot more knowledge now	Status	Optimistic	Future
970	4 Problem issues	A	I still don't like multinational corporations, again I associate them with the free market and so therefore when they are associated with something like the free market which has certain policies, practises, ideals I see them as being part of the problem	Barrier	Industry	Anti-SD
971	4 Problem issues	A	I don't agree that sustainability has been carried too far ?			
972	4 Problem issues	A	I don't think it has even started in some areas – I disagree with that one ?			
973	4 Problem issues	A	I don't think the World has an unlimited capacity - I think we will exhaust it	Environment	Problems	LimitedResources
974	4 Problem issues	A	We have already seen that in some areas	Environment	Problems	LimitedResources
975	4 Problem issues	A	We are loosing land in Australia at the moment – salinity -and that's a difficult problem to solve	Environment	Problems	LimitedResources
976	4 Problem issues	A	We already know that it is going to take a long time to be able to use again	Environment	Problems	LimitedResources
977	4 Problem issues	A	So that would be my biggest grudge that I really don't agree with number 9 – "Humans and humans alone have rights	Objective	Social	NotPriority
978	4 Problem issues	A	Nature is valueless except in so far as it can be used as a resource for human benefit"	Objective	Social	NotPriority
979	4 Problem issues	Q	Interviewer: If you had a card that was your least favourite, what would it be?	-	-	-
980	4 Problem issues	A	Yeah that would be card number 9	-	-	-
981	4 Problem issues	Q	Can you remember seeing a card that would be your most favourite statement?	-	-	-
982	4 Problem issues	A	I do like number 40	-	-	-
983	4 Problem issues	A	Card number 40 – "All the species and systems of nature deserve respect regardless of their usefulness to humanity	Objective	Env	Important
984	4 Problem issues	A	Nature needs to be preserved for its own sake"	Objective	Env	Important
985	4 Problem issues	A	It sort of sums up and I still agree with that one number 26 - "Overall, the free market system can be considered the source of today's pending economic, political and environmental problems"	Barrier	Industry	Anti-SD
986	4 Problem issues	A	I I guess these are the more emotional ones	-	-	-
987	**4 Reasons for LA21**	**T**	**Reasons for LA21**	-	-	-
988	**4 Reasons for LA21**	**T**	**Interview four**	-	-	-
989	4 Reasons for LA21	Q	Interviewer: Now that you have sort of looked at all the cards I just want to ask you some questions about local government because obviously I am interested about Local Agenda 21 and local government	-	-	-
990	4 Reasons for LA21	Q	I am just trying to get some insights into, actually no not very many local governments have formally adopted Local Agenda 21	-	-	-
991	4 Reasons for LA21	Q	So would you have any ideas yourself as to why?Like what problems or why you think local governments aren't becoming involved in LA21 – sustainable development?	-	-	-
992	4 Reasons for LA21	A	I haven't given it a lot of thought	-	-	-
993	4 Reasons for LA21	A	Oh a little bit of thought perhaps	-	-	-
994	4 Reasons for LA21	A	The local government isn't accountable	Barrier	Government	Local
995	4 Reasons for LA21	A	Very often it is up to individuals within the community to make any issues they have come to the foreground	Facilitator	Community	Lobby
996	4 Reasons for LA21	A	I think they are very insulated, the local councils	Barrier	Government	Local
997	4 Reasons for LA21	A	I think they need to be more open to the public and to have a certain number of people at every meeting before it can run	Facilitator	Community	Involvement-NS
998	4 Reasons for LA21	A	In terms of accountability I think that is where it falls down so if you haven't got many residents in the area that are concerned about something like Local Agenda 21 then you will get very little reaction from the councillors themselves unless they have that as their main focus	Barrier	Government	Local
999	4 Reasons for LA21	Q	Interviewer: So you think that it is a personal interest sort of issue?That if you get a council that is interested in that, it will happen but if you have a council that has nobody interested then it won't happen	-	-	-
1000	4 Reasons for LA21	Q	Is that right?	-	-	-
1001	4 Reasons for LA21	A	Yeah	-	-	-
1002	4 Reasons for LA21	A	I am thinking of our local council which is Melville	Barrier	Government	Local
1003	4 Reasons for LA21	A	They have had so much conflict over the last few months	Barrier	Government	Local
1004	4 Reasons for LA21	A	People are just sick of it	Barrier	Government	Local
1005	4 Reasons for LA21	Q	Interviewer: About what issues?	-	-	-
1006	4 Reasons for LA21	A	Building codes and keeping the land for public use	Facilitator	Community	Involvement-NS
1007	4 Reasons for LA21	A	And the Mayor wanted to do that and I think most of the public wants that as well	Facilitator	Community	Involvement-NS
1008	4 Reasons for LA21	A	But they shared the conflict of interest because of the fact that the councils wanted to make money from it and sell it as land for housing	Facilitator	Community	Involvement-NS
1009	4 Reasons for LA21	A	I am sure that if it was put to the public	Facilitator	Community	Involvement-NS
1010	4 Reasons for LA21	A	It is such a big issue	Facilitator	Community	Involvement-NS
1011	4 Reasons for LA21	A	I don't think they should have the total say	Facilitator	Community	Involvement-NS
1012	4 Reasons for LA21	Q	Interviewer: The council you mean?	-	-	-
1013	4 Reasons for LA21	A	Yeah the council	Facilitator	Community	Involvement-NS
1014	4 Reasons for LA21	A	Because that should have been an issue that was taken to the whole of the city of Melville in my eyes	Facilitator	Community	Involvement-NS
1015	4 Reasons for LA21	A	Because it was to do with our land and that is our right and the have no right just to sell it off and I think that happens in a lot of councils	Facilitator	Community	Involvement-NS
1016	4 Reasons for LA21	A	Some of the councillors have their own agendas and they are making money	Barrier	Government	Individuals

1017	4 Reasons for LA21	Q	Interviewer: They have conflict of interest themselves you think?	-	-	-
1018	4 Reasons for LA21	A	Yeah and because there is little accountability they get away with it and that's why you see so many areas in Perth with new houses there that are going up	Barrier	Government	Local
1019	4 Reasons for LA21	A	Because they can have that final say	Barrier	Government	Local
1020	4 Reasons for LA21	A	I think they are way too powerful for that little accountability they have	Barrier	Government	Local
1021	4 Reasons for LA21	Q	Interviewer: Finally just one more question in terms of yourself	-	-	-
1022	4 Reasons for LA21	Q	Would you describe yourself as being optimistic about the future or would you describe yourself as being quite pessimistic?			
1023	4 Reasons for LA21	A	I think overall that I would be optimistic	Status	Optimistic	Future
1024	4 Reasons for LA21	A	Mainly because if there's people, and I have met a lot of them here, who are willing to fight for the environment and they do make a difference then I believe they will be more action in the future	Status	Optimistic	Future
1025	**5 Implementation of SD**	T	**Implementation of Sustainable Development**	-	-	-
1026	**5 Implementation of SD**	T	**Interview five**	-	-	-
1027	**5 Implementation of SD**	T	**JADEP**	-	-	-
1028	5 Implementation of SD	Q	Interviewer: If you can just give an overview of how you feel about who should implement sustainable development and why you hold those views?	-	-	-
1029	5 Implementation of SD	A	I think what it is pointing out here is that I don't believe that any one sector is responsible for sustainable development	Facilitator	Multi Sectors	TopDown
1030	5 Implementation of SD	A	But I do recognise that there has to be some leadership in that and that's where I placed some of the statements about government, especially commonwealth government and state government cards as being leaders in developing the strategies or the processes to implement sustainable development	Facilitator	Multi Sectors	TopDown
1031	5 Implementation of SD	A	But my other cards recognise that you have to have a whole range of people from community groups, indigenous people, to keep a balance	Facilitator	Multi Sectors	JointEffort
1032	5 Implementation of SD	A	I definitely don't see that things like multinational corporations are the ones that are going to address these sustainable ability issues	Barrier	LittleEffect	Industry
1033	5 Implementation of SD	A	Most of the local government cards are in the middle and that's because I don't see local government as being a leader in the sustainability process	Barrier	LittleEffect	LocGov
1034	5 Implementation of SD	Q	Interviewer: Okay so you do think that they have a role?	-	-	-
1035	5 Implementation of SD	A	I do think that they have a role but I think the role has to be defined and that all sectors have to work together because I think that at local government level you can have one local government working almost in opposition to another in terms of the sustainability issues	Facilitator	Multi Sectors	JointEffort
1036	5 Implementation of SD	A	I see it as having the big picture first and then local government down at the more micro level in implementing it	Facilitator	Multi Sectors	TopDown
1037	5 Implementation of SD	A	I see them as very important but I think they have to work together not as individual councils	Facilitator	Multi Sectors	JointEffort
1038	5 Implementation of SD	Q	Interviewer: Can I ask you just about some of the individual cards? I guess number 46 and 46 where you have a position minus for them are to do with really whether people in government either endorse sustainability development or have an awareness about it or are actually committed to it in some way	-	-	-
1039	5 Implementation of SD	Q	So do you think when you are talking about, I guess, commonwealth government having their strategies or role in promoting sustainable development do you feel politicians at that level and bureaucrats at that level already have knowledge and commitment to sustainable development?	-	-	-
1040	5 Implementation of SD	A	Yeah I do	Barrier	Government	Federal
1041	5 Implementation of SD	A	I think that some of these, one of them was lack of awareness of internationally excepted environmental policies and standards	Barrier	Government	Federal
1042	5 Implementation of SD	A	I don't think they lack awareness	Barrier	Government	Federal
1043	5 Implementation of SD	A	I think they know the theory and I think in general they support it but it's never an overriding priority when it comes to decision making	Barrier	Government	Federal
1044	5 Implementation of SD	A	I think almost any intelligent person can take on board sustainability as a theory, and as something to accept	Barrier	Government	Federal
1045	5 Implementation of SD	A	But when it comes to them making economic decisions and political decisions, sustainability is then pushed to the background and it's not an immediate thing by making a decision on that issue your not going to immediately effect sustainability one way or the other	Barrier	Government	Federal
1046	5 Implementation of SD	A	So therefore it is never a key issue for them in decision making	Barrier	Government	Federal
1047	5 Implementation of SD	A	That's why it is so hard to get effort being made all in the same direction because it's long term and it depends on so many groups acting together ?			
1048	5 Implementation of SD	A	They know about it but they are not prepared to use it as an issue to make decisions	Barrier	Government	Federal
1049	5 Implementation of SD	Q	Interviewer: This card number 49, which you have right in the middle at zero point that is about religion becoming involved in sustainable development	-	-	-
1050	5 Implementation of SD	Q	Have you got any idea as to why you would have put that one there?	-	-	-
1051	5 Implementation of SD	A	I don't have an opinion about it one way or the other because I don't see that in reality it has any effect one way or the other	Barrier	LittleEffect	Religion
1052	5 Implementation of SD	A	I mean I think that if it is up to religion, I don't think that it is going to happen and I don't think the expectation should be that the multinational corporations are the only organisations	Barrier	LittleEffect	Industry
1053	5 Implementation of SD	A	They are not the only ones that are able to achieve sustainable development	Facilitator	Multi Sectors	JointEffort
1054	5 Implementation of SD	A	They are a small group	Facilitator	Multi Sectors	JointEffort
1055	5 Implementation of SD	A	You are talking about particulars sectors, not that religion is a small group but it is a sector and it has to be more than just a sector	Facilitator	Multi Sectors	JointEffort
1056	5 Implementation of SD	A	That is why I didn't agree with this one Sustainable development has the force of political commitment at the level of the commonwealth government	Barrier	Government	Federal
1057	5 Implementation of SD	A	It doesn't have commitment but they know all the right words to say but it doesn't actually push the decisions they make one way or the other I think	Barrier	Government	Federal
1058	5 Implementation of SD	Q	Interviewer: If you were looking around yourself today, who do you think is the main in reality the main proposer or implementer of doing sustainable development work at the moment in WA are there any groups or sectors that you think are outstanding?	-	-	-
1059	5 Implementation of SD	A	I think it depends which issue you are looking at when it comes to sustainable development	-	-	-
1060	5 Implementation of SD	A	I mean government can be seen as being reasonably pro-active in terms of waste management but I surpose then even theoretical air quality but then they go and build roads and encourage the very large trucks in the city	Facilitator	Government	NS
1061	5 Implementation of SD	A	I think in certain areas of the community is very strong on things like waste management but only to recycling but they don't change their buying patterns or anything	Barrier	Initiatives	Inconvenient
1062	5 Implementation of SD	Q	Interviewer: So it is a bit "issue based" at the moment	-	-	-
1063	5 Implementation of SD	A	It's like issues which are part of sustainable development are being pushed with other issues that aren't part of it ?	Barrier	Concept	Ambiguous
1064	5 Implementation of SD	Q	Is that how you see it?	-	-	-
1065	5 Implementation of SD	A	Yes and issues which are part of sustainable development that people can do easily without causing themselves to much hassle they will get involved in and it will make them feel good	Facilitator	Initiatives	EasyChange
1066	5 Implementation of SD	A	The easier issues where the behaviours at a government level eg supplying recyclable bins, I think that is why recycling has been one of the big issues that has been tackled	Facilitator	Initiatives	EasyChange
1067	5 Implementation of SD	A	Because you can fairly easily set systems in place and then regulations like the waste levy fees for charging for dumping, recycle bins they are not hard solutions	Facilitator	Initiatives	EasyChange
1068	5 Implementation of SD	A	But things like air quality the solutions are hard	Barrier	Initiatives	Inconvenient
1069	5 Implementation of SD	A	Spending billions and billions of dollars on public transport, disallowing people to use their cars making it harder	Facilitator	Initiatives	Disincentive
1070	5 Implementation of SD	A	Sustainability the issues that have been tackled are the easy issues	Facilitator	Initiatives	EasyChange

1071	**5 Objectives of SD**	**T**	**Objectives of Sustainable development**		-	-	-
1072	**5 Objectives of SD**	**T**	**Interview five**		-	-	-
1073	5 Objectives of SD	Q	Interviewer: The next set of cards are about the objectives to do with sustainable development		-	-	-
1074	5 Objectives of SD	Q	Mostly I would say it looks like you would look at these issues quite favourably		-	-	-
1075	5 Objectives of SD	Q	So have you got any comments why you have done this pattern with these cards?		-	-	-
1076	5 Objectives of SD	Q	The two obvious ones down here at the most negative end are card number 1 – "The maximisation of human welfare should be the main objective underpinning any environmental protection or "sustainability" policies"		-	-	-
1077	5 Objectives of SD	Q	And card number 10 – "Environmental protection or conservation is useful, only to the extent that peoples' welfare is positively affected or human needs are served"		-	-	-
1078	5 Objectives of SD	A	For me, both of them focus on the fact that it's human welfare that is taken into consideration and the reason for sustainability which I don't think is the direction that sustainability has to happen regardless not just because it is going to make human life better which it is		Objective	Env	Knock-on
1079	5 Objectives of SD	A	But that is why that is out there, the purpose here is only to help human need and I don't think that is the whole point of sustainable development		Objective	Social	NotPriority
1080	5 Objectives of SD	A	I think in a lot of ways some of the solutions are going to go against human needs, things that people think they want and they are going to have to stop wanting those things or stop using those things to help sustainability		Objective	Social	NotPriority
1081	5 Objectives of SD	A	The rest of them are I think are fairly obvious statements it is a long-term process		Objective	Perpetual	
1082	5 Objectives of SD	Q	Interviewer: That is the one I was going to ask you about that I thought was in the last set but it is actually in this set		-	-	-
1083	5 Objectives of SD	Q	I was going to ask you the question, you have that as the main at the plus five positions		-	-	-
1084	5 Objectives of SD	Q	So when it says a long-term process what is your time scale? A few years or thousands of years?		-	-	-
1085	5 Objectives of SD	A	It depends on which issue you are looking at but in terms of things like dry land salinity I mean who knows how long it is going to be		Objective	Perpetual	
1086	5 Objectives of SD	A	In terms of the air quality you don't know what advances are going to happen in the future so you don't know whether they are going to have a positive effect on air quality or if they are going to have a greater negative effect on air quality.So I see it as being long term process as in some of the solutions are long term some of the things will be ongoing and there will be new issues occurring and you will be tackling that on a sustainable development basis and that new issue may be something we don't even know about now		Objective	Perpetual	
1087	5 Objectives of SD	A	So it's not only long term we aren't going to get the end of 50 years and fixed up all our problems or the end of 100 years and fixed up all our problems		Objective	Perpetual	
1088	5 Objectives of SD	A	Sustainable development is going to have to be a way of life		Objective	Perpetual	
1089	5 Objectives of SD	Q	Interviewer: So an endless process perhaps?		-	-	-
1090	5 Objectives of SD	A	Yes an endless process		Objective	Perpetual	
1091	5 Objectives of SD	A	Part of life will be creating some of these environmental problems identifying them and working through as to how can we use sustainability to get back to a reasonable balance		Objective	Perpetual	
1092	5 Objectives of SD	A	I don't see those as being – "Oh we know all the issues now and once we fix them up they will all be gone"		Objective	Perpetual	
1093	5 Objectives of SD	A	I don't think that is the case at all		Objective	Perpetual	
1094	5 Objectives of SD	A	I think they will be different in different generations		Objective	Perpetual	
1095	5 Objectives of SD	A	You look at the smog in London I mean that got really bad but they have actually done something about it but they haven't fixed it up		Objective	Perpetual	
1096	5 Objectives of SD	A	They still have problems and they still have to work on it		Objective	Perpetual	
1097	5 Objectives of SD	A	Even if they say we have reduced lead down to acceptable levels in the air in a lot of capital cities around the world		Objective	Perpetual	
1098	5 Objectives of SD	A	But now there is volatile organic chemicals are becoming a problem and I don't see solutions to that		Objective	Perpetual	
1099	5 Objectives of SD	A	Human nature is always to create ongoing problems just by the fact you are producing new chemcial forms and processes and they are going to give you new issues to deal with		Objective	Perpetual	
1100	5 Objectives of SD	A	The rest of them are fairly straight forward they are all stating positive things that you can do and it points out that sustainability involves the whole community		Facilitator	Multi Sectors	JointEffort
1101	5 Objectives of SD	A	Everybody has to get involved in this and I surpose I agreed weakly with core objective for sustainable development should be to provide economic environmental and social equity within and between generations		Facilitator	Multi Sectors	JointEffort
1102	5 Objectives of SD	A	That is a nice thought but we don't have equity now so		Facilitator	Multi Sectors	JointEffort
1103	5 Objectives of SD	Q	Interviewer: That's card number 29 – "The core objective for sustainable development should be to provide economic, environmental and social equity within and between generations"		-	-	-
1104	5 Objectives of SD	A	I agree weakly with that - in theory it sounds great but		-	-	-
1105	5 Objectives of SD	Q	Interviewer: I guess I mean for me that would be pretty much the standard definition for sustainable development – is that what you mean?		-	-	-
1106	5 Objectives of SD	A	Yeah but in actual fact it is one of those things where, it is a bit like saying in salinity it should be an equity between generations but in actual fact if you want to tackle salinity things like getting farmers off their land and not using it is a real issue and it may not be equitable but it's a good solution		Objective	Env	Important
1107	5 Objectives of SD	A	It is a bit of a motherhood statement, which in some ways stops things happening you can't solve the problem of equity issues		Objective	Env	Important
1108	5 Objectives of SD	A	But that's about all		-	-	-
1109	5 Objectives of SD	Q	Interviewer: Card number 31 – "Bio-diversity is in such danger that Australia must cease developing any more relatively undisturbed land as but a first step to a sustainable development solution"		-	-	-
1110	5 Objectives of SD	Q	How serious a problem would you count that in terms of, you are obviously concerned about a range of problems where would that be positioned in your overall adversity?		-	-	-
1111	5 Objectives of SD	A	In terms of all other issues it is probably not my highest priority but it was particular statement about that particular issue and that is probably in my pinion very correct	?			
1112	5 Objectives of SD	A	Bio-diversities, numbers if you look at that statement, environment reports and that, I mean species are diminishing at a very rapid rate so the only way you can stop that happening is by actually stopping disturbing the land	?			
1113	5 Objectives of SD	A	But it is not a major issue with me but it probably should be	?			
1114	5 Objectives of SD	A	Because I think that a lot of the reduction in bio-diversity you don't see and it doesn't really have an impact where as things like salinity and air quality or water quality I mean they have a big impact on you	?			
1115	**5 Role of science and technology**	**T**	**Role of science and technology**		-	-	-
1116	**5 Role of science and technology**	**T**	**Interview five**		-	-	-
1117	5 Role of science and technology	Q	Interviewer:So in this selection you dealing with the roles of science and technology when implementing sustainable development		-	-	-
1118	5 Role of science and technology	Q	So would you like to just describe what your view is about the issue with science and technology?		-	-	-
1119	5 Role of science and technology	A	I think what most of these cards seem to be saying is that science and technology was the answer to solving all these problems all these ecological and environmental problems and that if you have science and technology then you don't have to worry to much		S&T	Subordinate	NS

