Constructive environmental scanning: A method in creating positive world paradigms for more sustainable alternative futures

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Declaration

I, Jan Hendrik Naude, declare that the entire body of work contained in this research is my own, original work; that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

JH Naude March 2016

Acknowledgements

The title of this thesis suggests that an enhanced environmental scanning approach will be conducive to create positive mental constructs among global citizens to achieve more sustainable alternative global futures. This presupposes that a global mind-shift in favour of such alternative global futures is a possibility and even a probability despite the current state of the world and the destructive forces that are working towards creating a dystopian global future. Envisioning a utopian global future might seem like wishful thinking. However, within the context of Futures Studies, designing the ideal future, whether utopian or otherwise, opens up the many choices humanity has in creating preferable alternatives global futures by envisioning what can be, and pursuing these actively.

I, as a futurist who embraces the foundational knowledge of the Future Studies discipline of inquiry, fully subscribe to holism in futures thinking that encompasses measuring, imagining and designing the future. The future is not just threats and opportunities, possibilities and probabilities but also the setting for preferable and ideal futures, to be created by purposefully applying open-mindedness towards achieving such goals. This is perhaps the subjectivity that will inevitably influence my analysis, and the findings and discussions of the interviews and surveys of this study.

I have experience from my own background that a mind-set of the future as an imaginative transformative space can lead to the creation of preferable and ideal futures. I grew up as a white male from the Afrikaner cultural group in apartheid South Africa who had a mind-set of fear and who saw the rest of the world as a threat to the existence of the Afrikaner nation. This was despite a Calvinistic Christian religious background that teaches the values of love instead of fear, hope instead of despair and victory instead of defeat. Studying Political Science and working for the apartheid government as an international political researcher gradually created the required open-mindedness to see the world from a different perspective. This brought the necessary understanding that was also noticeable among many enlightened Afrikaners who spearheaded the transformation of South Africa in 1994 to create today's "rainbow nation", by giving up war in favour of peace - a miracle within a global context. Perhaps this is another element of the subjectivity that I bring into this study; but it is a subjectivity based on the reality that perceived impossibilities can be transformed into real possibilities.

I wish to thank my supervisor, Prof André Roux, for his guidance and support with this study. His involvement started long before this study when his professionalism and knowledge as former Director of the Institute for Futures Research of the University of Stellenbosch Business School inspired me to enrol for the M.Phil. in Futures Studies.

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To my children, Nirése and Kéan, remember that the future is to be created by persistent, focused effort; never give up and always pursue your goals with enthusiasm.

“As a man thinketh, so is he”
(Proverbs 23:7)

Abstract

The research posits that people who generally do environmental scanning on the Litany Level of Knowing do not have good judgement and foresight about the global contextual future and are, therefore, ill-equipped to influence world thought leaders to adopt global measures that will be necessary to develop sustainable alternative global futures. People's poor judgement and foresight of the global contextual environment can be attributed to a deficient environmental scanning methodology that affects their knowledge base adversely and prevents them from having a good comprehension of future reality. What they learn from their scanning of the contextual environment create mental constructs with a futures disposition of pessimism, hopelessness and inaction about the global future.

The research approach is situated in the Futures Studies discipline of inquiry. Futures thinking holism is foundational in this context, specifically its concern with systematic and explicit thinking regarding alternative futures that aims to give some form of human control over the future. This is based on the three interrelated inquiries of Futures Studies, viz. measuring the future to obtain knowledge about the future, imagining the non-existing future, and purposefully designing the future.

A multi-strand concurrent mixed method research design with a qualitative dominant approach was adopted to do a thematic qualitative text analysis of formal semi-structured interviews as well as of primary and secondary survey data. This resulted in case- and thematic-oriented perspectives to answer the research question.

Constructive Environmental Scanning (CES) as a more balanced and holistic approach is posited to overcome the lack of knowledge regarding the global contextual environment and to enhance people's future consciousness to pursue sustainable alternative futures. From a theoretical perspective, CES is a critical thinking approach based on a proposed new Matrix Integral Layered Environmental Scanning (MILES) method. The purpose is to create depth in the environmental scanning inquiry to transcend superficial information and understanding encountered by scanning practitioners.

The qualitative interview strand of the inquiry provided a perspective of people's measuring of the global future, the impact of this measuring on people's images of the global future and what influence these images have on people's actions to create a better world. It showed that people generally have insufficient knowledge of contextual global developments due to their over-reliance on the Litany Level of Knowing for information, have a pessimistic-fearful disposition towards the global future and mostly do not contribute towards creating a better world.

The quantitative survey strand of the inquiry supports the perspectives of the qualitative strand in general terms. However, it provides additional and important insights showing that people's measuring, imagining and making of the future follow a different track when seen from the perspective of the transactional environment. It showed that despite having insufficient knowledge of

the contextual global environment due to scanning on the Litany Level of Knowing, people tend to have an optimistic-hopeful disposition towards their personal future and is positively inclined towards making an active contribution on the local level to create a better world.

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List of acronyms and abbreviations

CES	Constructive Environmental Scanning
CID	Collective Interior Dimension
CLA	Causal Layered Analysisc
DCDC	Development, Concepts and Doctrine Centre (UK)
DIKUW	Data, Information, Knowledge, Understading, Wisdom
DIKW	Data, Information, Knowledge, Wisdom
ES	Environmental Scanning
ESP	Environmental Scanning Professional
IED	Individual Exterior Dimension
IDC	International Data Corporation
IID	Individual Interior Dimension
ISIC	Informtion Seeking in Context
KID	Knowledge, Information, Data
LOK	Levels of Knowing
mei	matter, energy and information
MILES	Matrix Integral Layered Environmental Scanning
MOE	margin of error
Non-ESP	Non-Environmental Scanning Professional
Q-P	QuestionPro
S^3	Speed, scope and significance
SED	Social Exterior Dimension
SIRC	Social Issues Research Centre
STEEP	Social, Technology, Environment, Economic, Political
T-FT	Telefonica-Financial Times
USB	University of Stellenbosch Business School
USB DESC	USB Departmental Ethics Steering Committee

CHAPTER 1
INTRODUCTION

1.1 BACKGROUND TO THE RESEARCH

The 20th century was characterised by an information explosion due to advances in mass communication where the mass media both overwhelmed us with information, and helped us to sort it out (Sylwester, 2001). This is even more apparent in the 21st century. We now know more than any human being before us; information is everywhere and anywhere. The bits and bytes of the Digital Universe are estimated to have reached 4.4 trillion gigabytes in 2013 and will expand to 44 trillion gigabytes in 2020 (EMC, 2014). Even though the developing world, especially in Africa lags behind, Africans are more informed than their ancestors a few decades ago. The Millennium Projects' 2015-16 State of the Future Executive Summary states categorically that "Much of the world's knowledge … is available to the majority of humanity today (Glenn *et al*., 2015: 1).

The world of the 21st century is also different from the world of the pre-21st century mainly because of "glocalisation" and the challenges arising from it. Glocalisation is derived from the term "*glocal* (a contraction of *global* and *local*)" - a term used by social scientists of transnationalism and globalisation to refer to the concurrent localization and globalisation occurring across popular culture, business, government and more generally people's identities (Khor & Marsh. 2006: 4). The main challenge arising from "glocalisation" is sustainability. Environmental scanning of available literature about the future from the vantage point of the early 21st century carries the central message of the sustainability of humanity's actions on all levels. The sustainability message carries within it a negative notion and this negative notion forms the setting for dystopian futures paradigms in the early 21st century.

The end-result is that we are more advanced on all levels of human existence than any human in history. Rightly or wrongly, we may also be more fearful than any human in history. In a survey done by Gallup International Voice of the People in 2007 covering 61 600 people in 60 countries representing the views of almost 1.5 billion global citizens, 48% of all respondents were fearful about the global future and believed that the next generation would live in a less safe world. Only 25% of the respondents were optimistic about a better future (Gallup International, 2008). The balance of 27% of the respondents was between these two end points of the continuum about the global future.

In 2005, the Social Issues Research Centre (SIRC) examined the first decade of the 21st century, (2005: 11), stating that this particular decade could be characterised by a culture of fear which had been generated by, among others, the saturated media coverage of disastrous events as well as the gloomy predictions of think tank and forecasting agencies. Michael Chabon (2006), a 2001

Pulitzer Prize winner, said that his eight-year-old son had no hope for the future as the child believed that the world was going to end because of an array of negative “realities” facing earth today. Even the theoretical physicist Stephen Hawking did not seem to have much hope for the global future when he stated in a BBC interview (BBC, 2001) that the human race needed to spread into space because there were too many accidents that could befall life on a single planet. Foresight International (2011) stated on its website: “Humanity has reached a dangerous stage in its development. Some feel powerless and depressed when faced with the evidence of widespread suffering and dysfunction.”

The United Kingdom’s Ministry of Defence stated in its *Global Strategic Trends: Out to 2040* (DCDC, 2010) that there were few convincing reasons to suggest that the world would become more peaceful in the run-up to 2040. It highlighted pressure on resources, climate change, population increases and the changing distribution of power as the main trends that would result in increased instability and the likelihood of armed conflict. Significantly, it acknowledged that people were and would be the most important driver for change, underpinning societal, geopolitical and security developments. People, as the most important driver for change with regard to the global future, hold the key to changing dystopian paradigms and adopting more positive paradigms, which is necessary for creating sustainable alternative futures.

Roux (2007) posited that dystopian views of the future stand in the way of achieving a preferable global future. Roux linked a dystopian view of the future with a fear of the future and said that the underlying mind-set can be equated with a fear of change with regard to the future. He explains that people has a desire to know more about the future but simultaneously are fearful of what they may discover. This situation leads to what he called a fatalistic orientation and pathological morbidity about what the future may hold for humanity. Cornish (2004: 204) supported Roux’s notion of a fatalistic orientation and pathological morbidity by referring to the dark appeal of fatalism about the global future. In the futures context, Cornish showed that this form of fatalism represents thinking that is the equivalent of we can know nothing and do nothing about our future. Such fatalism about the global future is an extreme manifestation of dystopian thinking.

The problem is not that people are fearful because they know too much but because they usurp too much of the negative information to the extent that it becomes present and future reality. Harman (1998:27) stated that it is well established from research in hypnosis and other areas of experimental psychology that once a person has an internalised picture of reality, further experience tends to confirm that picture. The problem with this internalised picture of reality is that 21st century humans have developed dystopian futures paradigms. According to May (1996: 70) the underlying reason is that “…we all indulge in passive scanning, reading newspapers, magazines and periodicals relevant to our interest and watching television, without really thinking about it”.

The use of environmental scanning has increased in an effort to cope with the information explosion and the associated global change noticeable on all levels of society (Bell, 2007). The role of environmental scanning is an important element in people's images of the global future. Environmental scanning in the futures field of inquiry is closely linked to good judgement and foresight about the future. Roux (2007: 1) posited that good judgement and foresight, among others, come from appropriate experience gained by environmental scanning. It could, therefore, be argued that the more comprehensive and complete our environmental scanning become, the more reliable our judgement and foresight will be.

This raises a vital question: Do we have sufficient knowledge of our environment of interest to enable us to have good judgement and foresight about the future and to implement the required action steps to create the best possible global future? This question is important in the context of this study because limitations in the environmental scanning methodology will inevitably lead to poor judgment and foresight of what to expect from the future. Incomplete information and knowledge is a primary concern of this study; the more complete the information and knowledge base the more equipped people will be to focus on the right problem areas and to institute action steps to solve the challenges humanity faces about the future. Taking action to create the best possible future is essential and can make a difference on all levels of society. In this regard, Bell (2005) states that the future is not wholly predetermined but is to be created. Within this context the Millennium Projects' 2015-16 State of the Future (Glenn *et al*., 2015: 1) asserts the following:

> *The future can be much better than most pessimists understand, but it could also be far worse than most optimists are willing to explore. We need serious, coherent, and integrated understandings of mega-problems and opportunities to identify and implement strategies on the scale necessary to address global challenges.*

1.2 RESEARCH OBJECTIVE AND QUESTION

The research objective is to posit that people who scan for information on the Litany Level of Knowing of the Causal Layered Analysis theory (Inayatullah, 2009:8) do not have good judgement and foresight about the global future and are, therefore, ill-equipped to influence world thought leaders to adopt global measures that will be necessary to develop sustainable alternative global futures. Furthermore, the lack of good judgement and foresight on the Litany Level of Knowing is attributable to people's scanning of the environment and information sources, which creates mental constructs of pessimism and hopelessness about the global future. The linkage between environmental scanning on the Litany Level of Knowing and good judgement and foresight is to be explored to show that people who scan on the Litany Level of Knowing are disadvantaged in terms of their information and knowledge base and, therefore, do not have a good comprehension of the global future reality.

The study also posits that the creation of sustainable alternative global futures which will benefit the world populace is possible through a more balanced approach in the environmental scanning methodology. This balanced approach is achievable through deliberate Constructive Environmental Scanning (CES). Constructive Environmental Scanning is an attempt to develop a more holistic image of future reality as opposed to the current distortions underlying the accessibility and flow of information in the 21st century. In this regard, it is argued that environmental scanning on the Litany Level of Knowing negatively affect people's future consciousness; it impacts people's perceptions, paradigm creation and goals about the global future to the extent that people become paralysed about the possible action steps that will be required to create sustainable alternative global futures.

One research question, with two parts, is explored to obtain insight and understanding with regard to the research objective.

- Firstly, to primarily investigate whether people who scan on the Litany Level of Knowing have sufficient knowledge to develop good judgement and foresight of the global future to facilitate the development of the necessary paradigms required to imagine and pursue more sustainable alternative futures;
- Secondly, to determine whether there is a qualitative difference between environmental scanning professionals (ESP) and non-environmental scanning professionals (Non-ESP) with regard to the primary research question.

1.3 SIGNIFICANCE OF THE STUDY

The significance of the study is both theoretical and practical. Constructive environmental scanning is posited as an extension of the current environmental scanning methodology; it is an attempt to broaden the scope of environmental scanning in order to be more than just a business and/-or competitive intelligence tool; it is posited as a tool for global change on all levels possible.

From a theoretical perspective, constructive environmental scanning is a critical thinking approach based on a proposed new Matrix Integral Layered Environmental Scanning (MILES) method. The literature on environmental scanning, especially from a critical thinking perspective, argues in favour of more depth in the environmental scanning methodology so as to transcend the so-called flatland encountered by scanning practitioners. Although various propositions are given on how to achieve more depth in the environmental scanning process – for example, by considering the possibilities presented by, among others, hermeneutics, semiotics and, multiculturalism - these propositions appear to be solutions that mostly lie outside the Futures Studies discipline of inquiry.

A new MILES method, on which CES is based to achieve enhanced depth in environmental scanning, attempts to combine Biomatrix systems thinking, Integral Futures, and Causal Layered Analysis (CLA) into a single model. This multi-level approach has practical significance as it might

assist all environmental scanners to develop a more holistic and in-depth view of events and developments of both their transactional and the wider contextual environments. It is posited in this study that all environmental scanning, whether done casually by ordinary people reading a newspaper or professionally by task-specific environmental scanners, starts with the basic viewing of events and developments out there in the environment. It is at this basic viewing level where mental constructs about the global future are created.

Constructive environmental scanning, done deliberately, could be a useful method for perceiving the global environment, including, the way we think about it, value it and most importantly act in it. It could lead to the development of various choices, ideals and visions about the future. Good judgement and foresight in the context of sustainable alternative global futures could be derived from constructive environmental scanning as the scanning proficiency becomes enhanced by an awareness and consciousness of the information fallacies prevalent in the mainstream information sources of the 21st century.

The title of this dissertation, *"Constructive environmental scanning: A method in creating positive world paradigms for more sustainable alternative futures"*, has the following contextual meaning:

- Constructive environmental scanning is based on the MILES method to deepen the scanning process in order to achieve holism. "Constructive" and "positive" refer to Newberg's approach (2010) where some of our beliefs could be defined as "constructive" when they assist us in developing positive feelings of optimism and hope while "destructive" beliefs relate to feelings of stress, fear and pessimism.
- "Paradigms" is one element of various other mental constructs in the mind; the others include perceptions, world views, mind-sets and, mental models.
- "Sustainable" is used in general terms where sustainability could be defined as an ability of an entity to maintain itself, i.e. to take from the environment what is needed to live without putting others at risk in meeting their future needs. A sustainable activity should be able to continue indefinitely (LandLearn, 2014).
- "Alternative futures" is the higher order consciousness of humans that enables them to speculate and have foresight, and to model and choose between alternatives. Hence, "alternative futures" refers to thinking about many possible futures and not only of one possible future outcome (Slaughter, 2005b).

The title of the dissertation posits that an enhanced environmental scanning methodology will be useful to develop positive (constructive) feelings of optimism and hope in pursuance of various futures (alternatives) and to do it in such a way that humanity could maintain and sustain itself while also creating conditions for future generations to prosper indefinitely.

1.4 DELINEATIONS AND LIMITIATIONS

The dissertation's title might create the impression that various issues would be addressed comprehensively. However, the USB's Admissions Panel for PhD candidates warned against a too wide scope and requested that the study remains focused on the main theme. In this regard, the main emphasis of the study is limited to environmental scanning. Hence, Chapter 2 Contextual Framework comprehensively dealt with the literature exclusively pertaining to environmental scanning. Similarly, the interviews and surveys (Chapters 5 and 6) as well as Chapter 7 (Discussion: Measuring, imagining, and making the future) were done within the context of environmental scanning.

Various limitations inherent to the study should be noted, especially as it related to situational contingencies. Limited resources made it impractical to conduct the research on a global scale. Hence, the secondary Telefónica-Financial Times survey was used as a best-fit compromise to cover a global perspective. The primary QuestionPro survey was limited in scope due to cost considerations. Although it had a global reach, not all regions of the world were covered fully, while cost also limited to number of questions of the questionnaire.

The primary interviews were subject to the conditions set by the company who employed the environmental scanning professionals (ESPs). In this regard, a limited number of ESPs were made available for the interviews. This influenced both the pilot and main study with regard to saturation as it relates to small sample sizes. Also, the relative small sample size of the ESPs were replicated with the non-environmental scanning professionals (Non-ESPs) to avoid skewing the outcome of the interviews in favour of the Non-ESPs. All the interviewees were South Africans, which could limit claims of generalisation to the broader global community. However, Chapter 3: Research Design and Methodology, presented arguments to moderate the limitations of the study.

1.5 CHAPTER OVERVIEW

The dissertation consists of eight chapters, as illustrated in Figure 1.1 below.

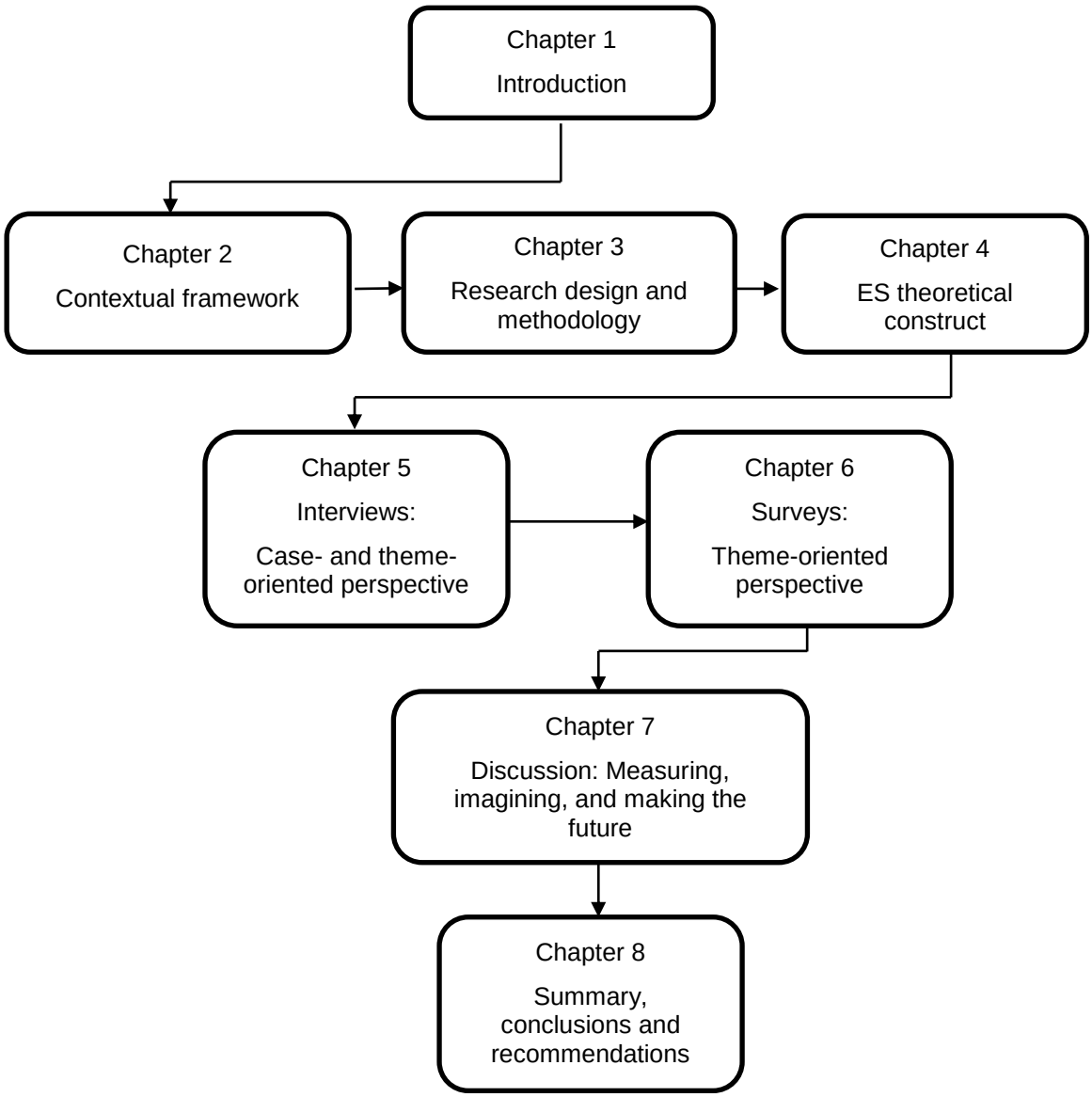

Figure 1.1: Dissertation framework

Source: Own compilation.

Chapter 2 presents the contextual framework of environmental scanning based on the literature. The nature of environmental scanning within the context of its definitions and purpose is explored. A determination is made of the various modes of scanning, the challenges associated with these modes and ways to overcome the challenges. Information in its broader context is the focus of scanning. Therefore, this research explores the characteristics of information to gain an understanding of how these characteristics may influence the scanners' ability to obtain good judgement and foresight of the future. Finally, the scope and impact of environmental scanning are

established to determine the extent of the scanners' depth in the inquiry to achieve holism with the scanning methodology.

Chapter 3 presents the research design and methodology. The research approach is explained in terms of the Futures Studies discipline of inquiry with specific reference to its interrelated core elements, viz. measuring, imagining and making the futures to achieve futures thinking holism. The philosophical approach is pragmatism in its wider application as it is well-suited for the study's focus on images of the future. Also, pragmatism bridges the divide between the qualitative and quantitative paradigms in support of the qualitative dominant multi-strand concurrent mixed-method research design of the study. This design allows for the development of meta-inferences from the inferences of the qualitative and quantitative phases in an attempt to utilise the complementary strengths of each phase while avoiding their possible overlapping weaknesses. The qualitative phase uses interviews as a research instrument while the quantitative phase uses both primary and secondary survey data. A thematic qualitative text analysis process is used to analyse and develop findings from the interviews and surveys.

Chapter 4 provides the theoretical construct of an enhanced approach to environmental scanning. Each of the three methods used to develop the MILES approach is explained. The Biomatrix systems thinking method provides depth in the inquiry regarding the process dynamics of the inner and outer activity systems in relation to environmental scanning. The Integral Futures method provides depth in the inquiry regarding the interior and exterior reality dimensions encountered by the environmental scanning system. The Causal Layered Analysis method provides depth in the inquiry regarding the different levels of knowing to be accessed by environmental scanning. Finally, the integration of the three methods is presented as the theoretical construct for constructive environmental scanning.

Chapter 5 provides the case and theme-oriented perspective of the qualitative phase of the multi-strand concurrent mixed-method research design. The interview case-oriented perspective consists of an interview summary of the main themes, analysis and findings in accordance with the MILES method for the main themes, and sub-conclusions of the main themes as these relate to the research question. The case-oriented analysis is concluded with a comparative analysis of the possible qualitative differences between the ESPs and Non-ESPs as these relate to the research question. A theme-oriented analysis based on the predetermined themes is done for the interview inquiry. The purpose is to do a comparative analysis with a theme-oriented analysis of the quantitative phase in order to develop the meta-inferences of the study.

Chapter 6 provides the theme-oriented perspective of the quantitative phase of the multi-strand concurrent mixed-method research design. The survey theme-oriented perspective consists of the qualitising narratives for the primary and secondary surveys, the analysis and findings in accordance with the MILES method for the main themes, and a summary of findings.

Chapter 7 discusses the analysis and findings of the interview and survey inquiries within the context of measuring, imagining and making the future as these relate to the contextual framework and the MILES approach. Each inquiry is discussed separately in terms of the holistic futures thinking process as it relates to the contextual framework and the MILES approach. This chapter is concluded with the meta-inferences.

Chapter 8 concludes the study with a summary of findings, conclusions related to the research question, a discussion of the contribution of the research, study limitations, and recommendations for future research.

CHAPTER 2
CONTEXTUAL FRAMEWORK

2.1 INTRODUCTION

This chapter provides the contextual framework of environmental scanning based on the literature. The nature of environmental scanning as presented by the literature is explored. In this regard, its definitions and purpose are highlighted to determine whether environmental scanning is domain specific or whether it encompasses information seeking in a broader catch-all context with a view to determine an appropriate holistic definition. How environmental scanning is done through various modes of scanning is emphasised with a view of determining its efficacy, especially as it relates to the development of knowledge and foresight of the future. A determination is also made of the possible challenges emanating from environmental scanning as a method while exploring ways of overcoming such challenges through an integral approach to deepen the methodology.

The contextual framework also explores the focus of environmental scanning, i.e. what is actually being scanned. This is important as the literature tends to cluster the "what" under the umbrella term of "information" but then fails to provide an acceptable definition of the concept of information. The concepts data, information, knowledge and wisdom are utilised in the literature to clarify the issue but in a manner that makes environmental scanning within the context of these concepts more opaque. The nature of data, information, knowledge and wisdom will be presented while an inter-related cyclical process in terms of systems thinking will be posited to refine the focus of environmental scanning.

The characteristics of information are examined to determine possible limitations that might affect the environmental scanning of the contextual environment. These limitations could have a direct impact on the scanner's ability to develop good judgement and foresight of the future.

The scope and impact of information concludes the contextual framework. The inter-relatedness of the exterior and interior dimensions of reality is presented. The literature suggests that information is not only available out there in the external environment but that the interior dimensions are impacted by information from the external environment. Mental constructs are important components of the interior dimensions of reality and, therefore, widens the scope of information. The impact of information as it relates to the interior dimensions of reality could have a limiting effect on achieving depth and holism in environmental scanning.

2.2 ENVIRONMENTAL SCANNING AS CONCEPT

The literature (Bates, 2010; Case, 2007; Godbold, 2006; Wilson, 2000) suggests that the concept *"Information Behaviour"* represents the various broad ways that people obtain information from their environment. In this regard, Case (2007: 5) defined Information Behaviour as

"…encompassing information seeking as well as the totality of other unintentional or passive behaviours (such as glimpsing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively avoiding information."

The study of Information Behaviour has followed an evolutionary path from a restricted discipline in Library Studies to an all-encompassing multi-disciplinary field (Table 2.1).

Table 2.1: History of the study of information seeking behaviour

TIMEFRAME	FOCUS AREA
1920s – 1930s	Studies on library use but focused more on the social class of library clientele than the information needs of people.
1940s – 1950s	Studies on the use of various forms of literature and of various types of institutions and their services. How many: • Books were circulated? • Reference questions were asked? • People of what economic strata used the library?
1960s and beyond	Research on the many sources of information. Main findings: • Preference of people to get information from other people ("principle of least effort" in information seeking, established). Ease of access rather than quality of information matters. • Unself-consciousness of information seeking. People are not seeking information but are trying to solve problems in their lives.
1970s and beyond	Studies on Information Needs and Behaviour commence. The analysis of information seeking in all the academic disciplines.
1980s – 1990's	Shift from system-centred approach to people-centred approach. Deepening the understanding of various aspects of information behaviour in less understood areas, i.e. information seeking in unconventional groups and domains (e.g. prisons, retirement homes and abused women).
1990s – 2000s	Researchers expanded studies on information behaviour by incorporating the whole environment. Social context and situation recognised as essential to the understanding of information seeking. Information Seeking in Context (ISIC) community established – holding biennial conferences.

Source: Adopted from Bates, 2010 and Wilson, 2000.

The literature indicates that Information Behaviour has various sub-branches which are the result of its evolutionary development. Wilson (2000: 49-50) identified three sub-branches, viz. information seeking behaviour, information searching behaviour and information use behaviour. Case (2007: 5, 333) emphasised information seeking as the most important sub-branch said that it has become a catch-all phrase for many researchers and practitioners in a variety of domains and is, therefore, an umbrella concept. Wilson's information seeking behaviour and Case's information seeking are identical as both define the concepts as purposive and conscious efforts to obtain and satisfy a need for information (Case, 2007: 5; Wilson, 2000: 49). Case (2007: 272-274) in addition presented a sub-branch of information seeking, viz. environmental scanning, which he arguably claimed to be domain specific to the business environment, albeit an integral part of information behaviour and seeking. Bates (2010) argued that information seeking remains a complex field of

study and that much still needs to be studied to obtain a better understanding of information seeking and behaviour. Choo (2001) concurred that our theoretical understanding of environmental scanning as it relates to organisations remains limited.

This study focuses primarily on environmental scanning but not in the restricted way that Case presented. The concepts of information behaviour, information seeking and environmental scanning are much more closely related than presented by Case. Although environmental scanning as a concept initially showed a business bias, its evolutionary path brought it much closer to the broader concept of Information Behaviour.

2.3 NATURE OF ENVIRONMENTAL SCANNING

2.3.1 Definition and general purpose

Environmental scanning is a core Futures Studies concept and methodology (Garret, 1993; Gordon et al, 2009; Lang, 1994; Mendonça, e Cunha, Kaivo-Oja & Ruff, 2004; Roney, 2010; Slaughter, 2012). It could be argued (Masini, 1993: 103) that the earlier work of Bertrand de Jouvenel in the 1950s regarding Futures Studies did contain elements of environmental scanning. Masini pointed out that De Jouvenel's references to *facta* spoke of all issues that influence a specific area inclusive of the context and the environment. However, De Jouvenel's work was very broad with regard to environmental scanning (he did not use the term *environmental scanning*) and probably only planted the seed for the works that followed. In his 1967 work "The art of conjecture", he only once referred to scanning, and then in the context of scanning the future for what he termed "casuels" or uncertainties (De Jouvenel, 1967: 35).

Gordon *et al*. (2009: 1) and Bell (2007) viewed environmental scanning as a basic human trait present in historical social organisations with the purpose of identifying opportunities and threats, and a necessity for the intelligent guidance of individual and collective affairs. The futures perspective of environmental scanning was made more explicit by Roux (2007: 1) when he stated that environmental scanning entails the gathering of information from the environment to develop a better understanding of those factors and forces that may have a bearing on the way the future takes shape.

The concept *environment* is generally seen in broad terms, i.e. as all-inclusive. However, Van der Heijden (2005: 60, 115) distinguished between the transactional and contextual environment (Figure 2.1); the former is the domain over which a person or organisation has substantial control, whereas the latter represents the external domain over which there is weak or no control. The literature mainly views the contextual environment as the focus of environmental scanning as developments in that domain determines success or failure for a business or organisation. This makes the focus of environmental scanning more explicit. This study does not necessarily follow this approach strictly as will become clearer later. However, scanning of the external environment is synonymous with the contextual environment.

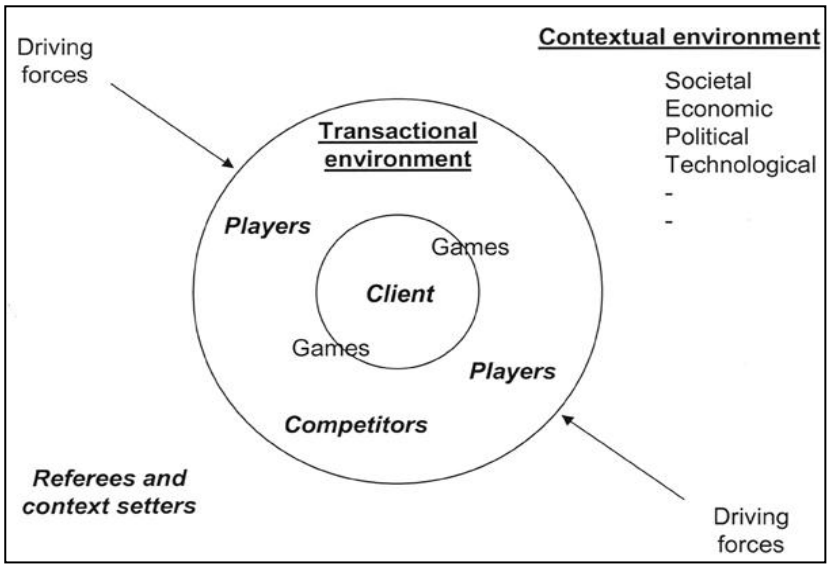

Figure 2.1: Van der Heijden's two business environments

Source: Van der Heijden, 2005: 186.

Various definitions are given of environmental scanning in the literature, which does not necessarily support Case's domain-specific approach. The major works on environmental scanning are those of Francis Aguilar (1967) and John Stoffels (1994). Aguilar's seminal work on *Scanning the Business Environment* (1967) appears to be domain-specific in addressing environmental scanning. Aguilar (1967: 1) initially gave a very wide, albeit useful, simplistic definition of environmental scanning by stating that scanning is an activity of acquiring information. His work has a narrow focus by specifically highlighting strategic information collection that will be essential for the management of a business organisation to take action (Aguilar, 1967: 2).

Aguilar's more elaborate explanation of environmental scanning for strategic information, gives pointers to the purpose of scanning: obtaining information about "events", and "relationships" in the contextual environment that will lead to "knowledge" creation to help users to determine a "future course of action". These pointers are applicable to scanning in general, as it can be argued that "everyone" engaged in scanning the environment are doing it with the purpose of obtaining information about events and will, consciously or sub-consciously, make relational connections that will enhance their knowledge base and eventually prompt them to act.

Stoffels' approach to environmental scanning (1994: 1) also concerns the business environment, especially as it relates to strategic issues management. Strategic issues management is a system to identify and respond early to significant trends and events internal and or external to an organisation (Ansoff, 1980: 134). Stoffels gave a more elaborate definition of environmental scanning than Aguilar, viz. "a methodology for coping with external competitive, social, economic and technical issues that may be difficult to observe or diagnose but that cannot be ignored and will not go away". In short, Stoffels regarded environmental scanning as a tool that accentuates events and circumstances in the contextual environment over which an entity has limited control.

Stoffels (1994: 2) saw value in environmental scanning in the sense that it could enhance the predictability of a possible future event by reducing the remoteness of such an event. In this regard, the possible future is contextualised within the dynamism of the present.

One of the more significant contributions that Stoffels make to environmental scanning as a methodology, is to contextualise its setting within the futures field of study. In this regard, he highlighted the qualitative nature of environmental scanning by pointing out that environmental scanning's success should not be judged in terms of how accurately it predicts a specific event but rather whether environmental scanning helps management to become better sensitised and prepared for the uncertain future (Stoffels, 1994: 17). The emphasis is, therefore, more on the interpretation and analysis of the information obtained through environmental scanning to create knowledge about the future and not on the quantitative collection of a full set of data and information about events. Stoffels pointed out that excessive and intensive scanning could lead to a preoccupation with a specific situation and an information overload that will increase uncertainty and complexity, and decrease understanding of the contextual environment. Stoffels succeeded in putting environmental scanning firmly on a higher level of knowledge creation rather than a lower level of information creation.

Reducing uncertainty in the contextual environment is a key feature of environmental scanning in Stoffels' approach. Stoffels (1994: 21) emphasised the so-called perceived uncertainty, which derives from the dynamism and complexity of the contextual environment. Perceived uncertainty is the product of a process that starts off with the collection of information, the analyses of the collected information and its synthesising as the knowledge base of the organisation. Although Stoffels does not go into detail regarding the analysis of the collected information, he does refer to so-called perception filters that impact the analysis. The perception filters are important as they could diminish or enhance the level of perceived uncertainty of the environment depending on the insight, thought processes and biases of the analysts.