Row		Topic	Type	Text		Cat 1	Cat 2	Cat 3
1120	5	Role of science and technology	A	While I believe to a certain point, and there are a couple of statements here that I do think that emerging technologies do offer higher productivity and increased efficiency and decrease pollution		S&T	Subordinate	NS
1121	5	Role of science and technology	A	I do believe that some of it, it's true, it's not the whole answer though		S&T	Subordinate	NS
1122	5	Role of science and technology	A	I think that science and technology has a part to play and that where the solution to a problem can be solved that way it's great but there are other strategic things that you can look at		S&T	Subordinate	NS
1123	5	Role of science and technology	A	Like whether or not you need to use those materials or put that into a process that you then have to clean up so what comes out is effecting the environment		S&T	Subordinate	NS
1124	5	Role of science and technology	A	I think that science and technology can provide lots of solutions like if we can produce a cleaner car that's really good use of it		S&T	Subordinate	NS
1125	5	Role of science and technology	A	But there are also things like the way the whole community works and acts is that their processes and actions can also be modified to achieve that end as well		S&T	Subordinate	Soc-Pol
1126	5	Role of science and technology	A	All these statements sort of added up to science and technology is the place for it to happen		S&T	Subordinate	NS
1127	5	Role of science and technology	A	The other thing is that science and technology is also the cause of all this, all the problems		S&T	Negative	Environment
1128	5	Role of science and technology	Q	Interviewer: Within these statements?		-	-	-
1129	5	Role of science and technology	A	Yes		-	-	-
1130	5	Role of science and technology	A	There the two sort of comments that they were making and of course things like waste behaviour is not really science and technology that is causing the problem it's peoples consumer behaviour and wanting to fulfil their needs and their wants and all those sorts of things that are the issues not so much science and technology creating the problem		S&T	Subordinate	Soc-Pol
1131	5	Role of science and technology	A	So I see science and technology as only part of the picture so only part of the answer and you can't just rely on the fact that if you've got a problem and ecological problem often science can't solve that problem for you and you have to find other ways		S&T	Subordinate	NS
1132	5	Role of science and technology	Q	Interviewer: Do you think as I guess just sort of a general issue do you feel that general science and the science and application technology are more beneficial to human wellbeing or environmental problem solving or are is the application of science and technology more damaging to health or environmental social issues?		-	-	-
1133	5	Role of science and technology	A	In general and that's because of my background I mean I'm a science trained person		-	-	-
1134	5	Role of science and technology	A	I think that it is actually beneficial		S&T	Important	SOL
1135	5	Role of science and technology	A	It supplies a lot of things in our lives that we really enjoy using and supplies a great deal of convenience and all sorts of things but it can create problems		S&T	Important	SOL
1136	5	Role of science and technology	A	But I think science is beneficial		S&T	Important	SOL
1137	5	Role of science and technology	A	I mean I wouldn't want to go back to being a cave man		S&T	Important	SOL
1138	5	Role of science and technology	A	I would much prefer to live now		S&T	Important	SOL
1139	5	Role of science and technology	A	I am actually quite positive about science I am not a negative person about science		S&T	Important	SOL
1140	5	Role of science and technology	A	So that is why I don't see that you should hang all the blame on science and technology and I don't think that you should look to science and technology to overcome problems which are basically problems of social, political or other economic basis to them	?	S&T	Subordinate	Soc-Pol
1141	5	Role of science and technology	Q	Interviewer: That's a pretty good summary I think		-	-	-
1142	5	Role of science and technology	A	Yeah well I won't go through each card but they do seem to fall into those two categories		-	-	-
1143	**5**	**Problem issues**	**T**	**Problem issues**		-	-	-
1144	**5**	**Problem issues**	**T**	**Interview five**		-	-	-
1145	5	Problem issues	Q	Interviewer: So the last issue is to do with problems that sustainable development is involved with, what problems we face and what problems do we need to overcome		-	-	-
1146	5	Problem issues	Q	So in terms of problems can you just outline your views about what you thinking about some of that?		-	-	-
1147	5	Problem issues	A	Lots of these are about real dooms day sort of comments that we are sort of taking the planet to the brink of destruction things like that		-	-	-
1148	5	Problem issues	Q	Interviewer: Do you think that's true yourself?		-	-	-
1149	5	Problem issues	A	I am just wondering why I put "We are living beyond the carrying capacity of our planet		Environment	Problems	LimitedResources
1150	5	Problem issues	A	Our numbers and our impacts have reached what in the case of any other species we would regard as plague proportions"		Environment	Problems	LimitedResources
1151	5	Problem issues	A	Yeah, I surpose that is why I agree with it		Environment	Problems	LimitedResources
1152	5	Problem issues	A	I mean our population for the planet is large and you would have to look at big cities as plague proportions		Environment	Problems	LimitedResources
1153	5	Problem issues	A	I think we have environmental problems		Environment	Problems	NS
1154	5	Problem issues	A	I think they are often site specific even though that site may be quite large		Environment	Problems	NS
1155	5	Problem issues	A	But you can't ignore things like the ones that I think are really worrying are things like greenhouse, something that can effect the whole planet		Environment	Problems	NS
1156	5	Problem issues	Q	Interviewer: But that's a global problem		-	-	-
1157	5	Problem issues	A	The global problems are probably the most scariest because if somebody really messes up a specific site be it a country or a city and leads to its destruction it doesn't necessarily mean there is destruction to the whole planet		Environment	Problems	NS
1158	5	Problem issues	A	But things like global problems are really starting to worry me because number one they are effecting everyone and the survival of the planet		Environment	Problems	NoControl
1159	5	Problem issues	A	Number two is that there is not a lot you can do about it		Environment	Problems	NoControl
1160	5	Problem issues	A	You don't have a lot of control over something like that		Environment	Problems	NoControl
1161	5	Problem issues	Q	Interviewer: How do you think we deal with doing, I guess as a sustainable development position say like global warming is obviously a big issue that worries a lot of people		-	-	-
1162	5	Problem issues	Q	How do you think we are actually doing in dealing with it at the moment?		-	-	-
1163	5	Problem issues	A	Well that the fact that the world recognises that there is a problem then you have a whole heap of nations come together to discuss the problem to try and modify the problem and try and modify their behaviour even though countries like Australia spend their time trying to say why they shouldn't do it I think that is a really positive thing		Status	Optimistic	Future
1164	5	Problem issues	A	But I don't know I think that the whole political and economic pressures are so great that environment... I don't think that people will make radical decisions until the environmental crisis is a crisis and at the moment I don't think that people recognise that it's a crisis and I don't whether you would describe it as a crises at this point and time		Barrier	Attitudes	Apathy
1165	5	Problem issues	A	But because these things are so long term, while people recognise the problems and are discussing it I think environmental problems are very secondary to social economic and political problems and at the end of the day the decision makers are going to be sacrificing environmental changes if they need to	?	Objective	Social	Priority
1166	5	Problem issues	A	You are talking about environmental issue and your talking about the RFA, there is jobs competing with environment and so getting decision making there is really, really hard because the political decision about jobs is far more immediate that the decision to save the forest	?	Objective	Social	Priority
1167	5	Problem issues	A	At the end of day most of these come down to political decisions and keeping people in jobs	?	Objective	Social	Priority
1168	5	Problem issues	Q	Interviewer: So you think that the crisis has to become a fairly bleak and obvious situation before people will act?		-	-	-
1169	5	Problem issues	A	Yes and I think that a lot of peoples views are that when something gets to a crisis situation and when people act		Barrier	Attitudes	Apathy
1170	5	Problem issues	A	So I think in terms of if we are heading down that road and I am not totally convinced we are, because we are trying to rectify things as we go along		Status	Optimistic	Future
1171	5	Problem issues	A	If we are going down that road I think what will happen is it will be like the Romans		Barrier	Attitudes	Apathy

1172	5 Problem issues	A	A whole civilisation will disappear and be wiped out and they may have been trying to fix up the problem but they may not be able to fix up the problem so therefore the population numbers will drop and hard times will come about and I think you have seen that happen in countries like Ethiopia that used to be fertile and now it is nothing more than barren desert	Barrier	Attitudes	Apathy
1173	5 Problem issues	A	Civilisations come and go and the inevitable that we do to	Barrier	Attitudes	Apathy
1174	5 Problem issues	A	Now whether it is environmental or something like a nuclear thing or whether it is a global thing	Barrier	Attitudes	Apathy
1175	5 Problem issues	A	We all go through another ice age or we all drown under the rising seas	Barrier	Attitudes	Apathy
1176	5 Problem issues	Q	Interviewer: A global thing in terms of a natural process?	-	-	-
1177	5 Problem issues	A	Yeah like having another ice age	-	-	-
1178	5 Problem issues	Q	Interviewer: So you where saying there about the end of our civilisation as a result of natural processing or human generated processes	-	-	-
1179	5 Problem issues	Q	Do you think that sustainable development as a strategy can help resolve the problem, is that the goal to overcome those problems?	-	-	-
1180	5 Problem issues	A	I think the only goal of sustainable development and why people actually tend to use it is a very selfish reason and that is that by sustainable development they see that their going to have ongoing resources and so keep on doing the things they are doing	Objective	Env	Knock-on
1181	5 Problem issues	A	I don't think it is an illogical reason	Objective	Env	Knock-on
1182	5 Problem issues	A	It just makes common sense that if you have a business it is better to keep the business buying and making money for you every year than to make a million dollars in the first and second year and then make nothing after that	Objective	Env	Knock-on
1183	5 Problem issues	A	So I think the motivation for sustainable development in most cases is common sense	Objective	Env	Knock-on
1184	5 Problem issues	A	People are saying we want to keep on rolling on we want to keep on having these resources, we want to be able to do these things, we want to be able to keep on using the land to produce our food, we want to be able to breathe the air	Objective	Env	Knock-on
1185	5 Problem issues	Q	So sustainable development makes sense for your own self-preservation	-	-	-
1186	5 Problem issues	A	I think that is the motivation	Objective	Env	Knock-on
1187	5 Problem issues	Q	Interviewer: Is that when you say that about other people is that your own view as well?	-	-	-
1188	5 Problem issues	A	It makes sense doesn't it?Things haven't actually come to an end and I don't think any action is totally selfless so it would be my motivation to but that is what I think sustainability is all about	Objective	Env	Knock-on
1189	5 Problem issues	A	It's maintaining humans needs and they sort of say that somewhere that's the jest of it that is why you do it	Objective	Env	Knock-on
1190	5 Problem issues	A	Maintain the human population being able to keep on doing what they are doing	Objective	Env	Knock-on
1191	5 Problem issues	A	I think that is the selling point of sustainability	Objective	Env	Knock-on
1192	5 Problem issues	A	If you were doing it for an altruistic reason like improving bio-diversity or the good of the planet then nobody would be interested	Objective	Env	Knock-on
1193	5 Problem issues	A	That is the selling point	Objective	Env	Knock-on
1194	**5 Reasons for LA21**	**T**	**Reasons for LA21**	-	-	-
1195	**5**	**T**	**Interview Four**	-	-	-
1196	5	Q	Interviewer: Well that is pretty much it for the statements	-	-	-
1197	5	Q	I was just trying to get some insight into maybe you would know or you would have thought about local government now	-	-	-
1198	5	Q	As you know there is a policy called Local Agenda 21 and one of the things I'd like to know, have you got any thoughts on why the Councils that have implemented Local Agenda 21 have and why the ones that haven't, haven't?	-	-	-
1199	5	A	Not from experience	-	-	-
1200	5	A	I don't know	-	-	-
1201	5	A	I think that it probabley depends on the motivation of the players	Facilitator	Government	Champion
1202	5	A	Some people have taken it up like all the environmental stuff some people have taken it up and are motivated and enthused about it and it also makes them feel good and they can see that there are positive things that they can do, and they have been able to enthuse that particular local council so you have corporations in other councils where you haven't got a motivator or councils where there are much more immediate issues or their just not interested	Facilitator	Government	Champion
1203	5	A	Local agenda 21 came from the Rio Conference in '92 and I think that for some of it, it is just too old and a lot of people just don't even know what it is all about	Barrier	Concept	Ambiguous
1204	5	A	But I haven't really spoken to anybody in local council so I don't really know	-	-	-
1205	5	A	A lot of environmental things need to be pushed by motivators, you need a person or people who guide the Local Agenda 21	Facilitator	Government	Champion
1206	5	A	Some have that and have taken it up and some haven't	Facilitator	Government	Champion
1207	**6 Implementation of SD**	**T**	**Interview six.**	-	-	-
1208	**6 Implementation of SD**	**T**	**SF LGC.**	-	-	-
1209	**6 Implementation of SD**	**T**	**Implementation.**	-	-	-
1210	6 Implementation of SD	Q	Interviewer: So perhaps if you can just start by telling me when you think about sustainable development and the implementation policies can you sort of give an overview of which different groups should be involved?	-	-	-
1211	6 Implementation of SD	A	Well I think these things have to be happening in unison so it should be core business.	Facilitator	Multi Sectors	TopDown
1212	6 Implementation of SD	A	And local government and the state government should have the dominant role.	Facilitator	Multi Sectors	TopDown
1213	6 Implementation of SD	A	It should also, I mean they both have dominate roles.	Facilitator	Multi Sectors	TopDown
1214	6 Implementation of SD	A	I wouldn't put one above the other - I think it has to be done together.	Facilitator	Multi Sectors	TopDown
1215	6 Implementation of SD	A	I am pretty surprised that I have put this card 17 – "Perhaps the best hope for the greatest worldwide gains toward sustainable development lies in motivated individuals voluntarily reducing or eliminating unsustainable behaviour" - I don't actually agree with that.	Facilitator	Multi Sectors	TopDown
1216	6 Implementation of SD	A	That is clearly not enough and the card doesn't say how many motivated individuals so I wouldn't agree with that now.	Facilitator	Multi Sectors	TopDown
1217	6 Implementation of SD	A	I feel that we need it happening as core business and local government and state government.	Facilitator	Multi Sectors	TopDown
1218	6 Implementation of SD	A	I think there is no way it can happen through just individuals, some individuals thinking about it and some not.	Barrier	LittleEffect	Community
1219	6 Implementation of SD	A	It needs to be happening both through local government and state government and also right through the whole business community.	Facilitator	Multi Sectors	TopDown
1220	6 Implementation of SD	A	It is absolutely vital from the mines of the North through to the tree plantations of the South that those businesses are thinking all about sustainable practise as well local government and state government.	Facilitator	Industry	Operations
1221	6 Implementation of SD	A	So it is an across the board approach but it's not enough to leave it to, I don't believe that we have enough time to allow slow happening by individuals on an individual basis without bringing it right through to the business of government.	Barrier	LittleEffect	Community
1222	6 Implementation of SD	Q	Interviewer Okay.	-	-	-
1223	6 Implementation of SD	Q	When you have those cards number 41 – "Implementing SD ought to be core business for local government" and 47 "The State government should have the dominant role in implementing SD in WA"	-	-	-
1224	6 Implementation of SD	Q	They're both in the plus four area.	-	-	-
1225	6 Implementation of SD	Q	The one about the local government and the state government - can you maybe just outline what is the relationship there.	-	-	-
1226	6 Implementation of SD	Q	For example I am thinking do you see local government as being implementors of the policies and say the state government as being the financers like getting the resources to local government or something else?	-	-	-

1227	6 Implementation of SD	A	Well a lot of it is just in policies.	Facilitator	Multi Sectors	TopDown
1228	6 Implementation of SD	A	If it is to do with land use it is to do with state government having state policies to do with land use that local government should then follow on with.	Facilitator	Multi Sectors	TopDown
1229	6 Implementation of SD	A	So you have to have the two things happening together.	Facilitator	Multi Sectors	TopDown
1230	6 Implementation of SD	A	Local government has to be happy about it but it is no good if the state government policy is to do with things like land use and don't reflect the thoughts about use of public transport, where we should be increasing population on transport lines.	Facilitator	Multi Sectors	TopDown
1231	6 Implementation of SD	A	They just have to work together.	Facilitator	Multi Sectors	TopDown
1232	6 Implementation of SD	A	There is not really a separating out of who should start first.	Facilitator	Multi Sectors	TopDown
1233	6 Implementation of SD	A	I think it is happening more at a local level than at the state government level, but within the state government a lot of the agencies are working very hard on that so in the end it ends up being the political people of state government that need to take it on board.	Barrier	Government	Individuals
1234	6 Implementation of SD	A	Which is probably the stumbling block at the moment.	Barrier	Government	Individuals
1235	6 Implementation of SD	Q	Interviewer: That is interesting because you have got this card number 42 right down at minus five which is "Sustainable development has the force of political commitment at the highest levels of the Commonwealth Government".	-	-	-
1236	6 Implementation of SD	A	That's where the downfall is in the actual politicians.	Barrier	Government	Individuals
1237	6 Implementation of SD	A	The agencies I deal with are all on the right track.	Barrier	Government	Individuals
1238	6 Implementation of SD	Q	Interviewer: You mean the people working in them?	-	-	-
1239	6 Implementation of SD	A	Yeah.	Barrier	Government	Individuals
1240	6 Implementation of SD	A	I think the problem is that the politicians don't actually read some of these things – reports - and learn about them.	Barrier	Government	Individuals
1241	6 Implementation of SD	A	I mean just the items in the paper today about there should be a sort of trigger when projects are emitting an excessive amount of green house gasses and there is the head of the country party saying no you can't do that we have to protect economic development.	Barrier	Government	Individuals
1242	6 Implementation of SD	A	He has probably never read or understood anything about sustainable development.	Barrier	Government	Individuals
1243	6 Implementation of SD	A	The process in actually educating politicians is a really important component of it.	Barrier	Government	Individuals
1244	6 Implementation of SD	A	You can get all these agencies doing all the hard work.	Barrier	Government	Individuals
1245	6 Implementation of SD	A	Even work that has been done on sustainable land practises when that actually came to the politicians debate it all got scrapped, yet all the work was there, the scientific proof.	Barrier	Government	Individuals
1246	6 Implementation of SD	Q	Interviewer: At a state and commonwealth level do you mean, that's what it sounds like to me?	-	-	-
1247	6 Implementation of SD	A	Yeah at a state and commonwealth level.	Barrier	Government	Individuals
1248	6 Implementation of SD	A	I don't think that it's the same as local government at all.	Facilitator	Government	Local
1249	6 Implementation of SD	A	I don't think the stumbling block is the councillors at all.	Facilitator	Government	Local
1250	6 Implementation of SD	A	I think that it is there back to once again often lack of knowledge and understanding.	Facilitator	Community	Educated
1251	6 Implementation of SD	A	There is often not an opportunity for people to learn about a better way to carry on business.	Facilitator	Community	Educated
1252	6 Implementation of SD	A	It takes quite a long time to read books and tune into those sorts of things and for the media to promote it.	Facilitator	Initiatives	Media
1253	6 Implementation of SD	A	Anything to do with sustainability are considered not exciting if we can have a personal drama instead.	Facilitator	Community	Educated
1254	6 Implementation of SD	A	So there is no education of the public in any meaningful way.	Facilitator	Community	Educated
1255	6 Implementation of SD	A	I mean it would be great if the media would take on responsibility to be involved in some education.	Facilitator	Initiatives	Media
1256	6 Implementation of SD	A	I know I went to see the editor of the West Australian and to talk about their role in accepting some responsibility in education.	Facilitator	Initiatives	Media
1257	6 Implementation of SD	A	But they on one hand admit that the only information that individuals get about things that are wrong whether they are crisis or whatever is from the newspaper but they seem to be still like that's not their job that's just entertainment.	Facilitator	Initiatives	Media
1258	6 Implementation of SD	A	They say information and entertainment but they don't seem to feel that they have a definite responsibility to think about that.	Facilitator	Initiatives	Media
1259	6 Implementation of SD	Q	Interviewer: It sounds like that a shame.	-	-	-
1260	6 Implementation of SD	A	I think we are heading in the right direction with local government pushing state government.	Facilitator	Government	Local
1261	6 Implementation of SD	A	It is definitely coming from local government in WA with the state government now saying what do you want us to do, that we want to do.	Facilitator	Government	Local
1262	6 Implementation of SD	A	But they are not the leaders.	Facilitator	Government	Local
1263	6 Implementation of SD	A	They are really turning to local government and saying how can we help.	Facilitator	Government	Local
1264	6 Implementation of SD	A	Which is great that perhaps we can then ask them for help but we need them to be in all their agencies and all the things they do from road building to management of the land to think about sustainability	Facilitator	Government	State
1265	6 Implementation of SD	A	It is just a different way of thinking and it needs to be happening at both those levels.	Facilitator	Government	State
1266	6 Implementation of SD	Q	Interviewer: So I have asked other people this question do you see in your own view that sustainable development a top down kind of government driven process?	-	-	-
1267	6 Implementation of SD	Q	Or is it a bottom up community, driven by individual motivated people who think it is important push it along.	-	-	-
1268	6 Implementation of SD	A	That's how it is happening but it is a very slow way to go.	Facilitator	Multi Sectors	TopDown
1269	6 Implementation of SD	A	You need a few enlightened leaders who can see that is the way to go even though the majority of the population might not be at that point yet.	Facilitator	Government	Champion
1270	6 Implementation of SD	A	It is an increasing awareness that is occurring but I would say that "no it is not enough to be coming from the bottom up".	Facilitator	Multi Sectors	TopDown
1271	6 Implementation of SD	A	The time has come when there is enough people in that area to say we now need leadership, we now need leaders in state government to start implementing it and the state government agencies and policies that they have so it is definitely not enough to be just from the bottom up.	Facilitator	Multi Sectors	TopDown
1272	6 Implementation of SD	A	It would take too long.	Facilitator	Multi Sectors	TopDown
1273	6 Implementation of SD	Q	Interviewer: So there needs to be real political commitment?	-	-	-
1274	6 Implementation of SD	A	Absolutely the time has come.	Facilitator	Multi Sectors	TopDown
1275	6 Implementation of SD	A	There has been enough information around, enough push from bottom; there should be enough enlightened leaders around by now to be able to implement what is needed from the top.	Facilitator	Multi Sectors	TopDown
1276	**6 Role of science and technology**	**T**	**Science and Technology.**	-	-	-
1277	**6 Role of science and technology**	**T**	**Interview six.**	-	-	-
1278	**6 Role of science and technology**	**T**	**SF.**	-	-	-
1279	6 Role of science and technology	Q	Interviewer: Yeah so we were just talking about science and technology and what the role of science and technology is.	-	-	-
1280	6 Role of science and technology	A	Yes I think it is something that hasn't been really thought about and I think it does offer some very useful things.	S&T	Important	NS
1281	6 Role of science and technology	A	I think there are some things that we are never going to be able to do in a sustainable way and we are actually going to need science and technology to help us out.	S&T	Important	SD
1282	6 Role of science and technology	A	Maybe in the end there are, given things like developing the right technology for the use of cars – I would love to see a reduction in cars but that is never going to be possible.	S&T	Important	SD
1283	6 Role of science and technology	A	It's going to be science and technology hopefully that would really get to a stage of being able to produce a car that has minimal impact.	S&T	Important	SD
1284	6 Role of science and technology	Q	Interviewer: Like zero emissions?	-	-	-
1285	6 Role of science and technology	A	Yes and it's the same with waste management.	S&T	Important	SD
1286	6 Role of science and technology	A	We need to work out ways to recycle the waste on our own properties, we need to use products that weren't packaged.	S&T	Important	SD

1287	6 Role of science and technology	A	But the latest science and technology wants as much waste as you can get it and they don't want it separated.	S&T	Important	SD
1288	6 Role of science and technology	A	So the new waste companies that want to come into Perth actually want as much waste as possible and from that they produce electricity.	S&T	Important	SD
1289	6 Role of science and technology	A	So this it a bit of a contradiction.	S&T	Important	SD
1290	6 Role of science and technology	Q	Interviewer: This is for incineration?	-	-	-
1291	6 Role of science and technology	A	Yeah for the incineration, gas to produce power.	S&T	Important	SD
1292	6 Role of science and technology	A	So maybe if we can't head down one path because it's too hard maybe this is going to be another alternative.	S&T	Negative	Focus
1293	6 Role of science and technology	A	I guess my main worry is that science does just continue on inventing things that maybe of no use or are harmful to the community, harmful to the environment long term – if we can invent lets keep going lets not stop.	S&T	Negative	Focus
1294	6 Role of science and technology	A	I think genetic engineering is a perfect example, I think that should be looked at quite differently.	S&T	Negative	Focus
1295	6 Role of science and technology	A	We should think of good farm management practises rather than how we are going to produce more crops.	S&T	Negative	Focus
1296	6 Role of science and technology	A	I think that is the wrong approach.	S&T	Negative	Focus
1297	6 Role of science and technology	A	If it can be invented lets go for it that's how humans are made and I don't agree with that.	S&T	Negative	Focus
1298	6 Role of science and technology	A	We need to promote the right science and technology, make decisions about that and if we are capable of inventing or producing something that might now be a good idea lets now do it.	S&T	Negative	Focus
1299	6 Role of science and technology	A	Lets actually be able to say no we're not interested in that, but we would like to put our scientists working on other things.	S&T	Negative	Focus
1300	**6 Problem issues**	**T**	**Problem issues.**	-	-	-
1301	**6 Problem issues**	**T**	**Interview six.**	-	-	-
1302	**6 Problem issues**	**T**	**SF.**	-	-	-
1303	6 Problem issues	Q	Interviewer: Okay thanks a lot.	-	-	-
1304	6 Problem issues	Q	So these are the last set of cards to do with problem issues.	-	-	-
1305	6 Problem issues	Q	Problems that sustainable development is trying to overcome.	-	-	-
1306	6 Problem issues	Q	What problems is sustainable development trying to overcome?			
1307	6 Problem issues	Q	Like what are things it's trying to improve?	-	-	-
1308	6 Problem issues	Q	And secondly what problems does sustainable development face when we kind of actually make it happen?	-	-	-
1309	6 Problem issues	Q	Can I get your views on those issues?	-	-	-
1310	6 Problem issues	A	Once again I think it is to do with disturbing the balance.	Objective	Balance	Env-Econ-Soc
1311	6 Problem issues	A	It's realising those things that we do have other side effects.	Objective	Balance	Env-Econ-Soc
1312	6 Problem issues	A	Everything you do has side effects so it's thinking about those and looking how you could do it in way that has less detrimental side effects.	Objective	Balance	Env-Econ-Soc
1313	6 Problem issues	A	Whether they are environmental or social.	Objective	Balance	Env-Econ-Soc
1314	6 Problem issues	A	So the problems that I guess we face with sustainability is becoming aware of those so it is to do with knowledge and understanding what repercussions and things are from building a wider road.	Objective	Balance	Env-Econ-Soc
1315	6 Problem issues	A	Building a wider road might make it nice and easy for people to get somewhere quicker.	Objective	Balance	Env-Econ-Soc
1316	6 Problem issues	A	But the impact it has in that it has been found to create more traffic and the environmental effects of more traffic on the environment and socially whether it is pleasant to be around to more accidents.	Objective	Balance	Env-Econ-Soc
1317	6 Problem issues	A	Getting people to think about everything they do and the repercussions so that you end up not compromising one for the other and I think that is how it was done in the past.	Objective	Balance	Env-Econ-Soc
1318	6 Problem issues	A	That it was okay to have a fantastic economic opportunity to develop something and because is was so fantastic and going to make so much money we could actually not worry about the environment or the social impact.	Objective	Balance	Env-Econ-Soc
1319	6 Problem issues	A	But sustainability is about having those three parts in balance not conflict.	Objective	Balance	Env-Econ-Soc
1320	6 Problem issues	A	So it's a change no longer compromising one or two of them, saying something should not go ahead.	Objective	Balance	Env-Econ-Soc
1321	6 Problem issues	A	No economic project from a mine or even practises of mining should be thought about.	Objective	Balance	Env-Econ-Soc
1322	6 Problem issues	A	At the moment a lot of he mining practises are not good socially.	Objective	Balance	Env-Econ-Soc
1323	6 Problem issues	A	They are having all sorts of effects on people.	Objective	Balance	Env-Econ-Soc
1324	6 Problem issues	A	So it's that thought that knowledge getting people to think about the side effects in everything that we do.	Objective	Balance	Env-Econ-Soc
1325	6 Problem issues	A	What was the other thing that you wanted me to talk about?	Objective	Balance	Env-Econ-Soc
1326	6 Problem issues	Q	Interviewer: Yeah, what problems do people actually face when they are trying to implement sustainable development?	-	-	-
1327	6 Problem issues	A	Well it's traditional views of the fact that economic growth is the most important thing.	Objective	Balance	Env-Econ-Soc
1328	6 Problem issues	A	And it's always been that sort of approach to the bottom line.	Objective	Balance	Env-Econ-Soc
1329	6 Problem issues	A	It is really what matters so if you are trying to implement something that is good for sustainability it's the bottom line approach that is the problem.	Objective	Balance	Env-Econ-Soc
1330	6 Problem issues	A	But with good sustainability of course you should be able to show that the bottom line has improved.	Objective	Balance	Env-Econ-Soc
1331	6 Problem issues	A	But you actually have to then put some figures on environmental things - either degradation or improvements.	Objective	Balance	Env-Econ-Soc
1332	6 Problem issues	A	So you actually have to put your figures differently to come up with that result.	Objective	Balance	Env-Econ-Soc
1333	6 Problem issues	A	Other problems would be lack of thought, history - the way we have just done things progressively without thinking about things impact and the overriding importance placed on economic consideration above all else.	Objective	Balance	Env-Econ-Soc
1334	**6 Reasons for LA21**	**T**	**Local Agenda 21 .**	-	-	-
1335	**6 Reasons for LA21**	**T**	**Interview six.**	-	-	-
1336	**6 Reasons for LA21**	**T**	**SF.**	-	-	-
1337	6 Reasons for LA21	Q	Interviewer: Can I ask you a couple of questions specifically about your experience in local government as a councillor.	-	-	-
1338	6 Reasons for LA21	Q	I guess one of the things I am really interested in is what you feel, we have some councils in Perth and some that haven't, what do you feel is the thing that has made the councils that have local agenda 21 actually have it?	-	-	-
1339	6 Reasons for LA21	Q	Like why have they and only they done it?	-	-	-
1340	6 Reasons for LA21	Q	Why haven't other councils endorsed Local Agenda 21?	-	-	-
1341	6 Reasons for LA21	A	Because there is no requirement under, which I would like to see by say state government to do it.	Facilitator	Government	Champion
1342	6 Reasons for LA21	A	It's always been up to the individuals to do it.	Facilitator	Government	Champion
1343	6 Reasons for LA21	A	So I think in all councils there has been that one person.	Facilitator	Government	Champion
1344	6 Reasons for LA21	A	They might have moved on and someone might have come in their place.	Facilitator	Government	Champion
1345	6 Reasons for LA21	A	But it's generally been one person, sometimes a group like say in Subiaco there is a group of councillors that have felt it was important.	Facilitator	Government	Champion
1346	6 Reasons for LA21	A	So it's not, it's always come through the actions of one or more individuals that have bought it forward.	Facilitator	Government	Champion
1347	6 Reasons for LA21	A	That's not to say there aren't councillors carrying out very good sustainability or being very considerate of sustainability when they are doing the things they do.	Facilitator	Government	Champion
1348	6 Reasons for LA21	A	I think there are a number of councillors in Perth, places like South Perth that I think so much what they do is really good but they haven't talked about the Local Agenda 21 structure at all.	Facilitator	Government	Champion

1349	6 Reasons for LA21	Q	Interviewer: So almost doing Local Agenda 21 but not following it – not calling it that?		-	-	-
1350	6 Reasons for LA21	A	Yes that's right.	?			
1351	6 Reasons for LA21	A	And I guess I have said to them the only point of you doing it is that it then helps the councillors who are trying to promote it.	?			
1352	6 Reasons for LA21	A	Then maybe in their councils they could practise LA21.	?			
1353	6 Reasons for LA21	A	It's a way to bring about sustainability is to actually set up agenda 21 process where you have serious committees thinking about what's happening throughout the council and that is the really unsustainable ones that need to do it more than the ones that are going along OK.	?			
1354	6 Reasons for LA21	Q	Interviewer: You might be doing good work but by actually giving it the name of LA21, bringing it relevance.		-	-	-
1355	6 Reasons for LA21	A	The LA21 committee at WAMA - it also provides a sort of networking.		Facilitator	Government	WAMA
1356	6 Reasons for LA21	A	It provides a connection with other councils, it supports the other councils.		Facilitator	Government	WAMA
1357	6 Reasons for LA21	A	So I think the councils that are going well with sustainable development as helpful as they are, are having to formalise a crisis and that is core business for them.	?			
1358	6 Reasons for LA21	A	But basically it has gone into councils through the actions of individuals and it wasn't known about so much.		Facilitator	Government	Champion
1359	6 Reasons for LA21	A	I guess now that it is becoming much more main-stream that won't always be the case it will be a group of people being alert to it.		Status	ParadigmShift	Aware
1360	6 Reasons for LA21	A	There are workshops in local government and there are conferences now about it.		Facilitator	Government	Local
1361	6 Reasons for LA21	A	Still people turning up and saying "what's this mean, I don't know what it means"		Barrier	Concept	Ambiguous
1362	6 Reasons for LA21	A	They are still learning, when they learn about it they say "yes across the board we should be looking at the way we do things thinking about sustainability"		Status	ParadigmShift	Prepare
1363	6 Reasons for LA21	Q	Interviewer: So correct me if I am wrong.		-	-	-
1364	6 Reasons for LA21	Q	Do you think that there has been some knowledgeable individuals or interested motivated individuals, councillors that they are crucial or have been up to now crucial in getting LA 21 talked about within the councils where it has actually happened?		-	-	-
1365	6 Reasons for LA21	A	There is a variety of circumstances.		Facilitator	Government	Champion
1366	6 Reasons for LA21	A	That's the case in Nedlands.		Facilitator	Government	Champion
1367	6 Reasons for LA21	A	When I first asked Nedlands about it they didn't know anything about it and I went onto council purely on that platform of setting LA21 in Nedlands.		Facilitator	Government	Champion
1368	6 Reasons for LA21	A	So in other councils it has just been the environmental officer, generally when I met the other focused councils that formed the LA21 advisory group there was only a couple of councils.		Facilitator	Government	Champion
1369	6 Reasons for LA21	A	Mainly officers that have become interested and see it as a way of improving councils decisions so they have been responsible for getting it implemented.		Facilitator	Government	Champion
1370	6 Reasons for LA21	A	In each council you can usually pin point a person or an officer or councillor who has initiated it and.		Facilitator	Government	Champion
1371	6 Reasons for LA21	Q	Interviewer: Another question I am really interested in your response to is when you think about the Department of Environmental Protection what would you like to see the DEP actually do in terms of helping councils like your council with it's program or councils generally when they implement LA21?		-	-	-
1372	6 Reasons for LA21	A	There are two things I would like.		-	-	-
1373	6 Reasons for LA21	A	First of all a formal acknowledgment by the state government of the importance of local communities doing LA21 and environmental plans.		Facilitator	Community	Involvement-NS
1374	6 Reasons for LA21	A	I think in NSW it's now a requirement that sustainability plans maybe its just environmental management plans but they are a requirement.		Facilitator	Community	Involvement-NS
1375	6 Reasons for LA21	Q	Interviewer: The same way we have a requirement on town planning schemes?		-	-	-
1376	6 Reasons for LA21	A	Absolutely.		-	-	-
1377	6 Reasons for LA21	A	That would be wonderful and if we can't make it to that point, I at least would like a letter of encouragement from state government that even would help validate the process for some councillors.		Facilitator	Government	State
1378	6 Reasons for LA21	A	To say that it is something that state government is encouraging and requesting that all local governments look at as part of there overall state strategies to encourage local governments which is what they have just said in response to the environment.		Facilitator	Government	State
1379	6 Reasons for LA21	A	The information is out and that is exactly just what they said and a way for them to formalise it would be to write to all the councils.		Facilitator	Government	State
1380	6 Reasons for LA21	Q	Interviewer: This is coming from the Minister for Local Government do you mean or from the DEP?		-	-	-
1381	6 Reasons for LA21	A	No from the state government, you know the response to the state of environment report page 5.		Facilitator	Government	State
1382	6 Reasons for LA21	A	I mean just after population and something else it talks about LA21.		-	-	-
1383	6 Reasons for LA21	A	Have you seen that one?		-	-	-
1384	6 Reasons for LA21	Q	Interviewer: Yes.		-	-	-
1385	6 Reasons for LA21	A	So when I read that - I think the actions I would like to see is formalising of that even if it is only just a letter to follow up on that to all councils.		Facilitator	Government	State
1386	6 Reasons for LA21	Q	Interviewer: Sorry yes that's what I meant.		-	-	-
1387	6 Reasons for LA21	Q	Would that come from the Minister for Local Government or from the Minister for the Environment?		-	-	-
1388	6 Reasons for LA21	A	Well it would be fantastic if it came from Paul (Minister for Local Government).		Barrier	Government	Individuals
1389	6 Reasons for LA21	A	I mean he doesn't even want to know about it.		Barrier	Government	Individuals
1390	6 Reasons for LA21	A	So I tried when I first got on council to go and see him about it but he's not interested.		Barrier	Government	Individuals
1391	6 Reasons for LA21	A	And I don't know if he knows anything about it at all, quite possibly he doesn't.		Barrier	Government	Individuals
1392	6 Reasons for LA21	A	I think someone mentioned it to him at some dinner or something and he didn't seem to have any understanding of it at all.		Barrier	Government	Individuals
1393	6 Reasons for LA21	A	Anyway that would be wonderful but that shows where the problem stands if the Minister for Local Government doesn't even know about it and here we are encouraging local government.		Barrier	Government	Individuals
1394	6 Reasons for LA21	A	So that would be fantastic if he understood and supported it.		Barrier	Government	Individuals
1395	6 Reasons for LA21	A	But even in the mean time I think the fact that it's in the response to the State of the Environment Report it should be done and then the next thing would be resources which is very difficult for local councils.		Barrier	Initiatives	Cost
1396	6 Reasons for LA21	A	And they do whinge and complain and say "well its the state government process or the federal government process" and I know in our councils to have a dedicated office as perhaps work on a regional basis to help with our Cities for Climate Protection program or our Travelsmart program.		Barrier	Initiatives	Cost
1397	6 Reasons for LA21	A	We at the moment rely on volunteers.		Barrier	Initiatives	Cost
1398	6 Reasons for LA21	A	We can't get funds through council.		Barrier	Initiatives	Cost
1399	6 Reasons for LA21	A	Council at this stage struggle with finding funds for declining infrastructure.		Barrier	Initiatives	Cost
1400	6 Reasons for LA21	A	These sort of things have been sort of the pushed by the mayor to say that every bit of money needs to go to the declining infrastructure and it is very hard to get these sorts of programs up and running and so some have volunteers.		Barrier	Initiatives	Cost
1401	6 Reasons for LA21	A	I guess what I would find useful is, would be an officer for the western suburbs.		Facilitator	Government	Champion
1402	6 Reasons for LA21	A	That's because these things Travelsmart and CCP - a lot of the strategies need direction.		Barrier	Concept	Ambiguous
1403	6 Reasons for LA21	Q	Interviewer: Just for the tape CCP is Cities for Climate Protection.		-	-	-
1404	6 Reasons for LA21	A	So that's what we would like would be a resource officer.		Facilitator	Government	Champion
1405	6 Reasons for LA21	A	We need to also make sure that I guess the state government is progressing it.		Facilitator	Government	Local
1406	6 Reasons for LA21	A	They need to put particular resources to officers there that are helping state agencies to look at all their practices and getting that happening throughout.		Facilitator	Government	Local

1407	6 Reasons for LA21	A	So it is a change in mind set.		-	-	-
1408	6 Reasons for LA21	A	And when that is done as normal practise we won't need that.		-	-	-
1409	6 Reasons for LA21	A	But to go from what we are at the moment to that point, to do that we do.		-	-	-
1410	6 Reasons for LA21	Q	Interviewer: So would it be useful for Nedlands to have an officer that is funded by DEP?		-	-	-
1411	6 Reasons for LA21	A	Well that's what we would need.	?	Facilitator	Government	Champion
1412	6 Reasons for LA21	A	Within the council or working for the DEP, in relationship for the councils, something like that.	?	Facilitator	Government	Champion
1413	6 Reasons for LA21	A	Well if they are working and I am suggesting jointly because I don't think, I mean I definitely have the work for one person to work full time because we are trying to get so many programs under way.	?	Facilitator	Government	Champion
1414	6 Reasons for LA21	A	They are all just sitting there waiting to be done and we are not progressing nearly fast enough because we have done all the basic work and now we actually need an officer to help us move on.	?	Facilitator	Government	Champion
1415	6 Reasons for LA21	A	I think Nedlands could use one full time but I don't think that is probably not likely but then everyone feels so.	?	Facilitator	Government	Champion
1416	6 Reasons for LA21	A	A regional officer.	?	Facilitator	Government	Champion
1417	6 Reasons for LA21	A	Maybe working with the DEP because in the end I think that it is a partnership we need to be promoting and carrying out projects that the state government is doing.		Facilitator	Multi Sectors	JointEffort
1418	6 Reasons for LA21	A	Whether it is Airwatch or TravelSmart.		Facilitator	Multi Sectors	JointEffort
1419	6 Reasons for LA21	A	I mean they are state programs that we are trying to tap into.		Facilitator	Multi Sectors	JointEffort
1420	6 Reasons for LA21	A	So I would not have a problem with them working from the DEP because I think that it is a partnership situation.		Facilitator	Multi Sectors	JointEffort
1421	6 Reasons for LA21	A	What are the chances?		-	-	-
1422	6 Reasons for LA21	Q	Interviewer: I don't know but it would be written in the report so, that's why I am asking you.		-	-	-
1423	6 Reasons for LA21	A	Yeah well that's it.		-	-	-
1424	7 Implementation of SD	T	Interview seven.		-	-	-
1425	7 Implementation of SD	T	DW CC.		-	-	-
1426	7 Implementation of SD	T	Implementation.		-	-	-
1427	7 Implementation of SD	Q	Interviewer: Can ask you, can you just give us some sort of overview of what you think about in terms of implementation of sustainable development.		-	-	-
1428	7 Implementation of SD	Q	Who should do it and why they should be involved?		-	-	-
1429	7 Implementation of SD	A	I guess it's all levels of government and the community and business I think everyone has a role in it.		Facilitator	Multi Sectors	JointEffort
1430	7 Implementation of SD	A	I probably emphasise the community and local government probably because that's where most of my work occurs and I can see them playing an important role.		Facilitator	Multi Sectors	BottomUp
1431	7 Implementation of SD	A	Local government is right at the forefront.		Facilitator	Government	Local
1432	7 Implementation of SD	A	A lot of them would not know what sustainable development was.		Facilitator	Government	Local
1433	7 Implementation of SD	A	It would just be something that they could incorporate it into their resume and it hasn't left any significant change in how they operate and make decisions.		Facilitator	Government	Local
1434	7 Implementation of SD	A	The idea that sustainability needs to be a corporate led issue, federal government or state government isn't right.		Facilitator	Multi Sectors	BottomUp
1435	7 Implementation of SD	Q	Interviewer: Do you see one of those levels of government that are having a lead role at this point in time.		-	-	-
1436	7 Implementation of SD	A	I guess given the current political climate I would pin my hopes on local government in that because they are supposedly closer to the community it's easier for them to be influenced by the local community and to raise awareness within the local community.		Facilitator	Government	Local
1437	7 Implementation of SD	A	I guess in Australia the commonwealth play a key role in promoting ESD at least on the Labor side.		Barrier	Government	Federal
1438	7 Implementation of SD	A	It's gone no where since the change of government.		Barrier	Government	Federal
1439	7 Implementation of SD	A	But on the whole there is all the work from ESD working groups and developing some sort of national frame work which is very good at laying out principles but it seemed to not go onto changes and decision making processes.		Barrier	Government	Federal
1440	7 Implementation of SD	A	Local government through local agenda 21, local conservations strategies and the like are starting to do more work in the area and that is where most of the activity seems to be happening.		Facilitator	Government	Local
1441	7 Implementation of SD	A	In amongst local councils and through places like Environment Australia and of course NGO's have been involved in that to some extent or in groups like the Conservation Council.		Facilitator	Government	Local
1442	7 Implementation of SD	A	At least they raise sustainability as a key issue in reference to particular projects or to state or national government strategies/polices, questioning how sustainability is featured.		Facilitator	Government	Local
1443	7 Implementation of SD	Q	Interviewer: Do you think that role has been quite successful?		-	-	-
1444	7 Implementation of SD	Q	In getting sustainable development back on the agenda?		-	-	-
1445	7 Implementation of SD	A	Well it is still a concept that is spoken about.	?			
1446	7 Implementation of SD	A	I mean wouldn't say it is always on the table when you hear about discussion of the state of Australia and sort of focuses on economic management issues like that.	?			
1447	7 Implementation of SD	A	Sustainability is not heard, or if they talk about sustainability, they talk about sustainable in the long term which is totally disconnected I think from the immediacy of sustainable development.	?			
1448	7 Implementation of SD	A	But without the actual NGO's it may well have slipped off the table.		Facilitator	NGOs	Lobby
1449	7 Implementation of SD	Q	Interviewer: One question that I have asked other people is would you see your own view about implementation of sustainable development that it is pretty much a bottom up driven process or that it is a top down from government to state government to local and then getting people to change?	?			
1450	7 Implementation of SD	Q	Which kind of direction do you see that process?	?			
1451	7 Implementation of SD	A	I guess it needs to be both but probably more likely to be bottom up because I see participation at the community level and each community being involved in decision making is critical.		Facilitator	Multi Sectors	BottomUp
1452	7 Implementation of SD	A	But it is sustainability so it can't simply be top down because it wouldn't work and yet you need that commitment as far as leadership goes as well.		Facilitator	Multi Sectors	BottomUp
1453	7 Implementation of SD	A	But basically I think it is bottom up or local government people to drive the idea.		Facilitator	Multi Sectors	BottomUp
1454	7 Implementation of SD	A	Also I think that is a reflection of how things are now which is why what I have got comment number 42 way up at minus four.		-	-	-
1455	7 Implementation of SD	Q	Interviewer: That says sustainable development has a force of commitment at the highest levels of commonwealth government.		-	-	-
1456	7 Implementation of SD	A	So I put it up there because I think "no it doesn't", "yes it should but no it doesn't it is not current reality".		Barrier	Government	Federal
1457	7 Implementation of SD	A	It wasn't even on the Labor agenda when most of the action was happening at national level or, wasn't even there but I think it was closer to that than it is even now.		Barrier	Government	Federal
1458	7 Implementation of SD	A	Partly I think that is because of the political climate that ESD is sort of less important.	?			
1459	7 Implementation of SD	A	Environmental issues seem to be less important and the focus in more on economic management.	?			
1460	7 Implementation of SD	A	Interviewer: Have you got any comments, I guess just on we talked about the highest levels of government and local government have you got any comments on perhaps what you think the role of either the state government as in the politicians or the state government as seen by the Department of Environmental Protection or Commerce and Trade or the Waters and Rivers Commission.		-	-	-
1461	7 Implementation of SD	Q	What do you see as being their role?		-	-	-
1462	7 Implementation of SD	Q	Either now and also the second question would be if I was to ask you what is your view that they should be doing?		-	-	-