Stoffels (1994: 21) identified two elements that create uncertainty in the environment, namely the extent and frequency of change, which he called "turbulence", and the visibility of change, which he called "signal strength". Greater turbulence implies greater uncertainty with reduced foreknowledge and the increased pace of change. This demands greater environmental scanning vigilance about developments in the contextual environment and their possible impact. Stoffels (1994:24) related the strength of signals to the proficiency of the scanning methodology to pick up meaningful new signals that will broaden the knowledge base about the future. Weak signals in relation to greater turbulence lead to greater uncertainty. Weak signals are low visibility indicators, mostly not reported in the mainstream sources of information, of possible events that may lead to changes in the environment; it is not the same as emerging issues but only the signals of events indicative of emerging issues (Hiltunen, 2010: 104).

Stoffels does not address the function of environmental scanning outside of the business context. However, various references in his work to the purpose, influence and function of environmental scanning in identifying emerging situations, hazards and opportunities (Stoffels, 1994:1) could also be applied to environmental scanning on the Litany Level of Knowing, even from an undirected viewing perspective. In this regard, Stoffels (1994: 3) sees environmental scanning as beneficial to survival and success in the world, as a tool for learning, for increasing responsiveness, for enhancing adaptability and for behavioural changes necessary to cope with the reality of the contextual environment. Stoffels (1994: 6, 7) does, however, believe that for environmental scanning to be useful it needs to be done intelligently and effectively. Constructive environmental scanning as it is posited in this study, seeks to move environmental scanning on the Litany Level of Knowing to a higher level that entails a more intelligent and effective approach.

Masini's cursory look at environmental scanning (1993: 83) places the latter together with strategic and issues management in the category of systemic methods because all are analysing systems as components of interrelated parts. Masini also viewed environmental scanning as a conceptual approach due to its lack of rigidity as a technique and the subjective elements it contains. Masini (1993: 82), like Stoffels, saw the function of environmental scanning as a tool for managers to reduce uncertainty about the contextual environment. May (1996: 170) regarded environmental scanning as an important but imperfect technique to continuously monitor change in the contextual environment – the imperfection stems from problems such as an information overload and biases in approach and interpretation.

Morrison (1996: 814) identified environmental scanning as a futures research tool that provides strategic intelligence in choosing strategic options. Morrison (1992) contextualised the concept by giving the following useful objectives of environmental scanning:

- Detecting scientific, technical, economic, social, and political trends and events important to the user (events and trends driven).
- Defining the potential threats, opportunities, or changes for the user implied by those trends and events (opportunities and threats driven).
- Promoting a future orientation in the thinking of the user (future consciousness driven).
- Alerting the user to trends that are converging, diverging, speeding up, slowing down, or interacting (driven by sense making in time and space).

2.3.2 Modes of scanning

Aguilar (1967, 19) identified four modes of scanning which have been adapted by some scholars (Masini, 1993: 103; May, 1996: 170; Morrison, 1996: 815) to reflect essentially passive or active forms of scanning. The four modes of scanning are: (a) undirected viewing; (b) conditioned viewing; (c) informal search; and (d) formal search.

Aguilar regarded undirected viewing as the basic mode of scanning which is neither focused nor directed at any specific element of information gathering. This mode of environmental scanning is closely linked to his simple definition of scanning, viz. a general acquiring of information. Information in this mode is of a general nature and implies that the scanner basically explores the vast amount of information available out there in the world. Aguilar did not specifically deal with the problems that might arise for the scanner in having an undirected viewing of the information, apart from having to confront a vast amount of information and being unfocused in approaching the available information. The lack of problematising this mode of environmental scanning is understandable given the era during which Aguilar conceptualised his four modes of scanning, namely the 1960s. The information explosion only truly arrived and escalated from the middle 1990s onwards with the advent of the digital universe and the arrival of the internet as the prime mover (IDC: 2007, 7).

Aguilar (1967: 20) was also of the opinion that this mode of scanning leads to a situation where the scanner discards the information relatively easily and quickly. This view does not take into account the possibility that such undirected viewing of information could still impact the scanner's consciousness and that it might form the basis on which perceptions, paradigms and assumptions could be constructed and on which the scanner might base a strategic approach to the contextual environment.

Aguilar's second mode of scanning, termed "conditioned viewing", shows a sensitivity for certain forms of information. The scanner pays more attention to information in this mode because of the possibility that the information could have some significance for the scanner. This mode is still passive in its approach and does not alert the scanner to any possible imminent problem. As with undirected viewing, Aguilar did not foresee or discuss the possibility that this mode could have an impact on the scanner's consciousness. This is an omission because the possibility exists that there could be some impact on the scanners consciousness due to the sensitivity of the scanner to some information that drew attention.

The last two modes of Aguilar's scanning involve active searching for particular information in either an informal or a formal manner. Informal searching consists of actively seeking specific information but doing it in a relatively unstructured way. Formal searching is a proactive mode of scanning that entails formal methodologies to obtain information for specific purposes. For Aguilar, the last two modes had more significance than the first two that are concerned only with the general viewing of information. He made the point that the differences between viewing and searching were comprehensive enough to see them as two distinct methodologies (Aguilar, 1967: 22). The formal modes do warrant more significance in Aguilar's approach as his study mainly focuses on the business environment. It could, therefore, be argued that business environmental scanning would benefit more from the active searching methodologies than the passive viewing methodologies.

In contrast to Aguilar, Stoffels (1994:2) did not identify specific modes of scanning but only provides two forms of scanning: (a) observation as the lowest level and (b) synthesis as the highest level of environmental scanning. Both these forms of scanning were seen as useful for the business context. Observation is a form of scanning which aims to inform the executive about the general contextual environment. Therefore, observation could be closely associated with Aguilar's conditioned viewing mode where more attention is paid to the information. Synthesis is the integration of relevant information into a business model with the aim of formulating a business strategy. In this regard, synthesis seems to go beyond Aguilar's highest mode of scanning, viz. formal searching, as it specifically becomes actionable by being incorporated in the formulation of business strategy.

Stoffels also posited that scanning should be done continuously to enable the scanner to identify useful signals and to determine the pace of change. This implies that scanning done in terms of Aguilar's two viewing modes (undirected and conditioned viewing) will produce incomplete signals and will also fail to gauge the rate of change in the contextual environment resulting in greater uncertainty and poor analyses. Stoffels (1994: 71), however, did acknowledge that continuous scanning could lead to information overload that could dull the senses of the scanner. Nevertheless, he believed that the benefits outweigh the negative aspects within a business context.

Choo (1999: 22) suggested that Aguilar's two viewing modes could be seen as "looking at information" while the two searching modes could be seen as "looking for information". These conceptualisations are useful in determining the possible approach of scanners. It is assumed early on in this study that scanning on the Litany Level of Knowing could be more aligned with looking at information rather than scanning for information in constructing a perspective of the global future.

Choo (2001) later modified Aguilar's modes slightly within the context of the business environment, viz. undirected viewing, conditioned viewing, enacting and searching, where the enacting mode is an active intrusion of the environment to influence events and outcomes. Choo (1999: 23) considered all the scanning modes useful as their application becomes more focused when the scanner progressively moves from the viewing to the searching modes. Undirected viewing in this context aims at detecting signs of early change in the environment. Seen in this way, undirected viewing for Choo (1999: 22, 24) was still an effective method of scanning and not to be discarded because it provides vital peripheral vision and long-range perspectives. Conditioned viewing is a cost-effective way of tracking trends and focuses on specific issues to determine their importance and impact on the organisation. Once the information becomes important the application changes to the informal and formal searching modes to deepen knowledge and understanding with the ultimate aim of making a decision on the future of the organisation. Choo, therefore, widened the scope of environmental scanning to emphasise both passive and active forms of scanning. This

agrees to some extent with the approaches of Morrison, Masini and May. Morrison (1996: 814-815) and Masini (1993: 103) referred to two modes of scanning, viz. passive and active scanning, while May (1996: 170) added a third mode of directed scanning as a more organised and selective approach aimed at a specific area of interest.

Passive scanning is seen as a casual process and a common activity of people reading newspapers, and it is not useful in detecting important signals in the contextual environment (May, 1996: 170; Morrison, 1996: 815). This is not necessarily the case as passive scanning done by professionals could show information on the periphery of the contextual environment that might need further attention in the more formal modes of enquiry.

Morrison (1996: 815) saw active scanning as an early warning mechanism to detect change in the contextual environment. He identified three types of active scanning, namely (a) irregular scanning, (b) periodic scanning, and (c) continuous scanning. Irregular scanning is an *ad hoc* approach required due to a specific crisis that arose, while periodic scanning is used to update a previous position. Morrison preferred continuous scanning because it is a continuous comprehensive process directed at a broad base of developments in the contextual environment.

2.3.3 Knowledge and foresight development

Although the general literature is clear on the definition, overall purpose and ways of environmental scanning, some authors go beyond the general approach by emphasising the deeper value of environmental scanning in knowledge and foresight development. Gordon *et al.*'s (2009: 1) approach envisions environmental scanning as facilitating a so-called emergent property of synergies. These synergies result from the interaction between data/information/knowledge, software and hardware, and mental processes of practitioners with the aim of learning through feedback loops to make more informed decisions. Underlying this process is the need to reduce uncertainty about the future through finding early signals of possible future events in order to obtain enough lead time for action.

Gordon *et al.* (2009) viewed environmental scanning as a system with a hierarchical nature (Figure 2.2). At the top of the hierarchy are plans about the future; these plans are rooted in forecasts about the future; the forecasts in turn are rooted in assumptions about the future; at the bottom is environmental scanning that constantly challenges assumptions about the future by providing new developments or perspectives about future threats and opportunities (Gordon *et al.*, 2009). This is a useful contextualisation of environmental scanning as it has a wide application; for example, individuals who scan on the Litany Level of Knowing constantly engages in undirected and conditioned viewing of their environment in order to form assumptions about what the global future would be (forecasting) and to make plans about the future.

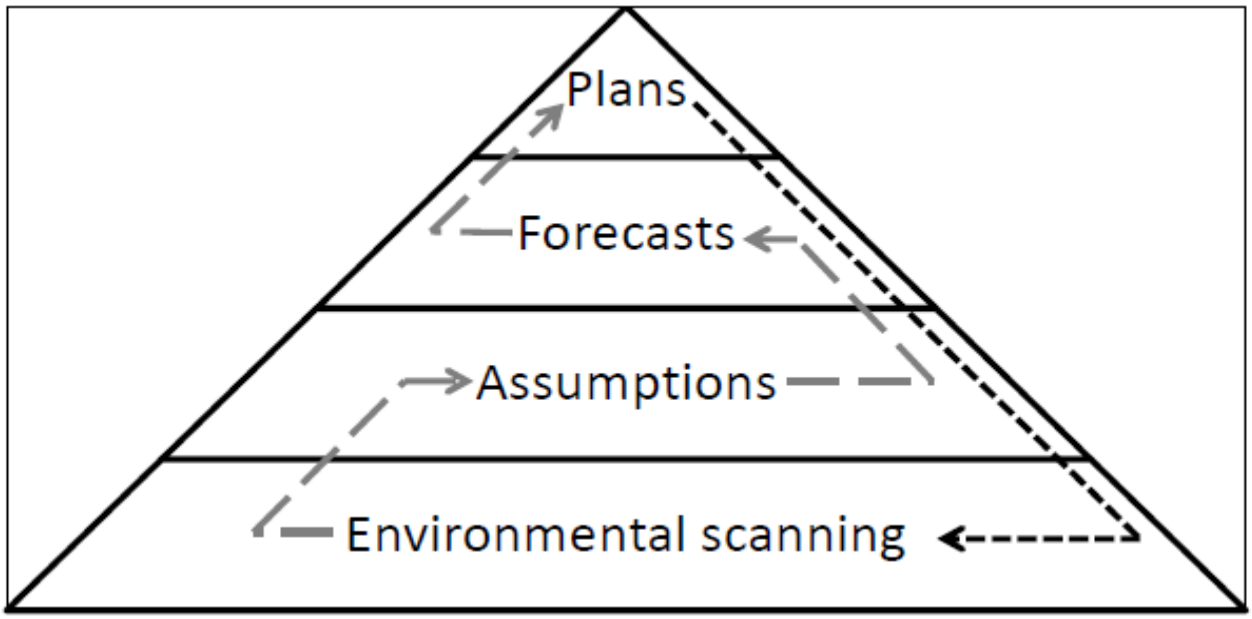

Figure 2.2: Environmental scanning as hierarchical system

Source: Adapted from Gordon *et al.* 2009: 1.

Graham Molitor made a significant contribution regarding early signals of possible future events (emerging issues) to obtain lead-time for action. Molitor (2003: 61; 2010: 3-11) developed a 22-step Molitor model based on 50 years of tracking activities that gave rise to change. He stated that change does not just happen, as there were early indications of the underlying issues and reasons for such change which must be found through a process of data mining (Molitor, 2003; 67). Although Molitor's model had been specifically designed to track and measure public policy changes (1977: 6), it is useful and applicable in forecasting other issues as well (Molitor, 2010: 1). The factors underlying patterns of change fall into three stages, viz. the Framing Issues stage, the Advancing Issues stage, and the Resolving Issues stage (Table 2.2).

Table 2.2: Molitor's 22-step model of change

Framing Issues →	**Advancing Issues →**	**Resolving Issues**
Knowledge of external environment	Cyclic & linear patterns underlying issues	Informal rules guide behaviour
Ideas behind issues	Agents of change responding to or explaining change	Informal settlements of issues (e.g. in closed group environment)
Innovations (technical & social)	Communications creating awareness (all media)	Judicial interventions
Events resulting from innovations	Organisations' response	Self-government responses
Issues resulting from the impact and effects of events	Psychological disposition to issues (e.g. reflected in opinion polls)	Voluntary accommodation to avoid formal sanction
Unusual phenomena	Catalysts pushing for change	Contractual arrangements
		Legislative responses
		Executive regulatory enforcement
		Possible judicial review
		Constitutional revision

Source: Adopted from Molitor, 2010: 3 -11.

Molitor's data mining in terms of his 22-step model is synonymous with the environmental scanning process. Scanning for information in the Framing issues stage requires formal methodologies as such issues are not obvious, e.g. ideas behind issues might be obscure, and linking the abstract ideas that gave rise to technical and social innovations could be even more difficult, especially in the context of unusual phenomena. The Advancing issues stage is also difficult to observe through environmental scanning, especially in identifying the cyclic and linear patterns underlying issues and the change agents involved. It becomes progressively easier as soon as the different forms of media create an awareness of issues in the public realm. Tracking the development of the issue in the Resolving issues stage is easier as the public attention had been drawn to the processes to resolve an issue.

An important contribution that Molitor (2010) and Gordon *et al*. (2009: 2) made is that environmental scanning instils learning in the practitioner. Through this learning process the knowledge base of the practitioner and organisation is enhanced through feedback loops and new requirements, which assist the scanners in avoiding an information overload, i.e. the practitioners become effective focused scanners of the contextual environment. Albright (2004: 40, 45) concurred with the notion of learning and stated that an organisation's survival depends on what it learns from continuous environmental scanning. This learning process enables the organisation to adapt rapidly to a changing contextual environment but also to address weaknesses in the organisation to better withstand those changes.

Choo (1999: 24) also viewed environmental scanning as a methodology that supports organisational learning, but more as an art form and not so much as a science. In this regard, Choo (1999: 23) believed that the art of effective scanning takes time and leads to the development of a knowledge and expert base that will enhance organisational learning. Choo (1999: 21) considered environmental scanning as a tool to understand, know and interpret external forces of change and in this regard environmental scanning becomes the primary method through which the organisation learns. This means that environmental scanning of the contextual environment must be as comprehensive as possible in both its coverage and scope to safeguard the organisation's future.

Zhang, Majid and Foo (2010: 721) made an important contribution to the field of environmental scanning by pointing out that information literacy is a key requirement of environmental scanning despite the mainstream literature on scanning not giving specific attention to this. Zhang et al. (2010: 719) stated that environmental scanning is an information intensive process and, therefore, needs information literacy skills to ensure that scanning is done effectively and efficiently.

Zhang *et al*. (2010: 720) indicate that no agreed definition of the term currently exists. However, in 1989, the American Library Association's Presidential Committee on Information Literacy gave an overview of the skills required from an information literate person (Figure 2.3). These skills were presented as: (1) recognising the need for information; (2) effectively accessing information; (3)

evaluating the information; and (4) creatively utilising the information. It is clear from these literacy skills that a link exists with environmental scanning competencies albeit more in terms of Aguilar's two searching modes of environmental scanning.

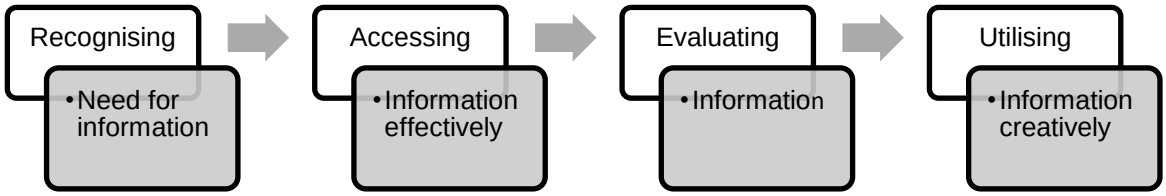

Figure 2.3: Information literacy skills

Source: Adapted from Zhang, Majid and Foo, 2010: 720.

Zhang *et al*. (2010:721) stated that information literacy forms the foundation of information power in a business context although business organisations do not see it that way. This oversight from a business perspective is the result of too much emphasis on the information acquisition part of environmental scanning while the other steps in the process are neglected. The emphasis on information gathering leads to an information overload. Zhang *et al*. (2010: 725) believed that information literacy could mitigate the problem of an information overload as it would empower scanners to work through massive amounts of information more effectively and efficiently.

According to Zhang *et al*. (2010: 726), environmental scanning should be seen as an integrated process that gives equal importance to all the scanning steps of the process. Also, an effective scanning process depends on the information literacy levels of all the scanners, from the lower levels in the organisation up to the highest managerial level (2010: 726). Zhang *et al*. (2010: 722) identified the scanning steps as: (1) scanning need identification; (2) information acquisition; (3) information processing and synthesising; (4) information distribution; and (5) information evaluation and use.

Zhang *et al*. (2010: 727) believe that information literate managers would be more open-minded and objective in their approach to information sources and the variety of perspectives presented by these sources. Openness and objectivity are seen as crucial to overcome the perceived environmental uncertainty prevalent among managers who are not information literate. Information illiterate managers rely too much on their own instincts and experiences, which could lead to making wrong decision and taking the wrong actions. The perceived uncertainty in the environment results from the inability of managers to grasp developments in the contextual environment, especially where the environment is impacted by a high degree of complexity and a high rate of change.

Zhang *et al.*'s perspective implies that the complete environmental scanning process could be negatively affected if information literacy is lacking and that the purpose of environmental scanning in assisting organisations to reduce uncertainty and complexity in the contextual environment could be defeated. Furthermore, their perspective also point to a potential problem of scanning on the Litany Level of Knowing. In this regard, undirected and conditioned viewing as the main scanning modes on the Litany Level of Knowing, do not appear to be conducive for enhancing information literacy.

Learning through environmental scanning is important as it can be related to the creation of perceptions, paradigms and assumptions by all scanners, ranging from undirected viewing to formal searching. The knowledge base of people engaged in undirected viewing could differ from those who are doing formal searching; the issue becomes complicated in the sense that the knowledge base of scanners engaged in formal searching could be contaminated by earlier (or even continuous) undirected viewing processes outside of their task-orientated working environment. These are issues not addressed by the general literature on environmental scanning.

Slaughter (2005b) viewed environmental scanning as a vital foresight tool for organisations and institutions in strategic planning that requires a careful and conscious process of creating a scanning framework and process as well as a way of communicating important data and evaluating how it is being utilised. However, Slaughter (2005b) was of the opinion that environmental scanning is rarely utilised effectively in institutions, "… hence, many phenomena, threats, (and) opportunities, seem to appear abruptly because their precursors (early signals) were ignored or missed".

Roux (2007: 1) supported Slaughter's approach by arguing that environmental scanning is closely linked to good judgement and foresight about the future. He posited that good judgement and foresight, among others, comes from appropriate experience gained by environmental scanning. Therefore, Roux's emphasis is on utilising environmental scanning to learn about the future, specifically to anticipate changes in the environment in order to survive. Anticipation and survival is, therefore, key outcomes of environmental scanning. It could be argued that the more comprehensive and complete environmental scanning becomes, the more reliable judgement and foresight will be. As the scanner moves from undirected viewing to formal searching (i.e. from passive to active scanning), the scanner should theoretically be able to substitute bad judgement and foresight with good judgement and foresight.

2.3.4 Challenge of the unexpected events

Various authors are of the opinion that the current environmental scanning methodologies are ill suited to foresee possible unexpected events in the contextual environment. Mendonça *et al*. (2004: 203) indicated that "unexpected" events have various labels in the literature, such as disruptive events, structural breaks, discontinuities, surprises, bifurcations and, unprecedented

developments. However, they prefer the concept “wild card” events. A wild card is defined as an event with a perceived low probability of actually occurring but with a high impact and severe implications that could lead to a paradigm shift once it materialises. However, Dator (2015) questioned the concept of wild cards, which according to him, presupposed the existence of a so-called normal future to which wild cards would then be deviations. Nevertheless, Mendonça *et al*. (2004: 203) believed that of the four broad components that lead to change in the contextual environment, *viz.* trends, cycles, emerging issues and wild cards, the latter are the most unpredictable and the severest precursor of change.

Mendonça *et al*. (2004: 205) suggested, among others, that environmental scanning of weak signals should be utilised as a method of identifying wild cards in the contextual environment. Theoretically, weak signals are seen as an abundance of scattered data that initially appears to be disconnected from current trends but which creates perceptions of possible changes in the contextual environment as the signals get stronger (Mendonça *et al*., 2004: 208). In this regard, Ansoff (1975: 24) identified various states of knowledge in relation to the progression of weak signals, viz. sense of threat/opportunity indicating an impending discontinuity; source of threat/opportunity identified; threat/opportunity becoming concrete; concrete response and concrete outcome. Environmental scanning occupies the first two states of knowledge about weak signals. In this regard, Bishop (2009) indicated that the scanners knowledge and experience was important to grasp the significance of weak signals, mainly because people’s subjectivity often leads to disagreement on the significance of a signal, especially when it is weak.

Lyle and Thomas (1988: 131) viewed weak signals of unanticipated environmental events as indicators of wicked problems. Wicked problems are defined as unstructured complex strategic problems which cannot easily be defined and that threaten the survival of an organisation (Lyle *et al*., 1988: 132). Lilly (2001: 9) explained that wicked problems usually lead to reactive crisis management decision-making due to a failure in issues management. Issues management utilises effective environmental scanning that connects the organisation with the environment and readies it for threats and opportunities, thereby preventing crises. However, Harris and Zeisler (2002: 25) believe that the interpretation of weak signals is problematic due to subjectivity. They viewed the subjectivity involved with weak signals as a major problem; the signals are difficult to detect by means of environmental scanning because they are disguised by, among others, the mind-sets, biases and attitudes of the scanners that makes issues management problematic with regard to wicked problems.

According to Lyle *et al*. (1988: 141) organisations that are successful in surviving wild card events and wicked problems are those that have learned from past encounters and have, adapted their approach to have a constant awareness of such events, and that utilise multiple scenario constructions of possible worst-case events. Within an organisational context, relying only on formalised environmental scanning without scenario construction will lead to failure. Van der

Heijden (2005: 150) concurred by indicating that combining environmental scanning with scenario construction "… means seeing more, broadening the range of view". In the same vein, Clemens (2009: 254) posited that environmental scanning could even become a wicked problem in itself during times of turbulent change and discontinuities as it continuously presents additional information that complicates sense-making of the weak signals.

Mendonça *et al*. (2004: 208, 209) concurred with the view of Lyle *et al*. that scanning for weak signals is subjective in nature but added that it is also culturally embedded. In this regard they emphasise that not all weak signals necessarily become strong signals; also, some groups and individuals might not be surprised by its manifestation while others will be, creating a situation in which some scanners will be too pessimistic or optimistic in identifying real wild cards. Mendonça *et al*. (2004: 208, 209) suggested an organisational learning approach where regular debates among weak signal scanners are held to obtain convergence on the real probabilities of events in the contextual environment.

Rockfellow (1994: 18) expanded on such organisational learning by positing that wild card thinking could bring about the deconstruction of people's perceptions of reality which is necessary for creative thinking. He pointed out that such wild card thinking has brought about many new global innovations and paradigm shifts characteristic of the 20th century. Hiltunen's study on weak signals elaborated on the importance of organisational learning. Hiltunen (2010: 4) developed what she called "organizational futures learning" (OFL), which emphasised the significance for a collective effort in an organisation to become aware of, collect and make sense of weak signals.

Albert (2008: 29) emphasised the skill of creative seeing in the environmental scanning methodology to find the unexpected in the contextual environment. Finding the unexpected is a key element in Albert's approach. Creative seeing starts with developing peripheral vision of events in the contextual environment. Peripheral vision could be equated with looking for weak signals. Albert indicated that creative seeing like creative thinking cannot be acquired through training but that it is a skill and competency to be actively acquired by practice. Creative seeing balances the visible observations with a consciousness for what the scanner is not seeing. The "not seeing" part is the terrain of the "unexpected".

Albert (2008: 29) concurred with Harris and Zeisler that the existence of mental frames in the mind of the scanner is a major obstacle in developing creative seeing as it assists in sorting and packaging information from the environment. The problem is that mental frames block information, especially the peripheral information that does not fit the frame. In this regard, Kahneman (2011: 85-88) indicated that there is an asymmetry in the way the mind treats available and unavailable information, i.e. the mind does not allow for information it does not have. Also, judgement of the contextual environment comes easier when the mind can construct a coherent pattern from little information (as opposed to a complete set of information), especially if consistency can be achieved in connecting patterns regardless of whether such patterns are interrelated.

Although Albert (2008: 26) fully agreed with Aguilar's definition of environmental scanning she added a significant element by indicating that scanning is not only about the external environment but also about the internal environment. The internal environment refers to the knowledge base that exists in an organisation and its people. She rightly pointed out that the knowledge base of organisational employees is affected by changes and trends in the outside environment. Albert did not elaborate on this but it is clear from the context that the employee knowledge base is the source of the mental frames that obstruct the development of creative seeing. This is an important perspective as it begins to emphasise the role of mental constructs - such as perceptions, paradigms and assumptions - as filters in the environmental scanning methodology.

Huffman (2004: 39, 40) posited that environmental scanning is worthless when the contextual environment is influenced by an unexpected event, which he termed a strategic inflection point. A strategic inflection point is defined as a point of massive change where the balance of forces shifts from an existing way of doing to a new way of doing. This definition is similar to Mendonça et al.'s wild card definition. Huffman (2004: 47) stated that strategic inflection points are becoming more common due to the rapidly changing world of the 21st century and that environmental scanning provides a false sense of security which is worse than fear of the future.

Huffman (2004: 40, 41) provided the characteristics of strategic inflection points. A strategic inflection point is asymmetric in nature and does not abide by the known rules of the current contextual environment; as a result, it levels the playing field for all in the contextual environment. A strategic inflection point is a one-time event and nearly impossible to forecast, hence its unexpected nature. This is closely related to what Taleb (2008: xvii) calls a "black swan" event, i.e. an event that lies outside the realm of regular expectations and that carries with it an extreme impact. Although Taleb's black swan events can never be foreseen, Huffman's strategic inflection point is actually visible to those with the right competencies and the "will to see".

Huffman (2004: 40) highlighted some problems with environmental scanning as a methodology, especially as it relates to strategic inflection points. First, he pointed out that environmental scanning systems mostly warn about the current environment. The current environment is based on people's perception of what the current environment entails, i.e. the current environment as reality is based on our perception of that reality. If the perception is incorrect, then environmental scanning is blind to the unexpected, undetected and unseen elements in the contextual environment. Secondly, environmental scanning focuses more on expected problems and warns about issues that are no real threat, i.e. the expected. In this regard, if a specific event is deemed unlikely to occur, it does not draw much scanning attention (Huffman: 2004: 42).

Huffman (2004: 43) noted a third problem with environmental scanning by indicating that it is qualitative and very subjective in nature. He acknowledged that scanning practitioners try to overcome this problem by employing various analytical systems and by having dedicated strategic planners in an organisation. However, he dismissed these attempts at bolstering the environmental

scanning methodology for the following reasons: (1) analytical systems cannot replace intuition born of experience; and (2) strategies are a fallacy because they are seen as analogous to road maps in reaching a specific goal. This is problematic as a real roadmap has fixed roads while a strategy has to cope with unfixed (unexpected) environmental changes.

Huffman (2004: 41, 42) suggested two interrelated approaches as specific solutions in dealing with strategic inflection points from an environmental scanning point of view, viz. intuition born of experience and synthesising of information. Intuition is important to identify strategic inflection points but it only works for those who are closer to the reality of the strategic inflection point of change, for example, line managers in a business organisation who experience daily what is happening in the world out there. This closeness is facilitated by continuously receiving unfiltered information about the changing contextual environment. Huffman (2004: 43) pointed out that human intuition is a mystery, and therefore cannot be formalised in an analytical system.

The second approach in dealing with strategic inflection points is the synthesising of information. Huffman (2004: 42) stated that environmental scanning systems tend to analyse (i.e. break up information for sense-making) more than they synthesise information (i.e. put seemingly unrelated pieces of information together for sense-making). The synthesising of seemingly unrelated pieces of information must be done conceptually before they synthesise themselves physically because the latter condition is a strategic inflection point in action. Huffman (2004: 45) acknowledged that the synthesis of information for unlikely events is more demanding than for likely events; that is why Huffman preferred line managers to be engaged in synthesising, and not specialised groups of planners or top-level managers who are too far removed to see the development of a strategic inflection point. The intuition of line managers is needed to synthesise fragmented pieces of information into meaningful wholes.

Heidrick and Struggles (2015: 6) proposed an "S^3 understanding of change" to cope with unexpected events in the contextual environment, viz. focusing simultaneously on speed, scope and significance of change (Figure 2.4).

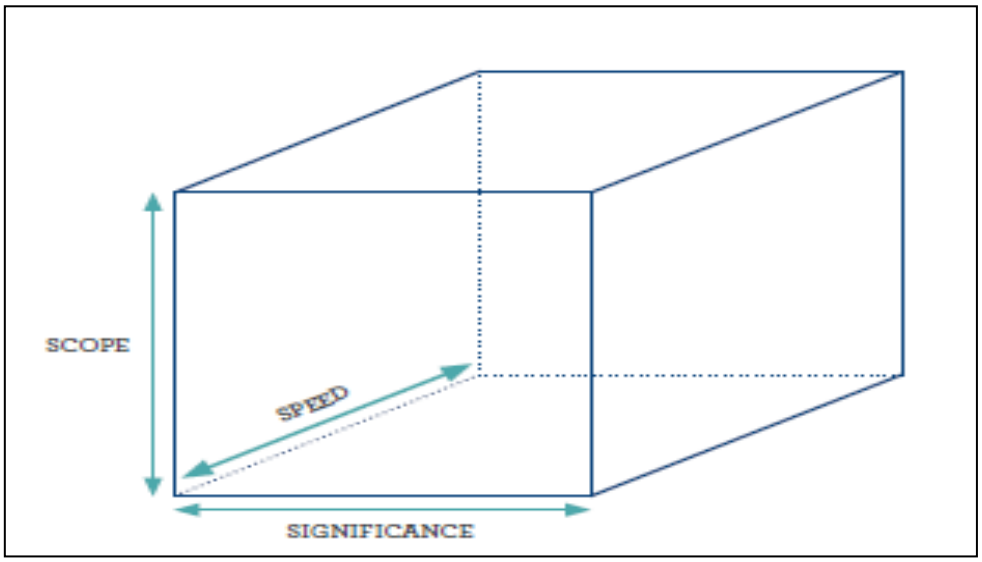

Figure 2.4: S^3 understanding of change

Source: Heidrick and Struggles, 2015: 7.

Heidrick and Struggles (2015: 3) indicated that the speed of change in a globalised world has become very demanding, especially given the digital era where information could be out there in the public domain before a response could be formalised. This leads to the management of organisations misdirecting their attention and energy to developments in the contextual environment that appear to be urgent but have limited scope and significance. Scope focuses on how far-reaching in terms of size and extent a particular event materialises. The implication is that events of greater scope could potentially also have greater impact and meaning for an organisation. Significance has to do with the depth of change and its impact on an organisation particularly as weak signals become strong signals and information accumulates (Heidrick and Struggles, 2015: 8). Speed, scope and significance vary in importance; hence it becomes important to determine where the focus should be by disentangling the S^3. This requires, among others, a comprehensive environmental scanning of the S^3.

Heidrick and Struggles (2015: 10, 11) furthermore indicated that managers do not only require contextual information but also information on how different contexts interact. They conceptualised this need as "ripple intelligence", i.e. "… the ability to predict how trends and contexts may intersect, interact, and change direction, helping CEOs anticipate disruptions, make time to plan, and protect against unexpected events". The purpose would be to make a judgement and have foresight of the interaction of different contexts that may fundamentally become disruptive.

2.3.5 A way forward

In an attempt to overcome the imperfections of environmental scanning, Slaughter (1999) proposed a more in-depth approach that highlights the need to investigate the interior dimension of people. Slaughter (1999), in his work on *A new framework for environmental scanning,* transcended the business contextual environment of environmental scanning by arguing for a

broader and deeper approach to environmental scanning. Slaughter's approach is an attempt to address the gap in environmental scanning with regard to the influence of perceptions, paradigms and assumptions in creating complexity in the external world. He expressed concerns that environmental scanning done within the business context only scans for information as it relates to the empirically measurable external world while little consideration is given to the interior world of individual and cultural groups that give rise to the external environment (Slaughter, 1999: 448). Slaughter posited that environmental scanning of mostly the external dimension could lead to shallowness while more depth could be achieved by exploring the internal dimensions of individual and cultural groups as well.

Slaughter (1999: 442) regarded environmental scanning as a methodology that is interpretative in approach because it mostly involves human judgement, i.e. the scanner constantly has to decide about the usefulness of information within the context of a scanning framework. Also, Slaughter linked environmental scanning with foresight but with the proviso that the former needed to be done effectively: discern information and, apply knowledge and insight to sense new developments in the contextual environment so as to give early warning of possible change.

Slaughter, however, stated (1999: 442) that environmental scanning is mostly approached in an empirical manner the business context. He regarded this approach as problematic because it only explores one way of knowing the environment while failing to scan the underlying internal world that gives rise to the external world. Since businesses use environmental scanning for strategic planning purposes, they need to adapt their approach to provide more depth in the environmental scanning methodology. Slaughter (1999: 450) believed that a combination of the empirical and interpretative approach in environmental scanning methodology could bring more depth and ensure that a complete scan takes place to enhance knowledge and wisdom. He also believed that foresight would suffer without the scanning of the interior dimensions of reality and that a critical and multi-perspective approach is required to overcome narrowness, parochial views and superficiality.

The definitions of environmental scanning as provided by the literature tend to support an "external" context for scanning. The more recent contributors to the debate, who propagate a deeper scanning methodology such as Slaughter, Collins, Hines and Voros (see §4.3), tend to look beyond environmental scanning as merely collecting information from the external environment, and include the "internal" environment to develop a future consciousness in the scanner. To some extent they answer the question (albeit indirectly) as to whether people do have sufficient knowledge of the contextual environment to have good judgement and foresight of the future. In this regard, sufficient knowledge is lacking if scanning neglects the internal environment that gives rise to the external environment.

The development of a future consciousness through environmental scanning makes environmental scanning more than just a domain-specific business tool for business intelligence – it is a tool for global change on all levels possible (Figure 2.5).

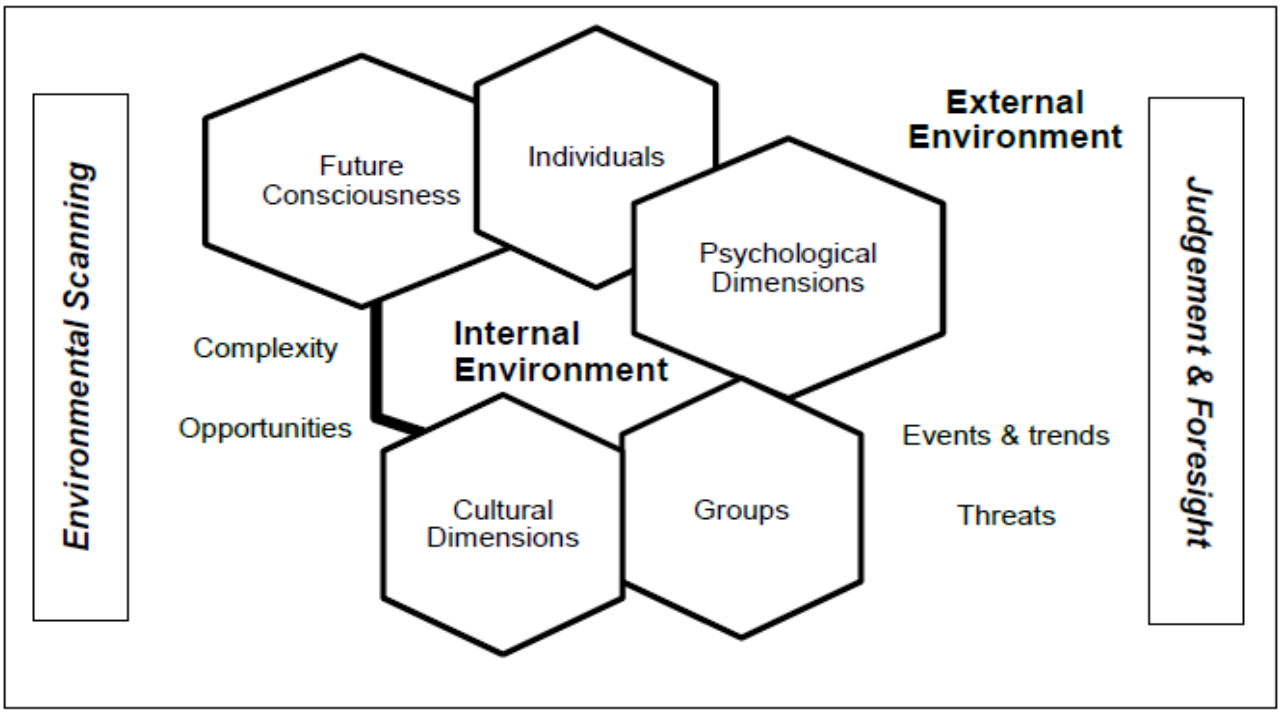

Figure 2.5: All-inclusive environmental scanning

Source: Own compilation.

Lombardo's definition of future consciousness (2008: 2) is appropriate in this context as it emphasises the need for holism in environmental scanning: "… the human capacity to be conscious of the future, to create ideas, images, goals, and plans about the future, to think about these mental creations and use them in directing one's actions and one's life". Thus, without a holistic environmental scanning methodology, future consciousness will be under-developed because of a lack of knowledge about the future.

An all-inclusive definition of environmental scanning could thus be posited as follows:

- Environmental scanning is a process of knowledge creation whereby information is obtained from the external environment by looking at or for events and trends for the purpose of identifying opportunities and threats occurring in time and space; and
- By engaging in in-depth inquiry of the internal environment of individuals and groups;
- To determine the psychological and cultural dimensions of reality that may have a bearing on complexity in the external environment; and
- Where the convergence of external and internal environmental scanning will develop a comprehensive futures consciousness conducive to good judgement and foresight about the future.

This all-inclusive definition of environmental scanning thus entails most of what is seen in the literature as information behaviour (the external focus of the concept but excluding the purposive behaviours such as avoiding information) while also deliberately including the internal dimension more explicitly to achieve holism.

In summary, this study posits that environmental scanning is aligned with Case's information seeking concept in a broader catch-all context, but that it goes beyond the normal practices of information seeking in general to be a holistic concept that encompasses both the external and internal dimensions of the environmental reality.

2.4 INFORMATION AS A CONCEPT

2.4.1 Nature of information

The concept of information is central to the process of environmental scanning. The comprehensive definition of environmental scanning states that it is, among others, a process of gathering information in both the external and internal environment. Capurro and Hjørland (2003) assert that the concept of information is similar to other concepts and should be defined in terms of its theoretical context. This approach is supported by Boisot and Canals (2004) who argued in favour of taxonomies of information based on adequate theorising that focuses on the differences between data, information and knowledge. The concept of information as it relates to environmental scanning is, therefore, all-inclusive and incorporates data and knowledge without excluding its meaning and utilisation in other disciplines.

According to Case (2007: 40), the word *information* originated from 14th century English as it was first used in one of Chaucer's tales. Nevertheless, the concept remained problematic to define. Capurro and Hjørland (2003) pointed out that the concept *information* has both a historical and modern meaning. Historically, information meant "to give form to matter" (Greek and Latin context) while in modern times it discarded the historical context to mean "communicating something to someone". Also, Sarkar (Inayatullah, 2009b) tried to bridge the divide between the modern and historical meaning of information through positing reality as a co-evolutionary process between "self, others, the transcendental and the natural world"; it is, therefore, more than just the Western perspective of breaking reality up into smaller bits for quantifying purposes.

Dostal, Cloete and Jaros (2005: 365) pointed out that the historical meaning is still relevant to information of the 21st century. In this regard, they believe that information still has the ability to give form to something and that it loses this ability when it is presented out of context. However, it may not be entirely accurate to suggest that information loses its ability to give form to something when presented out of context. Although "information in context" is absolutely necessary for constructing the correct picture of reality and the future, the "out of context information" still has the ability to give form to something, namely an incorrect picture of reality and the future. The purpose of environmental scanning, therefore, would be to obtain information in context through in-depth

scanning of both the exterior and interior dimensions of reality, i.e. contextual depth within an environmental scanning approach.

Case (2007: 65, 66) and Rowley (2007: 165) stated that no single definition exits for the concept *information* as scholars in information behaviour and information seeking fail to clearly delineate between the various related concepts of data, information, knowledge and wisdom. These related concepts have been presented as a hierarchy with data at the bottom and wisdom at the top; the so-called Data, Information, Knowledge, Wisdom (DIKW) hierarchy. The DIKW hierarchy (Figure 2.6) has been developed by scholars based on Russell Ackoff's "Content of the mind" (Bernstein, 2011: 68; Case, 2007: 40; Fricke, 2009: 132; Heckroodt, 2014: 5; Hey, 2004: 2; Jennex, 2009: 2; Rowley, 2007: 166). However, Cleveland (1982: 34) suggested that the hierarchy originally emerged from TS Eliot's 1934 poem "The Rock[1]".

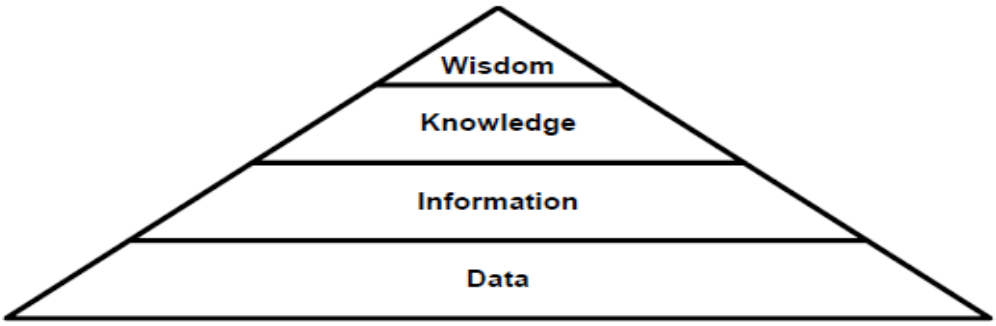

Figure 2.6: The DIKW hierarchy presented as a pyramid

Source: Rowley, 2007: 164.

Case (2007: 66) furthermore argued that the concept of information does not need a concise definition because it is a primitive concept that is basic to human understanding. Information, therefore, should be treated in broad terms to include all aspects of the data, information, knowledge and wisdom (DIKW) hierarchical distinction because the DIKW distinction has little value in terms of information seeking. Case (2007: 40), consequently, broadly defined information as "... whatever appears significant to a human being, whether originating from an external environment or a (psychologically) internal world".

Ackoff's hierarchy entails data, information, knowledge, understanding and wisdom (DIKUW) but has never been presented by him in a pyramid diagram, as most authors tend to do with the DIKW hierarchy. Ackoff (1989: 3) said that his DIKUW approach reflects types of the content of the human mind with wisdom at the top and data at the bottom, and with each level incorporating the ones below it. A more accurate rendition of Ackoff's DIKUW approach has been provided by Spies

[1] [1] Where is the Life we have lost in living?
Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?
- TS Eliot: The Rock (an excerpt)

(2007, Slide 87) where wisdom encapsulates all of the other elements, and the rest of the elements each incorporate the level below it (Figure 2.7).

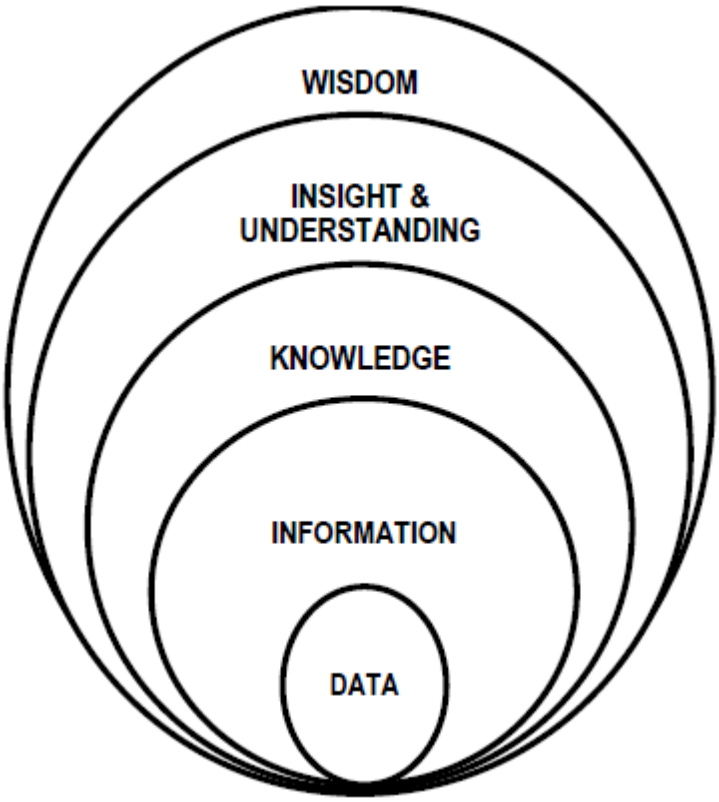

Figure 2.7: The DIKUW circle diagram

Source: Adopted from Spies, 2007: Slide 87.

Ackoff (1989: 3-9) provided the following explanations of the different elements of the DIKUW hierarchy:

- Data: Symbols representing the properties of objects, events, and their environment – products of observation.
- Information: Extracted from data by analysis, i.e. the processing of data to obtain value from it. Contained in descriptions that answer the questions “who, what, when and how many”. The difference between data and information is functional and not structural. Information ages rapidly.
- Knowledge: The know-how of how something works which makes the transformation of information into instructions possible. Knowledge can be obtained through transmission from person to person, by instruction or from experience, and increases efficiency. Knowledge, therefore, involves learning. Knowledge has a longer life-span than information but eventually becomes obsolete. Dervin (1998: 36) states that knowledge is necessary for making sense regarding something in time and space.
- Understanding: Knowing why and how to do something. It also increases efficiency and has some permanence.

- Wisdom: The ability to increase effectiveness through value-adding and judgement – it is an inherent, unique and personal attribute in a person. Wisdom is permanent.

Clark (2004) proposed an altogether different approach to the DIKW hierarchy by presenting a Continuum of Understanding (Figure 2.8). He cautioned, however, that the distinctions between data, information, knowledge, and wisdom are artificial with much overlapping between them.

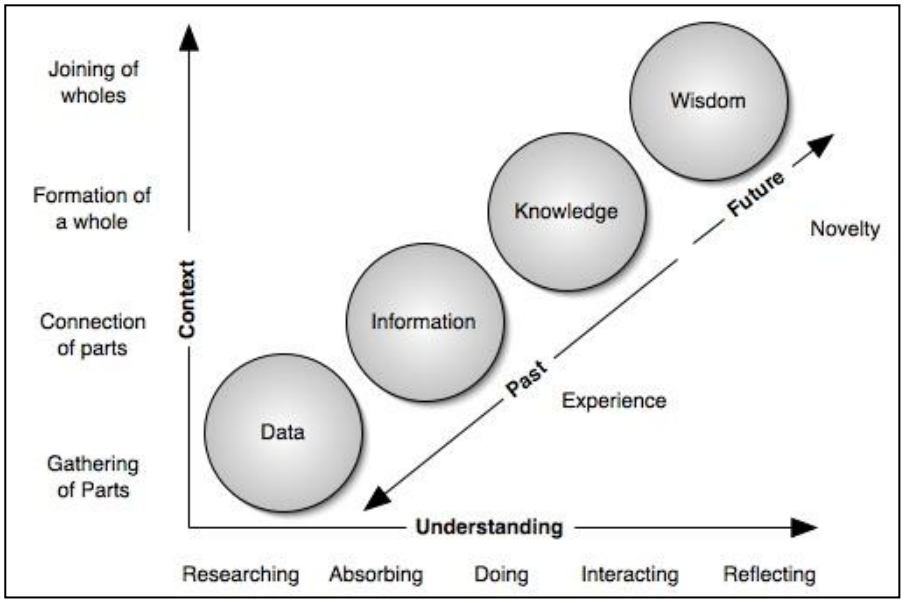

Figure 2.8: Clark's Continuum of Understanding

Source: Clark, 2004.

Clark's (2004) Continuum of Understanding provides a time-space context to the DIKW model. In this approach, data and information relates mostly to the past by collecting facts and providing context. Knowledge contains experience and perspective to deal with the present. Wisdom deals with the future by visioning and designing "…for what will be, rather than for what is or was". Clark (2004) agreed that wisdom is the definitive level in the hierarchy. This level is obtained by "seeing" sufficient patterns and meta-patterns in the knowledge base to be able to construct an image of the future. This is a purposeful approach that corresponds with Dostal *et al*.'s in-formation perspectival definition, i.e. everything learned up to the level of wisdom gives form to the future and is important in developing a future consciousness in an individual and in social groups.

Clark's Continuum of Understanding is similar to that of Bellinger, Castro and Mills (2004) where understanding is seen as the transition from each stage to the next. In this regard, the transition from data to information is achieved by developing an understanding of the relations between them (e.g. a cause and effect relationship). Similarly, the transition from information to knowledge is achieved by understanding patterns (e.g. some predictability based on patterns observed) while the transition from knowledge to wisdom entails the understanding of principles embodied in knowledge. Thus, the approach of Bellinger *et al*. is the understanding of the connectedness of the different DIKW elements (Figure 2.9).

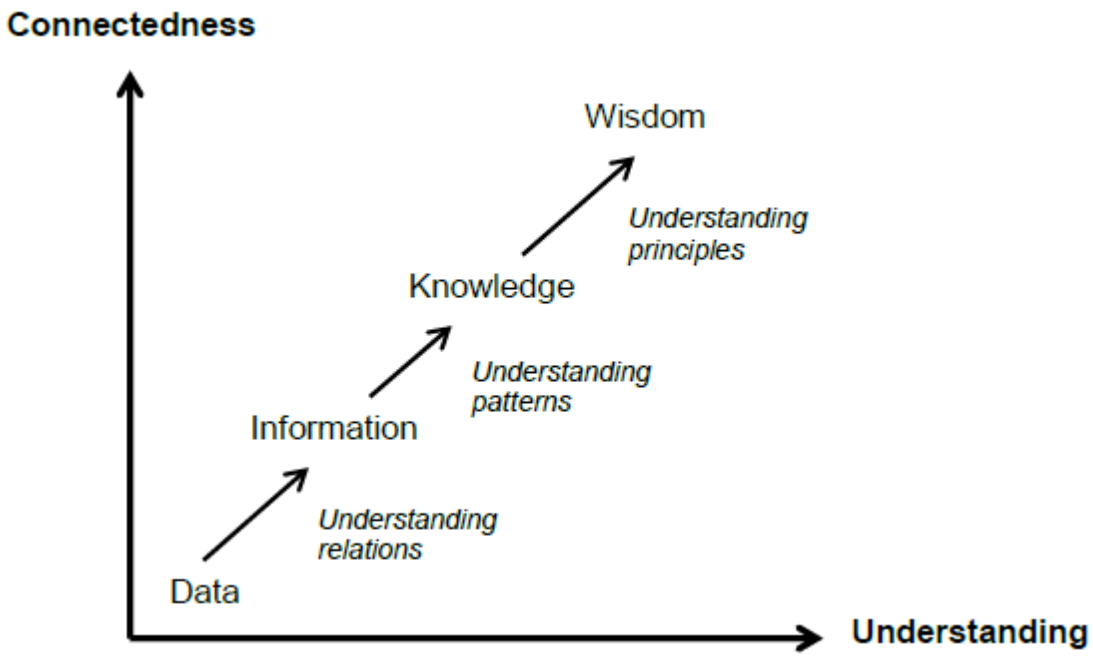

Figure 2.9: DIKW connectedness and understanding

Source: Adopted from Bellinger, Castro and Mills, 2004.

Bellinger *et al*.'s approach makes more sense in emphasising the interrelationship between the different elements of the DIKW. This is especially true in view of the critique expressed by Wilson (2000: 50) with regard to the differentiation between the elements. Wilson was of the opinion that knowledge is only knowable to the person who owns it and can only be transmitted as information which then makes it accessible to another person. Such information in turn represents an incomplete substitute for the knowledge. Likewise, the ability of data to be converted into information depends solely on a framework of understanding.

Tuomi (1999: 103, 104) found the DIKW hierarchy problematic. Although Tuomi's critique was based on the perspective of information systems design and development, he believes that the critique applies to the general application of the DIKW hierarchy as well. In this regard, Tuomi indicates that the DIKW hierarchy creates many misunderstandings of the related concepts and leads to too many epistemological concerns. Tuomi (1999: 105) stated that it is common knowledge that the existence of raw data is a misnomer and that the most elementary of perceptions has been contaminated by the dynamism of the human mind. Therefore, human cognition is blind to simple facts and only perceives such facts as part of a meaning structure; the meaning structure is the unarticulated background against which articulation and explication takes place. This is similar to Wilson's framework of understanding (2005: 50).

Tuomi (1999: 107-112) proposed a reversed hierarchy (and excluded the wisdom element), called the KID (knowledge, information, data) hierarchy, to correct the problems created by the DIKW hierarchy. In this regard, a fixed meaning structure (knowledge and information) is required to make data evident. Hence data does not become information by adding meaning to it. Data arises

from information through a predefined data structure that defines its meaning and, therefore, becomes visible by adding value to information. Knowledge emerges within the context of a stable structure of meaning created by social collectives, i.e. social units in society are the creators of knowing and knowledge. This meaning structure is crucial for sense-making as data will only make sense within the context of such a structure. Tuomi (2009: 112), therefore, concluded that the DIKW hierarchy will only emerge after the KID articulation has created data.

Although Tuomi's critique is valid, it should be acknowledged that Ackoff's DIKUW is a model that does not attempt to represent reality but rather provides a simple building block explanation of interrelated concepts "operating" in the mind of a person. The existence of the DIKW is not disputed; only its simplistic presentation in a hierarchical format that puts data first and wisdom last as if the one necessarily emanates from the other. It would probably be more useful to view the DIKW as a cyclical process in terms of systems thinking (Figure 2.10), rather than a hierarchical pyramid or a circle diagram. In this regard, each element of the DIKW influences the other in feedback loops. This corresponds with the views of Tuomi and Wilson, namely that data does not exist in a vacuum; it is the result of what we know from the other three elements; hence the interrelatedness of the model.

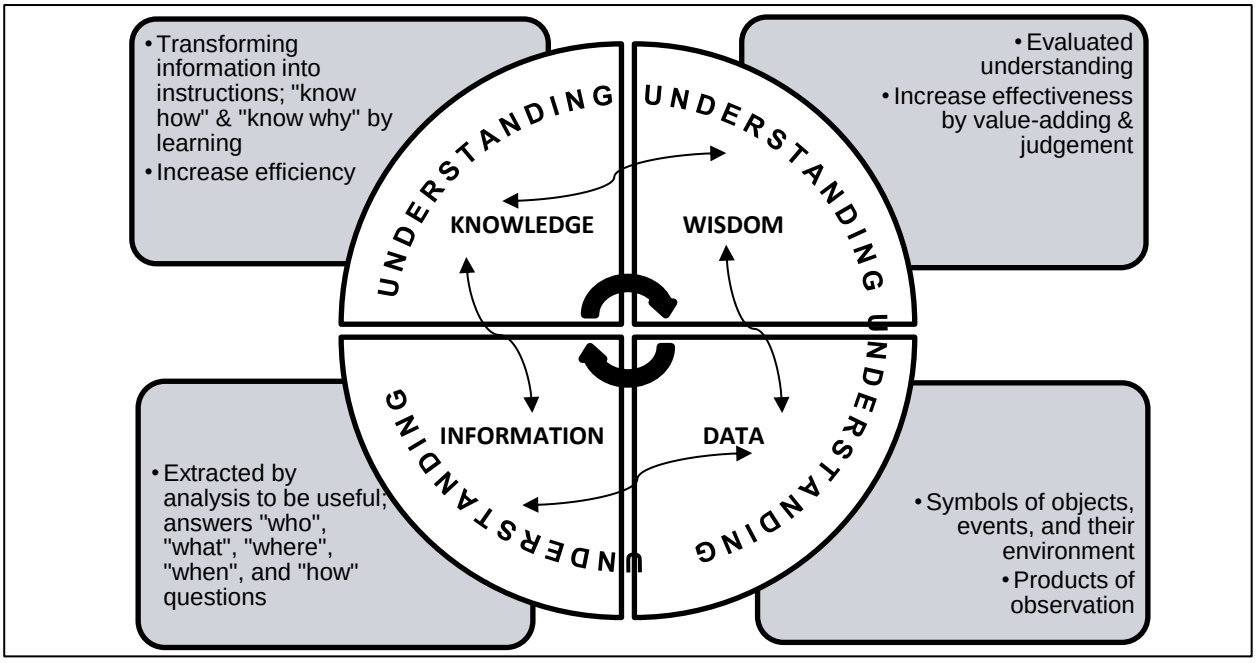

Figure 2.10: DIKW as an inter-related cyclical process

Source: Own compilation.

The cyclical model does away with the separate concept of "understanding"; it is posited that "understanding" is inherent in all four elements of the DIKW model, e.g. an "understanding" of data is needed for sense-making with regard to information; an "understanding" of information would be necessary for knowledge creation while an "understanding" of knowledge will lead to wisdom. In this context, "understanding" is dissimilar to Clark's approach of a continuum. Nevertheless, it does

encompass to some extent Ackoff's definition of what "understanding" is, viz. the "why" and "how" of the concept, but within each of the four elements of the DIKW model.

2.4.2 Scope and impact of information

The scope of information can be extensive and covers both the external and internal dimensions of reality. The impact of information covers what information does, as well as what is being done with it (Dervin, 1976: 333). Dervin (1998: 37), however, pointed out that information can only partially address the unknown. Therefore, environmental scanning needs to cover the full scope and impact of information to achieve holism to at least cover the "partial" comprehensively. Dervin (Case, 2005: 43) presented three types of information that are useful in developing an understanding of the scope and impact of information in the external and internal dimensions of reality, viz. objective external, subjective internal and sense-making information.

An important element in the scope of current environmental scanning methodology in the objective external typology is the limitation put on it by the influence of two aspects, regardless of the mode of scanning: (a) the characteristics of information that are scanned, and (b) the scope of scanning. The characteristics of information could be extensive depending on the context, i.e. whether the characteristics refer to a security-intelligence context or an information systems context, etc. In this study, the characteristics of information are defined within the context of environmental scanning as it relates to judgement and foresight of the contextual environment. In this context, information may have the following characteristics in ascending order from less useful to more useful:

- False: In the classical sense, information that is not according to fact; wrong and incorrect (Blackburn, 2005: 370; *The Concise Oxford Dictionary*, 1995: 486), i.e. when the information contained in descriptions that answer the questions "who, what, where, when and how many" is erroneous.
- Distortion in the form of propaganda: Information, ideas, opinions or images, often only giving one part of an argument, which are broadcast, published or in some way spread with the intention to influence people's opinions (*Cambridge Advanced Learner's Dictionary*, 2003: 995; Grabo: 2004: 90); i.e. when the information contained in descriptions that answer the questions "who, what, where, when and how many" is presented in such a way that it is out of context.
- Distortion in the form of deception: The act of deliberately making someone believe something that is not true, usually in order to get some advantage for yourself (*Collins Cobuild English Dictionary for Advanced Learners*, 2001); i.e. when the information contained in descriptions that answer the questions "who, what, where, when and how many" is presented to deceive.
- Explicit facts: Factual information that has been verified about something known to exist or that has happened and where this information is openly available in the public domain (Clark,

2010: 131); i.e. when the information contained in descriptions that answer the questions "who, what, where, when and how many" is factually correct.

- Concealed information: Factual information that is not publicly available because it is hidden, private or only available in a closed group domain; i.e. when the information contained in descriptions that answer the questions "who, what, where, when and how many" is not easily accessible. This includes cryptographic information where encryption through algorithms places information deep within data. According to Boisot and Canals (2004) such data may be publicly available but information can only be extracted from the data by possessing the "key" (algorithm).

The scope of scanning must also be taken into account because it directly relates to the ability to have good judgement and foresight about the future. The scope of scanning ranges from public scanning to domain specific scanning. It is posited that public scanning mostly utilises the first three modes of Aguilar's scanning, viz. undirected viewing, conditioned viewing and informal searching to be informed of general developments in a person's immediate environment of interest. Public scanning usually also occupies the Litany Level of Knowing and represents a proliferation of information on societal problems as projected through various media formats to the public (Inayatullah, 2009). The depth of the information on this level is superficial.

Domain-specific scanning covers a wide range of activities and interests. Choo (1998: 74-82) mentioned the following ranges in ascending order of scope: competitor intelligence, competitive intelligence, business intelligence, issues management and social intelligence. The first four ranges are focused in terms of individual competitors or strategic issues while social intelligence encompasses the total and widest environment possible and usually represents a government's official intelligence capabilities, i.e. the complete environment (Choo, 1998: 75).

The completeness of scanning may vary greatly; it depends on the level of access to specific information, which may range from explicit facts to concealed information. The modes of scanning utilised by the first four ranges usually entail conditioned viewing and, informal and formal searching to obtain a competitive advantage over business rivals and to identify future business trends, opportunities and threats. Social intelligence scanning, while not necessarily excluding the first three modes of scanning, mainly engages in formal searching with the aim of identifying threats to and opportunities for the domestic and foreign policy objectives of the state as well as threats to the sovereignty of the nation state. Figure 2.11 provides an overview of the characteristics of information, its correlation with the scope of scanning and connection with foresight and judgement as posited by Roux (2007).

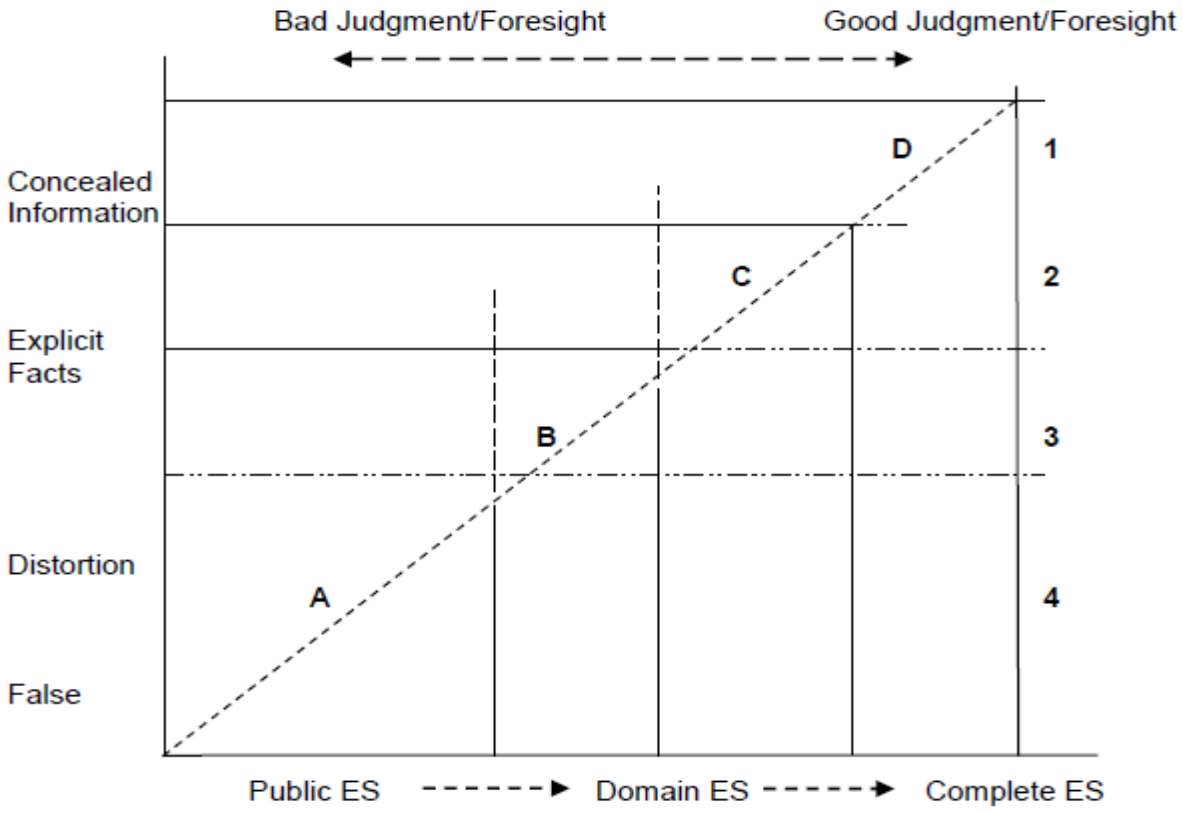

Figure 2.11: Scope of environmental scanning

Source: Own compilation.

The characteristics of the information scanned play a vital role in whether judgement and foresight is bad or good. It is obvious that judgement and foresight based on false information is not worth considering. Distortion (A4/B3 in Figure 2.11) is less obvious but equally precarious to consider when engaging in judgement and foresight. Explicit facts (C2 in Figure 2.11), i.e. factual information readily available to the public, lends themselves to better judgement and foresight. Explicit facts is the domain that environmental scanning should begin to occupy. However, it must be acknowledged that explicit facts may be incomplete as some information could be hidden or private within closed groups or in the minds of people, i.e. concealed.

Concealed information is not easily accessible. In this regard, Kurian and Molitor (1996: 33) indicated that the limitations of information are particularly pronounced in “closed arenas”. This makes forecasting difficult because the play of various forces and combinations within closed groups is often unknown. However, various authors (Clemens, 2009: 251; Dervin, 1998: 41; Reinhard, 2009; Van der Heijden, 2005: 323-325) suggested that such concealed information could be accessed by environmental scanning through applying strategic conversation techniques with people who possess such concealed information. Knowledge of concealed information is the ultimate in good judgement and foresight (D1 in Figure 2.11). The scope of the scanning and its correlation with the characteristics of information within the external objective realm is important in

developing an understanding of the limits of environmental scanning and the judgements and foresight that could be developed.

The scope and impact of information within the context of the external objective, the internal subjective and sense-making information is depicted by Boisot and Canals (2004) in Figure 2.12.

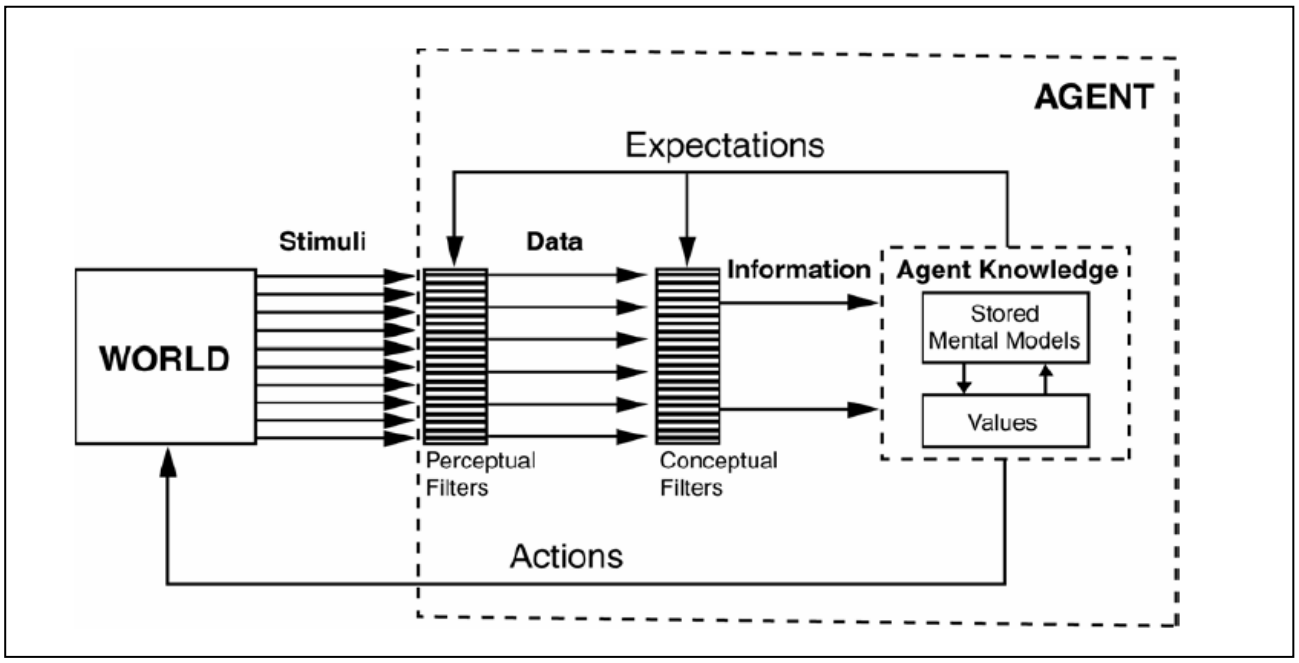

Figure 2.12: Scope and impact of information

Source: Adopted from Boisot and Canals, 2004.

Figure 2.12 illustrates the constant stimuli that originate from the external dimensions of reality (physical world) and the impact of the stimuli on the internal dimensions of reality of an individual (mental models and values). Choo (1998: 105) agreed with this by stating that "environmental scanning is about seeing, perceiving, and making sense." Boisot and Canals' depiction is useful in showing the impact of perceptual and conceptual filters on an individual's knowledge base. To some extent, it also supports the DIKW as an Inter-related Cyclical Process (Figure 2.10) by showing the feedback-loop from knowledge gained through data and information flowing back to the external dimensions of reality in the form of actions.

2.4.3 Information and mental constructs in scanning

The role of environmental scanning in this process is important given the huge volumes of stimuli the individual has to cope with. According to Langer (1989: 66-67), the scope of information as it relates to stimuli from the external dimensions of reality is a necessary condition. He stated that new information from the external environment is essential to avoid many psychological problems and for humans to survive in general. However, the external stimuli (information) can become overwhelming; the concept of *information explosion* captures the increasingly huge volumes of information characteristic of the 21st century. Dostal *et al*. (2005: 222) stated that an estimated 2.5 million bits of information reach our nervous system via our various senses every moment but that

only 300 to 500 bits of those information are processed consciously. Kurzweil (2005: 9) concurred by indicating that the human brain is extremely limited in processing new information compared to "the exponential growth of the overall human knowledge base". Sreedhar (2014) estimated that the exponential growth of information as stimuli increases by 60% a year; this shows the impact of information in making the external environment more complex.

The impact of information as it relates to information overload renders sense-making progressively more difficult. Sense-making and environmental scanning go hand in hand to deal with discontinuities in the contextual environment. Sense-making sees discontinuities as a common and fundamental aspect of reality and utilises communication and environmental scanning to fill information gaps (Case, 2007: 337). Dervin (1998: 39, 40) stated that information gaps are central to sense-making, and sense-unmaking is the area where information and knowledge are created, sought, used and rejected. In this regard, sense-making encapsulates the dynamism of the internal dimensions of reality and is influenced by an individual's mental constructs, which can either be fluid or rigid. Mental constructs in this study means (in a broad sense) the construction of, among others, paradigms, perceptions, mental models, mind-sets, and worldviews in the mind from usurping external stimuli where the mental constructs function as perceptual and conceptual filters to cope with complexity and information overload. It is acknowledged that the other concepts have various meanings and applications in other disciplines and that the concepts do not exclude those meanings; hence the need to collectively refer to those concepts as mental constructs in this study.