1463	7 Implementation of SD	A	It then raises the question of what are the different roles of government because sustainability is a pretty all embracing concept, how we make decisions, how we do things so you are then looking at what should the balance of power be between local state and national.	Facilitator	Government	Local
1464	7 Implementation of SD	A	I guess I probably see more power going to local.	Facilitator	Government	Local
1465	7 Implementation of SD	A	Whether it is local as it is now or local as in regional government which is an idea that some people have floated.	Facilitator	Government	Local
1466	7 Implementation of SD	A	A government based on bio-regions whether that is river basins or some other ecological unit.	Facilitator	Government	Local
1467	7 Implementation of SD	A	Try to organise government on that level whether that will happen I don't know but that would be ideal and that is where ecologically most concepts should happen.	Facilitator	Government	Local
1468	7 Implementation of SD	A	But local government has a role because it has the range of actions and those services through its work and it's connection through local communities.	Facilitator	Government	Local
1469	7 Implementation of SD	A	So it has an important role.	Facilitator	Government	Local
1470	7 Implementation of SD	A	State government because they have so much regulatory power at the moment obviously need to be in there.	Facilitator	Government	State
1471	7 Implementation of SD	A	That's using sustainability when you're applying a test to development so EPA or planning agencies and reviewing development proposals.	Facilitator	Government	State
1472	7 Implementation of SD	A	Or in terms of policies say where Commerce and Trade directs it's effort they could then accept it's promoting resource development which might increase green house or it might instead of doing that put effort into what we might call green industries.	?		
1473	7 Implementation of SD	A	Where promoting green technology on that service base industries are even, areas like recycling or remediating contaminated sites or revegetation or changing agriculture that sort of sustainability that's bio-technology or land management industries almost so state government has a role.	Facilitator	Government	State
1474	7 Implementation of SD	A	Then nationally the federal government there, their role relates to co-ordination and the fact that they have the financial power.	Facilitator	Government	Federal
1475	7 Implementation of SD	A	They raise the most revenue out of all levels of government.	Facilitator	Government	Federal
1476	7 Implementation of SD	Q	Interviewer: So do think that their main role perhaps should be as a resourcing?	-	-	-
1477	7 Implementation of SD	A	Yes I guess it's resourcing and probably policy leadership and that's got to be reflected in how we think about economic management but maybe as well as being concerned about the CPI of interest rates, we need some other progress indicators.	Facilitator	Government	Federal
1478	7 Implementation of SD	A	We actually talk about sustainability indicators and the state of the environment reporting has a bit more profile to actually use that through a new policy that if we are going backwards whether its say equality or whether it's loss of top soil in agricultural areas or bio-diversity.	?		
1479	7 Implementation of SD	A	That is actually seen to be important and that we use what we are finding out about the state of the environment to review policies, review the way things are happening.	?		
1480	7 Implementation of SD	A	Now I guess that's state, federal even local I mean state environmental reporting has increased and is happening at all levels.	?		
1481	7 Implementation of SD	A	The other positive ones are clear benefits from public involvement so the key public involvement is important.	Facilitator	Community	Involvement-NS
1482	7 Implementation of SD	A	Because unless a large number of people have some awareness of the idea and support the idea then it's not going to get far as something that is seen as important by a small group whether that's in NGOs or in particularly community groups and that's fine but that's not going to change thing.	Facilitator	Community	Educated
1483	7 Implementation of SD	A	Things will change if there is a community which says sustainability is important so that people have some idea of what that means.	Facilitator	Community	Lobby
1484	7 Implementation of SD	A	They might not think about it in quite those terms but sort of quality of life.	-	-	-
1485	7 Implementation of SD	A	The environment is sort of leading the issue, those sorts of concepts are important for people then I think that sort of flows onto it being on the political agenda as well and also some business culture I think.	?		
1486	7 Implementation of SD	A	What the community thinks and what employees think has some influence on how organisations operate.	Facilitator	Community	Lobby
1487	7 Implementation of SD	A	Whether they are in business or NGOs or government.	Facilitator	Community	Lobby
1488	7 Implementation of SD	A	Multinationals question 1 at minus two – because the debate and I think Paul Guilding used to hit Greenpeace Australia and his philosophy is that multinationals will save the day.	Facilitator	Industry	Involvement
1489	7 Implementation of SD	A	"They are the ones with power and global reach to be able to achieve change".	Facilitator	Industry	Involvement
1490	7 Implementation of SD	A	I can see merit in that, certainly they are increasing in power and we are increasingly moving towards a much more globalised economy in society so they have a role but they are also quite far removed and still think that at the local level is probably the most important and of that it has to be global but it needs to be real it needs to be grass roots.	Facilitator	Industry	Involvement
1491	7 Implementation of SD	Q	Interviewer: Do you see multinational corporations as an example Alcoa which lots of people say that it has a green image and that they are doing some really good conservation work do you see that the corporations are changing their mould or is it just PR kind of thing?	-	-	-
1492	7 Implementation of SD	A	People do say that it is green washed, it's corporations wanting to promote a green image of themselves that they are more, seen to be good citizens in the community eye and that they are more likely to get government or community support for particular projects.	Facilitator	Industry	Involvement
1493	7 Implementation of SD	A	There are a lot of organisations like Alcoa doing their own environmental reporting like they are reporting on as well as financial performance like customer service are also reporting on environmental performance I think that is a good thing.	Facilitator	Industry	Involvement
1494	7 Implementation of SD	A	That is being led by the big businesses.	Facilitator	Industry	Involvement
1495	7 Implementation of SD	A	I guess they can see it's important that they have the capacity to do that.	Facilitator	Industry	Involvement
1496	7 Implementation of SD	A	Yes they have a role, it's hard to see that they are fundamentally changing the way that they did business and I think the whole idea that sustainability implies that you do need some fundamental changes but time will tell I guess with that one.	Facilitator	Industry	Involvement
1497	7 Implementation of SD	Q	Interviewer: I was just wondering, I wonder whether you would, I guess, you get mission statements and stuff like environmental management plans, whether that translates into anything meaningful.	-	-	-
1498	7 Implementation of SD	Q	Have you a view on that?	-	-	-
1499	7 Implementation of SD	A	I think that it is all pointing in the right direction and suggesting that if a change is happening or people see the change is necessary, the problem is the context in which they are working.	Objective	Balance	Env-Econ-Soc
1500	7 Implementation of SD	A	They are still private organisations whose role is to generate a profit for the shareholders.	Objective	Balance	Env-Econ-Soc
1501	7 Implementation of SD	A	Exactly and how that they generate the profit well then the current way that we measure things and sort of organise ourselves it's basically exploiting natural resources or exploiting people.	Objective	Balance	Env-Econ-Soc
1502	7 Implementation of SD	A	I guess you can do that in a good way or a bad way but we are still sort of drawing down non-renewables, we are probable overusing renewable resources say fisheries for example there is a lot of problems around the world with poor fisheries management.	Objective	Balance	Env-Econ-Soc
1503	7 Implementation of SD	A	We are taking to much out so if you still have this profit which is based on increasing consumption of resources well that's a problem because it doesn't square with the sustainability.	Objective	Balance	Env-Econ-Soc
1504	7 Implementation of SD	A	Because it's not sustainable because the consequences, loss of natural capital you're loosing bio-diversity, the area for habitat is diminishing, the quality of habitat is being impacted by pollution.	Objective	Balance	Env-Econ-Soc
1505	7 Implementation of SD	A	The ability of the environment to sustain us, you would probably argue is diminishing it's not increasing and it's not staying the same either.	Objective	Balance	Env-Econ-Soc

1506	7 Implementation of SD	A	So until we can find a way of providing a way of people's livelihoods and wellbeing in way that maintains the environment that sustains us, that's sustainability but we're not there.	Objective	Balance	Env-Econ-Soc
1507	7 Implementation of SD	A	So these multinationals or any other business is still working, profit through consumption that's how they survive.	Objective	Balance	Env-Econ-Soc
1508	7 Implementation of SD	A	That's the challenge of sustainability and it's for all of us to try and work out what the future should be.	Objective	Balance	Env-Econ-Soc
1509	7 Objectives of SD	T	Objectives.	-	-	-
1510	7 Objectives of SD	T	Interview seven.	-	-	-
1511	7 Objectives of SD	T	DW.	-	-	-
1512	7 Objectives of SD	Q	Interviewer: So if I could just ask you in you own kind of view point not necessarily just expressed here but overall can you give me a summary of what you see the objective of sustainable development is actually trying to achieve?	-	-	-
1513	7 Objectives of SD	A	The question that lots of people grapple with so that we end up with statements that everyone agrees with but are not always very useful is that sustainable development, sustainability being sort of meeting the needs of the current generation.	Objective	Env	Knock-on
1514	7 Objectives of SD	A	Not removing choices for a future generation, which is good I think that sounds good but what does that actually mean?	Objective	Env	Knock-on
1515	7 Objectives of SD	A	I think that means maintaining natural capital so bio-diversity and the ability of the environment to support us so that the whole thing of the ecological process will maintain a livable world which includes us.	Objective	Env	Knock-on
1516	7 Objectives of SD	A	Then I guess the other thing with sustainability, people talked about it being the point at which the economy, society and environment come together and I see that's important too.	Objective	Env	Knock-on
1517	7 Objectives of SD	A	I would probably give priority to the environment.	Objective	Env	Knock-on
1518	7 Objectives of SD	A	Because I think that keeps everything else going but you need to obviously have some regard for the economy but for the economy to be sustainable you need to count things in different ways and make a living in different ways and use resources in different ways.	Objective	Env	Knock-on
1519	7 Objectives of SD	A	Then again with society with people we need to have regard to issues of equity and I think that's important.	Objective	Balance	Env-Econ-Soc
1520	7 Objectives of SD	A	That also relates to disparity and resource consumption.	Objective	Balance	Env-Econ-Soc
1521	7 Objectives of SD	A	If you are using too much and there's a masses in poverty who have too little so there is some sort of balancing out there.	Objective	Balance	Env-Econ-Soc
1522	7 Objectives of SD	A	So we could all live in ways that don't erode natural capital which means that we have enough in economic terms, it means that everyone else has enough too, so there is some equity and there is also equity in terms of participating and making decisions as well.	Objective	Balance	Knock-on
1523	7 Objectives of SD	A	I think that is a part of sustainability too.	Objective	Balance	Env-Econ-Soc
1524	7 Objectives of SD	A	People can participate in shaping what happens.	Facilitator	Community	Involvement-NS
1525	7 Objectives of SD	Q	Interviewer: Some of the statements you've placed obviously reflect that we have a common interest between the state of the environment and the people.	-	-	-
1526	7 Objectives of SD	A	Some people would challenge that and it sort of relates partly to what's at the other end of the spectrum that the utilitarian view of things that looking after the environment is, the only point of it is to basically serve the needs of people.	Objective	Balance	Env-Econ-Soc
1527	7 Objectives of SD	A	Which sometimes we certainly use that argument because people often don't appreciate things in there own right.	Objective	Balance	Env-Econ-Soc
1528	7 Objectives of SD	A	That they will conserve an area of habitat because it has a steady value or it is important to recreation that is often their main motivation.	Objective	Balance	Env-Econ-Soc
1529	7 Objectives of SD	A	The fact that it is important to keep things that, it's almost a rights thing that.	Objective	Balance	Env-Econ-Soc
1530	7 Objectives of SD	A	Why should we just appropriate everything for us and that we will keep species and areas of landscape or manage ocean resources in a way that meets our needs with complete disregard for the needs of any other species or creatures with which we share the earth.	Objective	Balance	Env-Econ-Soc
1531	7 Objectives of SD	A	That we put our needs above everything else.	Objective	Balance	Env-Econ-Soc
1532	7 Objectives of SD	A	Sort of do you take an anthropocentric view of the world or do you take what you might call an ecocentric view of the world.	Objective	Balance	Env-Econ-Soc
1533	7 Objectives of SD	A	I probable tend a bit more to the ecocentric but rather than us being at the top of some pinnacle it's more a web and we are part of that web.	Objective	Balance	Env-Econ-Soc
1534	7 Objectives of SD	A	We sort of try and live in a way which doesn't disrupt or deplete other species.	Objective	Balance	Env-Econ-Soc
1535	7 Objectives of SD	A	So I guess that's the reason for me putting that up there that yes, I – the utility is often an argument that conservationists will use but it's not the only reason for doing it.	Objective	Balance	Env-Econ-Soc
1536	7 Objectives of SD	A	Sustainable development is a long-term process.	Objective	Perpetual	
1537	7 Objectives of SD	A	Sustainability is almost replacing economic growth as the dominant goal of society it is sort of against economic growth as this idea of progress through material wealth is what it is all about and increasing GNP and increasing profit of a particular company or industry sector to shift away from that, working towards that goal to work towards sustainability and we need some measures for that.	Objective	Balance	Env-Econ-Soc
1538	7 Objectives of SD	A	Which might be environmental also quality of air or water resources, it might be social, levels of poverty.	Objective	Balance	Env-Econ-Soc
1539	7 Objectives of SD	A	Where the people have a sense of community, people feel they are involved in shaping their own lives and work and also economic things.	Facilitator	Community	Involvement-NS
1540	7 Objectives of SD	A	Measures to do with equity.	Objective	Balance	Env-Econ-Soc
1541	7 Objectives of SD	A	But that idea is sustainability becomes what we focus on and work towards instead of material wealth and to do that it is long term because we are changing around.	Objective	Perpetual	
1542	7 Objectives of SD	Q	Interviewer: I might ask you that specifically.	-	-	-
1543	7 Objectives of SD	Q	In your own view how long do you see that – long terms is a fairly open ended statement.	-	-	-
1544	7 Objectives of SD	Q	So is five years long term or fifty years or five hundred years or five thousand years perhaps?	-	-	-
1545	7 Objectives of SD	Q	Do you see this happening in your own lifetime?	-	-	-
1546	7 Objectives of SD	A	Yeah in one sense it is never ending but it's ongoing just as this notion of seeking a public progress.	Objective	Perpetual	
1547	7 Objectives of SD	A	Well I guess that's sort of linked in with the industrial revolution and that means the production of organisation of business and the sort of work that people do and the sorts of things that government do are sort of all tied in with that.	Objective	Perpetual	
1548	7 Objectives of SD	A	So of course turning it around is a big challenge so it might probably, fifty years I would hope that we would have made some significant change in the fifty years time frame.	Objective	Perpetual	
1549	7 Objectives of SD	A	But even then the whole notion of sustainability is something that keeps going on.	Objective	Perpetual	
1550	7 Objectives of SD	A	You can't sort of say "Okay we're sustainable now we will go on and do something else".	Objective	Perpetual	
1551	7 Objectives of SD	A	Sustainability is inherently the concept that it is maintaining a way of being that is good for people and the environment that's forever.	Objective	Perpetual	
1552	7 Objectives of SD	A	Number four – "bio-diversity is a key" because it is part of natural capital.	?		
1553	7 Objectives of SD	A	It's irreplaceable and making lots of decisions now that are irreversible and I don't think it's justified whether that bushland is lost for agricultural expansion or for housing.	?		
1554	7 Objectives of SD	A	It is also unnecessary in some cases.	?		
1555	7 Objectives of SD	A	Because we are doing things because it's the way that we have always done them.	?		
1556	7 Objectives of SD	A	But there are other ways of accommodating people or increasing agricultural production instead of diminishing bio-diversity.	?		
1557	7 Objectives of SD	A	So thirty-two is at four so – "priority to ecosystem integrity" because that's the thing that keeps us going.	?		
1558	7 Objectives of SD	A	If you undermine that it's like we are on a space ship and we rely on the oxygen supply, oxygen supply is the most important goal so ecosystem integrity is in the same respect on a planetary scale.	?		

1559	7 Objectives of SD	A	"Changes in lifestyle" that is eleven at number two – reducing resource consumption is critical and it's like being involved in thinking about what resources we use and participating in recycling and reuse.	?			
1560	7 Objectives of SD	A	That's a learning process for people and I think starting to change the way that you think about things.	?			
1561	7 Objectives of SD	A	That's what you do when you go shopping or how you organise things in your household and again when you sit down to a meal, all of that.	?			
1562	7 Objectives of SD	A	It helps bring back that cultural change.	?			
1563	7 Objectives of SD	A	The core objective should be equity between generations.		Objective	Equity	
1564	7 Objectives of SD	A	Well I think that in some regard, but future generations, we always have to look at the inequities between what we do and what people in future society or other societies.		Objective	Equity	
1565	7 Objectives of SD	A	Twenty-one at minus two- Sustainable development, they are basically saying it should - equating it to managed economic growth.	?			
1566	7 Objectives of SD	A	The problem with that would be that I think the whole notion of economic growth is flawed.	?			
1567	7 Objectives of SD	A	You would either have to redefine it radically or instead of talking about economic growth talk about sustainability and use particular measures as meaning.	?			
1568	7 Objectives of SD	A	But this whole idea of economic growth or increasing GDP or increasing profits if you are looking at a company scale I just think that is one of the reasons we are in our current situation that's a problematic way of measuring progress, it's a goal that we shouldn't have.	?			
1569	7 Objectives of SD	Q	Interviewer: Okay thanks.		-	-	-
1570	**7 Role of science and technology**	**T**	**Science and technology.**		-	-	-
1571	**7 Role of science and technology**	**T**	**Interview seven.**		-	-	-
1572	**7 Role of science and technology**	**T**	**DW.**		-	-	-
1573	7 Role of science and technology	Q	Interviewer: Okay so now we have the science and technology statements laid out.		-	-	-
1574	7 Role of science and technology	Q	So that's the viewpoint so I guess one of things that I'm interested in is what peoples views are broadly about science and technology.		-	-	-
1575	7 Role of science and technology	Q	Then I guess secondly how that impacts in terms of promoting sustainable development.		-	-	-
1576	7 Role of science and technology	Q	Whether you think that science and technology has a role in that or whether it hasn't or what that role would be.		-	-	-
1577	7 Role of science and technology	Q	So broadly if you could just give me some thoughts and feelings about those sorts of issues.		-	-	-
1578	7 Role of science and technology	Q	The role of science and technology in sustainability.		-	-	-
1579	7 Role of science and technology	A	I guess science being important for us to understand the state of the environment.		S&T	Important	Facts
1580	7 Role of science and technology	A	To provide some sort of objective measure of where things are at.		S&T	Important	Facts
1581	7 Role of science and technology	A	Sort of stocktaking and measuring, going backward and forwards and picking up sustainability indicators.		S&T	Important	Facts
1582	7 Role of science and technology	A	Also some solutions will be technical.		S&T	Important	Facts
1583	7 Role of science and technology	A	I tend to think that it is not a matter of science and technology saving the day.		S&T	Subordinate	Attitudes
1584	7 Role of science and technology	A	I think it is more a matter of how we organise ourselves and the values that we hold.		S&T	Subordinate	Attitudes
1585	7 Role of science and technology	A	I think it's a cultural basis of the problem not, there is no technical fix which will transform us into a sustainable society.		S&T	Subordinate	Attitudes
1586	7 Role of science and technology	A	That's not going to happen.		S&T	Subordinate	Attitudes
1587	7 Role of science and technology	A	It will be the goals that we hold and what we see to be important and therefore how we do things that's going to make that transition possible.		S&T	Subordinate	Attitudes
1588	7 Role of science and technology	A	Science and technology will help of course.		S&T	Subordinate	Attitudes
1589	7 Role of science and technology	A	The card number four at minus five – "knowledge of technology makes us above all other species that we don't need to be concerned about ecological constraints" - I disagree with that sort of notion.		S&T	Subordinate	Attitudes
1590	7 Role of science and technology	A	Sustainability, it almost questions the concept in that case it has no meaning if you thought that we were these dominant species that ruled the planet.	?			
1591	7 Role of science and technology	A	Science and technology is a problematic role because it's been very much the agent of change and this whole notion of economic progress is bound up in knowledge called innovation.		S&T	Negative	Focus
1592	7 Role of science and technology	A	Often adopting technology just because it is new or possible or because it has commercial value without regard to environmental consequences.		S&T	Negative	Focus
1593	7 Role of science and technology	A	If we thought more critically about the consequences of things we might manage technology and we would have different priorities.		S&T	Negative	Focus
1594	7 Role of science and technology	A	Instead of putting money into creating – manipulating seeds, multinationals that provides seed also provides plant stock also provides the fertilisers and herbicide from everything that goes with it.		S&T	Negative	Focus
1595	7 Role of science and technology	A	They provide a package deal that might benefit them but it's questionable if there is much environmental good out of that.		S&T	Negative	Focus
1596	7 Role of science and technology	A	It would be better to invest scientific resources and finding means of production, which less rely on resources.		S&T	Negative	Focus
1597	7 Role of science and technology	A	That you didn't need as many herbicides that you had in the crop management.		S&T	Negative	Focus
1598	7 Role of science and technology	A	But the ecological approach to managing production instead of a multinational, energy intensive pest warfare type approach.		S&T	Negative	Focus
1599	7 Role of science and technology	A	That example is effective.		S&T	Negative	Focus
1600	7 Role of science and technology	A	There is a problem where scientific research is directed and where the money goes.		S&T	Negative	Focus
1601	7 Role of science and technology	A	Things that are in the public interest often get less than the things that are in the commercial interest.		S&T	Negative	Focus
1602	7 Role of science and technology	Q	Interviewer: What you have said there that in card number 13 here which you have towards the middle of the array so it is "emerging technology offers the promise of higher productivity and increased efficiency and decrease pollution is essential to sustainable development".		-	-	-
1603	7 Role of science and technology	Q	I guess if that statement were true and I don't know if you believe that it is but if you do believe that emerging technologies do offer those things then would it also follow that, that is essential for the sustainable development?		-	-	-
1604	7 Role of science and technology	A	I guess I think that we could do things better and that there is innovation which has come out of scientific research which would be beneficial but the way that the card reads it is almost as if innovation is critical to us becoming sustainable.		S&T	Subordinate	Attitudes
1605	7 Role of science and technology	A	I think "yes that it will help" but I don't think it is critical because through a lot of wisdom in our past that we can draw on.		S&T	Subordinate	Attitudes
1606	7 Role of science and technology	A	People used to get by using pure resources, people used to reuse and recycle a lot more than we do now.		S&T	Subordinate	Attitudes
1607	7 Role of science and technology	A	But there are cultures that some people would describe as backward but they're sort of using animal waste or human waste in productive ways instead of being something that we output to the environment, which becomes pollution.		S&T	Subordinate	Attitudes
1608	7 Role of science and technology	A	So that is looking at other was of using resources, using resources less.		S&T	Subordinate	Attitudes
1609	7 Role of science and technology	A	I think that there is a lot in our past that traditional societies that have other ways of doing things.		S&T	Subordinate	Attitudes
1610	7 Role of science and technology	A	Things we already know when it comes back to our value system and organisation I think rather than needing some new technology to do it.		S&T	Subordinate	Attitudes
1611	7 Role of science and technology	A	There is existing technology which is more appropriate than high tech things that industry and government are chasing after.		S&T	Negative	Focus
1612	**7 Scale of problems**	**T**	**Scale of problems.**		-	-	-
1613	**7 Scale of problems**	**T**	**Interview seven.**		-	-	-
1614	**7 Scale of problems**	**T**	**DW.**		-	-	-