The literature identified paradigms and perceptions as the most important of the mental constructs that inform or contribute to the formation of mental models, mind-sets and world views. The concepts *paradigm* and *perception* are sometimes used interchangeably. The concept *paradigm* was first coined by Thomas Kuhn in the 1960s as a strictly scientific term to explain the changes in the paradigm of normal science due to a scientific revolution (Stanford Encyclopedia of Philosophy: 2011). He posited that a period of normal science was defined by its paradigm and that a scientific revolution occurs when there was a change in paradigms. By normal science he meant the perpetuation of an original scientific work by applying its methods to new areas and older ones to refine the paradigm. The concept has since adopted a broader meaning and is widely used in the social sciences to mean a point of view, a worldview, a frame of reference, or a way of seeing things, i.e. the lenses through which we see our present realities and future possibilities (Gelatt, 1993: 11). Harman (1998: 8) supported this view by stating that the dominant paradigm of a society refers to the basic ways that society perceive, think, value and act in relation to a particular view of reality. Lombardo (2008: 9) defined perceptions as the "mental anchor and framework for the reciprocal experiences of persistence and change" to aid consciousness in connecting experiences in time and space.

Generally, it could be argued that paradigms derive from perceptions in the unconscious mind. The unconscious mind is, among others, shaped by suggestion, expectation, influence of authority and

cultural beliefs (Harman, 1998: 78; Segall, Dasen, Berry & Poortinga, 1990: 67). Harman (1998: 78) posited that the influence of unconscious conditioning is a key element in understanding perception. According to him, humans are literally hypnotised from infancy by the cultural environment in which they are immersed and their perceptions will only change once they are dehypnotised or enlightened to see reality as it is. Wurman (1989: 244, 245) concurred that a cultural framework is at work and that collective cultural information represents the most structured forms of information necessary for sense-making of events, i.e. cultural information provides the context.

Perceptions are created by continuous environmental scanning, either directly through one's own observations of events or indirectly through the media and other people (Wurman, 1989: 244, 246). Raw data in the form of events build the mental images and ideas that eventually form an individual's vision of the world (Wurman, 1989: 244). Wurman acknowledged human physiological limitations in processing an infinite amount of stimuli and concurred with Boisot and Canals that deliberate filtering of information is done to derive some form of contextualisation. Some of these filters are derived from mental constructs such as worldview, beliefs and values. These mental constructs influences perceptions and what is perceived as reality (Dostal, 2005: 222; Wurman, 1989: 246). This again supports the systemic nature of the DIKW as an Inter-related Cyclical Process (§2.4.1, Figure 2.10) with feedback-loops.

The mental constructs are inherently flawed. Taleb (2008: 63) stated that these mental constructs are impacted by a narrative fallacy. It is an inbuilt mental problem where the facts of an issue or an event are over-interpreted and then over-simplified by weaving stories around the facts to gain an understanding of its causes. Taleb (2008: 63, 64) argued that this narrative fallacy of over-simplification severely distorts our mental representation of the world and increases a false perception of understanding the world. By forging a logical link upon the facts, complexity is removed for sense-making while also making the facts easy to remember. The problem arises when facts are discarded that in the metal construct do not appear to play a role in the causality of a development and therefore do not support the storyline (Harris & Zeisler, 2002: 25; Kahneman, 2011: 85-88; Taleb, 2008: 64).

Heuer (1999) provided some additional insight on the formation of paradigms and perceptions. According to Heuer paradigms starts off as perceptions where people construct their own versions of reality on the basis of information they have receive. Heuer posited that what is perceived depends in part on the person's patterns of expectations, which form a mind-set that predisposes the person to thinking in certain ways. Heuer supported Taleb's notion of a narrative fallacy by explaining that the patterns of expectations are perceived and processed easily, while events that contradict prevailing expectations tend to be ignored or distorted in perception.

Wurman (1989: 247) depicted Taleb's narrative fallacy and Heuer's views within the context of four selective processes acting as rings of defences against the stimuli of the external dimension of reality (Figure 2.13).

The four selective processes are:

- Selective exposure: Exposure to information that strengthens behaviour and attitudes.
- Selective attention: Responding to stimuli selectively when they occur concurrently.
- Selective perception: Personal filtering of what is seen and heard to preserve own needs.
- Selective retention: Recollect messages coherent with existing attitudes and beliefs.

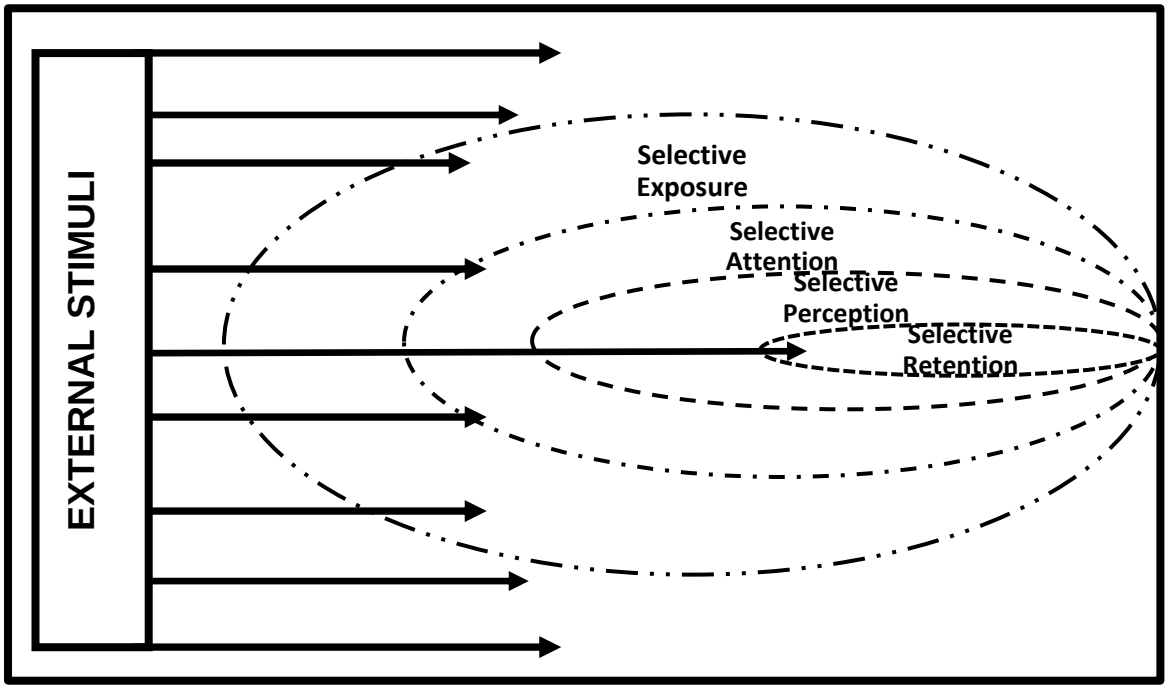

Figure 2.13: Four selective processes regarding external stimuli

Source: Own compilation.

Paradigms also carry an emotional element that is based in cultural replication which makes it difficult to change paradigms. In this regard, Meadows (1991: 3) supported Wurman's cultural framework by stating that the reigning paradigm of society is repeated and reinforced continuously through social interactions and other forms of expressions. This represents an emotional investment in a paradigm as it defines one's world and oneself. From this perspective, it could be argued that paradigm memes are formed. Memes are cultural expressions such as tunes, fashions, traditions, moral rules and theories that are transmitted from one generation to another by the social influences on the individual and that evolve seemingly independently (Blackburn, 2005: 229; Mauther, 2005: 383).

The impact of environmental scanning on paradigm formation could result in negative feedback loops from the interior dimension of reality to the external dimension of reality (see Figure 2.12's

"Actions"- line back to the physical world). Gelatt (1993: 11) believed that paradigms could have a paralysing effect on how the future world is perceived. This paralysis manifests when the future is perceived to be one of imminent disaster and catastrophe. The emerging future is only seen through the prevailing paradigms and, therefore, becomes reality to the perceiver upon which the perceiver acts. Gelatt (1993: 11) provided an insightful perspective by pointing out that although paradigms are a way of seeing the future they are also a way of "not seeing" the future. This perspective opens the way for the perceiver to challenge prevailing paradigms and to look for the unseen and unknown information in the contextual environment. Such an approach will broaden the scope of environmental scanning and will create the setting to move away from possible dystopian future paradigms to more positive alternative future paradigms.

Harman (1998: 10) explained paradigm formation from the perspective of consciousness as causal reality and argued that daily experiences confirm conscious decision-making as the cause of action. Consciousness as causal reality has to do with matters of personal human purpose, destiny and will where both measurable aspects and consciousness constitute reality (Harman, 1998: 20). Harman (1998: 30) called the former "materialistic monism" (reality is known by studying the rational world) and the latter "transcendental monism" (mind-consciousness is primary, and matter-energy arises in some sense from the mind). Harman's monism approach is supported by Sorokin's approach to societies and civilisations (Inayatullah, 2004: 6), where Sorokin indicated that macro-history swings like a pendulum between two points, viz. the sensate civilisation that focuses on pleasure and capital accumulation (material monism) and the ideational society that focuses on the nature of truth (transcendental monism). Consciousness as causal reality within this context will determine the operative paradigms.

Inayatullah (2004: 1) echoed Harman's sentiments on consciousness as a causal reality when he stated that the decisions to be made about the future do not only entail means-ends type of planning decisions but also "changes of the habits of the heart". Therefore, a changed consciousness is needed to change existing paradigms and create new paradigm memes necessary for breaking out of paradigm paralysis in pursuit of more positive alternative future paradigms. To achieve this, Inayatullah (2004: 4, 5) proposed "microvita change", i.e. change at the deepest level of reality incorporating both material monism and transcendental monism. However, microvita change has a bias towards the transcendental as it looks for the spiritual reality behind paradigms. Microvita change helps to move an individual from data to information to knowledge to wisdom, and eventually to experience the spiritual content of paradigms, thereby approaching paradigms and their formation from a different level to provide different routes to overcome paradigm paralysis.

Unconscious beliefs are central to perceptions of the external environment and the future. Harman (1998: 12) argued that sets of beliefs are held (unconsciously) to conceptualise experiences such as beliefs about the future. Hence, the anticipation of the future is influenced by people's

perceptions and paradigms. Harman (1998: 159) presented three major areas that require a shift in thinking and perceiving that could lead to a change in paradigms and perceptions:

- Increased emphasis on the connectedness of everything to everything: In this regard, Harman (1198: 159) moves beyond the material world's systems thinking truisms (the whole is more than the sum of its parts) and into the subjective domain of the inner-self. Gelernter (2007) referred to the cognitive continuum to explain the connectedness of the inner-self. The cognitive continuum connects the "puzzle pieces" of thinking, for example analytical thought, common sense, free association and, creativity. This inner-connectedness would be important to assimilate the alternative information (as opposed to general publicly available information) required to change perceptions about the future and to create new positive paradigms for sustainable alternative futures.
- A shift in the locus of authority from external to internal: External authority's presentation of reality is being questioned in favour of inner intuitive wisdom and authority. This shift could be linked to Inayatullah's deep questioning of the material world and its paradigms. It is a shift towards the "microvita" approach of the causal layered analysis levels of discourse and myth/metaphor analyses.
- A shift in the perception of cause from external to internal: The emphasis is on consciousness as causal reality where humanity becomes co-creators of the world, and takes responsibility for changing that world. Paradigm paralysis is superseded by a paradigm shift to create the internal consciousness conditions for more positive alternative future paradigms.

The achieve depth and holism in environmental scanning, it would be necessary to scan the internal dimensions of reality as represented, among others, by Harman's three major areas with regard to paradigms and perceptions.

2.5 CONCLUSION

Environmental scanning as an important Futures Studies methodology is usually seen as domain specific to the business environment. However, environmental scanning is synonymous with the broader concepts of information behaviour and information seeking. It is a normal human activity that entails both looking at and looking for information to develop an awareness of and to impact the external environment. Environmental scanning is not limited to the external environment. It also requires scanning of the internal dimensions of reality to develop an in-depth understanding of the dynamism in the external environment, where the dynamism is the result of judgements, foresight and actions by individuals to shape the future.

While environmental scanning is usually seen within the context of scanning for information, the concept of information appears to be indefinable in the literature. What is being scanned covers what Ackoff identified as data, information, knowledge and wisdom (DIKW). The DIKW approach

has seen much iteration. Nevertheless, its importance within the context of environmental scanning lies in the interrelatedness of the various DIKW concepts to achieve holism in scanning the external and internal dimensions of reality.

The characteristics of the DIKW and the depth of environmental scanning are important in developing good judgement and foresight about the future. Although information may be widely available due to an “information explosion” such information may not be accurate. Also, the most relevant information might not be widely accessible, and this could make environmental scanning superficial as it lacks the necessary depth. The result is poor judgement and foresight of the future.

The scope of DIKW as a representation of the external dimension of reality has a huge impact on the internal dimension of reality. The complexity of the external environment increases and place extensive demands on sense-making in the internal environment where coping mechanisms in the form of various mental constructs are employed. The mental constructs in the form of paradigms, perceptions, mind filters and world views are inherently flawed. These flaws need to be recognised as such when engaging in environmental scanning. Feedback loops from the interior dimensions of reality to the external dimensions of reality requires in-depth environmental scanning to develop a holistic understanding. Consciousness as causal reality, whether through conscious or unconscious beliefs, is central to perceptions of the external environment and the future.

CHAPTER 3
RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The aim of this chapter is to explain the research design and methodology that are followed to address the research question. The research objective and research question are briefly re-stated followed by the specific research approach and philosophical paradigm.

The research approach is situated in the Futures Studies discipline of inquiry. The creation of positive world paradigms through constructive environmental scanning to achieve more sustainable alternative futures is at the core of the Futures Studies discipline. The discipline has nine major purposes, one of which is the Study of Images of the Future. The concept of futures thinking holism, which underlies people's images of the future, is explained. Pragmatism in the wider sense represents the philosophical approach due to its interest in the process of thinking and how people engage with their environment through adjustment, adaptation and achieving goals. This neatly fits the study's focus on the Images of the Future. Furthermore, pragmatism is also a preferred approach in mixed-method research as a third research paradigm that bridges the divide between the qualitative and quantitative paradigms.

A mixed-method research strategy was adopted to mix the complementary strengths of the qualitative and quantitative methods while avoiding their overlapping weaknesses. This was purposefully done to enhance the depth and understanding of the research problem and, through triangulation, to obtain answers to the research question with a more flexible approach. In this regard, a multi-strand concurrent mixed-method research design with a qualitative dominant approach was used as it allows for the formation of inferences in each of the qualitative and quantitative phases which is then synthesised to form meta-inferences.

The research instruments in the concurrent phases of the design include a qualitative interview pilot study and a main semi-structured interview process where professional and non-professional environmental scanners are the research subjects. The quantitative phase included a primary web-based survey as well as historical secondary survey data. Qualitising of the quantitative data was done. A thematic qualitative text analysis approach was adopted for both the qualitative and quantitative phases because it is a category-based method for analysing qualitative data inductively.

3.2 RESEARCH OBJECTIVE AND QUESTION

The research objective as explained in §1.2 is to indicate that people who generally do environmental scanning on the Litany Level of Knowing do not have good judgement and foresight about the global contextual future and are, therefore, ill-equipped to influence world thought leaders to adopt global measures that will be necessary to develop sustainable alternative global

futures. People's poor judgement and foresight of the global contextual environment can be attributed to a deficient environmental scanning methodology that impacts their knowledge base adversely and prevents them from having a good comprehension of future reality. What they learn from their scanning of the contextual environment creates mental constructs with a futures disposition of pessimism and hopelessness about the global future. Their futures disposition also determines their motivation to actively contribute to creating a better world.

Constructive environmental scanning as a more balance and holistic approach is posited in this study to overcome the lack of knowledge regarding the global contextual environment and to enhance people's future consciousness. It is suggested that better knowledge obtained through learning from constructive environmental scanning will lead to better insight and understanding of the factors and forces that influence the contextual environment. Ultimately, it is hoped that such better understanding and insight will lead to open-minded thinking about the global future so that people will feel empowered to actively contribute to create a better sustainable world now and for the generations to come.

The research question for this study is as follows: Do people who scan on the Litany Level of Knowing have sufficient knowledge to develop good judgement and foresight of the global future to facilitate the development of the paradigms required to imagine and pursue more sustainable alternative futures, and is there a qualitative difference between environmental scanning professionals (ESPs) and non-professionals (Non-ESPs) with regard to this question?

3.3 RESEARCH APPROACH AND PHILOSOPHY

3.3.1 Futures Studies approach

The research approach is situated in the Futures Studies discipline of inquiry. The Futures Studies perspective has general and specific assumptions that define its approach. Some of these assumptions are also shared by other disciplines. The general assumptions posit the following (Bell, 2005):

- People are project-driven because they have an active, purposive goal-driven nature.
- Society is characterised by continual patterns of recurrent social interaction motivated, constructed and re-constructed by human behaviour in pursuit of the future.

The specific distinctive assumptions are (Bell, 2005):

- The time continuum is unidirectional and irreversible from past to future.
- Future things may not have existed in the past or in the present leaving scope for new thoughts, understandings and approaches.
- Human action is based on futures thinking; hence an interrelationship between causes of present action and images of the future.
- The future is to be created and not wholly predetermined.

- Future outcomes are partially determined by individual and collective choices and action.
- Holism and multi-disciplinarity are key approaches in an interrelated world where no system can be viewed as totally closed.

Inayatullah (1998: 386) posited three overlapping research dimensions in Futures Studies that highlight the general approaches to the discipline with the aim of achieving holism. These dimensions – the empirical, interpretive and critical dimensions – are summarised in Table 3.1.

Table 3.1: Futures Studies research dimensions

Empirical dimension	**Interpretive dimension**	**Critical dimension**
Language is neutral • Describes reality • Invisible link between theory and data	*Language and culture are involved in reality creation* • Truth is relative	*Language not symbolic* • Constitutive of reality
Predictive character • Assuming deterministic universe – future can be known	*Non-predictive* • Insight into differences sought to create unity • Provides insight into human condition by comparing cultural images of the future	*Neither predictive nor comparative* • Makes units of analysis problematic to undefined future • To disturb present power realities
Privileges experts • Future is a site for expertise • Future can be colonised	*Less technical* • Mythology as important as mathematics	*Structures are useful but not universal* • Only particular to history and episteme
Strategic discourse prevalent • Information valued – provides lead time to deal with challenges	*Learn from each model* • Central mission of this approach – within context of ensuring basic human values through universal narratives	*Categories part of discourse* • Want to know how categories became part of discourse • Not forecasting in terms of predefined categories
Linear forecasting techniques • Scenarios used as minor deviations from norm – no alternative worldviews	*Visions of the future important* • But also role of identity in social relations	*Makes present less rigid* • Loosening spaces of reality • Making the new possible • Evoking other scenarios of the future

Source: Adapted from Inayatullah, 1998: 387.

These dimensions are not exclusive of each other and all three should be utilised in an integrated way to achieve holism in Futures Studies (Inayatullah, 1998: 387). Within this context, Futures Studies is specifically concerned with systematic and explicit thinking regarding alternative futures with the aim of giving some form of human control over the future (Bell, 2007:2). Sustainable alternative futures are at the core of the Futures Studies approach. Slaughter (2005b) explicitly argued for a critical futures discourse in society to achieve adaptive change to foster long-term thinking and to make a transition towards sustainability. Therefore, the approach of this research to create positive world paradigms through constructive environmental scanning to achieve such

futures is at the core of the Futures Studies discipline. Futures Studies does not aim to predict (Dator, 1996: 107; 1998) or to provide foreknowledge (Rubin, 1998: 494) of the future neither does it claim that knowledge of the future is possible (De Jouvenel, 167: 5). Its purpose is to expand thinking within the context of the interpretive and critical dimensions in order to gain an understanding of the contextual environment from all dimensions possible and to create knowledge about the future, and to pursue possible, probable and preferable alternative futures (Bell, 1997: 42; Sardar, 2010: 178; Slaughter, 2005b).

Futures thinking is also based on three interrelated inquiries into the future with the objective to pursue the truth about the future (Spies, 2015). These inquiries are: (1) measuring the future (episteme) to obtain knowledge about the future; (2) imagining the non-existing future (ontos); and (3) purposefully designing/making the future (telos). These futures thinking dimensions are realised by four future-orientated processes of the mind, viz. futures consciousness, rational thinking, systems thinking and foresight. Slaughter (2012: 47) stated that the future is generally portrayed as a void or “blank screen upon which hopes and fears are widely projected” while in Futures Studies it is transformed into an imaginative and positive intellectual domain. It is within this transformative space where futures thinking holism takes form through processes of the mind that is based on futures consciousness, rational thinking, systems thinking and foresight development.

Although the future is not a present reality in the true sense, the disposition towards the future in whatever way carries the potential to make the future actual (De Jouvenel, 1967: 4; Poli, 2011: 70), while failure to manage these dispositions could present undesirable futures. Measuring, imagining and designing sustainable alternative futures should be the preferable outcome of holistic futures thinking and requires active interventions to realise (Figure 3.1). Holistic thinking is posited by Dian (2009: 62) as follows: “…a spectrum, (ranging) from the ability to see the larger picture with all its messy detail, to rational analysis and discussion.” Therefore, holistic futures thinking could be posited as thinking that ranges from the ability see the complete contextual environment, to rational analysis and discussion with the aim to realise a desirable or preferable future.

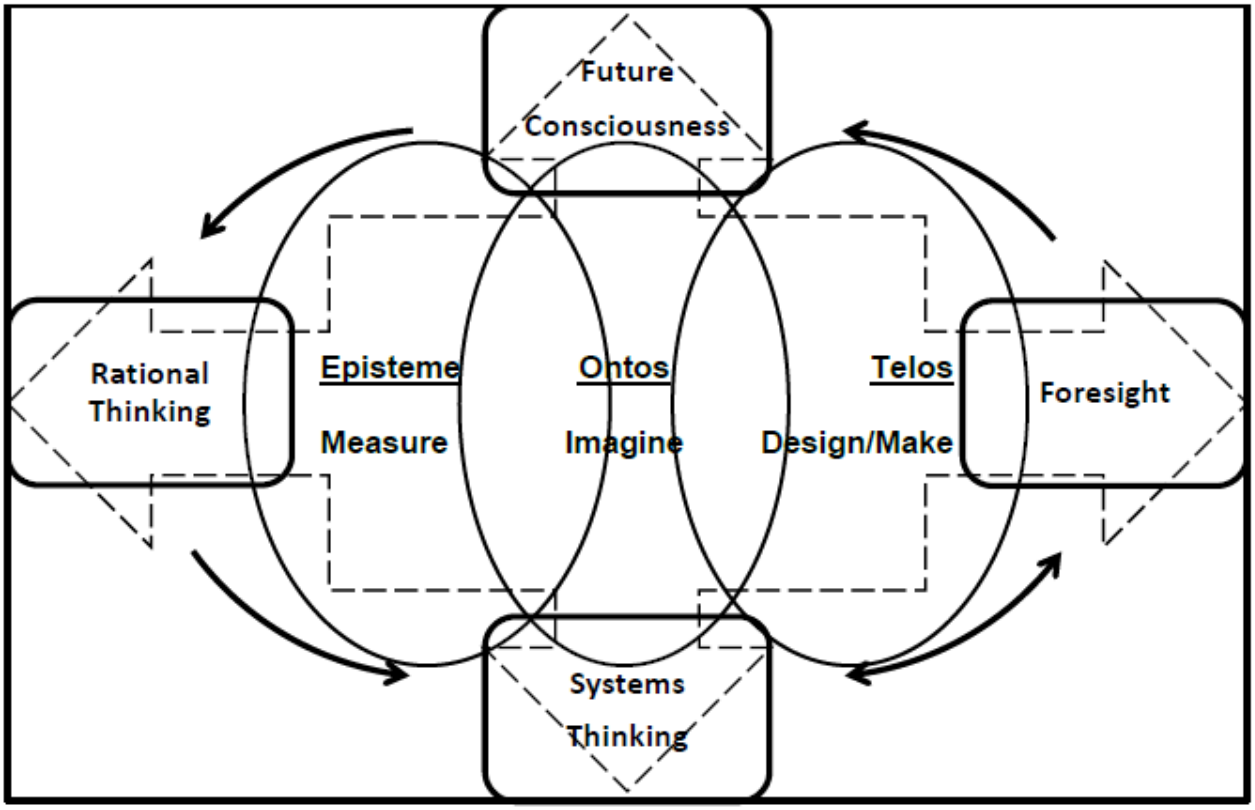

Figure 3.1: Holistic futures thinking

Source: Adapted from Spies, 2015.

To be able to think about the future in general, there is a need for some form of futures consciousness. Lombardo (2008: 2, 3) explained that future consciousness entails the human capacity to be conscious of the future, to create ideas, images, goals, and plans about the future, to think about these mental creations and use them in directing one's actions and one's life; future consciousness therefore includes all ideas, images, theories and beliefs about the future. To purposefully think about the future, where the purpose is to obtain the best possible future, rational thinking needs to be employed. Rational thinking, in this context, depends on the disposition towards the prospective future, i.e. optimism or pessimism, and fluctuations in-between. The disposition could be either a motivating or de-motivating factor in the approach towards the future.

Once a conscious decision has been taken to actively do something about or "change" the perceived future, systems thinking and foresight (systems thinking and foresight working iteratively) become necessary to develop deeper insight and understanding of how the future takes shape. It is in this phase where the actual processes of actively measuring the future, creating images of the future, and designing the preferable future(s) purposefully arise. It is acknowledged that certain elements of these processes exist in some form in normal thinking processes but not as structured as when employing a holistic futures thinking method. The futures thinking process continues with enhanced insight and understanding, and feeds back into futures consciousness to continually

improve the process of futures thinking and to achieve holism while simultaneously creating the preferred future(s).

Bell (1997: 42) identified nine major purposes of Futures Studies that are all interrelated to serve the main aim of the field which is to create a better global future through prospective thinking and action about the future (Figure 3.2).

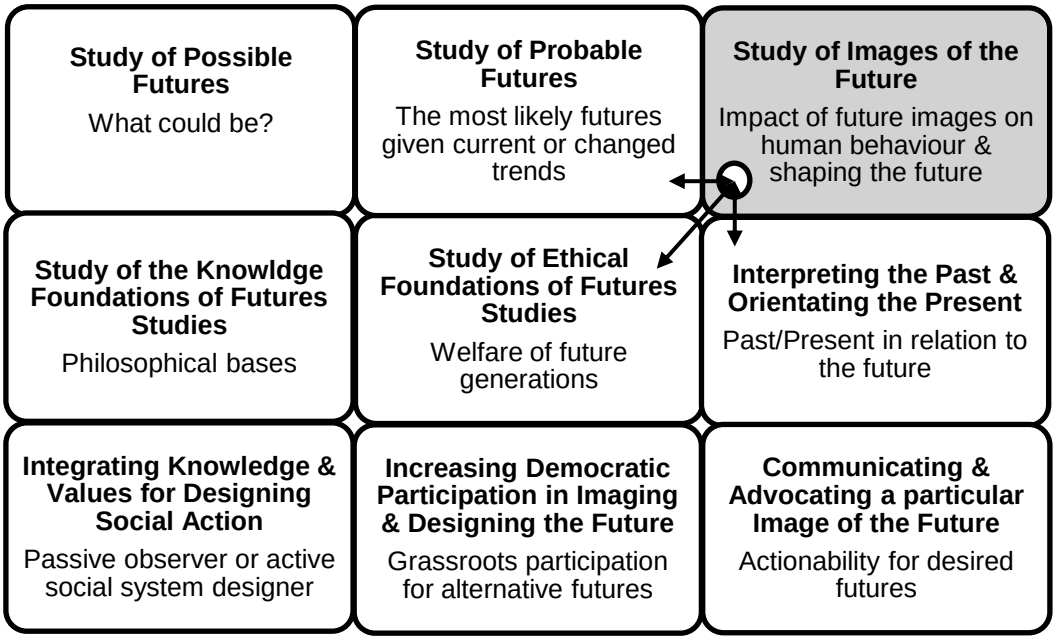

Figure 3.2: Research focus in terms of the nine major purposes of Futures Studies

Source: Adapted from Bell, 1997.

Although this research relates to all nine major purposes of Futures Studies, it focuses on the Study of the Images of the Future as it relates to environmental scanning, i.e. the interrelationship between scanning and images of the future. This corresponds with the futures thinking holism process (Figure 3.3) and involves, among others, the influence and impact of images of the future on human behaviour and the way it contributes to shape the future, i.e. people's hopes and anticipations of the societies in which they want to live. Human behaviour that is structured by, among others, time and space as well as hope and fear will determine whether people are inspired or de-motivated to face the challenges of their transactional or contextual environment to create more sustainable alternative futures.

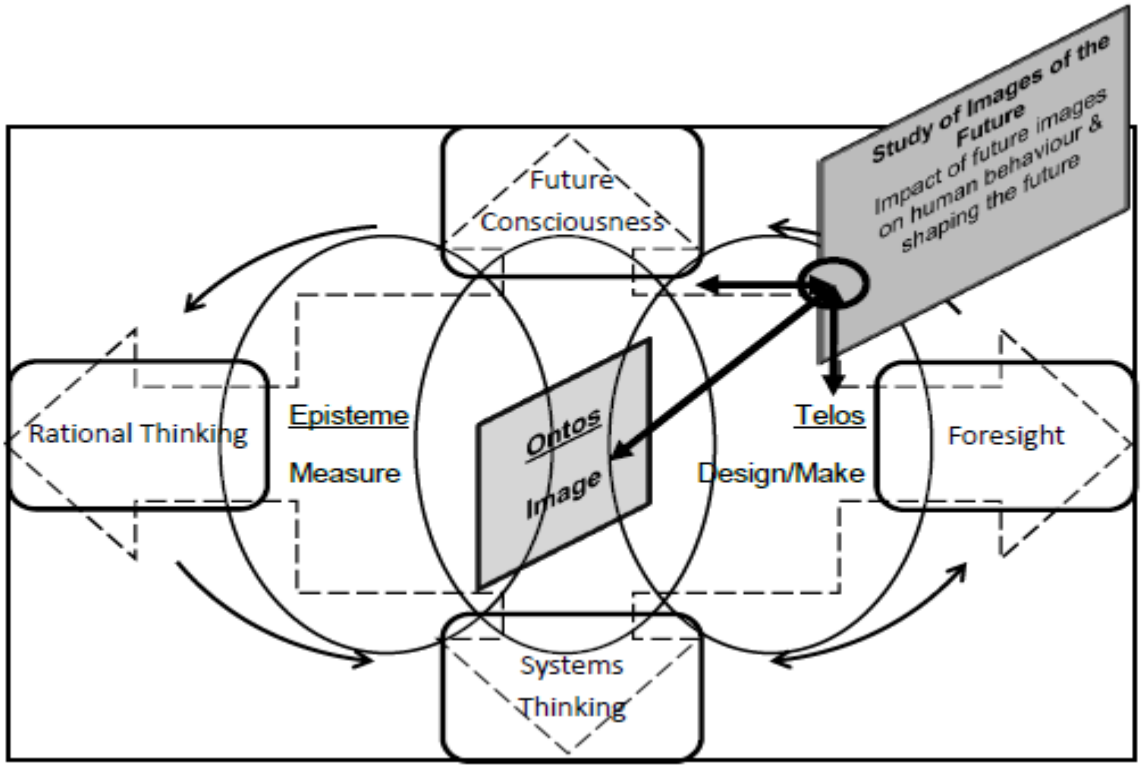

Figure 3.3: Study of images of the future

Source: Own compilation.

In general terms, an image is a flexible and changeable mental tool that involves consciousness of a perceived significant event that impacts the emotions (Rubin, 1996: 499). Dator (1998) agreed and emphasised the importance of images as mental constructs for the way the future takes shape; hence his notion that images of the future is an important Futures Studies focus area. Dator (1998) explicitly claimed that people's images of the future represent the empirical "facts" that futurists explore. In this respect, the futures images could make people optimistic or pessimistic, hopeful or fearful, paralysed or motivated, and Futures Studies attempts to examine and clarify these images in support of improved decision-making about the future (Dator, 1996: 109). Mental images of the future are powerful because they become part of the reality upon which people base their futures disposition and actions (Rubin, 1996: 499).

Furthermore, Lombardo (2008: 13, 17) indicated that emotions about the future are anticipatory and not just reactions to the present situation, i.e. emotions have a future focus. The conceptualisation, development and sustainability of people's goals for the future are influenced by their emotional state, which could be a motivational factor for people to act or a de-motivating factor in realising future goals. Lombardo (2008: 18) posited that emotions and motivation have a strong interrelationship with thinking and imagination. The impact of positive and negative emotional states is depicted in Table 3.2.

Table 3.2: Futures impact of emotional states

Positive emotional states	Negative emotional states
Optimism and hope are positive prospective emotions	Pessimism and fear are negative prospective emotions
Motivates to action	Generate immobility or avoidance
Stimulates higher levels of futures consciousness	Depressed state of futures consciousness leads to nihilism and negativity – seeing what can go wrong
Facilitates possibility thinking and actions to achieve goals	Mental and behavioural paralysis

Source: Adapted from Lombardo, 2008: 13-21.

People's actions as these relate to the future may follow two approaches based on whether they have a negative or positive disposition towards the future (Rubin 1996: 500):

- Reactive approach with futures strategies based on a negative disposition towards the future. People try to cope with the challenges of the present situation and feel powerless to act or influence the situation. As a result, they continuously adapt their strategies in the wake of new challenges. This approach is similar to De Jouvenel's (167: 5) "man in his role as a cognizant being" where the future is seen as uncertain, unattested and unverifiable, hence no or little action.
- Proactive approach with futures strategies based on a positive disposition towards the future. People use creativity to anticipate and influence the future through purposeful goal directed actions to achieve the best possible future. This approach is similar to De Jouvenel's (167: 5) "man in his role as an active agent" where the future is "a field of liberty and power" with the capacity to make that which does not currently exist, real at some future time, i.e. to validate a conception or image of the future.

Dator (1998) identified four generic images of the future that have been noticeable cross-culturally. These four generic images of the future are useful in analysing people's disposition towards the future:

- Continuation: The present continues basically in a linear way unchanged into the future.
- Collapse: Present global challenges lead to a collapse of the global order resulting in some form of severe global disorder.
- Disciplined society: Organised global order based on all-embracing values, standards etc.
- Transformational Society: Higher forms of living based on emerging forms of advancement resulting from new technologies (e.g. a technological singularity event) or spiritual enlightenment (e.g. encountering non-human intelligent life forms).

The study of the images of the future and its impact on the manner in which the future takes shape within the context of a holistic environmental scanning approach is of fundamental importance. Scanning the interior dimensions of reality illuminates the images people have about the future,

while scanning the exterior dimensions of reality completes the process by showing the impact of these images in the contextual environment as well as the impact of events in the contextual environment in creating new images of the future. The futures approach of this study also used the distinct concepts associated with the discipline. Some of the most important futures concepts that are foundational to the futures discourse, are presented in (Appendix A).

3.3.2 Pragmatism as philosophical approach

Futures Studies is a trans-, multi- and inter-disciplinary field of inquiry but it does not have a well-established theory of knowledge while its philosophical foundations are still emerging (Burns, 2005). However, it rejects positivism and postmodernism. No consensus exits among futurists on a specific philosophical approach although attempts have been made to posit critical realism as such an approach because it provides a more acceptable basis for knowledge in view of Futures Studies' nature as a future- and action-oriented field of inquiry (Burns, 2005). Bell (2007: 210-211) explained that critical realism did not demand that the truth of a proposition be justified, but only that a person was justified in believing that the proposition was true. This still allowed for the possibility that conjectural knowledge might be false. In this regard, a proposition undergoes serious criticism to falsify it, i.e. the purpose is not to show that it is true. Should serious criticism not lead to falsification, then, Bell (2007, 211) believed, the critical realist had no reason to reject the proposition since the criticism failed to refute the proposition, albeit without proof. Futures Studies, therefore, supported the notion that conjectural knowledge was possible and beyond reasonable doubt in the face of fallibilism while causation was a necessary assumption (Bell, 2007: 236).

Since the futurist debate is still open on a specific philosophical approach, pragmatism is posited in this study as an alternative to, and perhaps more suitable, than Bell's critical realism in answering the research objective and question. Turner, Beeghley and Powers (2012: 374) indicated that pragmatism is generally interested in "…the process of thinking and how it influences the action of individuals, and vice versa." This thought process (both lay and scientific) is instrumental in how people engage with their environment through adjustment, adaptation and achieving goals. Hence, pragmatists are interested in rational thinking, language and symbols, and the interrelationship between people's mental capacities and their disposition towards the world. Within the scope of the study, the thought processes within the broader context of mental constructs assist people to deal with the present and the future. In this regard, the pragmatism approach is directly applicable to the Futures Studies concern with people's images of the future. The latter takes pragmatism to the level of futures thinking holism by focusing on the design of preferable sustainable alternative futures.

Pragmatism as method, in the guise of "pragmatism of the middle" (Johnson, Onwuegbuzie & Turner, 2007b: 125) and in its wider sense (Hookway, 2015), is a preferred approach in bridging the divide between the qualitative and quantitative paradigms in support of mixed-method research

as a third paradigm. It incorporates the insights provided by the two former paradigms into a workable solution that is aimed at better understanding holistic real-world phenomena while simultaneously producing a superior research outcome (Johnson & Onwuegbuzie, 2004: 16-17). The research design thus uses a mixed-method approach with pragmatism as its underlying philosophy because it addresses the research objective and question with regard to images of the future as one of the purposes of Futures Studies. The research objective and question are geared towards obtaining a better understanding of people's disposition towards sustainable alternative futures. This approach supports Johnson *et al*.'s notion (2004: 19) that the purpose of a mixed design is understanding rather than corroboration.

3.4 MIXED-METHOD RESEARCH STRATEGY

3.4.1 Introduction

Integrated research has evolved since the late 1950s (Creswell, 2009: 14; Johnson, Onwuegbuzie & Turner, 2007b: 113) to become a so-called third research paradigm (Combs and Onwuegbuzie, 2010: 2) widely accepted as equal to both quantitative and qualitative research. Mixed-method research as this third paradigm has developed its own "unique philosophical, methodological, and analytic foundations" with quality standards that are still emerging (Tashakkori, 2009: 287). The emergent nature of mixed-method research is seen in its multi- and cross-disciplinary utilisation by various groups of researchers, methodologists and philosophers. The literature (Driscoll, Appiah-Yeboah, Salib & Rupert, 2007: 20; Tashakkori, 2009: 288) points out that although the mixed-methods community has agreed on its conceptual and methodological principles, much disagreement and challenges still exist with regard to philosophical and conceptual issues as well as the design of integrated research. Nevertheless, diversity of perspectives has been embraced instead of developing uniformity regarding the "how" of integrated research (Creswell et al. 2007a; Jang, McDougall, Pollon, Herbert & Russell, 2008).

Mertens (2012: 256) identified three paradigmatic stances that assist in bridging diversity, especially as these relate to philosophical assumptions from different perspectives, viz. dialectic pluralism, the pragmatic paradigm and the transformative paradigm. Briefly, the dialectic pluralism stance deepens understanding by converging the constructivist and post-positivist paradigms, the pragmatic paradigm supports the use of multi-methods as long as it fits the research question, while the transformative paradigm is supportive of mixed methods in so far as these enhance human rights and social justice. The pragmatic paradigm is the primary philosophy of mixed-method research (Johnson et al. 2007b: 113) and the approach followed in this study as explained in §3.3.2.

Johnson et al. (2007b: 123) consulted 19 leaders in the field of mixed methods research and developed the following general definition:

> *Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration*.

Creswell et al. (2007a: 207) identified four attributes necessary to claim a strong mixed-method study:

- The researcher must explain the utilisation of the mixed-method approach in answering the research question in terms of both qualitative and quantitative components.
- Qualitative and quantitative data must be identifiable, and separately analysed and presented. This includes qualitising and/- or quantitising the data.
- Identifiable inferences must be made that are based on the results of mixed-method analyses.
- Results from both approaches must be integrated into coherent inferences that supersede inferences of a mono-method approach.

Creswell's attributes for a strong mixed-method study should be viewed in terms of Johnson et al.'s (2007b: 124) qualitative-quantitative continuum (Figure 3.4):

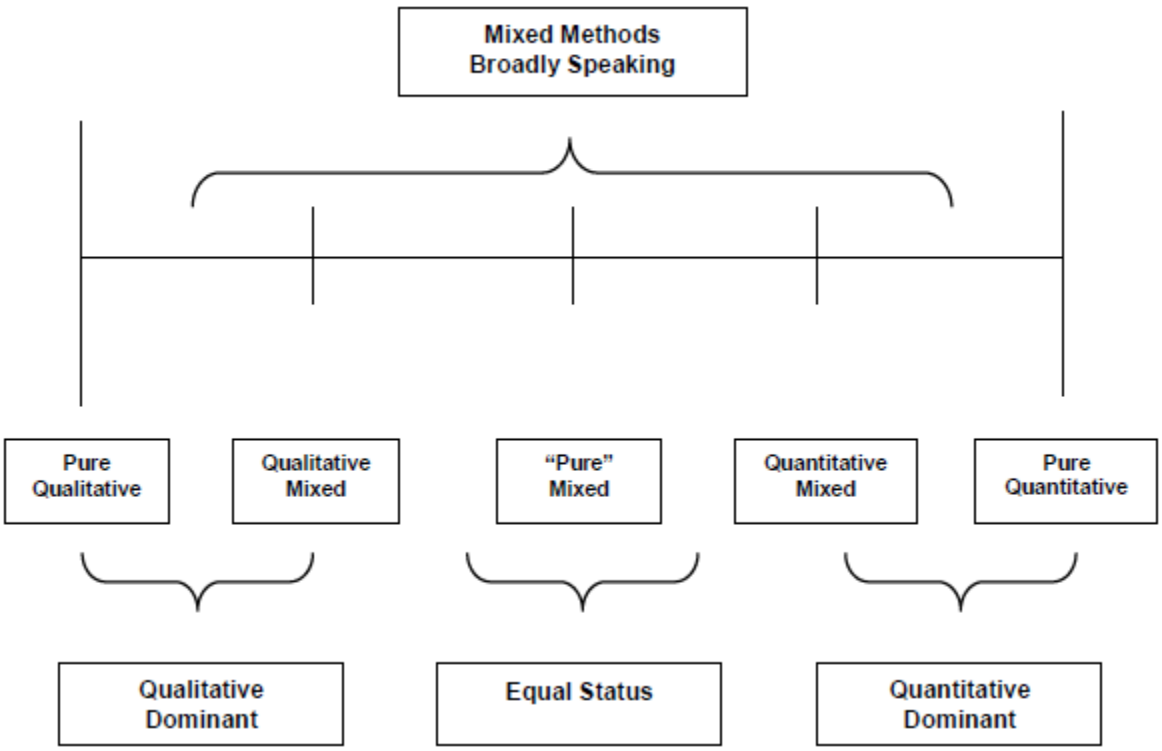

Figure 3.4: Subtypes of mixed-method research.

Source: Adopted from Johnson, Onwuegbuzie & Turner, 2007b: 124.

A strong mixed-method study could be equated with the median line of the “Pure” Mixed typology where both qualitative and quantitative methodologies have the same prominence. Nevertheless, the wide reach of what constitutes mixed method research ranges from qualitative dominant to quantitative dominant but has to at least include elements of both approaches in the same study. The qualitative dominant typology could represent the qualitative analysis of qualitative data as well as the qualitative analysis of quantitative data (qualitising) (Caracelli, 1993: 197) while the quantitative dominant typology could represent the quantitative analysis of quantitative data as well as the quantitative analysis of qualitative data (quantitising) (Table 3.3).

Table 3.3: Qualitative-quantitative mixed-method research matrix

Analysis	Qualitative data	Quantitative data
Qualitative	Interpretive text studies. Hermeneutics. Grounded Theory, etc.	Search for and presentation of meaning in results of quantitative processing (qualitising)
Quantitative	Turning words into numbers. Classical content analysis, word counts, free lists, pile sorts, etc. (quantitising)	Statistical and mathematical analysis of numeric data.

Source: Adapted from Kuckartz, 2014: 3.

3.4.2 Research design

A mixed method research strategy was adopted for this study to utilise this method’s fundamental principle of mixing the complementary strengths of the qualitative and quantitative methods while avoiding their overlapping weaknesses. The mixed-method research strategy was chosen based on the selection criteria identified by Teddlie and Tashakkori (2006: 25) for a best-fit research design. Broadly speaking, the criteria are as follows:

- Determine whether the research question requires a mono-method or mixed-method design.
- Identify the various typologies for mixed-method research designs while being mindful that designs could transform into other diverse configurations.
- Evaluate the criteria of each typology in relation to the study. Note that the broader set of seven typology criteria was used and not Teddlie *et al.*’s (2006: 13) four criteria. The seven criteria are:
    - Number of methodological approaches used
    - Number of strands or phases
    - Type of implementation process
    - Stage of integration of approaches
    - Priority of methodological approach
    - Functions of research study
    - Theoretical perspective.

- Select the most important criteria for the study.
- Apply the selected criteria to potential designs and select the best design for the study.
- If necessary, transform the design within the context of mixed-method designs to ensure a proper fit to the study.

Although the research question could probably have been adequately addressed by a qualitative mono-method research design, a mixed method research design was chosen to enhance insight, depth and understanding of the research problem, and through triangulation to obtain answers to the research questions based on a more flexible approach. Cohen and Crabtree (2006) defined triangulation as the use of multiple data sources in a study to enable deeper understanding. Method triangulation was an important and deliberate strategy for this study as the objective was to open possibilities for generalising the research results. Kuckartz (2014: 155) indicated in this regard that triangulation is one of the strategies used by researchers to generalise empirical results. O'Cathain, Murphy and Nicholl (2007: 148) stated that using both methods allows for greater width and completeness in addressing research issues as well as increased validity.

A multi-strand approach was adopted with both qualitative and quantitative phases, with each phase encompassing all three of the conceptualisation, experiential and inferential stages (Appendix B). When the study was conceptualised, qualitative and quantitative phases were envisaged based on available (albeit limited) secondary survey data in the literature as well as the research problem and question that emanated from these surveys, and which led to the study. Similarly, the experiential phase, with both its methodological and analytical components, and the inferential phase were designed to incorporate both qualitative and quantitative processes. The integration of inferences from both phases was done to develop meta-inferences. Integration is not only a requirement for mixed-method research but also a hallmark of such designs (Creswell, 2009: 14; Johnson *et al*. 2007a; O'Cathain *et al*., 2007: 149; Teddlie *et al*. 2006: 15).

The collection of qualitative and quantitative data was done concurrently. However, a conversion of data from the quantitative phase was done, i.e. the quantitative data was qualitised to do a thematic qualitative text analysis of both qualitative and quantitative data to achieve complementarity. This made the research design a multi-strand concurrent mixed design (or a conversion mixed design, as named by Teddlie *et al*.; 2006: 23). The implication is that the study has a qualitative dominant approach in addressing the research question. In this regard, a qualitative text analysis of the qualitative data was performed as well as a qualitative text analysis of quantitative data (qualitising). As the study aimed to achieve depth in the inquiry and had sufficient flexibility to answer the research question comprehensively, no quantitising of the qualitative data was done. Driscoll *et al*. (2007: 25) pointed out that a major disadvantage of such quantitising is the loss of flexibility and depth while small sample sizes of the qualitative approach will significantly reduce the statistical power of the quantitative approach. A possible overlapping weakness was thus avoided.

It is acknowledged that a qualitative dominant approach might be viewed by some authors as a quasi-mixed method design lacking in strength due to its qualitative dominant character. For example, Teddlie *et al*. (2006: 17) argued that a study should be seen as a quasi-mixed method design if only one type of analysis (i.e. either qualitative or quantitative) is done on converted data. Also, Johnson *et al*. (2007b: 126) expressed some reservations regarding a qualitative or quantitative dominant approach albeit acceptable in broad mixed-method terms. Although this study's design might appear less strong in terms of Johnson *et al.*'s (2007a) "pure" mixed strategy, it nevertheless contains all Creswell's required attributes of a mixed-method research study. Personal email correspondence with Udo Kuckartz[2], Tim Guetterman[3] and Kent Löfgren[4] in 2015 about this study's mixed-method design confirmed Creswell's typology and suggested that Teddlie *et al*.'s typology of a quasi-mixed method design has since been superseded by the mainstream authors on mixed methods research, inclusive of Creswell.

The multi-strand concurrent mixed design was adopted as it allows for the formation of inferences in each phase, which was then synthesised to form meta-inferences. It also made comparison between the outcomes of each phase possible to determine convergence and, divergence, and to provide new insights and understanding with regard to the research question. The qualitative dominant approach was specifically chosen to, among others, reduce complexity associated with a concurrent mixed design as well as the required expertise needed to fully implement both a qualitative and quantitative design, i.e. a "pure" mixed design. Teddlie *et al*. (2006: 21) and Johnson *et al*. (2007a) cautioned that a "pure" mixed type of concurrent design should not be undertaken by a solo researcher but only by a collaborative team due to the extensiveness and the expertise required for such research and the cost involved.

3.5 RESEARCH INSTRUMENTS

The multi-strand concurrent mixed research was done in two concurrent phases, viz. a qualitative and a quantitative phase. The qualitative phase used interviews as an instrument for collecting data while the quantitative phase utilised an online web survey (primary data collection) and secondary historical survey data. These specific instruments of research were chosen based on the prevailing situational contingencies. In this regard, the researcher had limited resources to conduct the research on a global scale. Interviews with professionals and non-professionals on

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[3] Tim Guetterman, CEHS Mixed Methods Research and Training Academy, University of Nebraska-Lincoln, USA. Guetterman works on the research team of John W. Creswell. The email was addressed to Creswell but the latter requested Guetterman to respond.

[4] Kent Löfgren is a Lecturer at the Department of Education, Umea University, Umeå, Sweden and author of *Teacher Education, Statistical Methodologies and the Construction of Knowledge*, 212-228. In *Pierre Bourdieu. Four-Volume Set edition. SAGE Masters in Modern Social Thought series.*

environmental scanning were done in the qualitative phase. In the quantitative phase, an online web survey and a secondary (global) survey were utilised. Both approaches were deemed the best options given the situational contingencies to address the research problem and research question adequately and optimally, i.e. to obtain the best possible insight, depth and understanding of the research problem given the limitations (see §1.4) while simultaneously pursing generalisability.

3.5.1 Pilot study

A pilot study was conducted with two interviewees prior to the main interviews with 10 interviewees. The two interviewees of the pilot study were respectively a professional environmental scanner (ESP) and a non-professional environmental scanner (Non-ESP). The limited sample size with the pilot study was due to the prevailing situational contingencies (see §1.4 and §3.5.2). Mason (2010) indicated that a qualitative sample was not about the size of the sample but rather about the occurrence of a piece of data, which must be useful in understanding the process behind the inquiry. The main purpose of the pilot study, therefore, was to check for comprehension and challenges with any of the questions – both for the interviews and the online web survey questionnaire as the questions were identical albeit directed at different research populations. The interviews were conducted in the same manner as for the main interviews with the only difference being that notes were taken to record the responses during the first pilot interview. This approach was followed to cater for the possibility that interviewees may not consent to recorded interviews. One of the outcomes of the pilot interviews was that note taking would be insufficient, cumbersome and lacking in accuracy. One hour was allocated for each interview but it became clear that comprehensive and accurate note taking would most probably extend the time limit of some interviews of the main study. It also distracted the interviewer and interviewees in communicating effectively. Therefore, the main interviews utilised digital recordings that were transcribed for qualitative text analysis.

Another outcome of the pilot study was that one question was added in the beginning of the interview session to set the scene for the questions that followed. Also, an initial optional question on the interviewee's views regarding his/her personal future in contrast to the global future was removed as it distracted interviewees from the global future perspective of the study.

An interview guide was developed for the pilot study to conduct semi-structured interviews. The aim was to ensure that the questions would provide answers in terms of five pre-determined main categories. The main categories were developed from the research question and the contextual framework and covered the following issues:

- Level of future consciousness
- Environmental scanning methodology
- Knowledge and foresight levels
- Views on the media

- Actionability.

The five main categories had 16 questions in total that needed to be covered in a particular order to ensure consistency in approach with all the interviewees. The main categories were structured to measure the three areas posited in this study for an enhanced approach to environmental scanning, viz. dimensions of reality, process dynamics and levels of knowing. Some of the questions were open-ended and the interview guide assisted in keeping to the pre-determined structure of the interview when the interviewees diverged from answering the set questions. Divergence in the discussion during the semi-structured interviews was welcomed as it provided new insights in relation to the main categories. It was also found during the pilot study that interviewees occasionally raised peripheral issues of interest to the study. This, however, did not require any changes to the questions or the structure of the interviews.

Observations from the pilot study in terms of the main categories and related questions produced the following outcomes:

- Level of futures consciousness: Dimensions of reality were adequately addressed by the five questions in this category. The disposition of the interviewees towards the future came out clearly in the answers with strong indications of the inner world of identity and meaning. The process dynamics in the way the interviewees made constructions of the future was sufficiently clear with possible reasons for the disposition towards the future beginning to emerge. The levels of knowing on which these constructions were based generally supported the categorisations of the Causal Layered Analysis theory.
- Environmental scanning methodology: Four questions were asked in this category. The dimensions of reality were again adequately addressed in terms of the specific reality dimensions being scanned with a strong emphasis on the external dimension with limited consideration for internal dimensions. The process dynamics gave a clear indication of the modes of scanning utilised by the interviewees. The levels of knowing showed the depth of scanning accurately.
- Knowledge and foresight levels: Three questions were asked in this category. The directness of the questions appeared to have challenged the interviewees to do serious introspection with regard to their knowledge base. This outcome was promising in terms of what to expect from the main interviews, referring to the depth of the inquiry regarding all three areas, viz. dimensions of reality, process dynamics and levels of knowing.
- Views of the media: Two questions were asked in this category. Dimensions of reality covered perception and paradigm formation as these related to the media in general. The process dynamics appeared to be similar to that of the previous two categories, which indicated a clear consistency in approach by the interviewees. Levels of knowing hinted towards a contradiction as interviewees identified their sources of information but later on questioned the reliability of the same sources as providers of information.

- Actionability: Two questions were asked in this category. The dimensions of reality have been properly covered by the two questions as they contrasted the interviewees' future consciousness with a disposition towards taking action to create a preferred future. Similarly, the process dynamics of making a contribution to the external environment were clearly articulated. Levels of knowing appeared to be consistent with the other categories covered in the interviews.

The pilot study interviews showed promising outcomes in terms of answering the research question through the other planned instruments of the research. The interview questions covered the levels of knowing comprehensively while interviewees' judgement and foresight proficiency were clearly illuminated. The issue of developing the necessary paradigms to imagine and pursue more sustainable alternative futures was also covered well, and early indications suggested that there might not be significant qualitative differences between ESPs and Non-ESPs in scanning the environment. The pilot study, therefore, suggested that the questions for the main interview phase as well as for the online web survey were suitable and reliable for answering the research question, and that there was a possibility that the validity of the qualitative process would be established.

3.5.2 Interviews

Formal semi-structured interviews were conducted to collect the primary qualitative data. Interviews were done with five ESPs and five Non-ESPs following the pilot study. The five ESPs were selected from one South African company that specialises in the provision of strategic political, economic, technological, social and environmental information to its clients. The company employs multi-skilled analysts who do their own environmental scanning and report writing on areas of specialisation. A letter was written to the executive management of the company explaining the research purpose of the study, the criteria for the interviews as well as the provisional interview questions which accurately resembled the pilot study questionnaire.

A formal request was made for permission to interview the company's analysts. Formal written conditional permission was granted. The conditions stated that the interviews had to be done anonymously, and that the company's information and identity cannot be revealed. On receipt of the letter of approval, an official meeting was held with an executive member of the company responsible for the analysts to discuss the selection criteria for the analysts based on the study purpose. The executive member restricted the number of analysts to six members to be interviewed due to the demanding programme of the organisation. The company only employs 15 analysts. Also, the executive member personally selected the analysts based on skills levels as well as gender and racial equality considerations. The average age of the analysts was 34 years and all had post-graduate degrees. Unrestricted access was provided to conduct the interviews with the analysts.

The executive member informed the analysts of their selection for the interviews. Formal interview schedules were telephonically arranged with the analysts and the interviews were conducted in person on a one-on-one basis either in their offices or in a board room. All interviewees consented to the interviews being digitally recorded with adherence to the principle of anonymity. An undertaking was also given that the recordings would not be shared with any person in the company, inclusive of the executive. One member of the selected analysts was chosen for the pilot study; therefore, only five analysts partook in the main interview process of the study.

The researcher was mindful that a relatively small sample size might be limiting in many respects, especially as a possibility existed that “saturation” might not be reached. However, Baker and Edwards (2012: 6, 18) said that no consensus exits within the literature on sample sizes for qualitative interviews, and that it is subject to, among others, the “research aims and objectives, validity within epistemic communities and available time and resources”. Mason (2010), however, indicated that the concept saturation was the guideline in determining sample size in qualitative studies. He said that saturation was achieved where the gathering of new data did not add to the matter under investigation. The five pre-determined main categories developed from the research question and the contextual framework provided the boundaries for achieving saturation, i.e. the interview questions limited the responses to the main categories, and by so doing, prevented endless new data arising from the respondents.

The five Non-ESPs were a purposeful sampling selected from the South African society and they represented a diverse group of people. A sixth Non-ESP participated in the pilot study. The five Non-ESPs were deliberately selected to equal the number of ESPs; a higher number of Non-ESPs could have had the unintended consequence of skewing the outcome of the research results in favour of the Non-ESPs. It must be noted that the researcher had no influence over the decision of the sample size of the ESP interviewees. The sample of 10 interviewees was deemed large enough to cover all the aspects of the research question effectively within the requirements of the qualitative phase of the study.

The average age of the five Non-ESPs was 37 years. They had tertiary degrees. All of them were interviewed in person and on a one-on-one basis. They represented the following professions:

- Teacher – interviewed in a school class room.
- Labour consultant – interviewed in a board room of the company.
- Programmer – interviewed via Skype.
- Systems analyst – interviewed at home.
- Financial advisor – interviewed at home.

The five ESPs formed the core group as it was assumed that they would be highly proficient in Aguilar’s four modes of environmental scanning while the five Non-ESPs would be less proficient because environmental scanning was not an occupational requirement for them. The five interview

categories were presented in the interviews in the same manner as with the pilot study. All the interviews were digitally recorded. The interview questions had the following aims:

- Level of futures consciousness: The interviewees' level of future consciousness was determined. It was important for the study to determine the dimension of their future-reality as it related to their mental constructs as well as the process dynamics in forming such a future-reality. This was done by asking questions on their approach towards the future, the timeframe of their future perspective, their feelings when thinking about the future, what developments would change their feelings as well as whether they were making a contribution towards creating a better future world. The answers to these questions directly related to the research question in terms of the interviewees' disposition towards the future that might have a bearing on how they imagine and pursue more sustainable alternative futures.
- Environmental scanning methodology: This core category of questions aimed to solicit the interviewees' environmental scanning approaches and the direct bearing of their approaches on the epistemological dimension of their futures knowledge base. The purpose was to determine which levels of knowing were accessed by the interviewees. The mode of scanning they used to obtain information as well as the scope and quality of the information were solicited by the questions. The answers to these questions addressed the Litany Level of Knowing issue in the research questions.
- Knowledge and foresight levels: The purpose of the questions in this category was for the interviewees to explain their own proficiency in making a judgement on the global future. The answers were compared with answers in the previous categories to obtain an understanding of the interrelationship between the categories, i.e. to understand to what extent their own views agreed or disagreed with what have been learnt from the future consciousness and methodological categories, and what answers this provided for the research question.
- Views of the media: The research question mainly focused on the Litany Level of Knowing (albeit not excluding the other levels of knowing) with the literature indicating that scanning on this level only, might not be sufficient to develop good judgement and foresight of the global future. The interviewees' views of the media as a source of information could be insightful, especially when compared with their answers on the scanning methodology and levels of knowing underpinning their future consciousness.
- Actionability: This category sought to determine whether there was a desire among the interviewees to pursue more sustainable alternative futures within the context of their perspective of the state of the world. The questions on actionability tried to solicit answers on whether the interviewees had a general disposition towards creating a better global future as well as what should be done, in what way and by whom to change the world for the better.

Within the context of the five categories that were explored in the interviews, certain assumptions and expectations existed in the pre-interview phase with regard to the research question. These assumptions and expectations needed attention during the data analysis phase. The assumptions and expectations were as follows:

- Levels of knowing: The ESPs were not expected to focus predominantly on the Litany Level of Knowing but to scan the environment mostly on the social causes and discourse/worldview levels to deepen the inquiry. However, it was assumed that any scanning of the Litany Level of Knowing (whether consciously or sub-consciously) could have an influence on their worldview. The interview data had been analysed to determine how much scanning was done by the ESPs on the Litany Level of Knowing in comparison to the other levels of knowing. Non-ESPs were expected to scan mostly on the Litany Level of Knowing but also to some extent on the Social Causes Level of Knowing and not at all on the Discourse/Worldview Level of Knowing. Scanning of the Myth/Metaphor Level of Knowing was uncertain for both groups and was also investigated in the analysis phase.
- Sufficient knowledge: This element of the research question was linked to the interviewees' levels of knowing, i.e. on which level of knowing did they rely for their information and knowledge to be able to have good judgement and foresight of the future? Also, what sources of information were utilised? It was, therefore, expected that the ESPs should have more advanced knowledge than the Non-ESPs due to the assumption that they operate on higher levels of knowing and have access to more reliable sources of information.
- Good judgement and foresight of the global future: It was assumed that ESPs would have better judgement and foresight given their expected proficiency of the different environmental scanning modes than the Non-ESPs. The latter is assumed to rely mostly on the two viewing modes of scanning.

All the digitally recorded interviews were captured and transcribed by the researcher personally using the MAXQDA software program. During the transcription phase, various important parts of text were highlighted for coding purposes. Memoranda were also created to capture initial perspectives while working with the text and to capture comments and insights that were important for utilisation in the analysis phase of the study (Appendix C). Initial coding was done in terms of the five pre-determined main categories as these related to the research question (Appendix D). This was followed by assigning various passages to each of the categories. Sub-categories were determined and a second coding process was initiated (Appendix E). Next, all the interview data was then coded in terms of the extended category system. A thematic qualitative text analysis approach was adopted because it is a category-based method for analysing qualitative data inductively (Figure 3.5).

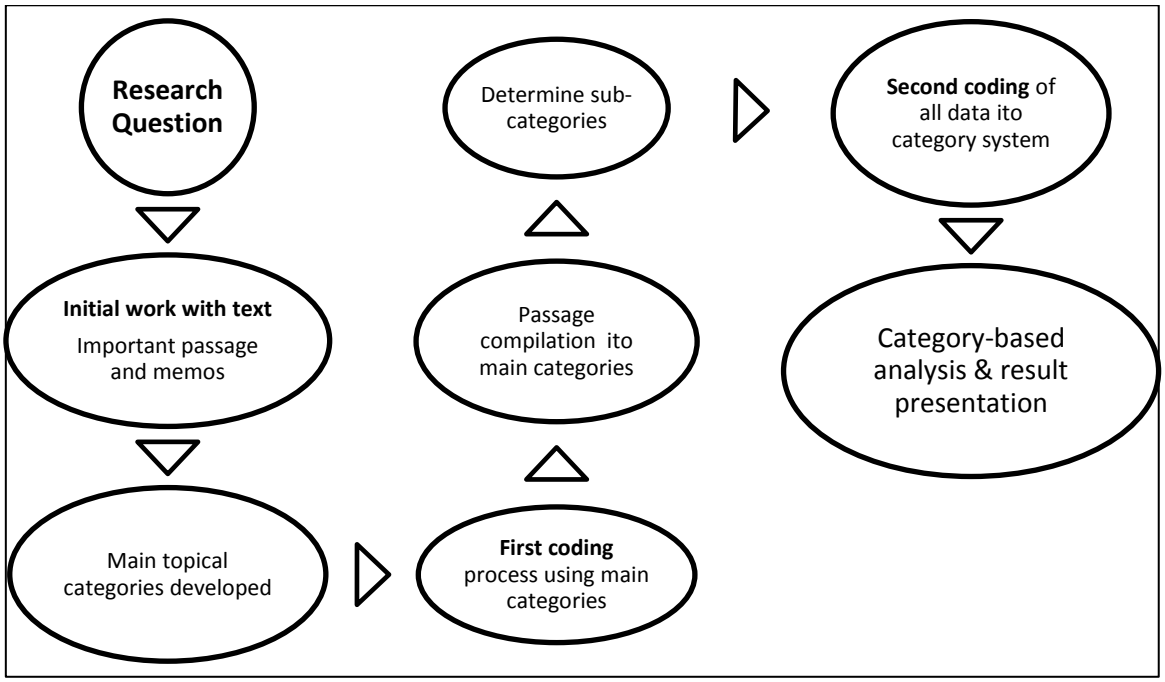

Figure 3.5: Thematic qualitative text analysis process

Source: Adapted from Kuckartz, 2014: 70.

This approach allowed for the topics and sub-topics to be identified, systematised and analysed while also determining the interrelationship between them. A profile-thematic matrix was used to do horizontal and vertical analyses of the data as these related to the pre-determined main categories and the research question (Appendix F).

The horizontal analyses provided each interviewee's perspectives on the themes to obtain characterisations of interviewees. The vertical analyses provided the perspectives of all interviewees on the specific themes that allowed for a description of statements as these related to the themes in a systematic way. The reliability of the analysis process was enhanced and greater insight and understanding of the research question was obtained by employing a more complex analysis strategy with the matrix. This was done by assessing multiple rows to compare and contrast the interviewees, especially to determine divergence and convergence between the ESPs and the Non-ESPs (Appendix F.5 and F6). Likewise, multiple columns were compared to determine the interrelationship between the themes while statements regarding themes were evaluated to determine the consistency of interviewees with regard to their overall disposition towards the future.

The different typologies used in the Case-oriented (Individuals) Profile/Thematic Matrix (Appendix F.1) is based on a holistic environmental scanning methodology to indicate the level of depth in the inquiry as these relate to knowledge, judgement and foresight competencies of the interviewees. In this regard, the following meanings were attached to the different typologies: (a) Bad: No depth in the inquiry; (b) Poor: Superficial depth in the inquiry; (c) Average: Limited depth in the inquiry; (d) Good: Some depth in the inquiry, and (e) Excellent: Depth holism in the inquiry. The approach with

the analyses of the scanning scope and modes, the levels of knowing, the reality dimensions and the characteristics of information as these relate to the Case-oriented (Individuals) Profile/Thematic Matrix is given in Appendix F.1.

It has not been possible to directly determine the quality of the information scanned by the interviewees; such an effort would have required the provision of information samples representative of all of their scanning. Situational contingencies such as huge volumes of information and the time required to analyse all the sample information made it impracticable. In addition, the ethical considerations regarding the ESPs as indicated in §3.6 precluded such an approach.

An indirect approach was utilised to determine the quality of the interviewees' information by exploring four interrelated areas of the holistic environmental scanning methodology, viz. the environmental scanning scope, the environmental scanning mode, the levels of knowing, and the reality dimensions in terms of the characteristics of information (Appendix F.4). The assumptions developed with regard to the characteristics of the information emanated from the discussions in §2.4 regarding information as a concept.

The characteristics of the information represented the following qualities as discussed in §2.4.2:

- False information: Bad quality – information to be avoided
- Distortions (propaganda and deception): Poor quality – requires discernment
- Explicit facts: Average quality – the focus of scanning for information
- Concealed information: Good quality – the focus of deeper scanning for information

The characteristics of the information in relation to the environmental scanning scope are based on the following assumptions:

- Public scanning scope is assumed to have a high probability of information with false, distorted and factual characteristics. This is due to the dominance of media reporting on the various contextual STEEP (Social, Technology, Environment, Economic, Political) areas where societal and global problems are the focus of reporting.
- Domain-specific scanning is assumed to have a high probability of information with distorted and factual characteristics. This is due to the coverage of a wide range of activities and interests related to specific domains, including competitor, competitive and business intelligence as well as issues management.
- Complete scanning is assumed to have a high probability of information with distorted, factual and concealed characteristics. This is due to the scanning of the total and widest environment possible.

The characteristics of the information in relation to the environmental scanning modes are based on the following assumptions:

- Undirected viewing is assumed to have a high probability of information with distorted and factual characteristics. This is due to the general and unfocused nature of the undirected viewing mode, which results in an overload of information complicating a verification of its quality. Therefore, the quality of the information in the undirected viewing mode will range from bad to poor quality.
- Conditioned viewing is assumed to have a high probability of information with distorted and factual characteristics. The conditioned viewing mode draws the attention of the scanner to certain information that may have value. In this context, the scanner may obtain factual information but is still exposed to the general nature of the viewing mode that may also have distorted information. Therefore, the quality of the information in the conditioned viewing mode will range from poor to average.
- Informal searching is assumed to have a high probability of information with distorted characteristics but also with more factual characteristics. In the informal searching mode the scanner seeks specific information in an unstructured way. The scanner has better awareness of the information quality with the informal searching mode than in the viewing modes. As a result, the scanner will be able to distinguish more clearly between distorted and factual information. Therefore, the quality of the information in the informal searching mode will range from poor to average.
- Formal searching is assumed to have a high probability of containing information with characteristics that are factual and concealed information. In the formal searching mode the scanner utilises formal methodologies to look for information and will be able to identify factual and concealed information. Obtaining concealed information in the formal searching mode depends on the depth of the inquiry, i.e. the likelihood of getting concealed information improves exponentially as formal searching accesses the deeper reality dimensions and levels of knowing. Therefore, the quality of the information in the formal searching mode will range from average to good.

The characteristics of the information in relation to the levels of knowing are based on the following assumptions:

- The Litany Level of Knowing is assumed to have a high probability of information with false, distorted and factual characteristics because this level of knowing contains information indicative of a proliferation of societal problems as presented by the various media formats. The quality of the information on the Litany Level of Knowing will range from bad to average.
- The Social Causes Level of Knowing is assumed to have a high probability of information with distorted and factual characteristics because of the analysis of societal problems within the context of the prevailing societal paradigms. The quality of the information on the Social Causes Level of Knowing will range from poor to average.

- The Discourse-Worldview Level of Knowing is assumed to have a high probability of factual and some concealed information characteristics because of an approach to determine the mental constructs underlying societal problems. The quality of the information on the Discourse-Worldview Level of Knowing will range from average to good.
- The Myth-Metaphor Level of Knowing is assumed to have a high probability of information with concealed information characteristics because of an approach that unearths the unconscious, emotive dimensions underlying societal problems. In this regard, the concealed information is obtained by focusing on consciousness (unconscious beliefs) as causal reality. The quality of the information on the Myth-Metaphor Level of Knowing will be good.

The characteristics of the information in relation to the reality dimensions are based on the following assumptions:

- The external reality dimensions (SED-IED) are assumed to have a high probability of information with false, distorted and factual characteristics. This is due to the nature of the sources of information reporting on the external contextual environment, viz. the various forms of flat-earth media reporting on the "reality" of the material world. The concept *flat-earth* was based on Davies' depiction of "flat-earth news" (2008:12) as a newspaper story appearing to be true and widely accepted as true even though it is riddled with falsehood, distortion and propaganda.
- The internal reality dimensions (CID-IID) are assumed to have a high probability of information with distorted, factual and concealed information characteristics. This is due to interior intentional subjective realm of individuals and the social inter-subjective realm of cultural groups underlying the dynamism in the external environment. The concealed information is obtained by accessing the deeper levels of inquiry as it relates to the levels of knowing (Discourse-Worldview and Myth-Metaphor) and its corresponding interior reality dimensions (CID-IID).

3.5.3 Surveys

3.5.3.1 QuestionPro survey

The primary survey utilised for the study was a web-based survey from QuestionPro. QuestionPro was chosen as the web online survey format from among various other web online companies due to its simplicity and uncomplicated design features. In this regard, the Simple Multiple Choice-format of QuestionPro was used to obtain real-time responses to the questionnaire. Since the QuestionPro survey was running concurrently with the qualitative interview process, such real-time information was valuable for a holistic picture of the data collection process of the multi-strand concurrent mixed-method research design.

The benefits of an online survey are that respondents are more open, honest and less biased when not confronted by an interviewer (Newberg & Waldman, 2009: 69). The cost was also an overriding factor. In this regard, Gunn (2002) stated that the cost-effectiveness of web surveys in relation to their potential is unmatched when compared to paper surveys. Other advantages of web surveys over paper surveys are:

- A faster response rate.
- The ease of sending reminders to participants;
- The ease of processing data, since responses could be downloaded to a spread sheet, data analysis package or database.
- Dynamic error checking capability.
- The option of putting questions in random order.
- The inclusion of pop-up instructions for selected questions.
- The use of drop-down boxes.

The major sources of error (such as sampling, coverage and non-response) found in survey methods also impact web surveys with (Gunn, 2002). Also, Gunn (2002) pointed out that the sample in a web survey does not really constitute a random sample, and that there is no method for selecting random samples from general e-mail addresses. Van der Laan (2011)[5] indicated that web surveys are only useful as online survey tools and for descriptive analysis methods.