1615	7 Scale of problems	Q	Interviewer: This is a card that I have been asking virtually everybody a question about – in terms of the environmental crisis, I guess that I am trying to get a sense for what people actually think the scale of problems are that we face.	-	-	-
1616	7 Scale of problems	Q	Also what kind of problems people are actually thinking about when they use the term environmental crisis.	-	-	-
1617	7 Scale of problems	Q	What are the actual issues that we face?	-	-	-
1618	7 Scale of problems	Q	Basically are people getting a scientifically reliable picture?	-	-	-
1619	7 Scale of problems	A	Because some industries will say things aren't as bad.	S&T	Important	Facts
1620	7 Scale of problems	A	Whereas people make out that they are and then they will use scientific evidence to back that up or by the same token environment groups, people lobbying to protect the place or a species or arguing against a particular project will use scientific evidence to support their case.	S&T	Important	Facts
1621	7 Scale of problems	A	So yes I think science provides us with facts but science is also value laden, as when how is the science being done, by whom is it being done?	S&T	Negative	Manipulated
1622	7 Scale of problems	A	Then of course it is just an interpretation.	S&T	Negative	Manipulated
1623	7 Scale of problems	A	Okay you have these numbers or what do they mean.	S&T	Negative	Manipulated
1624	7 Scale of problems	A	How important are they, what thing do you draw from it and that depends on your values.	S&T	Negative	Manipulated
1625	7 Scale of problems	A	Environmental crisis, I guess major issues would be things like global warming.	S&T	Important	Facts
1626	7 Scale of problems	A	So I don't think that there is any doubt.	S&T	Important	Facts
1627	7 Scale of problems	A	Concentrations of greenhouse gasses in the atmosphere are increasing.	S&T	Important	Facts
1628	7 Scale of problems	A	It is a matter of whether you think that matters or not.	S&T	Subordinate	Attitudes
1629	7 Scale of problems	A	To some people it does to some it doesn't.	S&T	Subordinate	Attitudes
1630	7 Scale of problems	A	I think based on what we know it does matter, we think that it will lead to changes in climate at a rate that will impact the ecosystem and impact on ourselves so yep that's a problem.	S&T	Important	Facts
1631	7 Scale of problems	A	Biodiversity I don't think there is much doubt that we are in phase of species depletion and that we are loosing habitat and that can't be a good thing.	?		
1632	7 Scale of problems	A	There is resource consumption but that sort of comes back to energy use so greenhouse and impacts on landscapes where things have been dug up from, carted through or disposed of to become pollution.	?		
1633	7 Scale of problems	A	But obviously there is a whole mix of environmental issues that are of concern.	?		
1634	7 Scale of problems	A	But it sort of comes back to the way in which we use resources.	?		
1635	7 Scale of problems	A	Whether that's land in it's own right that we use, whether it's water, it's fisheries.	?		
1636	7 Scale of problems	A	The problems sort of stem from the way in which we use resources.	?		
1637	7 Scale of problems	A	It's how we manage them, the quantities that we use, and the uses to which we are putting them.	?		
1638	7 Scale of problems	A	How they are distributed between people.	?		
1639	7 Scale of problems	A	Number 14 at minus three – I am not sure if the consumption of resources is steady or declined I would have thought that the material that we use in our economy has actually increased.	?		
1640	7 Scale of problems	A	Just looking at motor vehicles for example the fuel efficiency in motor vehicles has been pretty steady for several decades there has been no major advance to make vehicles much more energy efficient.	?		
1641	7 Scale of problems	A	It has been pretty marginal the level of change.	?		
1642	7 Scale of problems	A	The number of vehicles has increased, the level of vehicle uses has increased, we are using more fuel and more in the way of energy resources.	?		
1643	7 Scale of problems	A	But maybe there are things that we can achieve through a technological change that we use less.	?		
1644	7 Scale of problems	A	Energy efficient light bulbs or things like that for example.	?		
1645	7 Scale of problems	Q	Interviewer: Okay lets set up the next lot.	-	-	-
1646	7 Problem issues	T	**Problem issues.**	-	-	-
1647	7 Problem issues	T	**Interview seven.**	-	-	-
1648	7 Problem issues	T	**DW.**	-	-	-
1649	7 Problem issues	Q	Interviewer: So if I can just ask you what you think in terms of what problems sustainable development is trying to overcome what problems is it facing in it's implementation and those sorts of issues.	-	-	-
1650	7 Problem issues	A	Key problem is the amount of resources consumption.	?		
1651	7 Problem issues	A	The value we place on resources including land.	?		
1652	7 Problem issues	A	An example of that is urban growth of land which is used for future development.	?		
1653	7 Problem issues	A	It is not seen to have value as a green field site.	?		
1654	7 Problem issues	A	They seem to be not having any constraints, that is starting to change of course.	?		
1655	7 Problem issues	A	Maintaining biodiversity as bushland but that's becoming a problem for developers.	?		
1656	7 Problem issues	A	But we haven't fundamentally changed development patterns of Perth.	?		
1657	7 Problem issues	A	In terms of sustainability, through other ways to grow that wouldn't threaten bushland for example we don't have to continue growing outwards.	?		
1658	7 Problem issues	A	But we haven't made that change.	?		
1659	7 Problem issues	Q	Interviewer: So what alternative were you thinking about there?	-	-	-
1660	7 Problem issues	A	Making more intensive use of existing urban land, high-density development and encouraging development on already cleared land.			
1661	7 Problem issues	A	Promoting regional development.	?		
1662	7 Problem issues	A	We have several towns that are experiencing depopulation, businesses are closing, population has dwindled.	?		
1663	7 Problem issues	A	It has sort of a spiralled effecting on many rural towns.	?		
1664	7 Problem issues	A	So to try and reverse that I think living in a country town I think some people would appreciate there aren't jobs and if medical facilities aren't available then people aren't going to go there.	?		
1665	7 Problem issues	A	So attacking some of those problems would be a better way to manage growth instead of simply clearing several hectares of bushland and more low-density car based development on the fringes of the city.	?		
1666	7 Problem issues	A	The card that "Nature has an unlimited capacity to absorb waste and provide resources".	?		
1667	7 Problem issues	A	I guess that has been the view that we felt collectively for some time and it is partly why we are in the state that we are.	?		
1668	7 Problem issues	A	That maybe when population was very small you might be able to argue that or I would have put that you would even have localised problems with pollution and accessing resources.	?		
1669	7 Problem issues	A	Certainly in the current day and age knowing that nature can't absorb all the waste that we put out hence problems of global warming because of the amount of greenhouse gasses that we are putting out.	?		
1670	7 Problem issues	A	Local and regional air pollution because of pollution going into the air.	?		
1671	7 Problem issues	A	Contamination of ground water impacts on coastal water quality.	?		
1672	7 Problem issues	A	In terms of resources would be the depletion of fish stocks.	?		
1673	7 Problem issues	A	Wood as well.	?		
1674	7 Problem issues	A	There are competing interests as to how forests should be used.	?		
1675	7 Problem issues	A	Whether they are simply for timber resource or if they are more than that.	?		
1676	7 Problem issues	A	It's a statement which is contestable even scientifically, the idea that nature has a lot of capacity to absorb waste doesn't stand up and some scientists that I have spoken to have noted the assimilative capacity which is the idea that the environments and whether they would say that's a coastal water.	?		

1677	7 Problem issues	A	So Perth's coastal water they could take waste up to a certain point, I still see that idea as being a problematic one because it accepts our coastal waters as a receptacle for our waste and arguably we should aim for no pollution.	?		
1678	7 Problem issues	A	That waste in that case, I know of limited capacity being raised with wastewater.	?		
1679	7 Problem issues	A	Well we could use that waste water say for irrigating horticultural areas or irrigating grassed open spaces or we could shift from say large capital intensive centralised waste facilities to more localised waste treatment systems so you make better use of that resource at a local level.	?		
1680	7 Problem issues	A	Or you do away with water because what's water doing except carrying waste.	?		
1681	7 Problem issues	A	You can have composting toilets or vacuum systems as well.	?		
1682	7 Problem issues	A	But the idea that you can keep on putting waste into the environment without impact is flawed.	?		
1683	7 Problem issues	A	Interviewer: It is interesting to see that even here that although the two factorsare distinctly different that the statements that we are looking at, five, nine and seven are also fairly.	?		
1684	7 Problem issues	A	I mean they are not as extremely rejected as the first factor but they are all statements that not anybody agrees with really.	?		
1685	7 Problem issues	A	Card number seven of mine at minus four, "Sustainability has been carried to far", well I wouldn't have thought that we have really seen a lot change.	?		
1686	7 Problem issues	A	It is a term that has come up and I guess it is something that decision-makers need to contend with increasingly.	?		
1687	7 Problem issues	A	But that it has been carried too far - we have only just got started.	?		
1688	7 Problem issues	A	We keeping talking about the economic growth and that sort of thing – for a very long period of time has been the goal it has been the currency of political debate.	?		
1689	7 Problem issues	A	Of what we read in the newspapers and what we see on TV and hear on radio, people obviously get tired of that.	?		
1690	7 Problem issues	A	It has been carried to far, some of us argue that but that statement almost seems to be something that I expect to hear from a minister or a senior bureaucrat who is sort of fed up of hearing about it.	?		
1691	7 Problem issues	A	Number nine at minus four – "Humans and humans alone have rights" - there are a few other cards earlier on which are the similar sort of thing.	?		
1692	7 Problem issues	A	Utilitarian view and from the anthropocentric view that we are all that matters.	Objective	Social	NotPriority
1693	7 Problem issues	A	I disagree with that.	Objective	Social	NotPriority
1694	7 Problem issues	A	I think that we share the space with other species and we should have regard for them as well.	Objective	Social	NotPriority
1695	7 Problem issues	A	In fact that is almost in our self-interest.	Objective	Env	Knock-on
1696	7 Problem issues	A	There might be a species that you might not get value from in that it won't give us food or fibre but it is part of the web of life that sort of keeps us going.	Objective	Env	Knock-on
1697	7 Problem issues	A	I think that is almost utilitarian.	Objective	Env	Knock-on
1698	7 Problem issues	A	And that "Multinational corporations are the gravest threat to environmentally sustainable society" - that is thirty-nine at minus two.	-	-	-
1699	7 Problem issues	A	Multinationals, sustainability is an opportunity for them to be doing good things and fostering change.	Facilitator	Industry	Involvement
1700	7 Problem issues	A	By the same token they could be working against it with the power that they have and the political influence can be seen to undermine grassroots and community action.	Barrier	Industry	Anti-SD
1701	7 Problem issues	A	It is a little bit ambivalent but I think their record has been that they are more likely to be a barrier to sustainability rather than all for it.	Barrier	Industry	Anti-SD
1702	7 Problem issues	Q	Interviewer: How about some of these let me ask about some of these.	-	-	-
1703	7 Problem issues	A	The ones in the middle.	-	-	-
1704	7 Problem issues	A	Number nine – "All species of systems nature deserve respect regardless of their utility for us".	-	-	-
1705	7 Problem issues	A	"Environmental practises for current generations are harming the interests of future generations" - that is twenty-five at five.	-	-	-
1706	7 Problem issues	A	I think that is why we have the current debate.	Status	Pessimistic	NS
1707	7 Problem issues	A	You have global warming which potentially means that species will disappear.	Status	Pessimistic	NS
1708	7 Problem issues	A	Land which is now productive for agriculture might not be, all that the radical disruption to settlements or to industry then that is obviously going to impact to our kids and their kids.	Status	Pessimistic	NS
1709	7 Problem issues	A	And that if species are disappearing because of us then that limits the options for future generations.	Status	Pessimistic	NS
1710	7 Problem issues	A	If vast areas of habitat are destroyed for farmland or housing well that is irreversible.	Status	Pessimistic	NS
1711	7 Problem issues	A	Obviously it limits what is available to the people that will follow us.	Objective	Equity	
1712	7 Problem issues		.	-	-	-
1713	**7 Local Government**	**T**	**Local Government.**	-	-	-
1714	**7 Local Government**	**T**	**Interview seven.**	-	-	-
1715	**7 Local Government**	**T**	**DW.**	-	-	-
1716	7 Local Government	Q	Interviewer: Can I maybe go on and ask you know about the local government issues, which I am particularly interested in.	-	-	-
1717	7 Local Government	Q	Like your view about Local Agenda 21.	-	-	-
1718	7 Local Government	Q	What you think is going on.	-	-	-
1719	7 Local Government	A	I guess the first question is that as you know there aren't many council's that have adopted Local Agenda 21.	-	-	-
1720	7 Local Government	A	Actually can I maybe ask you first why do you think that is the case?	-	-	-
1721	7 Local Government	A	The public level of awareness would be people don't know of it or even more important is that mangers don't see it as being important.	Barrier	Concept	Ambiguous
1722	7 Local Government	A	When I read the strategic plans put out by some councils the sort of concepts and images that are the priorities that are reflected by the economic growth.	Barrier	Government	Local
1723	7 Local Government	A	It is almost sort of treating the council as a business that they are about the provision of services and fostering of growth in the areas that they manage.	Barrier	Government	Local
1724	7 Local Government	Q	Interviewer: So like all people are for more council revenue - that sort of thing?	-	-	-
1725	7 Local Government	A	That is what they are working towards.	Barrier	Government	Local
1726	7 Local Government	A	If there is any mention of the environment at all then it's sort of secondary to the other subjects.	Barrier	Government	Local
1727	7 Local Government	A	I think that it is understanding too.	Barrier	Government	Local
1728	7 Local Government	A	One of the professions represented in local government are their engineers or their planners and for some of them the environment is sort of a bit of a marginal issue which I think that you have little regard for.	Barrier	Government	Local
1729	7 Local Government	A	It's a constraint and you sort of work around it and take on certain conditions on a project and take an account of it in a fairly marginal sort of way.	Barrier	Government	Local
1730	7 Local Government	A	Instead of seeing sustainability as being the goal it's more a side issue that we need to make sure that it's considered.	Barrier	Government	Local
1731	7 Local Government	A	Say the developments okay and we'll set aside a little bit of bushland.	Barrier	Government	Local
1732	7 Local Government	A	So they are not sort of taking it on board.	Barrier	Government	Local
1733	7 Local Government	Q	Interviewer: So it sounds like you are saying that there is a bit of a cultural issue there of who actually works in councils.	-	-	-
1734	7 Local Government	A	And even as far as elected members go I think a lot of them – it's probably a thing that they don't sort of have a lot of awareness of or haven't thought of it much.	Barrier	Government	Individuals
1735	7 Local Government	A	I mean what dialogue is there in the general community about sustainability?	Barrier	Concept	Ambiguous
1736	7 Local Government	A	Not a lot.	Barrier	Concept	Ambiguous
1737	7 Local Government	A	It is not really a concept that regularly comes into the media and people aren't exposed to it a lot.	Barrier	Concept	Ambiguous

Row	Interview	Type	Type	Text	Cat 1	Cat 2	Cat 3
1738	7	Local Government	A	It is obviously talked about more now than say 20 years ago.	Barrier	Concept	Ambiguous
1739	7	Local Government	A	Environmental issues are of concern too - more people now than in the past.	Status	ParadigmShift	Aware
1740	7	Local Government	A	Although there is obviously ebbs and flows if you did opinion polls and ...But I guess it isn't a cultural dimension elected members and bureaucrats but it doesn't have priority so it doesn't get done.	Barrier	Government	Individuals
1741	7	Local Government	Q	Interviewer: In your experience of local government – councils, council staff and council rules in the councils that actually have Local Agenda 21.	-	-	-
1742	7	Local Government	Q	Or even just your experience with your own council what do you think has been crucial in getting those councils, the few councils to actually endorse that and get it on the table and start to make it happen?	-	-	-
1743	7	Local Government	A	Because I am sort of thinking where it is happening, I mean say Fremantle, I am not sure if they actually have a Local Agenda 21 but they are doing things that are consistent with the notion of Local Agenda 21 and I see them as a more progressive council and I think that it reflects the community better.	Facilitator	Community	Lobby
1744	7	Local Government	A	If they have a fairly diverse community - probably increasingly affluent people are choosing to go to Fremantle because the lifestyle is good it is a good place to live.	Facilitator	Community	Lobby
1745	7	Local Government	A	It is also the heritage there the fact that you sort of have an urban system that which is arguably more sustainable in density and street layout and things like that compared to an outer suburb area which has been designed in a way that is wasteful of energy that has little regard for bushland.	?		
1746	7	Local Government	A	Even if they have the opportunity to keep bushland they are tending not to take advantage of that where as Fremantle they are actually going to some effort to manage the little bushland that they have.	?		
1747	7	Local Government	A	So that the councils which I think are more progressive in their thinking which might reflect.	Facilitator	Government	Champion
1748	7	Local Government	Q	Interviewer: Do you mean the councillors?	-	-	-
1749	7	Local Government	A	I would say both probably a reflection of the community but that leads onto councillors and staff.	Facilitator	Government	Champion
1750	7	Local Government	A	The other thing that I think is champions or key opinion leaders.	Facilitator	Government	Champion
1751	7	Local Government	A	I think that it would be interesting to look at each council that is working Local Agenda 21, where did they come from?	Facilitator	Government	Champion
1752	7	Local Government	A	Why did they start?	Facilitator	Government	Champion
1753	7	Local Government	A	Probably trace that to particular individuals that hold the environment to be important and whether that is from a personal involvement in local activity or having gone to a conference or something and being exposed to these ideas and seeing how they apply locally.	Facilitator	Government	Champion
1754	7	Local Government	Q	Interviewer: So when you say "champion" do you think there has to be a key person that is basically got some knowledge about LA21 and agreement with knowledge of LA21?	-	-	-
1755	7	Local Government	A	Probably to get it started - of course if all of that is held from one person then of course that person leads on and the... don't stand or aren't re-elected to council that goes somewhere else and that is lost so that needs to expand and become a shared value.	Barrier	LocGov-Champion	Change
1756	7	Local Government	Q	Interviewer: What is your feeling there about where we are at.	-	-	-
1757	7	Local Government	Q	I guess we have been trying LA 21 for four or five years now in nine or ten councils.	-	-	-
1758	7	Local Government	Q	Do you feel that it's become a part of the culture or that it is still at that sort of embryonic stage where you just have a few people pushing it and keeping it on the agenda?	-	-	-
1759	7	Local Government	A	It seems to be at a fairly early stage.	Barrier	Concept	Ambiguous
1760	7	Local Government	A	One of the problems with Local Agenda 21 is "what does it mean"?	Barrier	Concept	Ambiguous
1761	7	Local Government	A	It is hard for people to understand what it is about.	Barrier	Concept	Ambiguous
1762	7	Local Government	A	I know with water issues over at the old Wanneroo, we worked on a local conservation strategy although we never ended up with a strategy.	Barrier	Concept	Ambiguous
1763	7	Local Government	A	We tended to talk about these high level principles and the turnover on the committee was quite high because people could understand and more tangible things on the ground things they want to see action happen.	Barrier	Concept	Ambiguous
1764	7	Local Government	A	I believe we would have used our energy and time much better if we focused on recommending action on particular issues.	Barrier	Concept	Ambiguous
1765	7	Local Government	A	Say energy use, well this is what we can do to promote sustainability by addressing energy use.	Barrier	Concept	Ambiguous
1766	7	Local Government	A	We could have come up easily with some practical actions.	Barrier	Concept	Ambiguous
1767	7	Local Government	A	Whether it's in the council vehicle fleet or energy use of council buildings how many suburbs are planned, energy use in homes, so issues of insulation that should be reflected in the guidelines or develop a requirement which the council opposes when someone comes and says I want to put up this building.	Barrier	Concept	Ambiguous
1768	7	Local Government	A	There are a whole range of things that could be done.	Barrier	Concept	Ambiguous
1769	7	Local Government	A	Sure, you would need some training and awareness raising for that to be taken up.	Barrier	Concept	Ambiguous
1770	7	Local Government	A	But had we spent more time dealing with nuts and bolts instead of vague ideas and principles then we would have got somewhere.	Barrier	Concept	Ambiguous
1771	7	Local Government	Q	Interviewer: So this was for a conservation strategy not a Local Agenda 21 strategy?	-	-	-
1772	7	Local Government	A	Well it sort of flowed on to Local Agenda 21 and we spoke about Local Agenda 21 and the council ended up engaging consultants that are studying and that came back but that was, the results that came out of that were fairly much at the level of principles and I think it talked a little bit about the operation of council operations.	Barrier	Concept	Ambiguous
1773	7	Local Government	A	But it didn't go far I don't think.	Barrier	Concept	Ambiguous
1774	7	Local Government	A	Neither Joondalup nor Wanneroo who have done much with it because of lack of understanding and lack of commitment.	Barrier	Concept	Ambiguous
1775	7	Local Government	A	If people don't understand it, if they don't think that it is important then it doesn't happen.	Barrier	Concept	Ambiguous
1776	7	Local Government	A	The fact that they are from one council which you ended up with two new local governments when there was an opportunity to put in place all these things, reorganise bureaucracy.	Barrier	Concept	Ambiguous
1777	7	Local Government	A	Incorporate these ideas into there strategic planning and it didn't happen.	Barrier	Concept	Ambiguous
1778	7	Local Government	A	Joondalup has recently engaged a LA 21 officer so quite what they will do I am not sure.	Barrier	Concept	Ambiguous
1779	7	Local Government	A	It is hard to see that they identify this as a major thing that they are going to work towards.	Barrier	Concept	Ambiguous
1780	7	Local Government	A	It is not reflected in the decisions that they are making about particular issues or in their corporate plans.	Barrier	Concept	Ambiguous
1781	7	Local Government	Q	Interviewer: The last question that I will ask you is quite a specific question.	-	-	-
1782	7	Local Government	Q	What would you see that the Department of Environmental Protection could actually do to bolster the promotion of LA 21 in local government?	-	-	-
1783	7	Local Government	A	Thinking back to Victoria, the state government understood, I think they may have worked with what is now Environment Australia which used to be the Local Conservation Association of Victoria.	Barrier	Concept	Ambiguous
1784	7	Local Government	A	So there was some training and putting together of resources materials and they also provided money like seed money to councils.	Barrier	Concept	Ambiguous
1785	7	Local Government	A	I think there may have only been four or five councils to take on a conservation officer.	Barrier	Concept	Ambiguous
1786	7	Local Government	A	Which meant the councils took on a person the state government was paying their wage for and they would have required a council contribution.	Barrier	Concept	Ambiguous
1787	7	Local Government	A	They had a person on staff that had to develop a strategy and help implement it and I think that most of the councils have continued on that once this start has been made because you have this person there.	Barrier	Concept	Ambiguous