The initial planning was to use the same questionnaire that was used for the interview phase of the study for the QuestionPro survey. However, this was not possible due to cost considerations. QuestionPro only allowed seven questions per questionnaire free of charge. QuestionPro offered a survey support team to conduct the survey globally. Its stated methodology would have moderated the sampling, coverage and other problems associated with web surveys. However, the cost implications were too high as QuestionPro quoted US$ 3 to US$ 5 per person per questionnaire depending on the geographical area covered. Hence, the questionnaire had to be amended significantly to cater for only seven questions while sampling and coverage also became restricted in scope.

The QuestionPro questionnaire (Appendix G) was continued albeit with the acknowledgement of the limitations to the survey results. Since the survey data would be qualitised it was deemed valuable for providing added understanding and insight in conjunction with the qualitative interviews and the secondary survey data. A convenience non-random sampling process was followed. Once the QuestionPro survey was launched online, email invitations were also sent to the 436 people on the researcher's email contact-list. Similar invitations were sent to the 53

[5] Personal email correspondence with Dr Luke van der Laan (PhD), dated 7 November 2011. Dr van der Laan is Senior Lecturer and Mission Leader – Openness, Australian Digital Futures Institute, University of Southern Queensland, Australia. He used a QuestionPro online survey for his PhD.

contacts on the researcher's Facebook friends list and the 279 contacts on the researcher's LinkedIn list. This potentially covered 768 people globally while an unknown number of people were also made aware of the survey through a clearly marked survey link attached to two blogs on the web as well as to the email address of the researcher. By the end of February 2015, 598 people had viewed the survey, 136 started the survey while 105 completed the survey, rendering a completion rate of 77% and a participation rate of 17.6%.

The QuestionPro survey addressed most of the five main categories and the elements of the research question despite its limited scope. The two categories that were not addressed due to the restrictive number of questions allowed were the respondents' views of the media and their actionability. The elements of the level of knowing, sufficient knowledge as well as judgement and foresight were covered by the survey albeit less complete than with the qualitative interviews due to limitations of the online survey. Nevertheless, sufficient data was obtained to provide explanations and make inferences.

The data from the QuestionPro survey was qualitised. A narrative was written about the outcome of each question as it relates to the five qualitative categories and the elements of the research question. A similar thematic qualitative text analysis approach as with the interview data analysis process (Figure 3.6) was followed. Similar coding as with the qualitative process was used to code the narrative data.

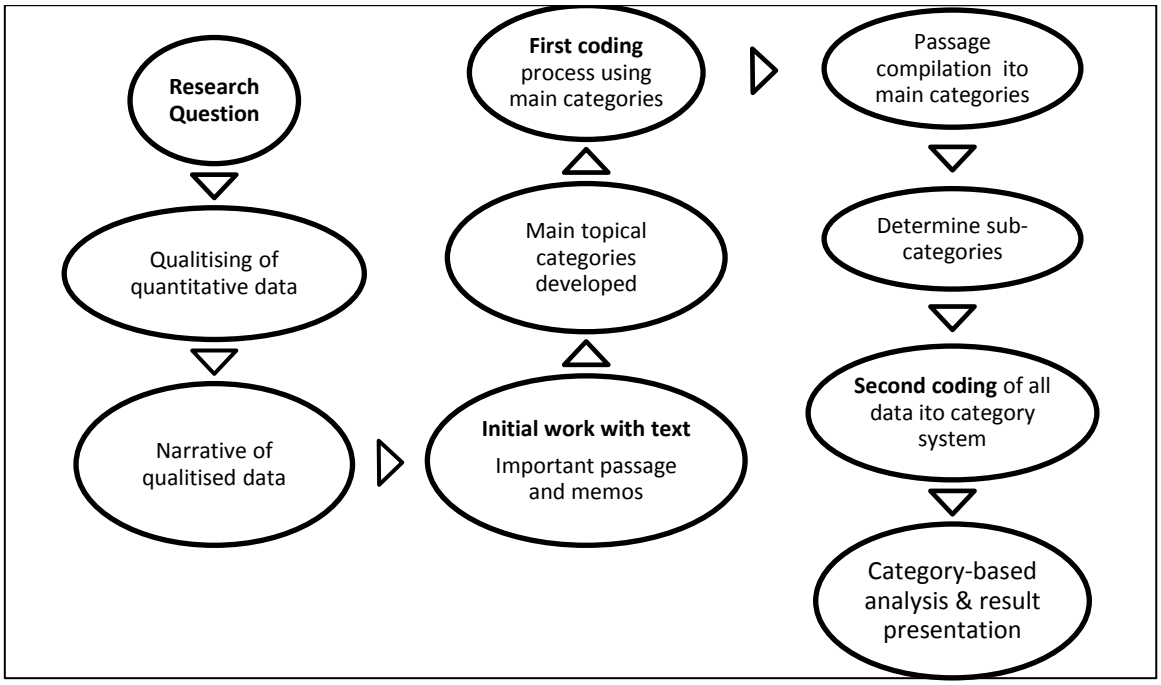

Figure 3.6: Thematic qualitative text analysis of qualitised quantitative data

Source: Own compilation.

3.5.3.2 Telefónica-Financial Times survey

The secondary survey utilised for the study was the Global Millennial Survey carried out by Telefónica in partnership with *Financial Times*. This survey commissioned 12 171 online quantitative interviews among people aged between 18 and 30 years residing in 27 countries in North America, Latin America, Western Europe, Central and Eastern Europe, Asia, the Middle East and Africa. The purpose of the study was to "look at the hopes, fears and dreams of the millennial generation" (Telefónica, 2013).

The Telefónica-Financial Times secondary survey was a cost-effective way to obtain useful data. The survey complied with the reliability standards indicated by the literature (Boslaugh, 2007: 3-5; Koziol & Arthur, 2011). The survey had the advantage of being administered in a professional manner and it generated high-quality data. It also had a wide scope as it was conducted globally. It is acknowledged that the major disadvantages of secondary data will be applicable to the Telefónica-Financial Times survey regardless of the advantages. In this regard, the depth of the survey cannot be established with certainty while there also was no control over the research design or data collection procedure. It is also unknown whether the data was cleaned and to what extent any recoding procedures were applied.

However, the Telefónica-Financial Times survey was useful because 41 of the 190 survey questions addressed the five main categories and the elements of the research question (Appendix I). In this regard, four questions related to the levels of knowing element, six related to the sufficient knowledge element, nine related to the good judgement and foresight element, 12 questions related to the futures consciousness/mental constructs element, and 10 questions related to the actionability element of the research question.

The data from the Telefónica-Financial Times survey was qualitised. A narrative was written about the outcome of each category and question section of the survey as these relate to the five qualitative categories and the elements of the research question. A thematic qualitative text analysis approach was followed (Figure 3.6). Similar coding as with the qualitative process was used to code the narrative data.

3.6 ETHICAL CONSIDERATIONS

The ethical integrity of the research has been maintained throughout. The guidelines as provided by the University of Stellenbosch Business School (USB) have been adhere to and no changes were made to the research proposal in terms of ethical considerations. All research supporting evidence had been submitted to the USB Departmental Ethics Steering Committee (USB DESC) and written approval was obtained to proceed with the research. The USB DESC approval recognised the written request of the company that employed the ESPs and that specifically stipulated that the identity of the company and its participating employees remain anonymous and that no company-related information may be revealed. All the interviewees in the qualitative phase

of the research signed the *Consent to participate in research* form of USB. The introduction and first web page of the QuestionPro questionnaire before being allowed to access the questionnaire clearly stated that participation in the survey was voluntary, that no foreseeable risks were associated with survey and that participants could withdraw at any time.

3.7 CONCLUSION

The most applicable research design and methodology to answer the research question were applied. A qualitative dominant multi-strand concurrent mixed-method research design was used to overcome the situational contingencies of the study. This was obtained by mixing the complementary strengths of the qualitative and quantitative methods while avoiding their overlapping weaknesses. Underlying this design is the Futures Studies discipline of inquiry focussing specifically on people's images of the future, and pragmatism as a philosophical paradigm. Futures Studies and pragmatism are generally complementary with regard to their approach to people's thought processes as these relate to a disposition towards the future.

The qualitative phase used interviews as an instrument for collecting data while the quantitative phase utilised an online web survey (primary data collection) and secondary historical survey data. A pilot study was conducted to check for comprehension and challenges with any of the questions – both for the interviews and the online web survey questionnaire. Formal semi-structured interviews were conducted with five ESPs and five Non-ESPs to collect the primary qualitative data. All the interviews were digitally recorded and transcribed by the researcher using the MAXQDA software program. A thematic qualitative text analysis approach was adopted for analysing the qualitative data.

The primary survey utilised for the study was a web-based survey from QuestionPro. The Simple Multiple Choice- format of QuestionPro was used to obtain real-time responses to the questionnaire. The data from the QuestionPro survey was qualitised and a similar thematic qualitative text analysis approach as with the interview data analysis process was followed.

The secondary survey utilised for the study was the Global Millennial Survey carried out by Telefónica in partnership with *Financial Times*. The survey addressed the five main categories and the elements of the research question through 41 of the 190 survey questions. The data from the Telefónica-Financial Times survey was qualitised. A thematic qualitative text analysis approach was followed to analyse the data.

CHAPTER 4
ENVIRONMENTAL SCANNING:
THEORETICAL CONSTRUCT

4.1 INTRODUCTION

The chapter provides a theoretical construct for an enhanced approach to environmental scanning as it relates to the study. First, the concept *environmental scanning* is contextualised within a systems thinking methodological approach to explain the systems dynamics of environmental scanning. The systems thinking method is utilised to move the current environmental scanning methodology to the constructive environmental scanning methodology to improve judgement and foresight of the global future. Environmental scanning is presented as an activity system based on the Biomatrix meta-theory's process and web-based systems theory. Environmental scanning as an activity system consists of three interacting elements central to this research, *viz.* the environment, the information and the individual as scanner.

Secondly, environmental scanning is contextualised within the Integral Futures methodological approach to explain the different levels of reality encountered by the environmental scanning system. The Integral Futures method provides a holistic view of the relationship between the exterior material world (exterior dimension of reality) and the interior consciousness world of the individual and its cultural context (interior dimension of reality). Environmental scanning within the Integral Futures context deepens the inquiry beyond a problem-oriented approach towards the critical Futures Studies approach of inquiry by linking the two realities to present a constructive approach to scanning.

Thirdly, environmental scanning is contextualised within the Causal Layered Analysis (CLA) methodological approach to enhance inquiry through its four levels of knowing, viz. the Litany Level, Social Causes Level, Discourse-Worldview Level, and Myth-Metaphor Level of Knowing. The CLA method explains the interior dimension of reality from the perspective of the cultural environment in which individuals live. The cultural context is influential in terms of mental construct formation on the four CLA levels; these act as the filters in the environmental scanning methodology and impact the scanners disposition towards the global future.

Lastly, the three methods are integrated into a new single Matrix Integral Layered Environmental Scanning (MILES) method to fuse the strengths of each method and to form the theoretical base for constructive environmental scanning. The purpose is to obtain greater depth in the futures inquiry as it relates to environmental scanning by having (1) a holistic approach that encompasses the whole and its different parts (all information out there, i.e. the information environment), (2) an integral and layered approach through which internal and external dimensions and levels of reality

could be explored (reality mental construct formation), and (3) a systems matrix approach that explains the connectedness of activity and entity systems (environmental scanning complexity).

4.2 ENVIRONMENTAL SCANNING: BIOMATRIX SYSTEMS APPROACH

The various definitions of environmental scanning (Aguilar, 1967: 1; Albert, 2008: 26; Morrison, 1996: 814; Roux, 2007; Slaughter, 1999: 442; Stoffels, 1994: 2; Zhang *et al*., 2010: 719) give the key elements of the concept as consisting of (a) an activity undertaken by (b) an entity, (c) to collect information of (d) the environment as contextual focus area. The purpose of environmental scanning is to have a good comprehension of the dynamics shaping the future. The key elements of environmental scanning show that it has the nature of a system. Spies (2009: 3) provided the following comprehensive definition of a system:

> *A system is a whole that consists of two or more elements (parts) where the behaviour of each element has an effect on the behaviour of the whole, where the behaviour of the elements and their effect on the whole are interdependent, and where, however, subgroups of elements are formed, each has an effect on the behaviour of the whole and not an independent effect on it.*

Graphically, a system could be represented as follows: P represents the individual parts of the system (W); Bv represents the behaviour of the parts and Ef represents the effect of the behaviour on the system (W) (Figure 4.1).

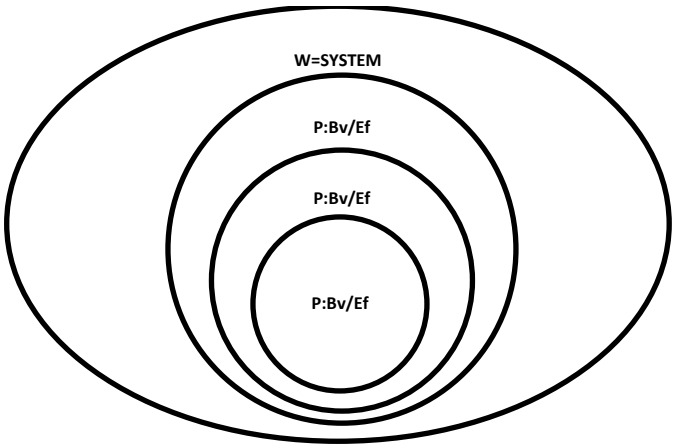

Figure 4.1: A system of interrelated parts, behaviour and effect

Source: Own compilation.

A systems approach is a method to deal with situations that are influenced by, among others, change, multiple interests and complexity. Leonard and Beer (2009: 1) explained the characteristics of a systems approach as follows:

- A system focuses on wholes and not the parts.
- Circular causality predominates where A causes B causes C causes A.

- The observer is subjective because it is part of the system.
- The context is highly relevant.
- Multiple truths and answers explain the dynamics in a system.
- Externalities are important.
- Problems are dissolved and not just solved.

Leonard and Beer (2009: 1) also mentioned that the systems approach has various names, such as systems thinking and operational research. However, Dostal *et al.* (2005: 12) distinguished between systems theory, systems thinking and a systems approach. Systems theory answers the "what" questions by providing an ontological perspective regarding the nature of the universe and its organisation. Systems thinking answers the "how" questions by providing an epistemological perspective regarding the nature of the inquiry. Systems approach is the practical application of systems theory.

This study adopted systems thinking because it represents the worldview of the information age (Dostal *et al.*, 2005: 194) and because it alternates analysis with synthesis to provide a synthesised view of reality (Dostal *et al.*, 2005: 13). In the context of environmental scanning, systems thinking attempts to explain the "how" of the process in terms of the behaviour, effect and interdependence of the whole (environmental scanning) and its constituent elements, viz. the entity, the information and the environment. This aligns with Senge's view (1990: 68) that systems thinking is a holistic discipline suitable for seeing interrelationships and patterns rather than things and events.

One of the three theoretical approaches adopted by this study to achieve greater depth in the environmental scanning methodology is the Biomatrix systems approach. Although the Biomatrix systems approach is part of the broader systems approach, it is distinguished from general systems theory in the following ways (Dostal *et al.*, 2005:3, 4):

- General systems theory accentuates structure and is concerned with the dynamism between systems and their parts inclusive of process chains and feedback loops. Also, it emphasises change within structures.
- Biomatrix systems theory accentuates process where the dynamism of activity systems forms a web of interactions that gives rise to entity systems. It emphasises structures emerging from change.

The Biomatrix systems approach is an integration of the systems concepts and theories of the most relevant systems thinkers to address the complexities and interrelatedness of the information age (Dostal *et al.*, 2005:2, 4). One of the most important contributions of the Biomatrix approach relevant to this study is the interrelationship of activity and entity systems as these relate to environmental scanning to form a web of dynamic interrelated systems (Figure 4.2).

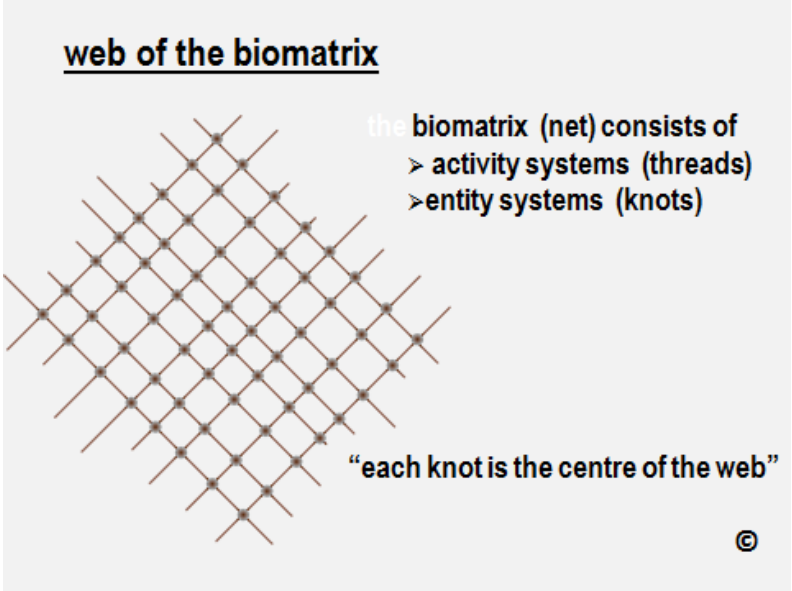

Figure 4.2: Web consisting of activity and entity systems

Source: Dostal, 2007: Slide 32.

Dostal (Dostal *et al.*, 2005: 27) defined an activity system as "a purposeful process which is structured and regulated to achieve its aims, whereby process refers to a flow of substance or mei" (where mei represents matter, energy and information). Furthermore, an activity system is an organised process of an entity system extending into time and space, with a qualitative difference between the two systems (Dostal *et al.*, 2005: 23, 26). An entity system is defined by Dostal (Dostal *et al.*, 2005: 30, 31, 33) as a living, relatively independent whole (or system) consisting of three types of activity systems, viz. the outward, inward and self-directed activity systems in, out and through the entity (Figure 4.3). This notion is supported by Senge (1990: 20) who pointed out that "out there" and "in here" are commonly elements of a single system.

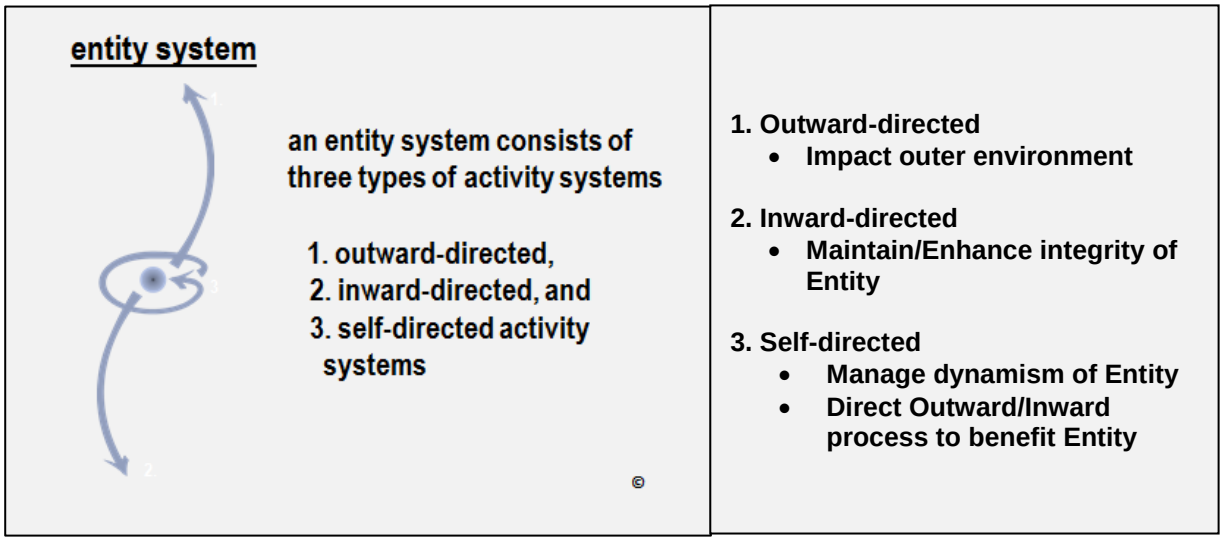

Figure 4.3: Entity system made-up of activity systems

Source: Adapted from Dostal, 2007: Slide 37.

The purpose of the outward directed activity system is to impact the outer environment to change or dissolve a situation. As stated above, Leonard and Beer (2009: 1) indicated that one of the characteristics of a systems approach is to dissolve problems and not only to solve problems. The inward directed activity system maintains or enhances the integrity of the entity system to which it belongs. The purpose of the self-directed activity system is to manage the dynamism of the entity system and to direct the outward and inward activity systems to the benefit of the entity system.

An important dimension for this study's approach to environmental scanning is the interplay between activity systems and the entity system to which it belongs. In this regard, Dostal (Dostal *et al.*, 2005: 35) identified two purposes for activity systems within the entity system (Figure 4.4):

- Contributing activity system (distributive activities): In this role, the activity system makes a contribution to the outer (other entity systems) and inner environment as well as inwardly to itself through organised matter, energy and information (mei).
- Tapping activity system: In this role, the activity system usurps contributions made by other entity systems within the outer and inner environment as well as from the self-directed environment.

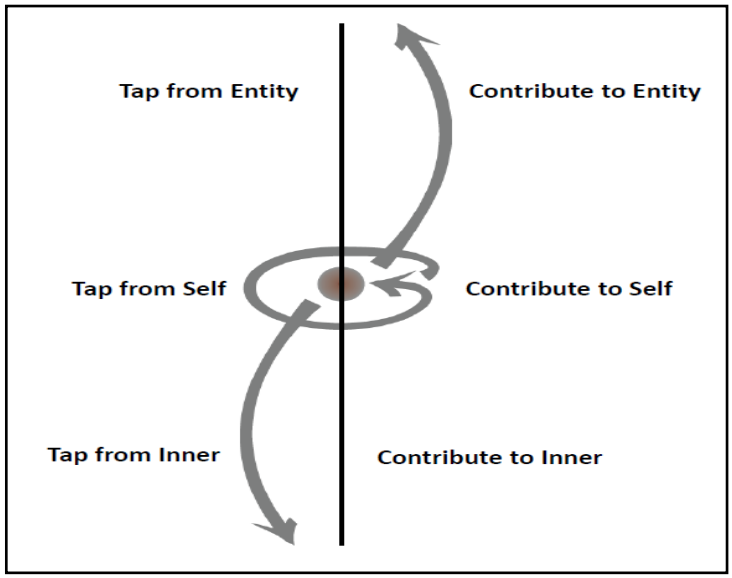

Figure 4.4: Entity system with tapping and contributing activity systems

Source: Adapted from Dostal, 2007.

The dynamism of the tapping activity system is only possible if there is a desire and an ability to do the tapping (Dostal *et al.*, 2005: 37). The desire stems from the will and motivation which is situated in the ethos and core of the entity system. The ethos is the information contained, for example, in a human being that represents its values, principles, visions, perceptions and meaning of life (Dostal *et al.*, 2005: 32, 33). This ethos is within the core of the entity system and represents the focus of organisation within the entity system from where it sets activity systems in motion and from where it taps into external activity systems.

The ability to do the tapping relates to the inner and other resources (mei) of the entity system where it has to reach out and seek out the required resources, i.e. tapping into matter, energy and information. An inability to access inner and outer resources and within itself will lead to the demise of the entity system.

Environmental scanning could be typified as a web of dynamic interrelated systems within the context of the Biomatrix systems theory. According to Spies's definition of a system as indicated in §4.2, the different parts of the environmental scanning system are the scanner, the information and the environment. Each part is interdependent and shows behaviour that has an effect on the whole system (Figure 4.5).

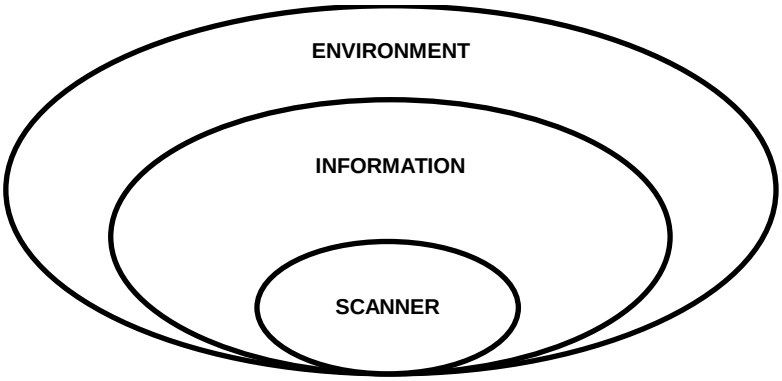

Figure 4.5: Environmental scanning system based on Biomatrix meta-theory

Source: Own compilation.

The scanner as an entity in the Biomatrix web shows behaviour and has an effect on the whole system in accordance with the tapping and contribution characteristics of activity systems within an entity system (Figure 4.6).

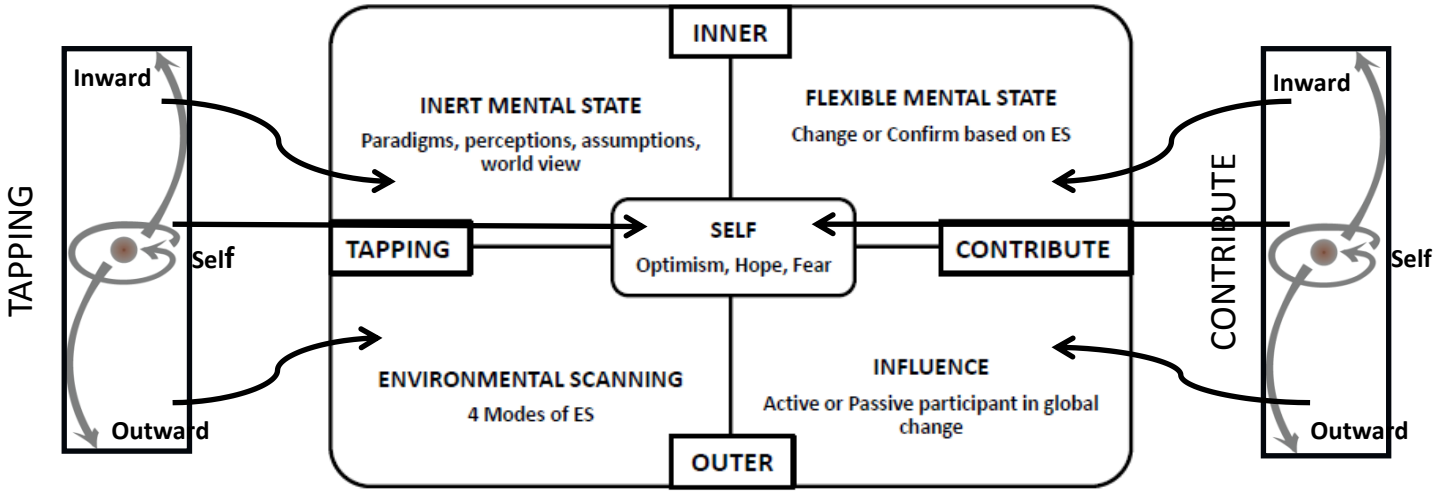

Figure 4.6: Dynamism of Biomatrix on scanner as entity system

Source: Own compilation.

The tapping activity system of the scanner is inwardly, outwardly and self-directed for the purpose of getting information about the entity system called the environment. The concept “environment” is defined by Armstrong (2001: 780) as conditions surrounding the situation where the “environment includes information about the ranges and distributions of cues, the correlations among them, and the relations between the cues and the event being judged”.

The scanner engages in the tapping activity system by accessing and internalising the contributions offered by the environment as well as its own internal system and itself. When the scanner taps the outer activity systems, it could utilise any of the four environmental scanning modes posited by Aguilar (1967: 19), viz. (a) undirected viewing, (b) conditioned viewing, (c) informal search, and (d) formal search.

When the scanner taps the inner activity systems, it contextualises the information that it obtains through environmental scanning by filtering the information in terms of mental constructs such as paradigms, perceptions, assumptions and world view that are present in its inert mental state. People consciously process only a fraction of the millions of data received at any given moment due to a lack of brain capacity (Dostal *et al.*, 2005:222; Kurzweil, 2005: 9; Sreedhar, 2014). The implications are that people deliberately filter the information to derive some form of contextualisation (Boisot & Canals, 2004; Wurman, 1989: 247). The mental state is inert because, as Senge (1990: 8, 13) pointed out, such mental states (or mental models as he conceptualised it) are deeply ingrained, do not easily change and require a fundamental shift of mind through learning. Learning through environmental scanning has been highlighted by various authors on the subject (Albright, 2004: 40; Choo, 1999: 24; Gordon *et al*., 2007: 2; Rockfellow, 1994: 18) to overcome an information overload, to change assumptions, and to deconstruct perceptions of reality. Inquiry in this context is interested in the thought styles of people (6 & Bellamy, 2012: 231), i.e. the way in which people think, how rigidly people mark their categories, how dogmatically they hold their views and how easily they accommodate compromise. The mental state of the scanner is crucial in the process of environmental scanning. In this regard, Senge (1990: xv) pointed out that the scanner does not have a mental state but that the scanner is the mental state.

The contributing activity system of the scanner is also inwardly, outwardly and self-directed for the purpose of utilising the information gained through tapping to respond to other entity systems, its inner processes and the self. The learning process necessary to achieve a shift of mind addresses the inward contributing activity system. Here, the mental state is flexible. What has been learned through the environmental scanning process could either confirm or change the inert condition of the mental state. Confirmation of the mental state is the result of learning through only usurping information (information creation) as opposed to real learning (knowledge creation) that comes from realising that people contribute to their own problems and the problems of the contextual environment (Senge, 1990: 13, 21).

The outward contributing activity system relates to the scanner's influence on other entity systems in the environment. The scanner may contribute passively or actively. A passive contribution has an influence in that the other entity systems do not gain from the knowledge of the scanner. In this regard, the scanner does not impact the present situation to create sustainable alternative futures. An active contribution through knowledge gained could lead to a significant impact on the present situation and could change the future to the benefit of other entity systems. According to Senge (1990: xiv) this could be done by sharing visions, understandings, and new capacities for coordinated action.

The self-directed tapping and contributing activity systems relates to the scanner's unconscious belief system which is the foundational core of its existence and which determines the scanners' futures disposition (Figure 4.7). The unconscious belief system goes much deeper than the conscious belief system and is central to the scanner's disposition towards the future (whether dystopian or utopian – these two concepts represent the opposite end-points of a futures disposition continuum). In this regard, Harman (1998: 12) posited that people (unconsciously) hold sets of beliefs (such as beliefs about the future) with which they conceptualise their experiences. Newberg (2010) pointed out that some of our beliefs could be defined as "constructive" when they assist us in developing positive feelings of optimism and hope while "destructive" beliefs relate to feelings of stress, fear and pessimism. Lombardo (2008: 13) highlighted the future focus of fear, hope and anxiety by suggesting that these emotions are anticipatory and not just reactions to present circumstances. It could, therefore, be argued that self-directed activity systems are instrumental in determining the action or in-action (motivation or de-motivation) of the scanner in creating sustainable alternative futures.

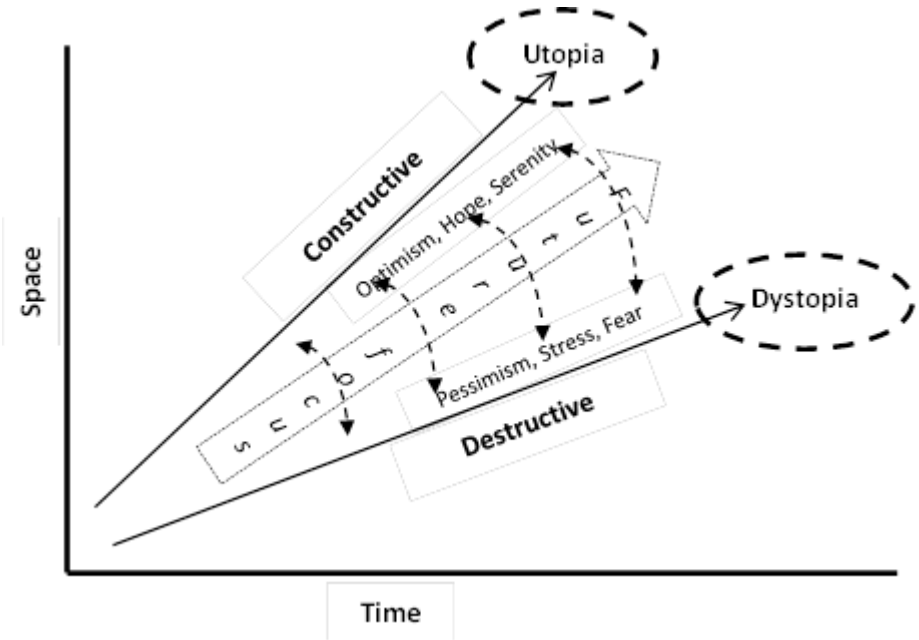

Figure 4.7: Scanner's futures disposition

Source: Own compilation.

The self-directed tapping activity system sets the conditions based on the disposition of the SELF for tapping in the outer and inner activity systems. In this regard, the individual's mental state determines which environmental scanning mode to apply and how to make sense of the information. The self-directed tapping activity, therefore, concurs with Dervin's position (1998: 40) where sense-making encapsulates the dynamism of the internal dimensions of reality and is influenced by an individual's mental constructs, which can either be fluid or rigid. The self-directed contributing activity system relates to Newberg's (2010) constructive or destructive augmentation of the scanner's unconscious belief system. In this regard, the mental state determines whether there will be an active or passive response to the outer environment. Knowledge of the outer environment could change the unconscious belief system of the scanner through learning that represents a shift of mind and belief.

The tapping and contributing activity systems of the Biomatrix systems approach are important in the context of the study's research objective and question. The literature suggests that a significant number of people who scan on the Litany Level of Knowing appear to have anxiety about the global future. It is posited that a dystopian mind set is the product of tapping the outer, inner and self-directed tapping activity systems. Failure to actively contribute to the outer environment in favour of more sustainable alternative global futures is the product of a lack of desire (will and motivation) and an inability to do so due to a flawed environmental scanning approach.

4.3 ENVIRONMENTAL SCANNING AND THE INTEGRAL FUTURES METHOD

A second approach of inquiry, viz. Integral Futures, will be utilised to explain the different dimensions of reality encountered by the environmental scanning system. Integral Futures was developed by the futurist Richard Slaughter and is based on the Integral Theory of Ken Wilber. Integral Theory provides a holistic view of the relationship between the exterior material world and the interior consciousness world of the individual and its cultural context. Wilber's Integral Theory focuses on the evolutionary dimension of human development, hence his notion that it is a theory of "everything" and is still evolving (Wilber, 1999).

Wilber's Integral Theory could be viewed as a holistic systems approach that attempts theoretically to empower anyone using the theory to obtain knowledge about anything in the world out there if a user's mind is applied to that goal. Wilber (1999) made it clear that the Integral Theory is only a representation of reality and not reality itself – the purpose is to have a comprehensive and effective way of looking at reality by bringing and integrating all knowledge of different realities together into one model. Bell (2007: 216) emphasised the importance of such "reality maps" in successfully achieving goals; without accurate "reality maps" a person will be less successful in achieving goals. Hence, to achieve more sustainable alternative futures, accurate "reality maps" of such futures are required.

According to Esbjörn-Hargens (2009), Integral Theory is a mixed-method orientation of reality by combining first-, second-, and third-person methods, practices and techniques to determine various issues at play in a given situation. In this regard, Esbjörn-Hargens (2009) explained that Integral Theory represents multiple ways of getting knowledge by providing "a third-person map of reality, a second-person framework for working within and across disciplines, and a first-person practice for engaging the development of our own embodied awareness". This comprehensive integral approach, therefore, provides a strategic checklist that theoretically makes the user aware of the most important dimensions to scan for information in order to have the most comprehensive knowledge base about a specific issue of interest.

It is within this context that the Integral Theory is useful for developing a comprehensive environmental scanning system. The Integral Theory covers reality as widely and deeply as possible, i.e. it includes realities emanating from internal processes and external processes. Wilber (1999) argued that different realities exist covering both the objective and subjective. The objective reality is represented by the physical world out there while the subjective reality is represented by internal individual human consciousness and the collective sharing of such consciousness with other humans in a group context. According to 6 and Bellamy (2012: 230), subjective interpretation is the study of meanings and important in the methodological discourse of interpretation in the social sciences. They refer to three kinds of meanings, which is important for inquiry in the subjective realm: People's mental lives, people in the actors' context (social groups), and people's thought styles. This inquiry regarding meanings is useful in the context of the Integral Theory.

Esbjörn-Hargens (2009) emphasised the importance of investigating reality as comprehensively as possible to obtain sustainable solutions to solve problems. He stated that comprehensive and sustainable results are only possible to achieve when major dimensions of reality are included in the enquiry. However, 6 and Bellamy (2012: 231) cautioned that it is very difficult to capture all of the principal kinds of meaning in a single study, and therefore contemporary social scientists tend to focus only on a limited number of aspects of people's subjective lives.