Row	Int	Type	Text	Cat1	Cat2	Cat3
1788	7	Local Government	A	There has to be some sort of dialogue that local staff and councils hopefully they would run some sort of committee and awareness raising and consultation process to this plan and that in implementing this plan that you try and involve all parts of council and community in doing that.	Barrier	Concept	Ambiguous
1789	7	Local Government	A	So you had a person that could make that change and things start to happen by providing that seed money and having those resources there.	Barrier	Concept	Ambiguous
1790	7	Local Government	A	Whether it's a booklet or case studies or something written for councillors that is concise but understandable this is what Local Agenda 21 means.	Barrier	Concept	Ambiguous
1791	7	Local Government	A	But it requires a tangible thing, but maybe a resource booklet, maybe seed money so that you had LA 21 officers in local government.	Barrier	Concept	Ambiguous
1792	7	Local Government	A	Limited number like demonstration projects and go from there.	Barrier	Concept	Ambiguous
1793	7	Local Government	A	Another idea to start things off would be to have a round table and bring together some of these people that have been interviewed people from state, local government, NGOs - bring them together and talk and come up with something from that.	Facilitator	Multi Sectors	JointEffort
1794	7	Local Government	A	Something like requiring local and state environment reporting would be a good idea to.	Barrier	Concept	Ambiguous
1795	7	Local Government	Q	Interviewer: Because some of the local governments are doing that now – State of the Environmental Reporting.	-	-	-
1796	7	Local Government	A	For example I think under the heritage act, local governments have to have a register for heritage and they were required to within a certain period of time I think it was in five years to put that register together.	Barrier	Concept	Ambiguous
1797	7	Local Government	A	Now if you required local councils to do a local environmental report then I think you would need to promote some guidance on what that would have to involve then some would probably do it willingly, some would be reluctant some would say they couldn't afford it with their resourcing but what it would mean is that you would then have this information base to inform action.	Barrier	Concept	Ambiguous
1798	7	Local Government	Q	Interviewer: Provide priorities?	-	-	-
1799	7	Local Government	A	You hope that could be a stimulus to LA 21.	Barrier	Concept	Ambiguous
1800	7	Local Government	A	[illegible] be a great support to have that and use that to pick out what the key issues are in that local area and to figure out what to do.	Barrier	Concept	Ambiguous
1801	7	Local Government	A	For some councils [illegible] would probably be better to work together - say western suburbs because they are relatively small and maybe because of value and there is a benefit for all organisations of councils if you could use it to do that.	?		
1802	7	Local Government		I guess the other thing is I am thinking is how do you get to key elected members or to key people in the bureaucracy.	?		
1803	7	Local Government	A	The CEO and the council and the director of planning and the director of Tech services and maybe if these things are coming up in the journals that they read or in the conferences that they attend or hold a [illegible] and [illegible] is a guest speaker and you sort of laugh at that sort of thing but they want to go to them and get exposed to the ideas and then there is dialogue about them and hopefully that will support those other things too, so that would be good to see.	?		
1804	7	Local Government	A	But if all the discussion and talking that they are exposed to is about managing the budget or promoting local economic growth....	?		
1805	7	Local Government	Q	Interviewer: Then they are never getting out of their comfort zone are they?	-	-	-
1806	7	Local Government	A	So you need to introduce this idea into their thinking.	?		
1807					-	-	-
1808	**8**	**Implementation of SD**	**T**	**Stumbling Block Interviews**	-	-	-
1809	**8**	**Implementation of SD**	**T**	**Implementation of Sustainable Development**	-	-	-
1810	**8**	**Implementation of SD**	**T**	**Interview one**	-	-	-
1811	**8**	**Implementation of SD**	**T**	**MEDEP**	-	-	-
1812	8	Implementation of SD	Q	Interviewer: Okay what I would like to do is talk about these implementation of sustainable development cards	-	-	-
1813	8	Implementation of SD	Q	As you can see most of these cards you seem to disagree with	-	-	-
1814	8	Implementation of SD	Q	You have only got 3 cards that you indicate that you agree with and the other fourteen cards you have indicated that you disagree with but they are pretty much in the middle	-	-	-
1815	8	Implementation of SD	Q	So can you just talk about these ones? What do they tell you?	-	-	-
1816	8	Implementation of SD	A	These cards I guess they are implementation cards and to be honest with you when I sorted them, these cards are the ones that I feel least bothered about	-	-	-
1817	8	Implementation of SD	A	As you can see most of them are in the middle around about the zero point	-	-	-
1818	8	Implementation of SD	A	I don't feel particularly strongly about any of them really	-	-	-
1819	8	Implementation of SD	A	I guess my main point I would make is I certainly agree with the idea expressed by the card that it is really up to the people that have some knowledge about it	Facilitator	Experts	Decisions
1820	8	Implementation of SD	A	We need people with some expert knowledge making decisions	Facilitator	Experts	Decisions
1821	8	Implementation of SD	A	But who implements sustainable development itself, I guess my view is that we need a top down approach involving governments	Facilitator	Multi Sectors	TopDown
1822	8	Implementation of SD	A	Good scientific advice being given to government, and then the politicians making rational decisions	Facilitator	Government	NS
1823	8	Implementation of SD	A	Probably the commonwealth government need to become involved in implementing sustainable development	Facilitator	Government	Federal
1824	8	Implementation of SD	A	But you need to have people that know about it and have knowledge about it	Facilitator	Experts	Decisions
1825	8	Implementation of SD	A	I wouldn't say that particularly a person in the community has the knowledge that they need to be able to do it	Barrier	NGOs	Misdirected
1826	8	Implementation of SD	A	I think definitely the order for me would be the commonwealth government giving money, providing resources	Facilitator	Government	Federal
1827	8	Implementation of SD	A	The state government also having money and resources to implement sustainability development	Facilitator	Government	State
1828	8	Implementation of SD	A	At the same time I guess one of the problems is that we can clearly see that because it is such a sort of malleable context that it just means that anything to anybody really	Barrier	Concept	Ambiguous
1829	8	Implementation of SD	A	It needs everybody to be involved state government, local government non government groups and people in their own homes in that kind of order	Facilitator	Multi Sectors	TopDown
1830	8	Implementation of SD	A	So a top down approach really	Facilitator	Multi Sectors	TopDown
1831	8	Implementation of SD	A	I wouldn't say that it should be core business for local government particularly	Facilitator	Multi Sectors	TopDown
1832	8	Implementation of SD	A	I don't feel to strongly about that myself	Facilitator	Multi Sectors	TopDown
1833	8	Implementation of SD	A	I definitely don't think that sustainable development has the force of political commitment within government at this time	Facilitator	Multi Sectors	TopDown
1834	8	Implementation of SD	A	I think because it is a malleable concept it is stupid really	Barrier	Concept	Ambiguous
1835	8	Implementation of SD	A	People like to talk about it because its nice but if they really have a clear view as to what it is I am not sure	Barrier	Concept	Ambiguous
1836	8	Implementation of SD	A	The issue about religion card number 49 again I am not really favourably inclined to religion anyway so I don't really see that religion has a role to play	Barrier	LittleEffect	Religion
1837	8	Implementation of SD	A	In particularly strategic decision making	Barrier	LittleEffect	Religion
1838	8	Implementation of SD	A	So those are my feelings really about this issue and about the implementation as you can see my main feeling is that it is not a priority for me	Environment	Positive	NoProblems
1839	**8**	**Objectives of SD**	**T**	**Objectives of Sustainable Development**	-	-	-
1840	**8**	**Objectives of SD**	**T**	**Interview one**	-	-	-
1841	8	Objectives of SD	Q	Interviewer: These nine cards are about objectives about sustainable development and what it is trying to achieve	-	-	-
1842	8	Objectives of SD	Q	Why have you arranged them like this?	-	-	-

Row	Ref	Type	Spkr	Text		Cat 1	Cat 2	Cat 3
1843	8	Objectives of SD	A	Now I guess for me personally I think that all strategic policies that impact people on the planet need to have a people focus		Objective	Social	Priority
1844	8	Objectives of SD	A	People are the most important things in my life and I very much count myself as being a humanist		Objective	Social	Priority
1845	8	Objectives of SD	A	And I am sure that in any vision of sustainable development that I hold then the principal really for doing it is to maximise human welfare		Objective	Social	Priority
1846	8	Objectives of SD	A	That involves for me having good health, good education, high incomes, good access to multiple resources, clean water and clean air		Objective	Social	Priority
1847	8	Objectives of SD	A	Anything – any condition that humans would find less than our Western lifestyle - I do think it is intolerable		Objective	Social	Priority
1848	8	Objectives of SD	A	And it is really up to sustainable development then if it can maximise human welfare then that's what it needs to be doing		Objective	Social	Priority
1849	8	Objectives of SD	Q	Interviewer: Are you saying that sustainable development is "people first, environment second"?		-	-	-
1850	8	Objectives of SD	A	I guess my range as you can see here goes right from the most plus end or plus three right through to minus five		-	-	-
1851	8	Objectives of SD	A	Most of the cards are around about the positive end for me		-	-	-
1852	8	Objectives of SD	A	In fact of them seven out of nine actually make it into the positive array		-	-	-
1853	8	Objectives of SD	A	So I agree with most of them		-	-	-
1854	8	Objectives of SD	A	The ones that I disagree with, clearly I disagree with – the idea that we're endangering the Planet		Environment	Positive	NoProblems
1855	8	Objectives of SD	A	I disagree that we must not clear any more land		Environment	Positive	NoProblems
1856	8	Objectives of SD	A	Also I disagree with sustainable development requires changes in lifestyle		Environment	Positive	NoProblems
1857	8	Objectives of SD	A	Other than improving people's lifestyles by providing a higher standard of living for more people – poor people in the third world		Objective	Social	Priority
1858	8	Objectives of SD	A	So I don't agree that we need to reduce to reuse or any of those sorts of things		Environment	Positive	NoProblems
1859	8	Objectives of SD	A	I believe fundamentally that we have plenty of resources		Status	NoNeed	
1860	8	Objectives of SD	A	The issue is how we manage those resources to make if you like 'the world a cleaner place for people to live in'		Objective	Social	Priority
1861	8	Objectives of SD	A	For me it is intolerable for people to live in highly polluted environments if it has bad outcomes on their health and welfare		Objective	Social	Priority
1862	8	Objectives of SD	A	So in that sense I do believe that there is a common interest between looking after the environment and looking after people		Objective	Env	Knock-on
1863	8	Objectives of SD	A	Does that answer your question?		Objective	Env	Knock-on
1864	8	Objectives of SD	A	But the priority has to be promoting policies that firstly look at the people		Objective	Social	Priority
1865	8	Objectives of SD	A	Like if we are going to have clean air, we need to have clean air not because it's nice for animals but because it's good for people		Objective	Social	Priority
1866	8	Objectives of SD	A	So that's my view of implementing sustainable development and the objectives		Objective	Social	Priority
1867	8	Objectives of SD	A	And I do very much believe that if we are going to have good environment protection that the environment protection is useful only to the extent that people's welfare is served by that protection		Objective	Social	Priority
1868	8	Objectives of SD	A	We shouldn't be doing it just because it's good for nature in some sort of weird kind of subjective way		Objective	Social	Priority
1869	8	Objectives of SD	Q	Interviewer: What is your time frame for implementing sustainable development?		-	-	-
1870	8	Objectives of SD	A	I guess sustainable development is a long term process and that would be a question people should think about		Objective	Perpetual	
1871	8	Objectives of SD	A	How long is that process? My view is probably it is a very long-term process		Objective	Perpetual	
1872	8	Objectives of SD	A	We don't have any immediate problems on the horizon and really I think we do live in a sustainable world as now		Environment	Positive	NoProblems
1873	8	Objectives of SD	A	I think we always have done really		Environment	Positive	NoProblems
1874	8	Objectives of SD	A	Obviously the world changes but most of the time humanity has changed for the better and I think that will continue in the future		Environment	Positive	NoProblems
1875	8	Objectives of SD	A	But I think the kind of processes we are talking about are at least in the order of hundreds of thousands of years that we have got for even moderately serious problems		Environment	Positive	NoProblems
1876	8	Objectives of SD	A	In terms of things like global warming or whatever		Environment	Positive	NoProblems
1877	8	Objectives of SD	A	People talk about if it is really real		Environment	Positive	NoProblems
1878	8	Objectives of SD	A	As a problem I am not sure		Environment	Positive	NoProblems
1879	8	Objectives of SD	A	So that's my view of the objectives of sustainable development in a summary I would say it is definitely about promoting human wealth and wellbeing those sorts of issues		Objective	Social	Priority
1880	**8**	**Role of science and technology**	**T**	**Role of science and technology**		-	-	-
1881	**8**	**Role of science and technology**	**T**	**Interview one**		-	-	-
1882	8	Role of science and technology	Q	Interviewer: Moving onto the next issue is what role do we have for science and technology in implementing or promoting sustainable development?		-	-	-
1883	8	Role of science and technology	A	This is an issue that is really interesting to me personally and you can see that my array goes from plus five right at the most positive end right through to minus five so I have the full range	?			
1884	8	Role of science and technology	A	However only two of the nine cards that relate to the roles of science and technology in promoting sustainable development only two of those cards are at the negative end	?			
1885	8	Role of science and technology	A	So again most of those cards I agree with in the same way as the objectives I earlier on agreed with	?			
1886	8	Role of science and technology	A	This for me is the core issue	?			
1887	8	Role of science and technology	Q	Interviewer: In what way?		-	-	-
1888	8	Role of science and technology	A	What I would suggest is that I don't agree with any notions that suggest the world has limits to what humans can achieve		Status	Optimistic	Future
1889	8	Role of science and technology	A	I don't think there is any basis, the traditional view for sustainable development of one where limit is essential		Status	NoNeed	
1890	8	Role of science and technology	A	Why would you want to promote sustainable development if there weren't limits?		Status	NoNeed	
1891	8	Role of science and technology	A	So I am not sure if I agree with the whole concept anyway – the concept as seen from an "environmentalist" viewpoint		Status	NoNeed	
1892	8	Role of science and technology	A	The idea that we are going to run out of resources or that we are going to pollute the planet and die or any of those populations coming out exceeding the carrying capacity of the planet		Status	Optimistic	Future
1893	8	Role of science and technology	A	All those sorts of things I won't have a bar of that		Status	Optimistic	Future
1894	8	Role of science and technology	A	The reason for that is that humans themselves have the ability to solve all of our problems whether they be social, economic, environmental all those type of problems		Status	Optimistic	Future
1895	8	Role of science and technology	A	I think if you look at the historical trend what you will see quite clearly, if you go over the historical pattern of development, over any period		Status	Optimistic	Future
1896	8	Role of science and technology	A	If you look at 200 years since the industry revolution, 2000 years since ancient roman society, 200,000 years since humans started to appear on the planet		Status	Optimistic	Future
1897	8	Role of science and technology	A	Then what you will see is an upward sweep of progress		Status	Optimistic	Future
1898	8	Role of science and technology	A	People now live longer than they used to, the technology that we utilise today in most ways have less negative consequences than technology did in the past		Status	Optimistic	Future
1899	8	Role of science and technology	A	We have better management of our resources today		Status	Optimistic	Future
1900	8	Role of science and technology	A	Not that I am saying that our resources are going to run out anyway		Status	Optimistic	Future
1901	8	Role of science and technology	A	But the way we management them, the way we control pollution – all for the better		Status	Optimistic	Future
1902	8	Role of science and technology	A	My idea is that what sustainable development is really		Status	Optimistic	Future
1903	8	Role of science and technology	A	It needs to be that third world countries - very poor nations, the best way that they can achieve sustainable development or a better future is to become like we are in western countries		S&T	Important	SD

Row	Int	Topic	Type	Text		Cat 1	Cat 2	Cat 3
1904	8	Role of science and technology	A	High levels of technology, high levels of science		S&T	Important	SD
1905	8	Role of science and technology	A	Use their resources in very, very high quality ways of doing so		S&T	Important	SD
1906	8	Role of science and technology	A	We really need to use our science and technology to help them join the globl market		S&T	Important	SD
1907	8	Role of science and technology	Q	Interviewer: So what do you see as a role for multinationals?		-	-	-
1908	8	Role of science and technology	A	Like the last statements here that I really believe in quite firmly	?			
1909	8	Role of science and technology	A	Things like economic growth is required to overcome problems, it is only when you get to certain level of growth that the economy has enough money that you can actually have experts to manage the ecology	?			
1910	8	Role of science and technology	A	Which I think that people don't take notice of	?			
1911	8	Role of science and technology	A	The technologies that are coming around like the internet, Bio-engineering, genetic engineering – really do offer us the promise of increasing productivity, increasing efficiency by which we produce things, increasing equality by which we distribute those things to people because obviously we must create the resources to go around		S&T	Important	SD
1912	8	Role of science and technology	A	Also decreasing the impact that previous community techniques had on the world		S&T	Important	SD
1913	8	Role of science and technology	Q	Interviewer: What do you mean by that comment?		-	-	-
1914	8	Role of science and technology	A	I don't believe that – as I have indicated down here in my minus five card, that the environmental crisis is a real problem		Environment	Positive	NoProblems
1915	8	Role of science and technology	A	I don't actually think there is such a thing as environmental crisis		Environment	Positive	NoProblems
1916	8	Role of science and technology	A	In actual fact I think that some environmental problems are not problems at all				
1917	8	Role of science and technology	A	And I also quite strongly doubt that science and technology has a negative impact on the environment		S&T	Important	SD
1918	8	Role of science and technology	A	Actually, the opposite is true		S&T	Important	SD
1919	8	Role of science and technology	A	I think that it has quite a positive impact on the environment		S&T	Important	SD
1920	8	Role of science and technology	A	So that is my view on science and technology		S&T	Important	SD
1921	8	Role of science and technology	Q	Interviewer: But what about multinationals – what is their role		-	-	-
1922	8	Role of science and technology	A	I think a positive one		Facilitator	Industry	Operations
1923	8	Role of science and technology	A	The big companies are putting their money and resources into development of new ways of working, new techniques		Facilitator	Industry	Operations
1924	8	Role of science and technology	A	Look at steel making, the steel plants – furnaces are much less poluting		Facilitator	Industry	Operations
1925	8	Role of science and technology	A	Agriculture using less toxic pesticides than before, and targetted better with genetic modification of the crops		Facilitator	Industry	Operations
1926	8	Role of science and technology	A	All leading to lower impacts		Facilitator	Industry	Operations
1927	8	Role of science and technology	A	Oil companies reducing flairing of gases		Facilitator	Industry	Operations
1928	8	Role of science and technology	A	All these thinks save the enviroment and make more money		Facilitator	Industry	Operations
1929	8	Role of science and technology	A	So companies have an incentive to get smarter		Facilitator	Industry	Operations
1930	**8**	**Problem issues**	**T**	**Problem issues**		-	-	-
1931	**8**	**Problem issues**	**T**	**Interview one**		-	-	-
1932	8	Problem issues	Q	Interviewer: Moving onto the last area which is about problems or I guess issues to do with why we want to implement sustainable development, what problems we are trying to overcome or what is the solutions to those problems		-	-	-
1933	8	Problem issues	Q	What is your view about these issues?		-	-	-
1934	8	Problem issues	A	I guess this is the most cynical of all my view points	?			
1935	8	Problem issues	A	I guess, in summary I think we don't have any major global environmental problems as such		Status	Optimistic	Future
1936	8	Problem issues	A	We could clean up		Status	Optimistic	Future
1937	8	Problem issues	A	We have economic problems and we have distribution problems and we have equality problems but we don't have global environmental problems		Status	Optimistic	Future
1938	8	Problem issues	A	I don't think that we have global environmental problems and again the problem we do have are the global requirements of equality and equity and distribution and we have people in the west who are incredibly rich and we have third world who are incredibly poor		Environment	Positive	NoProblems
1939	8	Problem issues	A	In my view sustainability is one in which those people in those third world countries become as rich and as affluent as we are in the first world countries		Objective	Social	Priority
1940	8	Problem issues	A	And that all people throughout the world have equal benefits from the way that we manage to make things really – to produce		Objective	Social	Priority
1941	8	Problem issues	A	When we could have the capacity to solve all those socialproblems that those people face		Objective	Social	Priority
1942	8	Problem issues	A	I also think that people in third world where they do have severely degraded environments they do so precisely because they're so poor		Objective	Social	Priority
1943	8	Problem issues	A	And the worst part is, they're kept poor precisely because of a lack of transfer of our knowledge and our scientific methods		Objective	Social	Priority
1944	8	Problem issues	Q	Interviewer: Can you summarise that view?				
1945	8	Problem issues	A	So I guess to summarise the cards – I do think that our planet has an unlimited capacity to provide resources to us		Environment	Positive	NoProblems
1946	8	Problem issues	A	I don't think that there are any resource limits in any meaningful ways		Environment	Positive	NoProblems
1947	8	Problem issues	A	I do believe that if even we were polluting the planet to some extreme levels which is what is promoted by the green people then the world can assimilate those pollution's on a global level		Environment	Positive	NoProblems
1948	8	Problem issues	A	Although I do believe clearly that we have local environmental problems that require good management		Environment	Positive	NoProblems
1949	8	Problem issues	A	So cities like Mexico City, those problems require managing		Environment	Positive	NoProblems
1950	8	Problem issues	A	Or like the great lake where you have water pollution problems		Environment	Positive	NoProblems
1951	8	Problem issues	A	In western Australia where you have salinity, again those things are local problems and they require local original solutions		Environment	Positive	NoProblems
1952	8	Problem issues	A	But I don't believe collectively that we face this thing called a "global problem"		Environment	Positive	NoProblems
1953	8	Problem issues	A	The things that I have at the positive end, I do firmly believe that cities are the way of the future		S&T	Important	NS
1954	8	Problem issues	A	I do believe that there are ecological benefits for people to live in urban areas		S&T	Important	NS
1955	8	Problem issues	A	Cities are far more resource efficient – transport, crating new ideas, that kind of thing		S&T	Important	NS
1956	8	Problem issues	A	Moving onto the other end of the scale, I don't think that economic development has gone too high in Western Australia		Status	Optimistic	Future
1957	8	Problem issues	A	I think we could do a lot more, we have an enormous amount of land		Status	Optimistic	Future
1958	8	Problem issues	A	I think we could do with a lot more people here to develop our land		Status	Optimistic	Future
1959	8	Problem issues	A	I definitely don't believe that we as a society in Australia or in the planet are living beyond our means		Status	Optimistic	Future
1960	8	Problem issues	A	I definitely don't think that this idea that our modern society is worse than before and that people would be better living in a simple rural community is complete nonsense		Status	Optimistic	Future
1961	8	Problem issues	Q	Interviewer		-	-	-
1962	8	Problem issues	Q	What is the reason for your belief?		-	-	-
1963	8	Problem issues	A	I mean in actual fact again if you look at historical trends people live longer they are healthier, they are more educated they have their health care they have access to more resources they can keep their homes they can wash up and cook		S&T	Important	SOL
1964	8	Problem issues	A	Those are all things that through the application of knowledge		S&T	Important	SOL
1965	8	Problem issues	A	So as far as I'm concerned the problems we face are pretty much under control		Status	Optimistic	Future
1966	8	Problem issues	Q	Interviewer: You mean that the future is bright?		-	-	-
1967	8	Problem issues	A	There is no reason I can see to actually stop the processes that have been bought in		Status	Optimistic	Future
1968	8	Problem issues	A	I think we are pretty much self sustaining		Status	Optimistic	Future
1969	8	Problem issues	A	Our economy sustains itself		Status	Optimistic	Future
1970	8	Problem issues	A	We have plenty of resources we need to have		Status	Optimistic	Future
1971	8	Problem issues	A	I guess sustainable development is one issue into that about equalising distribution but that to me is about making the third world richer		Objective	Social	Priority