Using Integral Theory as the foundation for a second approach to environmental scanning, this study focuses exclusively on the Integral Theory's four-quadrant model to develop an understanding of the interrelationship between the internal and external dimensions of reality. Collins and Hines (2011: 2) pointed out that the four-quadrant model is at the centre of the Integral Theory. Wilber (2007:71) used the four-quadrant model to represent the different realities in his Integral Theory (Figure 4.8).

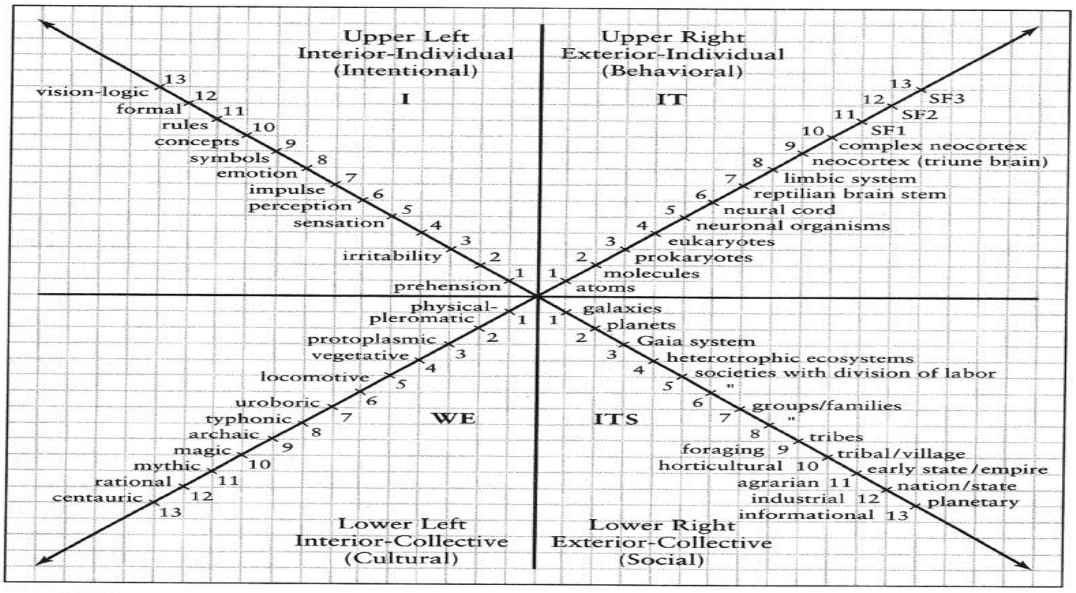

Figure 4.8: Wilber's integral theory four-quadrant model

Source: Wilber, 2007: 71.

It should be noted that the complete Integral Theory have four more elements in addition to the four-quadrants, viz. all levels, all lines, all states and all types (Wilber, 2007: 17). Slaughter (2012: 132) and Esbjörn-Hargens (2009) briefly explained these other elements as follows:

- Levels refer to the depth of interior development (individual and cultural) and the complexity of the exterior environment (behavioural and physical).
- Lines refer to the modalities of human development.
- States refer to various states of consciousness.
- Types refer to various classifications of humanity.

The other elements are not used in this study as the four-quadrant model will suffice for the purpose of constructive environmental scanning. Nevertheless, it could be beneficial for scanners to also develop proficiency in terms of the other four elements of Wilber's Integral Theory. However, it would require specific expertise in the disciplines represented by each element to conduct environmental scanning successfully in terms of those other four elements.

The Upper-Left quadrant of the four-quadrant model represents the subjective interior processes of an individual's consciousness; among others, intentions, thoughts and feelings. The Upper-Right quadrant represents the objective exterior image; among others, its physical behaviour observable by others. The Lower-Left quadrant represents the inter-subjective collective consciousness of individuals in their cultural context; among others, shared values and world views. The Lower-Right quadrant represents the observable inter-objective external manifestation of the collective's behaviour in the physical world out there (Wilber, 2007: 70-73). An important element of the four-quadrant model is the interrelatedness of the quadrants. Collins and Hines (2011: 2) pointed out

that any effect in one quadrant has an impact on the other quadrants. Therefore, they argue that solutions to problems need to take the interrelatedness of the quadrants into consideration to achieve success in resolving problems.

The futurists Slaughter, Hines and Voros adapted Wilber's Integral Theory to develop the Integral Futures model. Integral Futures is an integral Futures Studies perspective of futures inquiry (Voros, 2008) and a critical Futures Studies approach that provides deeper insight into the nature and structure of peoples' unique interior worlds by utilising a theoretical Integral Four-Quadrant Matrix representative of the interior and exterior dimensions of reality (Slaughter, 2008: 120) (Figure 4.9).

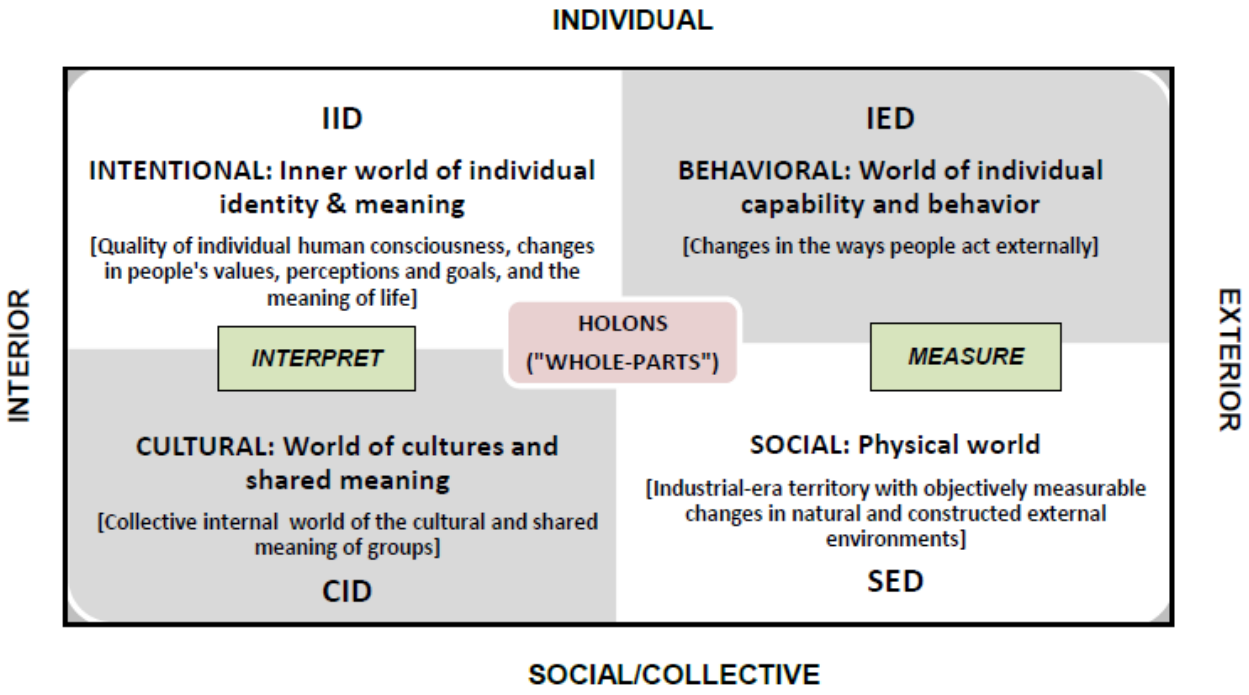

Figure 4.9: Integral four-quadrant matrix of integral futures

Source: Adapted from Hines, 2003 and Voros, 2001.

Voros (2008, 190) explained the complexity of Integral Futures by indicating that it combines integral inquiry and futures inquiry into one model. The integral inquiry follows an approach that emphasises multiple ways of knowing through many methods and modes of inquiry while also accepting the role of subjectivity in the inquiry (Voros, 2008: 198). Hines (2002:340) explained that Integral Futures as a critical Futures Studies approach enlighten the deeper processes of meaning-making, paradigm formation and obscured worldview commitment. The important contribution Integral Futures make is that it compels a person (scanner) to have a holistic approach of inquiry (Collins & Hines 2011: 2).

The Integral Four-Quadrant Matrix is similar to the matrix of Wilber's Integral Theory (Figure 4.8 and Figure 4.9). Hines (2003: 51) emphasised that the purpose of the Integral Four-Quadrant Matrix in Integral Futures is to assist in making sense of the dynamism in the physical world. The

key principle is holism where the dynamism in one quadrant has manifestations in the other three quadrants. The Integral Four-Quadrant Matrix in Integral Futures is, therefore, an attempt to fuse the three kinds of meaning of the subjective interpretation (6 & Bellamy, 2012: 230) with the objective interpretation of the material world.

Hines (2003: 51-52) and Voros (2001: 537) explained the four quadrants as follows:

- The upper right (UR) is the behavioural objective realm where an individual's exterior behaviour and actions can be observed and measured. In this study this dimension of reality will be termed the Individual Exterior Dimension (IED).
- The lower right (LR) is the social inter-objective realm where natural and constructed changes in the external environments can be measured objectively. In this study, this dimension of reality will be termed the Social Exterior Dimension (SED).
- The lower left (LL) is the social inter-subjective realm of the collective internal world of the cultural and shared meaning of groups. Here, 6 and Bellamy (2012: 231) stated that this realm consists of the following: 1] Ways of categorising and classifying things; 2] Symbols; 3] Myths; 4] Narratives and histories (both overtly fictional and non-fictional), collective memories, historical analogies, points of reference; 5] Ideologies or world views; 6] Values; 7] Moral standards; 8] Legitimate and accepted reasons for action; 9] Etiquette; and 10] Standards for work done, or normative expectations. In this study this dimension of reality will be termed the Cultural Interior Dimension (CID).
- The upper left (UL) is the intentional subjective realm of an individual's interior world concerned with human consciousness, values, mental constructs and the meaning of life. In this regard, 6 and Bellamy (2012: 231) stated that this realm consists of the following: 1] Ways of classifying things; 2] Thought patterns, ways of arguing, ways of moving between topics; 3] Biases; 4] Attitudes; 5] Beliefs; 6] Desires, including both general aspirations and specific goals; 7] Motives, or reasons for action; 8] Intentions, acts of will and commitment; 9] Anticipations of the future; 10] Narratives about the past; and 11] Emotions, including hope, fear and anxiety. In this study this dimension of reality will be termed the Individual Interior Dimension (IID).

The Integral Four-Quadrant Matrix represents four dimensions for environmental scanning in this study. It ensures that environmental scanning is done holistically by covering both the exterior material world and the interior consciousness world of individuals and their collective cultures. The Integral Four-Quadrant Matrix, therefore, is a reference for environmental scanning regardless of whether scanning is done through undirected viewing, conditioned viewing, informal search or formal search. The major purpose of the Integral Four-Quadrant Matrix in this study is to assist the scanner to overcome "flat-earth" environmental scanning and to move the scanner to deeper environmental scanning (Figure 4.10). Flat-earth environmental scanning predominantly scans the

external environment and has been the norm with practitioners engaged in futures-related work (Slaughter, 2012: 131, 141). Deeper environmental scanning specifically also taps the two interior dimensions of the individual and its cultural context. However, to achieve holism in environmental scanning both types of scanning should be done in an integrated way.

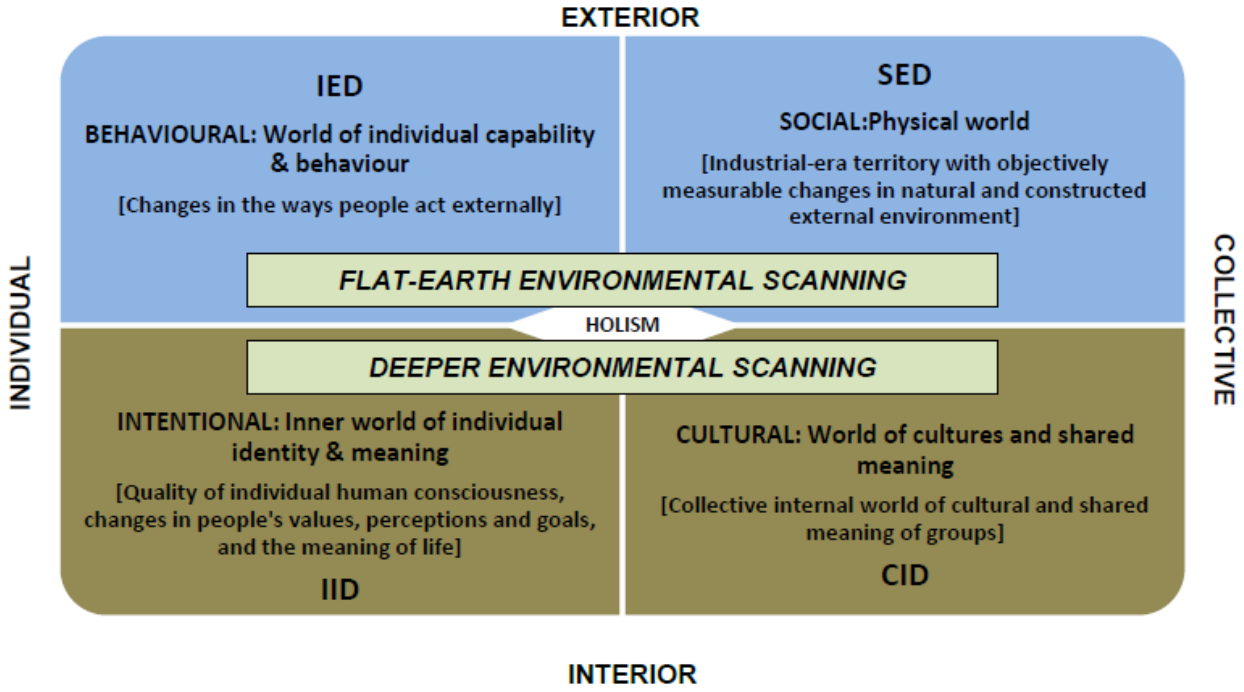

Figure 4.10: Integral approach to environmental scanning

Source: Own compilation.

The importance of Integral Futures for this study is that it deepens the inquiry beyond a problem-oriented approach towards the critical Futures Studies approach of inquiry. Integral Futures does not illuminate the future but it assists in answering questions about the human subjective perspectives of the global future, i.e. it helps to determine why humans might be hopeful or fearful about the future, and what interventions could be made to ensure more sustainable alternative futures. Environmental scanning based on Integral Futures is the initial step in this process.

4.4 ENVIRONMENTAL SCANNING AND CAUSAL LAYERED ANALYSIS METHOD

The third approach of inquiry, viz. Causal Layered Analysis (CLA) as developed by Sohail Inayatullah, will be utilised in environmental scanning to enhance inquiry on four levels where each level represents four ways of knowing. CLA attempts to reveal the unknown and the subjective through the various ways of knowing (Inayatullah, 2004b: 9). Inayatullah (2009a: 1, 7) explained that CLA is strongly situated in theory where it attempts to combine “empiricist, interpretive, critical and action learning modes of knowing”. The actionability of the theory lies in the CLA method, which attempts to create transformative spaces to develop alternative futures (Inayatullah, 2009a:

1). CLA could be used as a single method or in combination with other futures methodologies (Milojević, 2014: 3)

The four levels of knowing utilised by CLA are: the Litany level, the Social Causes level, the Discourse/Worldview level and the Myth/Metaphor level (Figure 4.11).

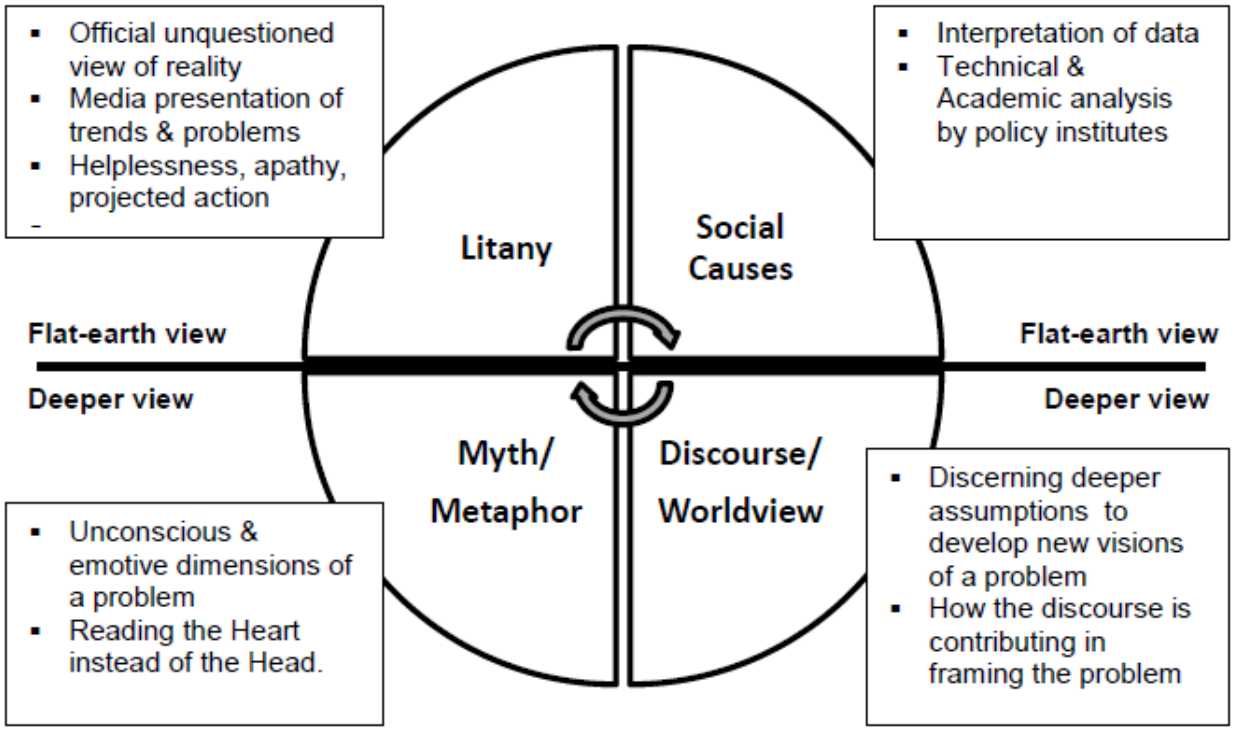

Figure 4.11: Four levels of CLA with depth of enquiry

Source: Own compilation.

The Litany Level of Knowing represents a level of quantitative trends that are indicative of a proliferation of societal problems and that are presented in various formats by especially the news media to the public (Inayatullah, 2009a: 8). This is a flat-earth reality without any depth in inquiry, where developments in the contextual environment are unconnected and are seemingly fragmented (Inayatullah, 1998: 393). Hence, it represents the official unquestioned view of reality (Inayatullah, 2004b: 8). It is also the level where conventional futures research contributes in creating a "politics of fear" (Inayatullah, 1998: 393).

At the Litany Level of Knowing, responses to solve societal problems follow two routes, viz. (a) too simple, leading to ignorance and inaction or (b) too problematic to solve, leading to despair, inaction and the transfer of responsibility to an external authority. The result is often short-term solutions that usually exacerbate societal problems due to a lack of depth in the understanding of the underlying causes of these problems (Inayatullah, 2009a: 36). Scenarios for Litany Level approaches are instrumental in nature while the responsibility for solving problems is shifted to an external authority (Inayatullah, 1998: 394).

The Social Causes Level of Knowing represents an explanatory level that is based on an analysis of society in accordance with the STEEP approach, i.e. interpreting data and information (quantitative approach) as it relates to the social, technological, economic, environmental and political sectors of society (Inayatullah, 2009a: 34). On this level, the roles and interactions of various systemic role players are explored to determine causal variables in an attempt to find systemic solutions to societal problems. Technical explanations and academic analyses are usually published in editorials and journals of policy institutes. These explanations and analyses, however, do not break through the flat-earth view as they fail to deepen the inquiry beyond the prevailing paradigms that frame societal problems (Inayatullah, 2009a: 8). Scenarios for Social Causes Level approaches have a policy orientation while the responsibility for solving problems is presented as collaboration between various groups (Inayatullah, 1998: 394).

The Discourse-Worldview Level of Knowing represents a deeper level that breaks through the flat-earth view. This is done by de-linking the various societal role players from the problems and focusing on determining the underlying mental constructs - such as assumptions, mind-sets, paradigms and values - that frame and cause societal problems; it is an attempt to find new perspectives on these problems by exploring the impact of different discourses constituting a problem. The various discourses and worldviews are horizontally applied on this level to societal problems under investigation to determine the impact, if any, of each discourse or worldview in the creation of such problems. Information on these discourses and worldviews is usually found in journals of an ideological and philosophical nature that are on the fringes of mainstream societal discourses. An attempt is made in these publications to change a prevailing discourse or worldview to resolve societal problems (Inayatullah, 2009a: 8, 36). Scenarios for Discourse-Worldview Level approaches highlight fundamental differences while the responsibility for solving problems is presented as people and/or voluntary associations (Inayatullah, 1998: 394).

The Myth-Metaphor Level of Knowing represents a very deep level of knowing, often seemingly irrational, where the unconscious and emotive dimensions of individuals and social groups are investigated. Exploring this level of knowing means to disregard rational information in favour of apparent nonsensical information based on a transcendental reality. The purpose is to obtain insight into its possible contribution to societal problems and approaches for solutions to these problems. Visionary and/or mystic leaders are often the source base of these deep-seated unconscious and emotive dimensions. Their works could provide useful insights in developing an understanding of the influence of such ideas on society and its problems (Inayatullah, 2009a: 8, 36). Scenarios for Myth-Metaphor Level approaches present fundamental differences through narratives or images while the responsibility for solving problems is presented as visionaries or artists (Inayatullah, 1998: 394).

It is posited that environmental scanning based on a CLA theory and method of approach could enhance the knowledge of the environmental scanner by creating an awareness of the limitations and richness of each CLA level (Figure 4.12):

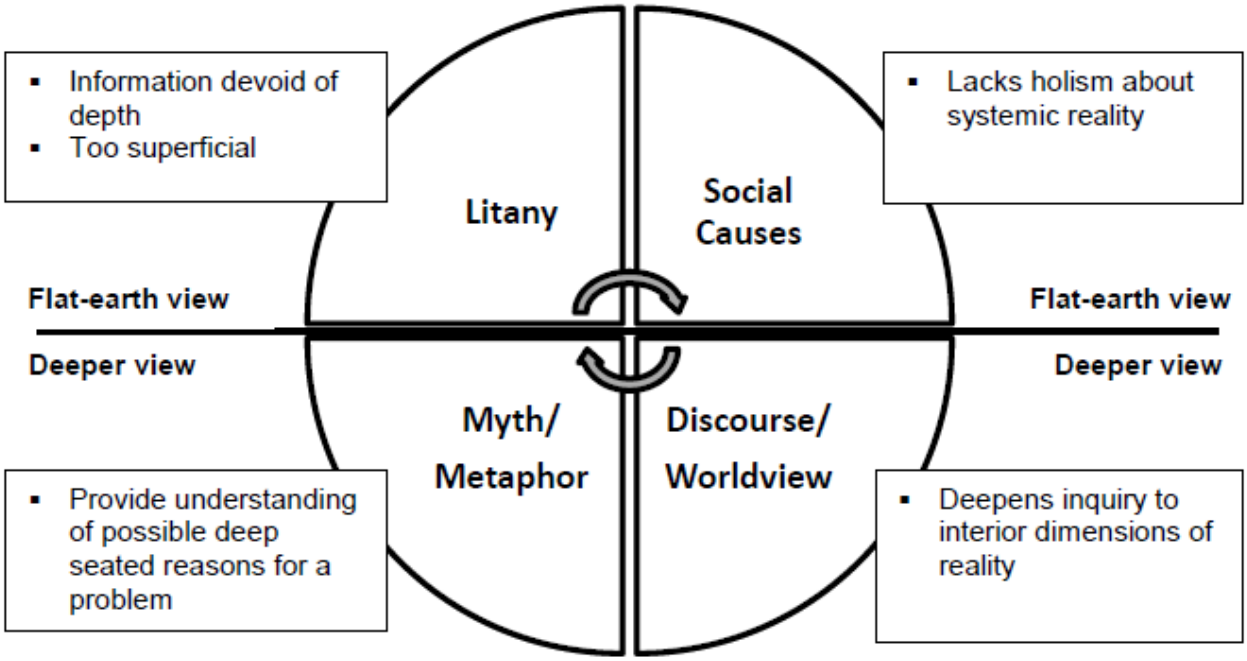

Figure 4.12: Four levels of CLA: Limitations and richness

Source: Own compilation.

- Environmental scanning on the Litany Level of Knowing will be devoid of depth in the inquiry and is likely to contribute to a dystopian view of the future because (a) media information is unreliable and distorted, and (b) the scanner's mind-set could be affected negatively by the alarmist nature of the information and the societal paralysis in solving perceived complex problems.
- Environmental scanning on the Social Causes Level of Knowing still represents a flat-earth view because an inquiry of the systemic reality does not provide a holistic image of reality.
- Environmental scanning on the Discourse-Worldview Level of Knowing deepens the process by transcending the exterior dimensions of reality through extending the inquiry to the interior dimensions of reality.
- Environmental scanning on the Myth-Metaphor Level of Knowing also deepens the inquiry as it attempts to access the transcendental dimensions of reality.

Environmental scanning based on a CLA theory and method does not exclude any one of the four levels nor does it see any level as predominant over the other levels. In this regard, Inayatullah (2009a: 5) stated that it is crucial to constantly move up and down the four levels when applying the method. This will ensure greater holism and lead to the development of more sustainable long-term solutions when deeper levels of reality are accessed. Therefore, when utilising CLA as a

method in environmental scanning, the scanner needs to continuously scan up, down and across the four levels to be as holistic as possible in obtaining information (Figure 4.13).

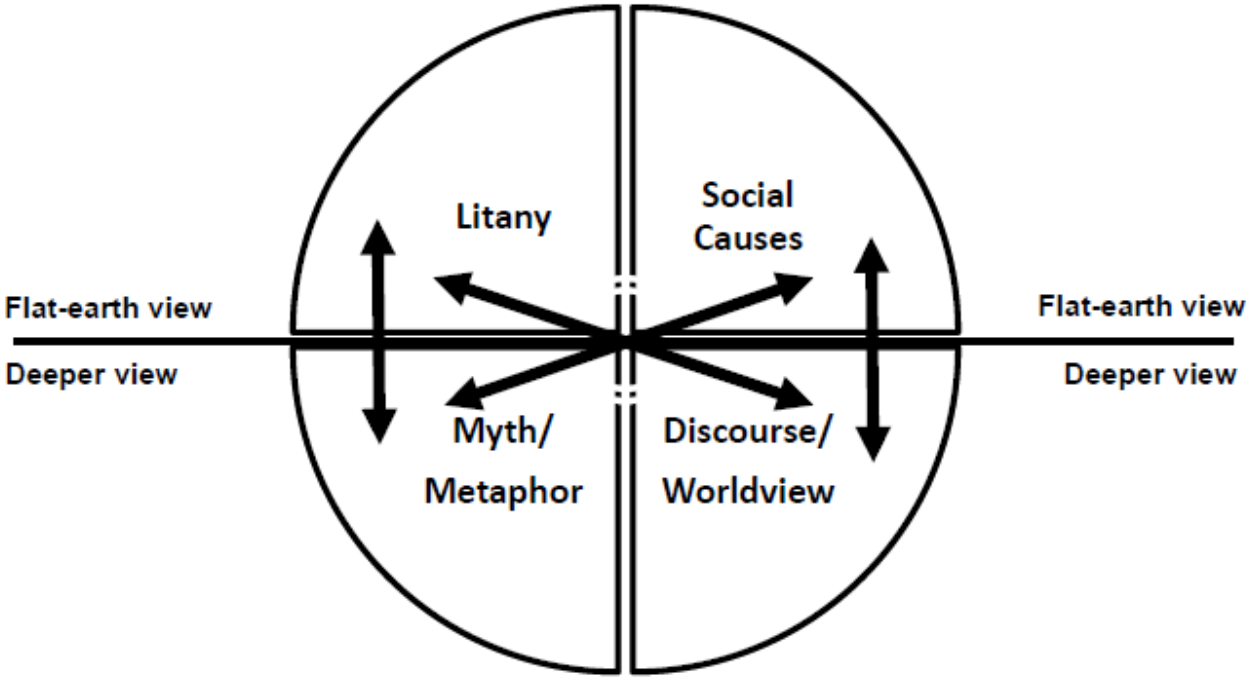

Figure 4.13: Scanning up, down and across with CLA method

Source: Own compilation.

4.5 MATRIX INTEGRAL LAYERED METHOD TO ENVIRONMENTAL SCANNING

The three methodological approaches provide three different perspectives to enhance environmental scanning. The Biomatrix systems approach explains the process dynamics; the Integral Futures approach explains the dimensions of reality while Causal Layered Analysis explains the different levels of knowing. The common denominator is that all three approaches attempt to achieve depth through holism in their inquiry, and holism is a crucial requirement for comprehensive and successful environmental scanning that creates good judgement and foresight about the future.

The Biomatrix systems thinking approach achieves holism through explaining the process dynamics of activity and entity systems and the connectedness of the inner and outer dimensions of these systems. The Integral Futures approach achieves holism by combining integral and futures inquiry to explain the interrelatedness of the interior and exterior dimensions of reality as a deeper form of inquiry to supersede a superficial view of the world. The Causal Layered Analysis (CLA) approach achieves holism by using a process of iteration to continuously move between multiple levels of knowing to enhance knowledge and wisdom, and to create transformative spaces to develop alternative futures (Inayatullah, 2004a: 8).

A comparison of the three methodological approaches displays various correlations albeit from different perspectives, as illustrated in Appendix H. The inward-directed tapping and contribution of the inward-directed activity system impact the mental states and unconscious beliefs of the entity system. It correlates strongly with the Individual Interior Dimension (IID) of individual intentions and the Cultural Interior Dimension (CID) of collective shared meaning of the Integral Four-Quadrant Matrix of the Integral Futures model. The IID and CID reality is the result of the inward-directed activity system's utilisation of the four levels of knowing of Causal Layered Analysis.

The outward-directed tapping and contribution of the outward-directed activity system correlate with the Individual Exterior Dimension (IED) and Social Exterior Dimension (SED) of the Integral Four-Quadrant Matrix of the Integral Futures model. Outward-directed tapping utilises the four modes of environmental scanning to obtain information and create knowledge of the behavioural IED and dynamism of the physical world in the SED. Outward-directed contribution influences the IED and SED actively or passively to affect change. The outward-directed activity system taps the exterior by scanning in accordance with the four levels of knowing of Causal Layered Analysis while it also makes a contribution to each of those levels of knowing to influence the IED and SED.

The self-directed tapping and contribution of the self-directed activity system determines the disposition towards scanning the environment, i.e. whether the scanner will be fully or selectively exposed to the contextual environment. This exposure correlates with all four quadrants of the Integral Four-Quadrant Matrix of the Integral Futures model. In this regard, the self-directed activity system determines the disposition of the SELF towards the four dimensions of reality. The self-directed tapping of the unconscious beliefs utilises attitude or disposition (will and motivation) towards the world while the self-directed contribution regulates the response of the SELF towards making a contribution (or not) to any of the four quadrants. The self-directed activity system correlates with Causal Layered Analysis by determining the disposition towards the four levels of knowing. It determines to what extent the scanner has the will and motivation to tap for information superficially only on the Litany and Social Causes Levels of Knowing or to deepen the inquiry through tapping the Discourse/Worldview or Myth/Metaphor Levels of Knowing, and to make contributions to any of those four levels.

4.5.1 Application of MILES

The three methods are integrated into a single Matrix Integral Layered Environmental Scanning (MILES) approach to fuse the strengths of each method to form the theoretical base for constructive environmental scanning (CES) (Figure 4.14).

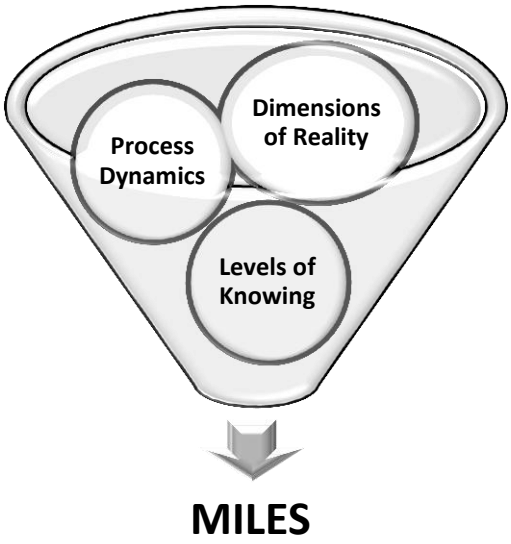

Figure 4.14: The MILES approach of Constructive Environmental Scanning

Source: Own compilation.

Constructive Environmental Scanning (CES) attempts to obtain holistic information about the external material systemic world as well as the interior consciousness world of individuals and cultural groups to be able to develop good judgement and foresight about possible future outcomes for the purpose of designing sustainable alternative futures. CES is, therefore, an expansion of Aguilar's seminal work. Aguilar (1967: 2) viewed environmental scanning as obtaining information about "events", and "relationships" in the contextual environment that will lead to "knowledge" creation to help users to determine a "future course of action". CES also builds on the subsequent work of Slaughter which advocated for a deeper approach in the inquiry that covers the internal dimensions of reality. Furthermore, CES aligns with Inayatullah's futures studies research dimensions (see Table 3.1) that is utilised in an integrated way to achieve holism.

The purpose of the MILES approach is to achieve holism and greater depth in the futures inquiry as it relates to environmental scanning by having (1) a systems matrix approach that explains the connectedness of activity and entity systems (environmental scanning complexity), (2) an integral approach through which internal and external dimensions of reality could be explored (reality mental construct formation), and (3) a layered approach through which various levels of knowing could be employed to assist in deepening the inquiry (Figure 4.15).

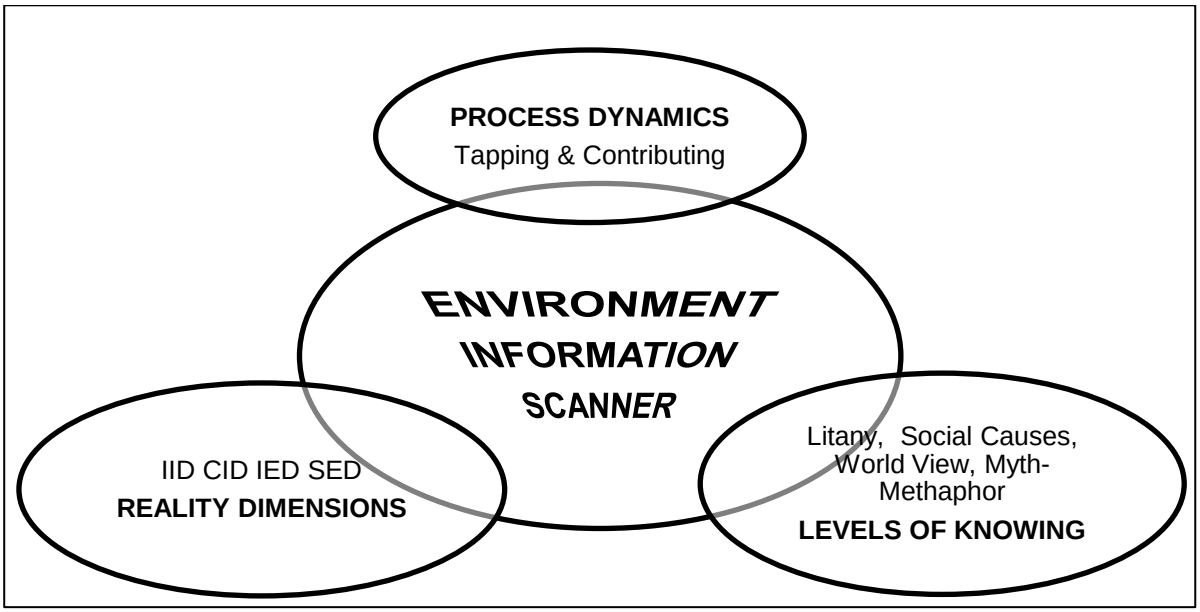

Figure 4.15: MILES holism and depth

Source: Own compilation.