1972	8 Problem issues	A	Rather than making the first world poorer like the third world	Objective	Social	Priority
1973	8 Problem issues	A	That is it really it, those are my views	Objective	Social	Priority
1974	8 Problem issues	Q	Interviewer: There is a lot there, can you summarise your view of sustainable development?	-	-	-
1975	8 Problem issues	A	In terms of what sustainable development is itself, I can't say that I feel really strongly inclined with the whole concept	Status	NoNeed	
1976	8 Problem issues	A	Then again I think it is rather a meaningless kind of idea in some way	Status	NoNeed	
1977	8 Problem issues	A	I cancompletely see how it has come about because if you held the view around limits in nature, then clearly you need to do something to overcome those limits and partly that would be sustainable development	Status	NoNeed	
1978	8 Problem issues	A	As I said earlier I don't actually believe that there are limits and if there are no limits why do you need to have sustainable development? Living within the constraints of those limits is meaningless if they don't actually exist	Status	NoNeed	
1979	8 Problem issues	A	That is my real sense of the issue	Status	NoNeed	
1980	**8 Reasons for LA21**	**T**	**Reasons for LA21**	-	-	-
1981	**8 Reasons for LA21**	**T**	**Interview one**	-	-	-
1982	8 Reasons for LA21	Q	Interviewer: Can you tell me why you think that not many Councils have adopted LA21?	-	-	-
1983	8 Reasons for LA21	A	I think to start with, a lot would argue that they're all ready doing "sustainable development"	Barrier	Concept	Ambiguous
1984	8 Reasons for LA21	A	You know, a lot now have environmental plans, environmental positions, some policies	Barrier	Concept	Ambiguous
1985	8 Reasons for LA21	A	Some have "Cities for Climate Protection"	Barrier	Concept	Ambiguous
1986	8 Reasons for LA21	A	That kind of thing	Barrier	Concept	Ambiguous
1987	8 Reasons for LA21	A	I also think a lot of people probably think it's a load of rubbish	Barrier	Concept	Ambiguous
1988	8 Reasons for LA21	A	It's not particulary well packaged	Barrier	Concept	Ambiguous
1989	8 Reasons for LA21	A	I mean, would you buy a product called "LA21"?It tells you nothing about the product	Barrier	Concept	Ambiguous
1990	8 Reasons for LA21	A	I think a title like "Caring for Cottesloe" - now that means something to someone, but LA21	Barrier	Concept	Ambiguous
1991	8 Reasons for LA21	A	It's not an easy sell	Barrier	Concept	Ambiguous
1992	8 Reasons for LA21	A	So knowledge is a factor in the low take up	Barrier	Concept	Ambiguous
1993	8 Reasons for LA21	A	It certainly hasn't seen the light of day in the DEP	-	-	-
1994	8 Reasons for LA21	A	People talk about sustainable development, but there is no resourcing coming from the state government to help local government	Barrier	Government	State
1995	8 Reasons for LA21	A	I'm also not sure that local government is the place for it to happen	Barrier	Government	Local
1996	8 Reasons for LA21	A	LA21 in the local community - it's only ever going to achieve a limited amount and that's probably why people don't get enthusiastic	Barrier	Concept	Not Immediate
1997	8 Reasons for LA21	A	That's probably why no serious state funds have come down to promote LA21	Barrier	Concept	Not Immediate
1998	8 Reasons for LA21	A	There's also bigger issues with a clearer "problem focus"	Barrier	Concept	Not Immediate
1999	8 Reasons for LA21	A	The regional forest agreement	Barrier	Concept	Not Immediate
2000	8 Reasons for LA21	A	Salinity	Barrier	Concept	Not Immediate
2001	8 Reasons for LA21	A	That kind of thing seems to get the money and political support form both commonwealth and state	Barrier	Concept	Not Immediate
2002	8 Reasons for LA21	A	There certainly are some people who are enthusiastic though	Facilitator	Government	Champion
2003	8 Reasons for LA21	A	I can think of a few case study examples where one or two individuals have put LA21 on the local council agenda	Facilitator	Government	Champion
2004	8 Reasons for LA21	A	Nedlands would be one	Facilitator	Government	Champion
2005	8 Reasons for LA21	A	Jarrahdale and Mandurah	Facilitator	Government	Champion
2006	8 Reasons for LA21	A	I'd say that the LA21 is not part of the "system" though	Barrier	LocGov-Champion	Change
2007	8 Reasons for LA21	A	If and when people move on it will go with them	Barrier	LocGov-Champion	Change
2008	8 Reasons for LA21	A	That's my feeling at the moment	Barrier	LocGov-Champion	Change
2009	**9 Implementation of SD**	**T**	**Implementation of Sustainable Development**	-	-	-
2010	**9 Implementation of SD**	**T**	**Interview 9**	-	-	-
2011	**9 Implementation of SD**	**T**	**ERCOM**	-	-	-
2012	9 Implementation of SD	Q	Interviewer: I'd like to talk about the implementation of sustainable development	-	-	-
2013	9 Implementation of SD	Q	So, can you talk about the issue of implementing sustainable development?What do you think?	-	-	-
2014	9 Implementation of SD	A	Well what I've done here is lay the cards to represent my view	-	-	-
2015	9 Implementation of SD	A	First up, and top priority is the need for business to be involved - card number 3 is exactly right - that exactly what I'd say "Multinational Corporations are the only organisations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainable development"	Facilitator	Industry	Lead
2016	9 Implementation of SD	A	I think that because to me, they are already sustainable	Facilitator	Industry	Lead
2017	9 Implementation of SD	A	I can think of so many businesses that are doing good things - Alcoa reforesting the mine sites in the Darling range	Facilitator	Industry	Lead
2018	9 Implementation of SD	A	Woodside doing good stuff with its wind farms and tree farms near Esperence	Facilitator	Industry	Lead
2019	9 Implementation of SD	A	I just think that we know so much more about production today	Facilitator	Industry	Lead
2020	9 Implementation of SD	A	No one wants to live in a messed up environment so the big companies are cleaning up their acts	Facilitator	Industry	Lead
2021	9 Implementation of SD	A	It's the little ones that are more of a problem	Facilitator	Industry	Lead
2022	9 Implementation of SD	A	They can't afford to pay	Facilitator	Industry	Lead
2023	9 Implementation of SD	A	And ones in the third World	Facilitator	Industry	Lead
2024	9 Implementation of SD	A	Look at China or Russia	Facilitator	Industry	Lead
2025	9 Implementation of SD	A	Because they don't have the capital to invest they've got old, outdated polluting technology	Facilitator	Industry	Lead
2026	9 Implementation of SD	A	In Australia, we generate more wealth and can afford to pay to protect our environment	Facilitator	Industry	Lead
2027	9 Implementation of SD	A	I also think that decisions should be left to experts	Facilitator	Experts	Decisions
2028	9 Implementation of SD	A	Again, big companies can pay for good research - the latest research	Facilitator	Industry	Lead
2029	9 Implementation of SD	A	The Commonwealth also has a role there - you know CSIRO, the DEP etc	Facilitator	Government	Federal
2030	9 Implementation of SD	A	I can't believe some of the rubbish that is spouted about these days	Barrier	NGOs	Misdirected
2031	9 Implementation of SD	A	You know, petrol will run out, water will run out, air quality getting worse	Barrier	NGOs	Misdirected
2032	9 Implementation of SD	A	All the facts point the other way	Facilitator	Experts	Facts
2033	9 Implementation of SD	A	There's more cars today because fuel is so cheap - because there is so much of it	Facilitator	Experts	Facts
2034	9 Implementation of SD	A	It will be worthless soon as the scientists get fuel cell technology sorted out	Facilitator	Experts	Facts
2035	9 Implementation of SD	Q	Interviewer: You mentioned the Commonwealth there?	-	-	-
2036	9 Implementation of SD	A	I think the Government does have a role	Facilitator	Government	Federal
2037	9 Implementation of SD	A	You know, paying for researching, regulating the offenders in business, and there are some like that	Facilitator	Government	Federal
2038	9 Implementation of SD	A	We need to weed them out so only good companies with good values of environmetnal protection remain	Facilitator	Government	Federal
2039	9 Implementation of SD	A	That's a role for government - enforcing the laws that protect us form rogues and pirates	Facilitator	Government	Federal
2040	9 Implementation of SD	Q	Interviewer: Pirates?	-	-	-
2041	9 Implementation of SD	A	You know, cheap operators who cut corners, cut costs, pollute the environment and move on	Barrier	Industry	Minority
2042	9 Implementation of SD	A	The government can regulate that area quite strongly	Facilitator	Government	Federal
2043	9 Implementation of SD	Q	Interviewer:I notice you've also got card number 18 - "The role of NGOs is most critical to the success of sustainable development" at the positive end of your array	-	-	-
2044	9 Implementation of SD	Q	How does that fit with your views?	-	-	-
2045	9 Implementation of SD	A	Well, it seems a bit of a contradiction	Barrier	NGOs	Misdirected
2046	9 Implementation of SD	A	I guess I see it like this - although many of those green groups are dead wrong on a lot of issues, like	Barrier	NGOs	Misdirected
2047	9 Implementation of SD	A	the greenhouse stuff for example, and particular running out of resources - they're important for	Facilitator	NGOs	Lobby
2048	9 Implementation of SD	A	I do think that some companies would bend the rules if they weren't being looked over	Facilitator	NGOs	Lobby
2049	9 Implementation of SD	A	Not the big ones, not now, but medium sized and ones coming into Australia that don't have our culture	Barrier	Industry	Minority

2050	9 Implementation of SD	A	I think the old "rip it up, ship it out" kind of attitude is gone in Australia	?			
2051	9 Implementation of SD	A	But overseas those NGO groups do a good job as a barometer – keeping an eye out	Facilitator	NGOs	Lobby	
2052	9 Implementation of SD	A	Like Shell, maybe in Nigeria – not a good record, but a very corrupt government there as well	Facilitator	NGOs	Lobby	
2053	9 Implementation of SD	A	So that's that	Facilitator	NGOs	Lobby	
2054	9 Implementation of SD	Q	Interviewer	-	-	-	
2055	9 Implementation of SD	Q	Any thing else, what about this end [points to negative end of array]?	-	-	-	
2056	9 Implementation of SD	A	Oh, no big deal	-	-	-	
2057	9 Implementation of SD	A	I'm not religious and see them lot as being part of our problems	Barrier	LittleEffect	Religion	
2058	9 Implementation of SD	A	Family planning wise and just generally backward looking	Barrier	LittleEffect	Religion	
2059	9 Implementation of SD	A	I also don't think we need a radical change in values – not environmental values anyway	Objective	Social	Priority	
2060	9 Implementation of SD	A	Perhaps more of a socialist value – sharing the benefits of the big companies	Objective	Social	Priority	
2061	9 Implementation of SD	A	I mean we're just so rich now that it's inexcusible for there to be poor people	Objective	Social	Priority	
2062	9 Implementation of SD	A	Coming back to the big companies, they really should be doing more to help the Africans	Objective	Social	Priority	
2063	9 Implementation of SD	A	The genetic food issue and better farming practices for the third world	Objective	Social	Priority	
2064	9 Implementation of SD	A	It should be done to make the world a better place	Objective	Social	Priority	
2065	9 Implementation of SD	A	The others are just in the middle	-	-	-	
2066	9 Implementation of SD	A	I don't really care one way or the other	-	-	-	
2067	9 Implementation of SD	A	You know, women and children involved, well yeah OK, involving the public, again, sounds OK but not a big deal	-	-	-	
2068	**9 Objectives of SD**	**T**	**Objectives of Sustainable Development**	-	-	-	
2069	**9 Objectives of SD**	**T**	**Interview two**	-	-	-	
2070	9 Objectives of SD	Q	Interviewer: These cards are about objectives about sustainable development and what it is trying to do	-	-	-	
2071	9 Objectives of SD	Q	What do they tell you – what are you saying here?	-	-	-	
2072	9 Objectives of SD	A	This one summs it up really nicely – "The maximisation of human welfare is the main objective" – card one in the very first place	Objective	Social	Priority	
2073	9 Objectives of SD	A	Everything about environmental protection should be about looking after people	Objective	Social	Priority	
2074	9 Objectives of SD	A	There is just so many problems that we face that people should come first	Objective	Social	Priority	
2075	9 Objectives of SD	A	It annoys me, to be honest, you see those Koala ber suits collecting money to save this or save that, whales, koals whatever	Objective	Social	Priority	
2076	9 Objectives of SD	A	It annoys me that young people like that are wasting their energy when they could be helping people	Objective	Social	Priority	
2077	9 Objectives of SD	A	Poor kids in the city	Objective	Social	Priority	
2078	9 Objectives of SD	A	Refugees	Objective	Social	Priority	
2079	9 Objectives of SD	A	People in Africa who could really do with a hand	Objective	Social	Priority	
2080	9 Objectives of SD	A	So that's it for me	Objective	Social	Priority	
2081	9 Objectives of SD	A	We need to make the world a better place for people as a priority, then look after the animals	Objective	Social	Priority	
2082	9 Objectives of SD	A	This one – number 29 – that's also a priority	Objective	Social	Priority	
2083	9 Objectives of SD	Q	Interviewer: Number 29 says "The core objective for sustainable development should be to provide economic, environmental and social equity within and beteen generations"	-	-	-	
2084	9 Objectives of SD	Q	Why do you say it's a priority?	-	-	-	
2085	9 Objectives of SD	A	Well because it's firstly important to have a better distribution of wealth	Objective	Social	Priority	
2086	9 Objectives of SD	A	In the world today there is no valid reason for anyone anywhere to be poor	Objective	Social	Priority	
2087	9 Objectives of SD	A	Even in India, Pakistan, they could have a lifestyle like you and me no problem	Objective	Social	Priority	
2088	9 Objectives of SD	A	Also, it's important that we pass on a richer world than the one left to us – and we will so long as we don't go backwards	Objective	Social	Priority	
2089	9 Objectives of SD	A	I believe that we're better off because of the advances made by our forebearers	Objective	Social	Priority	
2090	9 Objectives of SD	A	And I believe that advances happening today should be passed forward	Objective	Social	Priority	
2091	9 Objectives of SD	A	Take genetic engineering – that could be the biggest breakthrough ever known – feed the world, fight disease, the whole lot	Objective	Social	Priority	
2092	9 Objectives of SD	A	But it's in danger form the backwards looking green lobby	Barrier	NGOs	Misdirected	
2093	9 Objectives of SD	A	Imagine if they'd said stop the industrial revolution, it's going to pollute the environment	Barrier	NGOs	Misdirected	
2094	9 Objectives of SD	A	We'd still be living in garrets with candles and tallow, bad teeth, poor food and no transport	Barrier	NGOs	Misdirected	
2095	9 Objectives of SD	A	Progress has been tremendous and we need to pass it on to the next generastion	Objective	Social	Priority	
2096	9 Objectives of SD	A	Well that's my view anyway	Objective	Social	Priority	
2097	9 Objectives of SD	Q	Interviewer: Have you got a timeframe for a sustainable future?	-	-	-	
2098	9 Objectives of SD	A	Look you're probably getting the impression that I don't want a sustainable world	Objective	Perpetual		
2099	9 Objectives of SD	A	I know myself that my view is probably different to other people you've interviewed	Objective	Perpetual		
2100	9 Objectives of SD	A	But I do believe in sustainable development	Objective	Perpetual		
2101	9 Objectives of SD	A	It's just about sustaining development involving a continuously growing, better educated world	Objective	Perpetual		
2102	9 Objectives of SD	Q	Interviewer: When you say "continuously growing" – do you mean people?	-	-	-	
2103	9 Objectives of SD	A	No, not population, not numbers, I mean richer people, more affluent, better quality of life, probably less people I expect	Objective	Social	Priority	
2104	9 Objectives of SD	A	Sustainable development is about creating a fairer share for everyone	Objective	Social	Priority	
2105	9 Objectives of SD	A	A better world	Objective	Social	Priority	
2106	9 Objectives of SD	A	It's not just about environmental protection	Objective	Social	Priority	
2107	9 Objectives of SD	A	That will come from making the world more affluent	Objective	Social	Priority	
2108	9 Objectives of SD	Q	Interviewer: How so?	-	-	-	
2109	9 Objectives of SD	A	Simply because rich people get to travel and they come to value the environment more	Objective	Social	Priority	
2110	9 Objectives of SD	A	They can also afford the time and resources, energy needed to protect it	Objective	Social	Priority	
2111	9 Objectives of SD	A	Look at the backpacking scene – people being able to routinely travel the planet – and make complaints about bad things happening	Objective	Social	Priority	
2112	9 Objectives of SD	A	We know so much more nowadays	Objective	Social	Priority	
2113	9 Objectives of SD	A	One last point, I totally reject that number 32, and the number 31	Objective	Social	Priority	
2114	9 Objectives of SD	A	I know that's the standard rhetoric "primacy to the environment", "biodiversity in danger" blah blah blah	Objective	Social	Priority	
2115	9 Objectives of SD	A	I've talked to people that believe that stuff	Objective	Social	Priority	
2116	9 Objectives of SD	A	We should never give priority to environment over people	Objective	Social	Priority	
2117	9 Objectives of SD	A	There's not even a need in Australia	Objective	Social	Priority	
2118	9 Objectives of SD	A	Just fly over it – it's so damn big we could fit 100 million of us if we could get the water!	Objective	Social	Priority	
2119	**9 Role of science and technology**	**T**	**Role of science and technology**	-	-	-	
2120	**9 Role of science and technology**	**T**	**Interview one**	-	-	-	
2121	9 Role of science and technology	Q	Interviewer: Ok, if I can move on to the next issue of science and technology in implementing or promoting sustainable development	-	-	-	
2122	9 Role of science and technology	Q	What role do you see?	-	-	-	
2123	9 Role of science and technology	A	Well, looking at the layout, they're opposites really	S&T	Important	SD	
2124	9 Role of science and technology	A	Card number 3 – "instead of contributing to problems, industry solves them" and at the other end – card 33 – "The application of science is the major driving force behind negative impacts"	S&T	Important	SD	
2125	9 Role of science and technology	Q	Interviewer: Just for the tape – statement 3 is at the positive end and 33 at the negative	-	-	-	
2126	9 Role of science and technology	A	Yeah, yeah that's right	S&T	Important	NS	
2127	9 Role of science and technology	Q	Interviewer: So what's going on there?	-	-	-	
2128	9 Role of science and technology	A	Well, as I've said earlier	S&T	Important	SD	
2129	9 Role of science and technology	A	We're more sustainable now that before because we use science and technology to solve our problems	S&T	Important	SD	

2130	9 Role of science and technology	A	Again, genetic engineering is one where we can overcome food shortages – potential famines by always having enough food	S&T	Important	SD
2131	9 Role of science and technology	A	Science is the answer,but many people see it as the problem	S&T	Important	NS
2132	9 Role of science and technology	A	It's the other way round	S&T	Important	NS
2133	9 Role of science and technology	Q	Inteviewer:Can you tell me about card number 4 – "The exceptional characteristics of Homo sapiens, particularly our knowledge and technology exempt us from the ecological limits that constrain other species"	-	-	-
2134	9 Role of science and technology	Q	Why did you put that at plus 5 position?	-	-	-
2135	9 Role of science and technology	A	Again, there is just so much evidence that as the world has progressed we've made it better	S&T	Important	NS
2136	9 Role of science and technology	A	Think about Christopher Columbus setting off in those little ships	S&T	Important	NS
2137	9 Role of science and technology	A	Captain Cook sailing to Australia	S&T	Important	NS
2138	9 Role of science and technology	A	Now you fly in a Jumbo in one day what took three years	S&T	Important	SOL
2139	9 Role of science and technology	A	And have gin and tonic with smoked salmon for lunch!I just think that we can overcome problems we face by using our brains	S&T	Important	SOL
2140	9 Role of science and technology	A	I don't see why that should suddenly stop	S&T	Important	SOL
2141	9 Role of science and technology	A	If it did, if people get stupid, that's when I'll really get worried	S&T	Important	SOL
2142	**9 Problem issues**	**T**	**Problem issues**	-	-	-
2143	**9 Problem issues**	**T**	**Interview nine**	-	-	-
2144	9 Problem issues	Q	Interviewer: In the area about problems that sustainable development is trying to overcome – what it faces - What is your view about these issues?	-	-	-
2145	9 Problem issues	A	This one was difficult	Environment	Positive	NoProblems
2146	9 Problem issues	A	I don't actually think we have many problems as set out in these terms	Environment	Positive	NoProblems
2147	9 Problem issues	A	These seem to be more about environmental problems	Environment	Positive	NoProblems
2148	9 Problem issues	A	I think – and I've indicated here that "there is a record of enormous environmental progress and much to be optimisitic about"	Status	Optimistic	Future
2149	9 Problem issues	A	That's so true	Status	Optimistic	Future
2150	9 Problem issues	A	But most of these, I don't agree with	Environment	Positive	NoProblems
2151	9 Problem issues	A	Number 36, 37, they're dead wrong	Environment	Positive	NoProblems
2152	9 Problem issues	Q	Interviewer: Number 37 says "Economic, industrial and urban development has gone too far in WA" and 36 – the least favoured card says "The whole ten thousand year history of civilisation has been one of decline and degeneration from an earlier simpler lifestye of humankind"	-	-	-
2153	9 Problem issues	A	Yeah, they'r both utter rubbish!We need more development not less in WA	Environment	Positive	NoProblems
2154	9 Problem issues	A	And we certainly had a simpller life – it was certainly shorter anyway	Environment	Positive	NoProblems
2155	9 Problem issues	A	Look at us now, living longer than ever before because we've got good food, basic hygene, health care and a cleaner environment	S&T	Important	SOL
2156	9 Problem issues	A	All that "back to nature" stuff is actually dangerous	S&T	Important	SOL
2157	9 Problem issues	A	That's how PolPot started – get the city dwellers back in the fields and look what happened in Cambodia	S&T	Important	SOL
2158	9 Problem issues	A	It's a dangerous and backward view	S&T	Important	SOL
2159	9 Problem issues	A	Again, that's my opinion	S&T	Important	SOL
2160	**9 Reasons for LA21**	**T**	**Reasons for LA21**	-	-	-
2161	**9 Reasons for LA21**	**T**	**Interview one**	-	-	-
2162	9 Reasons for LA21	Q	Interviewer: I'm not sure if you know, but c in you tell me why you think that not many Councils have adopted sustainable develoment?Do you know about LA21?	-	-	-
2163	9 Reasons for LA21	A	I'm not sure	Barrier	Concept	Ambiguous
2164	9 Reasons for LA21	A	I don't know about this LA21 is it?	Barrier	Concept	Ambiguous
2165	9 Reasons for LA21	Q	Interviewer: Yes, I'll explain off tape	-	-	-
2166	**9 Reasons for LA21**	**T**	**Tape stopped to explain about LA21**	-	-	-
2167	**9 Reasons for LA21**	**T**	**Tape starts**	-	-	-
2168	9 Reasons for LA21	Q	So any information about sustainable development?			
2169	9 Reasons for LA21	A	Well, to me the whole thing is muddled	Barrier	Concept	Ambiguous
2170	9 Reasons for LA21	A	I can understand how some councillor would get confused	Barrier	Concept	Ambiguous
2171	9 Reasons for LA21	A	There are cards in here about it being, what was the word?"Malleable"	Barrier	Concept	Ambiguous
2172	9 Reasons for LA21	A	Well that's it exactly	Barrier	Concept	Ambiguous
2173	9 Reasons for LA21	A	I know I've got one view about it and I know others that have a different view – many of my friends	Barrier	Concept	Ambiguous
2174	9 Reasons for LA21	A	So how can a councillor expect to make a decision – it's not cut and dryed	Barrier	Concept	Ambiguous
2175	9 Reasons for LA21	A	Look at the controversy over "greenhouse"	Barrier	Concept	Ambiguous
2176	9 Reasons for LA21	A	Some saying it will happen and others that it won't	Barrier	Concept	Ambiguous
2177	9 Reasons for LA21	A	Other than that, I don't know	Barrier	Concept	Ambiguous
2178	9 Reasons for LA21	A	Does that help?	-	-	-
2179	9 Reasons for LA21	Q	Interviewer: Yes, thank you	-	-	-
2180	9 Reasons for LA21	A	It's probably resources as well	Barrier	Initiatives	Cost
2181	9 Reasons for LA21	A	You know?Lack of resources	Barrier	Initiatives	Cost
2182	9 Reasons for LA21	A	Shires don't seem very cashed up over here, and probably conservative values	Barrier	Initiatives	Cost
2183	9 Reasons for LA21	A	I'm guessing because I don't know, but councillors are often in it for themselves	Barrier	Government	Local
2184	9 Reasons for LA21	A	They buy a block and want rezoning so they get elected for that kind of thing	Barrier	Government	Local
2185	9 Reasons for LA21	A	Or else to stop something that bothers them – you know a prison next door or what have you	Barrier	Government	Local
2186	9 Reasons for LA21	A	Don't quote me on that	Barrier	Government	Local
2187	9 Reasons for LA21	A	I'm sure many are also quite sincere and want to do good things for the community	Barrier	Government	Local
2188	9 Reasons for LA21	A	I know one or two who is like that – very committed to the community kind of thing	Facilitator	Government	Champion
2189	**10 Implementation of SD**	**T**	**Implementation of Sustainable Development**	-	-	-
2190	**10 Implementation of SD**	**T**	**Interview ten**	-	-	-
2191	**10 Implementation of SD**	**T**	**LC**	-	-	-
2192	10 Implementation of SD	Q	Interviewer: I would just like you to explain an overview of your card arrangement of who and why you think should implement sustainable development	-	-	-
2193	10 Implementation of SD	A	Okay my general feelings are that the individuals can't do anything and that small community groups can't do anything that is actually going to have an effect	Barrier	LittleEffect	Community
2194	10 Implementation of SD	A	So therefore larger organisations and the state government should be leading a lot of this because they have the power to encourage people to do these things through tax, through spending money on things	Facilitator	Government	State
2195	10 Implementation of SD	A	I believe we need the experts to actually lead the way, because a lot of group's get misled by the opinions by certain individuals and those individuals are not always correct	Facilitator	Experts	Decisions
2196	10 Implementation of SD	A		Barrier	NGOs	Misdirected
2197	10 Implementation of SD	Q	Interviewer: Who were you thinking about there?	-	-	-
2198	10 Implementation of SD	A	No particular group	Barrier	NGOs	Misdirected
2199	10 Implementation of SD	A	It just seems that the person that shouts loudest seems to be getting the more attention and cause things to happen	Barrier	NGOs	Misdirected
2200	10 Implementation of SD	A	I surpose a good example there is the Brent Spar situation with Shell	Barrier	NGOs	Misdirected
2201	10 Implementation of SD	A	Green Peace and everybody got angry about Brent Spar being dumped in the North Sea when actually it was significantly more dangerous for them to take it apart offshore	Barrier	NGOs	Misdirected
2202	10 Implementation of SD	A	And the north sea would have been a very good solution as far as the experts were concerned and where as the Green Peace and the public sort of ignored the experts just because it was a popular thing to support Greenpeace	Barrier	NGOs	Misdirected

2203	10 Implementation of SD	A	So I think that the experts should be involved and I think government bodies should be involved because they actually have the power to influence a lot of people	Facilitator	Experts	Facts
2204	10 Implementation of SD	A	People don't do anything unless they are actually encouraged	Facilitator	Initiatives	Inc-NS
2205	10 Implementation of SD	A	We all say we want to save the world and everything but we still don't recycle or we still drive around in our cars and things like that and until we actually get penalised for driving around in our cars we won't stop doing it	Facilitator	Initiatives	Disincentive
2206	10 Implementation of SD	Q	Interviewer: So it sounds to me like you are saying that it should be a top down sort of process from government through into the community	-	-	-
2207	10 Implementation of SD	Q	Not necessarily the other way around	-	-	-
2208	10 Implementation of SD	Q	Is that right?	-	-	-
2209	10 Implementation of SD	A	Yes	Facilitator	Multi Sectors	TopDown
2210	10 Implementation of SD	A	It's the top leading it but obviously you have to get everyone on board and you can't just make them do it	Facilitator	Multi Sectors	JointEffort
2211	10 Implementation of SD	A	So that's why they have to be clever about the incentives and the motivation they give us to do it and then whether they set up local communities which you have to support or the government and funded by the government	Facilitator	Initiatives	Inc-NS
2212	10 Implementation of SD	A	Then the local government or local communities could probably get the actual individuals going but I don't think smaller groups can do it on there own because it's such a global thing individuals certainly can't do it	Barrier	LittleEffect	Community
2213	10 Implementation of SD	Q	Interviewer: Do you think it's actually necessary? Like yourself when you think about these issues, like the whole concept of sustainable development do you think it is a necessary concept to have at this point and time?	-	-	-
2214	10 Implementation of SD	A	I think we always have to be aware of it	?		
2215	10 Implementation of SD	A	That we always have to be considering are we doing some damage and being realistic about it as to whether we can actually still take the resources but not cause the damage or what is it we are actually bothered about	?		
2216	10 Implementation of SD	A	Are we bothered about our own lives or are we bothered about the planet	?		
2217	10 Implementation of SD	A	So I think it is still worth considering all the time and maybe not to take to far	?		
2218	10 Implementation of SD	Q	Interviewer: Can I just ask you about the cards at the extreme ends first	-	-	-
2219	10 Implementation of SD	Q	I noticed you put the card about religion down, right down here at the minus four which is the furthest one in this certain card	-	-	-
2220	10 Implementation of SD	Q	Do you have a reason for doing that?	-	-	-
2221	10 Implementation of SD	A	Probably because personally I don't respect religion	Barrier	LittleEffect	Religion
2222	10 Implementation of SD	A	I just feel that religious groups just cause more trouble than anything	Barrier	LittleEffect	Religion
2223	10 Implementation of SD	A	They never actually do any good and to me religion – sustainable development, environmental issues are just not linked	Barrier	LittleEffect	Religion
2224	10 Implementation of SD	Q	Interviewer: Then down at the other end, I am particularly interested in that card number is it 43 – "Decision-making about problems of sustainable development probably ought to be left to those people with expert scientific knowledge"	-	-	-
2225	10 Implementation of SD	A	I think they have to be involved and they have to be the people that identify where we actually have got	Facilitator	Experts	Facts
2226	10 Implementation of SD	A	That's why I put – "Decision-making about problems of sustainable development probably ought to be left to those people with expert scientific knowledge" down there	Facilitator	Experts	Facts
2227	10 Implementation of SD	Q	Interviewer: The scientists you mean? The scientists as policy makers almost or what?	-	-	-
2228	10 Implementation of SD	A	It would actually be the ones that are deciding where there is a problem through science, taking into account the damage that we are doing and what we could, whether it is actually damaged and how we can repair it	Facilitator	Experts	Facts
2229	10 Implementation of SD	A	I think we should be consulting the experts instead of people just making their own opinions not based on the evidence	Facilitator	Experts	Facts
2230	10 Implementation of SD	A	We have to have the experts evidence and then I surpose the people have to decide what it is they value	Facilitator	Experts	Facts
2231	10 Implementation of SD	A	The experts can't say right we do care more about the planet than we do about humans or vice versa	S&T	Subordinate	Attitudes
2232	10 Implementation of SD	A	So they maybe aren't policy makers but we need them there as experts to guide us	Facilitator	Experts	Facts
2233	**10 Objectives of SD**	**T**	**Objectives of Sustainable Development**	-	-	-
2234	**10 Objectives of SD**	**T**	**Interview ten**	-	-	-
2235	10 Objectives of SD	Q	Interviewer: I think that is about it for the implementation	-	-	-
2236	10 Objectives of SD	Q	Okay so this is the second series of cards about the objectives about sustainable development not what it's about but what it is trying to achieve	-	-	-
2237	10 Objectives of SD	Q	So I guess it would appear that you agree with more of these cards than you disagree with	-	-	-
2238	10 Objectives of SD	Q	Would you like to just describe in your own opinion what the objectives of sustainable development are perhaps even what they ought to be	-	-	-
2239	10 Objectives of SD	A	I feel that the objectives of sustainable development are like a long-term benefit	Objective	Perpetual	
2240	10 Objectives of SD	A	It's about a long-term process	Objective	Perpetual	
2241	10 Objectives of SD	A	It is not just reacting to things that are happening at the moment, but considering are we protecting the earth for a long term process but at the same time that we are answering for as well	Objective	Equity	
2242	10 Objectives of SD	A	That our generations answering for as well	Objective	Equity	
2243	10 Objectives of SD	A	Everybody wants to be protecting for the future the next generation	Objective	Equity	
2244	10 Objectives of SD	A	But we also need to look at the humans today that they are benefiting	Objective	Equity	
2245	10 Objectives of SD	A	Sustainable development for me is about related to human factors not just the plants	Objective	Social	Priority
2246	10 Objectives of SD	A	The whole objective is about enabling humans to live not just necessarily just plants to live	Objective	Social	Priority
2247	10 Objectives of SD	A	Obviously it would be nice if we didn't concrete the whole earth over and things like that	Objective	Social	Priority
2248	10 Objectives of SD	A	At the same time we have to do things that enable us to have a good life to eat and to develop	Objective	Env	Knock-on
2249	10 Objectives of SD	A	Looking at the cards an obvious perception that I've got is that it is about actually growing it's not about stopping here and making sure we don't disturb it anymore, it's about actually developing and growing and making the most out of all the resources that we have got	? S&T	Important	NS
2250	10 Objectives of SD	A	You don't know what benefits your going to get out of doing some research or developing a piece of land	? S&T	Important	NS
2251	10 Objectives of SD	Q	Interviewer: So what you said there is that you don't see it as being going back to a simple lifestyle	-	-	-
2252	10 Objectives of SD	Q	Am I correct in thinking that?	-	-	-
2253	10 Objectives of SD	A	No we have to keep moving forward, we have to keep finding new cures for things and finding new resources and ways to use those resources	S&T	Important	SOL
2254	10 Objectives of SD	A	But obviously at the same time maybe get in the balance so that we don't make is a horrible place to live and we don't harm the atmosphere or the land so badly so that we can't live here anymore	Objective	Balance	Env-Econ-Soc
2255	10 Objectives of SD	A	A perfect example of that is where the salt is effecting a lot of the land in WA	Objective	Balance	Env-Econ-Soc
2256	10 Objectives of SD	A	You have to start doing something about that because sooner or later the land is just going to become infertile there and that's no good for us	Objective	Balance	Env-Econ-Soc
2257	10 Objectives of SD	Q	Interviewer: So are you surprised that you put these two cards here, card number 1 and card number 10 at minus one and minus two given that you obviously sorted 50 cards at a time from what you said?	-	-	-
2258	10 Objectives of SD	A	Maybe I haven't thought about doing this a bit after doing this question			
2259	10 Objectives of SD	A	I definitely think that it is all about humans that count in the long run not just the planet	Objective	Social	Priority
2260	10 Objectives of SD	A	So maybe I am surprised that they are not further up	Objective	Social	Priority

2261	10 Objectives of SD	A	Not considered more important particularly this number one maximisation of human welfare should be the main objective	Objective	Social	Priority
2262	10 Objectives of SD	Q	Interviewer: It sounds like that is sort of what you were saying			
2263	10 Objectives of SD	A	At the same time I don't want humans to be greedy	Objective	Balance	Env-Econ-Soc
2264	10 Objectives of SD	A	I don't want us to just do it for, in it just for striping the air it should be for things that we actually do need	Objective	Balance	Env-Econ-Soc
2265	10 Objectives of SD	A	We can't use this excuse doing it just humans, we can't use that to allow large companies just to make lots of money out of it when it isn't something that we really need	Objective	Balance	Env-Econ-Soc
2266	10 Objectives of SD	Q	Interviewer: How do you feel about, I know you have it down as one of your least favourites number 31 saying that bio-diversity is such danger in Australia			
2267	10 Objectives of SD	Q	Do you not agree that bio-diversity is endangered in Australia in particular?			
2268	10 Objectives of SD	A	I don't think it is	Objective	Balance	Env-Econ-Soc
2269	10 Objectives of SD	A	Not that we have to completely stop developing	Objective	Balance	Env-Econ-Soc
2270	10 Objectives of SD	A	There are certain issues like the salt that you have to think about	Objective	Balance	Env-Econ-Soc
2271	10 Objectives of SD	A	But to actually sort of stop development completey and just stay as we are just seems a bit drastic	Objective	Balance	Env-Econ-Soc
2272	10 Objectives of SD	A	There are always solutions to our problems	Objective	Balance	Env-Econ-Soc
2273	10 Objectives of SD	A	I feel that the "greeny" people are sort of maybe accentuating the risks of the state that we are in a bit too much	Barrier	NGOs	Misdirected
2274	10 Objectives of SD	A	It's really not so bad	Barrier	NGOs	Misdirected
2275	10 Objectives of SD	Q	Interviewer: Do you think that's in and attempt to stop development by those people?			
2276	10 Objectives of SD	A	In an attempt stop development and progress, yeah	Barrier	NGOs	Misdirected
2277	**10 Role of science and technology**	**T**	**Role of science and technology**			
2278	**10 Role of science and technology**	**T**	**Interview ten**			
2279	10 Role of science and technology	Q	Interviewer: Well that is the objective side			
2280	10 Role of science and technology	Q	Okay so the next set of cards is about the roles of science and technology in the issue of sustainable development			
2281	10 Role of science and technology	Q	So can you offer some kind of narrative explanation for these cards			
2282	10 Role of science and technology	A	I think the cards demonstrate that I see science and technology as a very positive thing and that a lot of benefits come out of science and technology and research in general	S&T	Important	SD
2283	10 Role of science and technology	A	I think overall we have more benefits come out of science and technology than we do bad aspects	S&T	Important	SD
2284	10 Role of science and technology	A	Normally we find a solution to the bad aspects anyway	S&T	Important	SD
2285	10 Role of science and technology	A	Quite often when people are looking for something that is quite negative they actually discover a very positive outcome	S&T	Important	SD
2286	10 Role of science and technology	A	They find a new drug or something like that	S&T	Important	SD
2287	10 Role of science and technology	A	So research in general is very good and I certainly don't see it as a negative thing that is harming the world in the big picture	S&T	Important	SD
2288	10 Role of science and technology	A	Obviously some times there are some negative aspects but generally they get solved in the long run	S&T	Important	SD
2289	10 Role of science and technology	A	I think that that's where the money should be spent on science and technology to come up with more efficient ways to doing things or better ways of using these resources and not causing waste and stuff like that	S&T	Important	SD
2290	10 Role of science and technology	Q	Interviewer: You see a definite role from what your saying by the sounds of it in science and technology leaning forwards with sustainable development directions and sustainable development			
2291	10 Role of science and technology	A	Yep definitely			
2292	10 Role of science and technology	A	Again it is the role of the expert, getting involved and giving their opinion on what's the best way to do something and how can you do it without causing more harm and what will the benefits be in the long-term	S&T	Important	Facts
2293	10 Role of science and technology	Q	Interviewer: Can I just ask you about a couple the cards perhaps			
2294	10 Role of science and technology	Q	Card number 34 that you have in the position of minus two which says "the scientific reliable picture is much more alarming than people are led to believe"			
2295	10 Role of science and technology	Q	Do you think that, for me you have put that in and said you don't believe that is the case			
2296	10 Role of science and technology	Q	So do you think that the picture of what's being said is not particularly real or just being made up in some way			
2297	10 Role of science and technology	A	I think there are certain aspects that are not desirable but I think the global picture isn't as bad as a a lot of the green groups make out			
2298	10 Role of science and technology	A	Maybe some of the situations are bad but they are not too serious			
2299	10 Role of science and technology	A	They can be solved basically through science, through regulations	S&T	Important	SD
2300	10 Role of science and technology	A	The Fishing situation that we will out strip the sea of all its fish and all of that through careful regulation we can ensure that we continue with good fish supplies through our generation	S&T	Important	SD
2301	10 Role of science and technology	A	That's through science and technology being involved in understanding how they breed and all that rather than just saying let us stop fishing completely	S&T	Important	SD
2302	10 Role of science and technology	A	That doesn't do anybody any good, as I said before we have to keep growing so lets do it in a way that enables us to keep going	S&T	Important	SD
2303	10 Role of science and technology	Q	Interviewer: So it sounds like you are saying that basically sustainable development is just about good management really	-	-	-
2304	10 Role of science and technology	Q	Is that right?	-	-	-
2305	10 Role of science and technology	A	Definitely	Status	Optimistic	Future
2306	10 Role of science and technology	A	Basically ensuring that we get what we need to survive but also leaving enough so that it continues to be there	Objective	Balance	Env-Econ-Soc
2307	10 Role of science and technology	A	Any gardener or farmer knows that when your ploughing the soil that you leave enough nutrients in the soil that it is going to be able to give you fruit and vegetables in the up coming years	Objective	Balance	Env-Econ-Soc
2308	**10 Problem issues**	**T**	**Problem issues**	-	-	-
2309	**10 Problem issues**	**T**	**Interview ten**	-	-	-
2310	10 Problem issues	Q	Interviewer: I'll stop it there and set out the next cards	-	-	-
2311	10 Problem issues	Q	Okay so we are at the last set of cards now dealing with the problems relating to sustainable development or reasons why we should do it in the first place	-	-	-
2312	10 Problem issues	Q	So can you just offer some sort of summary for why you have arranged these cards the way you have	-	-	-
2313	10 Problem issues	A	I surpose these cards that are in the negative end are showing that I don't agree that we are going too far or that we should stop production and that we should stop all use of resources and all that	Status	Optimistic	Future
2314	10 Problem issues	A	I don't believe that we are living beyond our capacity of the planet or anything like that	Status	Optimistic	Future
2315	10 Problem issues	A	Everyday we see solutions to problems	Status	Optimistic	Future
2316	10 Problem issues	A	We see science creating new ways to produce food and for us to support the lifestyles that we choose and make the most of our resources and all that	S&T	Important	SOL
2317	10 Problem issues	A	So basically I don't agree that things are like the history of civilisation has been one of decline	Status	Optimistic	Future
2318	10 Problem issues	A	I think everything has improved	Status	Optimistic	Future
2319	10 Problem issues	A	We live longer, we have better food, we have less diseases	Status	Optimistic	Future
2320	10 Problem issues	A	At the positive end the one I have at the positive end is about species andsystems and nature deserving respect regardless of its usefulness to humanity	Objective	Env	Important
2321	10 Problem issues	A	So even though I don't think we have gone too far I still believe that nature is important so it goes back to having that stewardship role that we have to continue to develop	Objective	Env	Important

Row	P	Type	Text	Cat1	Cat2	Cat3
2322	10 Problem issues	A	There is no point being here unless we continue to grow and discover the benefits of science and what the earth has to offer us, but at the same time nature is important	Objective	Env	Important
2323	10 Problem issues	A	Nature is important and it is good to have those around	Objective	Env	Important
2324	10 Problem issues	A	So I don't recommend that we concrete the world or anything like that or completely destroy it	Objective	Env	Important
2325	10 Problem issues	A	We have to take a long term view of this sort of thing and ensure the future generations as well	Objective	Equity	
2326	10 Problem issues	A	That they can survive and have just as good a lifestyle as we have	Objective	Equity	
2327	10 Problem issues	Q	Interviewer: So you get out and interact with nature yourself?	-	-	-
2328	10 Problem issues	A	Definitely	Objective	Env	Knock-on
2329	10 Problem issues	A	I think most importantly that is good for peoples stress levels	Objective	Env	Knock-on
2330	10 Problem issues	A	Help them to live a more relaxed lifestyle getting away from it sometimes	Objective	Env	Knock-on
2331	10 Problem issues	A	So I still see nature should be there for humans that it is still a use for them and I don't think it is totally there just for natures sake	Objective	Env	Knock-on
2332	10 Problem issues	A	We get a benefit from them	Objective	Env	Knock-on
2333	10 Problem issues	A	Also who knows what plants may find the cure for aids or something	Objective	Env	Knock-on
2334	**10 Reasons for LA21**	**T**	**Reasons for LA21**	-	-	-
2335	**10 Reasons for LA21**	**T**	**Interview ten**	-	-	-
2336	10 Reasons for LA21	Q	Interviewer: Our last section I wanted to ask you about was local government	-	-	-
2337	10 Reasons for LA21	Q	I don't know if you know much about this but there is a policy called Local Agenda 21 which is a sustainable development policy	-	-	-
2338	10 Reasons for LA21	Q	Now not many local governments in Perth - only about ten out of thirty actually have LA21	-	-	-
2339	10 Reasons for LA21	Q	I was just wondering if you have any thoughts as to why local governments either would adopt a policy like that or why they haven't	-	-	-
2340	10 Reasons for LA21	A	I would have to say that I haven't really heard of that the agenda so I am not aware of them actually doing anything in this area or who's doing and who's not then	Barrier	Concept	Ambiguous
2341	10 Reasons for LA21	Q	Interviewer: That's Okay thanks a lot	-	-	-