The initial step in applying MILES is to develop a comprehensive understanding of the environmental scanner (Scanner) as entity system within the Biomatrix systems thinking context. The Scanner as entity system consists of three types of activity systems, viz. outward-, inward- and self-directed activity systems. The Scanner needs to assess his/her own IID of the Integral Four-Quadrant Matrix by tapping into and contributing to the outward-, inward- and self-directed activity systems. This is done to determine the Scanner's disposition towards the environment to be scanned as well as the operative inert mental state at the time of scanning. The Scanner also needs to utilise CLA to determine the IID levels of knowing, i.e. to what extent the Scanner is utilising the Litany, Social Causes, Discourse-Worldview and Myth-Metaphor Levels of Knowing to constitute the IID.

In tapping and contributing to the activity systems of the IID and the CLA levels of knowing, the Scanner generally wants to determine the following:

- Self-directed tapping: Is my disposition towards the future, among others, that of optimism, hope, pessimism or fear, and why? How constructive or destructive (the Newberg typology) is my disposition towards the future? What CLA level of knowing informs my disposition towards the future?
- Inward tapping: Do I have an awareness of my mental constructs and their influence on my environmental scanning abilities? Which of the four CLA levels of knowing enlightens my inert mental state? What is the purpose and goals of my environmental scanning? Do I only want to know what is going on in the world (personal reasons) or because it is my profession to know (organisational reasons), or both?

- Outward tapping: What mode of environmental scanning will I use: undirected or conditioned viewing, informal or formal searching, and why? Will I scan all four CLA levels of knowing to get a holistic and deeper understanding of reality? Do I know how to scan all four CLA levels of knowing? Am I mindful of the interrelatedness of the DIKW cyclical process as well as the characteristics of information? Am I alert to weak signals, unexpected events, wicked problems etc., i.e. do I have peripheral vision when scanning?
- Outward contribution: Will I be an active or passive participant in creating sustainable alternative futures or will I make no contribution? What are the reasons for my willingness to contribute or lack of it? At what CLA level of knowing will I contribute to affect change?
- Inward contribution: How flexible is my mental state to accommodate possible new information? Am I open to allow information from all CLA levels of knowing to affect change regarding my mental state? What is the level of my open-mindedness in scanning? Am I willing to change my mental constructs based on new information?
- Self-directed contribution: Do I want to change my disposition towards the future? What impact will learning through environmental scanning of all CLA levels of knowing have on my disposition towards the future? What shifts of mind and beliefs are possible in me?

Apart from the Scanner's self-assessment of the IID, a similar process regarding his/her cultural background (CID) may also be beneficial to provide contextual insight and understanding of the origins of the IID. In tapping and contributing to the activity systems of the CID and the CLA levels of knowing, the Scanner generally wants to determine the following:

- Self-directed tapping: What is the general disposition of the CID towards the future? What CLA level of knowing constitutes this disposition of the CID? Is there any correlation between the CID and the IID in shared meaning of the dynamism in the contextual environment, and to what extent?
- Inward tapping: To what extent is my IID the product of the CID I belong to? What symbols, myths, narratives and histories, world-views, values, moral standards and normative expectations, etc. are shared from the CID? Which of the four CLA levels of knowing enlightens the CID?
- Outward tapping: What are the origins of the CID collective internal world? How does the CID obtain knowledge of the external realities and its impact on the Scanner's IID? To what extent does the CID obtain knowledge from other CIDs and at which CLA level of knowing?
- Outward contribution: To what extent is the CID actively or passively contributing to the external realities and how does such environmental influence or lack of it impact the IID? At what CLA level of knowing is the CID contributing to affect change and how does this impact the IID?
- Inward contribution: How flexible/inflexible is the CID with regard to its symbols, myths, narratives and histories, world views, values, moral standards and normative expectations

etc.? Does the CID allow information from all CLA levels of knowing to affect change in its cultural disposition? To what extent does this influence the IID's own flexibility?

- Self-directed contribution: Is the CID open to learning from all CLA levels of knowing and to possible change? To what extent does the CID openness (or lack of it) impact the IID or allow the IID to impact the CID's disposition towards the future?

The main reason and objective for engaging in this initial step is for the Scanner to have a holistic self-understanding before initiating the environmental scanning process, i.e. it is an attempt to correct for or be open-minded to the operative mental constructs; also to determine beforehand how much depth the Scanner will achieve when doing environmental scanning. It is posited that the Scanner's ability to have good judgement and foresight of the future depends on a comprehensive self-understanding within the context of the IID as it relates to environmental scanning.

Applying the MILES method to the environmental scanning of the external contextual environment moves the Scanner to outward-directed tapping within the context of the all-inclusive definition of the concept (§2.3.5), which states that environmental scanning is a process whereby information is obtained:

> (a) From the external environment by looking at or for events and trends for the purpose of identifying opportunities and threats occurring in time and space, and
>
> (b) By engaging in in-depth inquiry of the internal environment of individuals and groups
>
> (c) To determine the psychological and cultural dimensions of reality that may have a bearing on complexity in the external environment,
>
> (d) Where the convergence of external and internal environmental scanning will develop a comprehensive futures consciousness conducive for good judgement and foresight about the future.

The Scanner applies all four scanning modes, viz. undirected viewing, conditioned viewing, informal search and formal search to tap the external contextual environment as represented by the IED and SED of the Integral Four-Quadrant Matrix in an integrated way, all the while being mindful of the limitations and strengths of each mode and the characteristics of information. With regard to the IED, specific attention must be paid to the exterior behaviour and actions of individuals while the SED draws attention in terms of the natural and constructed developments and events. The purpose of the scanning of the external contextual environment is to detect trends and events within the STEEP context (but not limited to it) to identify potential threats, opportunities or changes, and be alert to these developments converging, diverging, speeding up, slowing down,

or interacting. This must be done as widely as possible to also include weak signals that may lead to unexpected events, strategic inflection points, wicked problems and the like.

A comprehensive understanding of the external contextual environment is obtained by engaging in in-depth inquiry of the internal environment of individuals and groups. The purpose is to determine the psychological and cultural dimensions of reality that may have a bearing on the dynamism and complexity in the external environment and to have good judgement and foresight of the contextual future. This is done by applying the analysis techniques of the Biomatrix activity systems approach and the CLA levels of knowing to the IID and CID interior dimensions of the role players in the external contextual environment. The Biomatrix activity systems approach is utilised to gain an understanding of how the process dynamics of the IID and CID impact developments in the IED and SED while the CLA levels of knowing is utilised to determine what level of knowledge informs the IED-SED. In this regard, the relevant IED and SED role players need to be identified, i.e. individuals and organisations. The Scanner would generally want to determine the following:

- Self-directed tapping: What is the IED-SED disposition towards the contextual future, i.e. the area in which it operates and why? What impact will this disposition have towards the contextual future of other role players? What CLA level of knowing informs the IED-SED disposition towards the future?
- Inward tapping: What is the IED-SED inert mental state and what mental constructs exist that may have an impact on developments in the contextual future? Which of the four CLA levels of knowing underlies the formation of the inert mental constructs?
- Outward tapping: How does the IED-SED obtain information about the external contextual environment and what CLA level of proficiency exists? Does the IED-SED have sufficient comprehension of the external reality of the contextual future, i.e. a holistic and deeper understanding of that reality by scanning all four CLA levels of knowing? Is the IED-SED alert to weak signals, unexpected events, wicked problems and the like?
- Outward contribution: To what extent is the IED-SED actively or passively contributing to the external realities and for what reasons? How does such influence impact the other role players in the external contextual environment and the future? What CLA level of knowing is impacted by the IED-SED action?
- Inward contribution: How flexible/inflexible is the IED-SED with regard to its symbols, myths, narratives and histories, world views, values, moral standards, normative expectations etc.? Is the IED-SED open to new information from all CLA levels of knowing to affect change in disposition towards the contextual future?
- Self-directed contribution: Is the IED-SED open to learning from all CLA levels of knowing and possible change? To what extent does the IED-SED openness (or lack of it) impact other role players in the contextual future?

The MILES approach is a comprehensive way of addressing the information gaps that Dervin (1998: 39, 40) has highlighted in the sense-making and sense-unmaking process (§2.4.3), albeit in a different context. Much of the information on the IID and CID interior dimensions of the role players in the external contextual environment might be concealed information that will be difficult to access even by a formal searching approach. Nevertheless, as some authors (Clemens, 2009: 251; Dervin, 1998: 41; Kurian and Molitor, 1996: 33; Reinhard, 2009; Van der Heijden, 2005: 323-325) have indicated, this challenge could be overcome by environmental scanning through applying strategic conversation techniques with people who possess such concealed information. It is posited that the application of MILES in CES will deepen the inquiry obtained through environmental scanning to achieve some form of holism that will enable its users to have good judgement and foresight of the contextual future while simultaneously developing a desire to create and pursue more sustainable alternative futures.

4.6 CONCLUSION

The theoretical approach of this study as encapsulated in the proposed new MILES approach is primarily an attempt to deepen the inquiry to achieve holism in the environmental scanning methodology. A secondary objective is to present MILES as an enriched approach that builds on the methods and approaches of the past with the hope that it will contribute towards enhancing the evolutionary development of the critical Futures Studies field of inquiry.

In summary, the MILES approach achieves depth in the inquiry by developing a comprehensive understanding of the process dynamism of environmental scanning by utilising the Biomatrix meta-theory's process and web-based systems theory. As the environment to be scanned is complex, depth could be achieved by scanning as comprehensively as possible on the different dimensions of reality as presented by the Integral Futures Four-Quadrant Matrix. Furthermore, depth in the inquiry is achieved by scanning continuously the different ways of knowing as presented by CLA. The MILES approach, therefore, forms the core theoretical construct for this study's proposed Constructive Environmental Scanning (CES) methodology to create positive world paradigms for more sustainable alternative futures.

CHAPTER 5

INTERVIEWS: CASE- AND THEME-ORIENTED PERSPECTIVES

5.1 INTRODUCTION

This chapter provides the case and theme-oriented perspectives of the qualitative phase of the multi-strand concurrent mixed-method research design of this study. The qualitative phase consisted of the formal semi-structured interviews conducted with ten interviewees divided into two groups of five interviewees, viz. the Environmental Scanning Professionals (ESPs) and the Non-Environmental Scanning Professionals (Non-ESPs), to collect the primary qualitative data.

A thematic qualitative text analysis process was utilised to analyse all the interviewees individually to obtain findings from a case-oriented perspective in relation to the predetermined thematic categories. Next, the findings from the individual case-oriented perspectives were utilised to do a comparative analysis of the two groups to address the related research question.

The individual case-oriented perspective text analysis was structured as follows:

- An interview summary for each of the main themes: This approach was adopted because the complete transcripts of the interviews are not included in the study due to the ethical consideration and undertakings as explained in §3.6.
- The analysis and findings in accordance with the MILES method for each of the main themes: The concepts and the terminology used in this part of the process originate from the MILES method as discussed in Chapter 4.
- Sub-conclusions of the main themes as these relate to the research question: These sub-conclusions will form the basis for the final conclusions of the study.

The case-oriented analysis of the two groups was done separately for each group in terms of the main themes inclusive of research question sub-conclusions. The case-oriented analysis was concluded with a comparative analysis to explore a possible qualitative difference between the ESPs and Non-ESPs in terms of the research question.

A theme-oriented analysis based on the predetermined themes was conducted as it related to the individual interviews. The purpose was to utilise the inferences from the interview themes together with the thematic inferences of the quantitative phase to develop the meta-inferences required by the mixed-method research design.

5.2 CASE-ORIENTED ANALYSIS: INDIVIDUALS

5.2.1 Person B (ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee B (I-B)[6] does think about the future but less so than in the past when I-B was still a student studying politics. Since I-B started in the company as an ESP, I-B became more cautious about what the future entails. When I-B was a student, I-B had clear views of the future, seeing trends easily based on a gut feeling. This gut feeling was closely linked to I-B's own expectations of what the future should be, i.e. a future consciousness based on I-B's perception of an ideal future. Now that I-B is an ESP, I-B is "more hesitant to make a forecast".

I-B's work as an ESP in the company requires I-B to work mostly within a short- to medium-term timeframe of the future. I-B, however, recognises that a longer term perspective is also necessary, specifically in terms of a mental construct of what a possible long-term future would entail. Nevertheless, I-B is of the view that any perspective of the future needs "to (be) articulated more carefully and more concisely".

I-B's feelings about the global future have moved from idealism when I-B was a student to professed realism within the context of I-B's occupation as an ESP. When I-B was a student I-B's idealism created a perception that world politics had its own momentum, "that there is almost like an invisible hand…that guides…the political terrain". I-B's realism about global political events is now based on observations where individual politicians and/or prominent institutions "can change things dramatically". I-B stated that "realistic does not necessarily mean pessimistic" and "I would say I am still optimistic but more realistic".

I-B sees the progression from idealism to realism as a necessary "learning curve" within the context of I-B's ESP occupation. I-B does not think that people outside of the ESP environment have the same progression or learning curve. However, as an ESP "you move from an idealist type of mind-set to a realist mind-set". I-B would move from realism to pessimism regarding the global future only in the face of a "massive historical event that have a shock effect, for example September 11", referring to the terrorist attack in New York, US, on 11 September 2001. For I-B "things like that alter your worldview, they knock you off balance a little". I-B makes a distinction between such unexpected political-security events and natural disasters with a high impact, "something like a tsunami in Japan … (that) normally does impact on people". For I-B, "things of high …political international magnitude" have greater global consequences for the future than

[6] Note that Person A participated in the Pilot Study and not in the main study.

natural disasters. However, I-B does state that "the laymen in the street" might view the natural disasters as equal to political events of a high international magnitude.

MILES analysis and findings

I-B's future consciousness is relatively well-developed in terms of general futures thinking (Table 5.1). I-B's inert mental state-IID underwent change over time as a result of learning. I-B's inert mental state as a student became flexible through what I-B has learnt as an ESP. The learning changed I-B's SELF in favour of a new disposition towards the future, i.e. from idealism to realism.

I-B's current inert mental state will only become flexible again if a global high-impact, unexpected event on a political-security level occurs. Such an event will change I-B's disposition towards the possible global future from realism to pessimism but only temporarily because I-B expects the world to reach a state of equilibrium soon after such an unexpected event.

I-B's inert mental state-IID in terms of future consciousness is as follows:

- Short-term to medium-term thinking (and sometimes longer term) about the future due to occupational requirements
- Realism about the probable global future (previous disposition as a student was idealistic)
- Caution when forecasting the global future (previously based on a gut-feeling approach)

Table 5.1: Person I-B's future consciousness analysis

Futures Thinking	**Short Term** Work context		**Medium Term** Work context		**Long Term** Global issues
Futures Disposition	Fear	**Pessimism**	Hope	Optimism	**Realism** Impact of global leaders/institutions
Futures Image	**Possible** Global security event		**Probable** Complex, Fluid	Preferable	Ideal
Disposition Change	None	**Global Event**	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-B is focused mostly on specific work-related information and is not interested as such in information on general global developments. I-B receives company-generated information and will

also do active and specific cell phone based internet searching on issues related to I-B's occupation as an ESP. Outside of the work environment, I-B would read up on science and cyber issues as well as political philosophy "but it's all very focused". I-B does not have a TV because, "You will be exposed to information outside of what you are interested in but for me now it is very focused". I-B would also view newsfeeds on the cell phone regarding issues of interest and I-B listens to the radio as "sort of a chaos factor". I-B does not read "a lot of other news other than I am interested in the moment". I-B does not engage with people outside the work environment in discussions on global issues. In this regard, I-B stated that "I don't enjoy it and I try to be very dismissive".

I-B sees the media as a powerful role player in creating the future in accordance with the views of the people who control and finance the media. In this regard, I-B says that "The media is extremely powerful …(it has) an impact in creating the future world …The media is able to change people, change communities and change countries …" and "They won't say it explicitly but it is a narrative build upon other people's world view and it is also build on the resources that fund those places". I-B believes that even the factual information of the media is presented in terms of a specific goal to be achieved. I-B says that, "You can write a lot of facts but it is the way things are written that creates the ground in which those facts will be conceived". I-B will scan the media for factual information albeit with a critical mind as to the media's analyses and projection of the future, even where the media presents statistics to support its views. I-B would rather try to obtain independent analytical assessments "where they honestly appraise the world in 10 years (with) less ideological content (because) it is the ideological content that fusses it out".

I-B refrains from indicating whether sufficient knowledge exists to make a judgement of the future. In this regard, I-B stated that the company would be able "on a very strategic global level …to give a very cursory overview and it would be fairly accurate". I-B does, however, believe that a better judgement could be achieved if enough time is spend on developing such judgement. In this regard, I-B says that, "I would basically surround myself with as much information as possible … (and then) technically you wait for your mind …to spit something out and that's a creative exercise". I-B did not give any indication of whether I-B is approaching the ESP job in such a manner, regardless of being prompted to give a clear answer. It is assumed that I-B does not follow this in-depth approach; this assumption is based on the short- to medium-term timeframe of I-B's ESP job, which precludes long-term forecasting.

MILES analysis and findings

I-B's SELF is distrustful of the general media. I-B's inert mental state-IID perceives the media as a change agent on a global scale and a powerful role player in creating the future. I-B's IED behaviour regarding the media is to scan only for factual information. I-B is aware of the litany level problem of media reporting and is applying so-called critical thinking when scanning the media, even as it relates to factual information, because of a perception that the facts could be distorted

by media contextualisation. I-B would look for information on the Social Causes Level of Knowing to overcome the ideological content of media reporting. In this regard, I-B would scan for independent analytical assessments of global issues in the SED contextual environment and obtain perspectives on the global future.

The process dynamics in terms of I-B's scope of scanning regarding the SED contextual global environment are predominantly poor (Table 5.2). I-B generally utilises public scanning to obtain information about contextual global issues but limited to some STEEP areas of interest. I-B is mostly doing domain-specific scanning as it relates to I-B's narrow ESP focus areas. I-B does not cover SED contextual global developments comprehensively. Discussions with other people outside the work environment are mostly avoided; hence, an option to get different perspectives is precluded. I-B's scanning scope is too narrow and incomplete regarding the STEEP areas to enhance I-B's knowledge base regarding the SED contextual global environment.

Table 5.2: Person I-B's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow		(X)			
Domain ES Narrow		(X+)			
Public ES Wide					
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-B's utilisation of the scanning modes regarding the SED contextual global environment are predominantly good (see Table 5.3). The ESP focus area requires I-B to search formally and informally. The undirected and conditioned viewing modes are utilised in terms of newsfeeds to keep abreast of the general developments related to the ESP focus area. Undirected and conditioned viewing is also used, mainly for interests outside of the work environment. However, I-B does not follow an approach where the viewing and searching modes are formally and seamlessly integrated to achieve holism in scanning to enhance knowledge creation.

Table 5.3: Person I-B's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X			
Conditioned Viewing		X			
Informal Search			(X)		
Formal Search				(X)	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-B's level of knowing regarding the SED contextual global environment is predominantly poor (Table 5.4) because I-B generally scans for information on the Litany Level of Knowing as it relates to the SED contextual global issues of interest. The Social Causes and, to a limited extent, Discourse-Worldview Levels of Knowing as these relate to company-generated information are only accessed within the narrow ESP focus areas. I-B's specific personal areas of interest outside of the work environment are mainly on the Litany Level of Knowing, e.g. the newsfeeds and radio. No deeper levels of knowing are scanned by I-B as it relates to SED contextual global issues that may have a bearing on how the global future could develop. I-B's approach lacks depth in the inquiry by failing to fully explore the deeper levels of knowing and, hence, does not enhance I-B's knowledge base regarding the SED contextual global environment.

Table 5.4: Person I-B's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X			
Social Causes			(X)		
Discourse-Worldview				(X-)	
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-B are generally average regarding the SED contextual global environment (Table 5.5). In this regard, I-B mostly accesses information in the SED-IED quadrants and to some extent the CID-IID quadrants based on the relatively narrow STEEP areas of focus. Also, I-B's non-work related interests are mainly in the SED (science and cyber interests) and IID (political philosophy) quadrants. I-B does not follow an approach where all the reality dimensions are comprehensively accessed and formally integrated for holistic scanning to enhance knowledge creation.

Table 5.5: Person I-B's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED					
SED/IED & CID/IID (-)			(X)		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-B accesses regarding the SED contextual global environment are predominantly average (Table 5.6). The information is generally a combination of distorted and factual information based on I-B's scanning scope and modes, the levels of knowing and reality dimensions. I-B is aware of the possible distortion of information from the public media and applies so-called critical thinking to moderate these problems. I-B also has access to company-generated concealed information but within the limited narrow ESP focus areas. I-B's scanning is done narrowly within the public domain but mostly the domain-specific area of focus by using both viewing and searching modes. Also, I-B generally accesses the Litany and Social Causes Levels of Knowing and to a limited extent the Discourse-Worldview Level of Knowing as it pertains to mostly the external but also limited internal dimensions of reality. I-B's quality of information, therefore, has limited depth to enhance I-B's knowledge base regarding the SED contextual global environment.

Table 5.6: Person I-B's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X		
Concealed information				(X-)	
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-B's foresight is one-dimensional and generally poor regarding SED contextual global developments. In this regard, I-B's views that the world of humanity is robust and has always survived throughout the ages, and that such resilience will continue into the future precludes possible alternative futures, whether good or bad futures. I-B is very much task-orientated regarding the narrow ESP focus areas with a limited knowledge base regarding the broader SED contextual global developments, and this limits I-B's capacity for making judgements about the global future. I-B's one-dimensional approach regarding the global future is indicative of an insufficient futures toolkit to develop a range of views on possible futures or to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-B's knowledge base, judgement and foresight about the global future is poor, i.e. mostly a superficial depth in the inquiry, mainly because of a narrow scanning scope and levels of knowing regarding the global contextual environment (Table 5.7).

Table 5.7: Person I-B's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope		I-B			
ES Modes				I-B	
Levels of Knowing		I-B			
Reality Dimensions			I-B		
Information Characteristics			I-B		
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional		I-B			
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-B is contributing to make the world a better place through doing I-B's job. I-B states that "I would not stay in this job if I did not think that I did (contribute) in some way …you know that it does feed in to a larger bureaucracy that does something." Outside of the job environment, I-B believes that a contribution is made through a religious approach to life. In this regard, I-B stated that "I try to use the religious aspect that type of thing …to make the world better by thinking it from a religious point of view".

I-B believes that the world is already a better place due to human ingenuity but that it can still improve. Individuals and groups cooperated through the ages to make the world a better place. I-B says that things will improve more if "you just …do your part – in the end it is a tough question".

MILES analysis and findings

I-B's SELF has a positive disposition towards the state of the world. In this regard, I-B's inert mental state-IID perceives the world as already good due to robustness developed over the millennia and human ingenuity that has progressively made the world perfect. I-B has a flexible mental state regarding the state of the world and is of the opinion that an even better world could be created if all people and governance structures within the IID and CID context contribute in the SED-IED environment. I-B's own contribution is passive through the ESP job and outside the working environment through having a religious approach to life, i.e. I-B intentionally (IID) adopted behaviour (IED) to only contribute passively to improve the SED contextual environment (Table 5.8).

Table 5.8: Person I-B's actionability analysis

State of the world	Acute	Dismal	Ambiguous	***Good***	Excellent
Whose responsibility	Individual	Society	Government	International	***All***
Own contribution	None	***Passive: Job***	***Passive: Society***	Active: Job	Active: Society

Source: Own compilation

RESEARCH QUESTION SUB-CONCLUSIONS

I-B has a relatively well-developed future consciousness. I-B predominantly scans for information on the Litany Level of Knowing as it relates to general SED contextual global issues. I-B refrained from providing an own assessment on whether sufficient knowledge exists to make a judgement about the global future. Nevertheless, I-B's knowledge, judgement and foresight regarding the global future is poor to average, i.e. ranging from superficial to limited depth. I-B's mental constructs about the probable future is influenced by an inert mental state-IID, which will only temporarily become flexible by creating a pessimistic disposition towards the global future should a high-impact unexpected event occur. I-B has a one-dimensional and generally poor image of the global future and an insufficient capacity to foresee alternative global futures. I-B, furthermore, only contributes passively in creating a better global future.

5.2.2 Person C (ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee C (I-C) thinks about the future within the context of the full timeframe, i.e. ranging from short to long term. I-C believes that it is important for one's future happiness to plan and take action steps in the short term. This short term approach is foundational for I-C's future happiness.

I-C has a pessimistic view of the global future and says that, "it is not such an encouraging feeling, it's more like a gloomy dreary feeling". This pessimistic view of the global future stems from various global challenges, which I-C identified as over-population, limited resources, the wealth gap between rich and poor, and cultural conflicts. For I-C, "there is more things that drive people apart despite the fact that it is a globalised world". I-C believes that globalisation is only connecting people on a technological level but "more and more" separation exists on other levels. Hence, I-C believes that people of the future will not be better off than people of the present. I-C sees the

current global challenges as being on a linear trajectory which "is almost inevitable…" and that the world is in a state of "degeneration that is almost unavoidable".

I-C does, however, believe that divisions among people of the world could be overcome "if may be there was a whole lot more acceptance being ingrained within people from the moment they are born as part of their socialisation, I think that will go a long way in removing the strife". I-C's global future perspective was not in any way linked during this phase of the interview to I-C's occupation as an ESP.

MILES analysis and findings

I-C's future consciousness is relatively well-developed in terms of general futures thinking by imagining a future of happiness through planning and taking action steps in the short term (Table 5.9). The disposition of I-C's SELF towards the future is, however, pessimistic. I-C's inert mental state-IID has a futures image that sees the probable future as negative due to the many SED contextual global problems, i.e. the present global problems are linearly projected to become the probable future. I-C does not show a disposition change towards the future. In this respect, I-C does not have any flexible mental state that could change I-C's feelings about the probable future. However, "hopefulness" is noticeable for an ideal future but only if CID global learning in favour of individual and cultural acceptance could be instilled.

I-C's inert mental state-IID as it relates to futures consciousness is:

- Short- to medium-term planning/action for long-term future happiness
- Pessimism about the probable global future
- Hopefulness about the ideal global future

Table 5.9: Person I-C's future consciousness analysis

Futures Thinking	**Short Term** Planning		**Medium Term** Action		**Long Term** Happiness
Futures Disposition	Fear	**Pessimism** Global Challenges	**Hope**	Optimism	Realism
Futures Image	Possible	**Probable** Bleak future		Preferable	**Ideal** Global Learning
Disposition Change	**None**	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-C has a general interest in all forms of news and usually gets information from the "radio, TV, print, (and) media broadcasts". I-C is interested in "everything that is news, entertainment news, politics, global economics, environmental issues". I-C mostly gets information from the internet and by reading hard-copy newspapers. I-C says that, "a newspaper I would usually read in my office …and then when I want to follow up, then I would go to the website". I-C does engage with other people in discussions about issues related to global developments but does not necessarily start such conversations.

I-C is unaware of media reporting on the global future by saying that, "I don't know actually that I picked up a specific trend about what they (media) report about the future …they don't really go into forecasting for the long term". I-C believes the media focus more on the present than the future and when the media do present a future view, "…it is usually exaggerated or qualified". I-C does not scan the media for future perspectives but if there is a need to do it I-C would not scan the media because they over-simplify perspectives. I-C would rather scan "for academic stuff online, seek out writings" of experts "as opposed to journalists …basically to remove that filter". I-C does not distrust the media in general but believes that the media are too simplistic when providing a futures perspective of the world, hence the need to obtain an in-depth analysis from experts on the global future.

I-C is of the opinion that sufficient knowledge exists to make a judgement about the future. I-C specifically thinks that historical events can be used as a guideline to obtain perspective and determine the trajectory of the future. In this regard, I-C says that, "I am looking at the past so as to determine the future …a lot of what has happened in the last 20 years or so …just kind of gives you an idea of where generally things are headed".

MILES analysis and findings

I-C's SELF trusts the general media, albeit cautious of the manner in which the media report on SED global issues. I-C's inert mental state-IID perceives the media as too simplistic in their reporting because they filter out information and exaggerate issues. I-C's IED behaviour regarding the media is to look for factual information regarding specific issues of interest rather than relying on a journalist's perspective of these issues. When required, I-C would look for information on the Social Causes Level of Knowing to obtain a perspective on SED global issues and to obtain perspectives on the global future.

The process dynamics as it relates to I-C's scope of scanning regarding the SED global contextual environment is predominantly average (Table 5.10). I-C mostly has a public scanning scope that covers a wide range of issues on the political, economic, environment and social areas of interest, i.e. mostly all global STEEP areas. I-C's scanning scope also includes discussions on SED global

issues with other people, which could enhance I-C's understanding of these issues. I-C's knowledge base regarding the SED contextual global environment is enriched by the wide scanning scope albeit limited to the public domain.

Table 5.10: Person I-C's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow					
Domain ES Narrow					
Public ES Wide			X+		
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics as it relates to I-C's utilisation of the scanning modes regarding the SED global contextual environment are predominantly poor (Table 5.11). In this regard, the undirected viewing mode is mostly utilised to keep abreast of the general SED contextual global developments. This is done by scanning the internet and newspapers. Conditioned viewing and informal/formal searching of the internet are only occasionally utilised to fill information gaps regarding issues of interest observed in the undirected viewing mode. The unfocused nature of the undirected viewing mode favours information creation over knowledge creation, which limits I-C's knowledge base regarding the SED global contextual environment.

Table 5.11: Person I-C's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X+			
Conditioned Viewing			X-		
Informal Search			X-		
Formal Search				X-	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-C's level of knowing regarding the global future is predominantly poor (Table 5.12) because I-C mostly scans for information on the Litany Level of Knowing to obtain information about contextual SED global developments. Occasionally, I-C would look for additional information on global issues of interest but not beyond the Litany Level of Knowing. I-C did indicate that if there was a desire to find out more about the future, I-C would access the Social Causes Level of Knowing. However, such a desire does not exist currently. No deeper levels of knowing are scanned by I-C in terms of contextual SED global issues that may have a bearing on how the global future could develop.

Therefore, I-C's knowledge base has to contend with the superficial information of the Litany Level of Knowing.

Table 5.12: Person I-C's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes					
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-C are generally poor regarding the SED global contextual environment (Table 5.13). In this regard, I-C mostly accesses information in the SED-IED quadrants based on the scanning scope and levels of knowing. Therefore, I-C's knowledge base has to contend with information about the external dimensions only, without information about the internal dimensions that give rise to the external developments.

Table 5.13: Person I-C's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED		X			
SED/IED & CID/IID (-)					
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of the information that I-C accesses regarding the SED global contextual environment are predominantly poor (Table 5.14). The information is generally a combination of distorted and factual information based on I-C's scanning scope and modes, level of knowing and reality dimensions. I-C's scanning is done widely within the public domain on the Litany Level of Knowing and I-C accesses the external dimensions of reality by utilising the undirected viewing mode and limited utilisation of the other modes. I-C shows some awareness for possible distortions regarding media reporting and would occasionally search for additional information on specific issues of interest. I-C's quality of information, therefore, is poor and is not conducive to enhancing I-C's knowledge base.

Table 5.14: Person I-C's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X-		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-C's foresight is one-dimensional and generally poor regarding the SED contextual global developments (Table 5.15). In this regard, I-C uses knowledge of past events to linearly forecast the future. Given I-C's limited knowledge base regarding SED global developments, I-C has an under-developed capacity for making judgements about the global future. Also, I-C does not have the necessary futures toolkit to develop a range of views on possible futures, and neither does I-C understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-C's knowledge base, judgement and foresight of the global future are poor, i.e. enquiries are mostly of a superficial depth because of limitations regarding scanning modes, levels of knowing, reality dimensions and information quality (Table 5.15).

Table 5.15: Person I-C's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope			I-C		
ES Modes		I-C			
Levels of Knowing		I-C			
Reality Dimensions		I-C			
Information Characteristics		I-C			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional		I-C			
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-C is not doing anything specifically to make the world a better place. However, I-C believes that everyone is contributing by being connected to everyone else; hence there is a global collective effort albeit very indirectly. In this regard, I-C says that, "…the only influence I may be aware of is the one that is my immediate sphere of influence but I would like to believe that it is multiplied or

have a ripple effect throughout society …I think everyone acting with good agency are making the world slightly a better place".

I-C believes everyone has a shared responsibility to create a better world, "based on your convictions". I-C states: "It should not even be a conscious effort that I'm going to do good now; your general approach in life should be of good intentions". I-C believes that various people and organisations are doing things to create a better world. In this regard, I-C states: "I think there are things being done, I don't know whether it is enough, I don't know whether that goodwill can counteract the forces that seem to …make the world sort of …full of tension and strive".

MILES analysis and findings

I-C's SELF has a negative disposition in terms of the state of the world (Table 5.16). In this regard, I-C's inert mental state-IID perceives the world as on a path of unavoidable degeneration. I-C does not have a flexible mental state about the state of the world: I-C remains pessimistic about the global future and sees no real prospects for improvement.

I-C is of the opinion that everyone shares the responsibility for creating a better world. In this regard, I-C believes many people and organisations (IID and CID) are already working towards that goal albeit unclear whether such efforts are having a positive impact in the SED environment. I-C is not making a contribution to create a better world. Nevertheless, I-C does believe that acting with good agency in society somehow has an impact on I-C's immediate environment.

Table 5.16: Person I-C's actionability analysis

State of the World	Acute	***Dismal***	Ambiguous	Good	Excellent
Whose responsibility	Individual	Society	Government	International	***All***
Own contribution	***None***	Passive: Job	Passive: Society	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-C has a relatively well-developed future consciousness. I-C predominantly scans for information on the Litany Level of Knowing as it relates to general SED contextual issues. I-C is of the opinion that sufficient knowledge exits to make a judgement about the global future. However, I-C's knowledge, judgement and foresight regarding the global future are poor, i.e. it mostly has only superficial depth. I-C's mental constructs about the probable future is influenced by an inert mental state-IID with no flexibility for change about the probable future. I-C has a one-dimensional and

generally poor image of the global future with no capacity to foresee alternative global futures. I-C also shows no intention (IID) to contribute towards creating a better global future, i.e. I-C's behaviour (IED) is to remain indifferent to the SED contextual environment.

5.2.3 Person D (ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee D (I-D) thinks about the future in the context of all the challenges facing the world. I-D believes one should be alert to the various global changes, especially due to the speed of change and the different patterns of change. Some of the most important changes I-D identified is technology, and economic and lifestyle changes. I-D finds it difficult to have a short-term approach to the future because "things are just changing quickly". I-D equates the short-term approach to the future with making plans for the future, having a mission to achieve. In this regard, I-D states that, "…a mission is something that I am going to achieve in the short term". I-D's mission regarding the future is based on a long-term vision of the future. I-D's approach is to have short-term plans based on a medium- to long-term vision of a preferred future.

I-D has difficulty in identifying a specific disposition towards the future but the emphasis on and explanations of the global challenges point to a pessimistic disposition towards the future. I-D states that, "It is a challenging question …". I-D also says that, "I am not a prophet". Nevertheless, I-D foresees various global challenges, which are identified as terrorism, religious extremism, lack of security and technological inequality. In terms of the latter, I-D says: "Technology in other countries is so vast that we are left behind". I-D concludes by stating: "I can foresee a lot of confusion in the future".

I-D believes that a solution to the global challenges lies in global cooperation regardless of the prevailing different agendas and interests pursued by global role players. In this regard, I-D states that, "…if you can have a common understanding or respecting each other's cultures", then many of the global challenges could be overcome.

MILES analysis and findings

I-D's future consciousness is relatively good in terms of general futures thinking (Table 5.17). I-D shows a theoretical understanding for the process dynamics of developing a long-term image of a preferred future but fails to personalise such an approach to create a personal visionary preferred future. The disposition of I-D's SELF towards the future is pessimistic. I-D's inert mental state-IID has a futures image that sees many serious global challenges that, together with the speed of short-term change, are linearly projected to a probable future, which is imagined as chaotic.

I-D does not show a disposition change towards the future. In this regard, I-D does not have a flexible mental state that could change I-D's feelings about the probable global future. Instead, I-D

has a desire for an ideal future where global CID common understanding among nations will overcome the current global challenges.

I-D's inert mental state-IID as it relates to future consciousness is:

- Theoretical short term planning approach for a visionary long-term global future
- Pessimism about the probable global future
- Desire for an ideal global future based on common understanding among nations

Table 5.17: Person I-D's future consciousness analysis

Future Thinking	**Short Term** Planning		**Medium Term**		**Long Term** Vision
Future Disposition	Fear	**Pessimism** Global Challenges	**Hope**	Optimism	Realism
Future Image	Possible	**Probable** Confusion	Preferable		**Ideal** Common Understanding
Disposition Change	**None**	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-D is mostly interested in information related to I-D's occupation as an ESP, but does view information on broader global issues. In this regard, I-D says that, "I do tap into other issues what are happening …I'll just get a sense of economically where is the world going to, okay, technology is changing, okay, what is happening in the USA, I go into everywhere".

I-D is mostly searching the internet for information, stating that "…it is just the internet". These internet sources of information range from news websites to "think tank" and international governance websites. Sometimes I-D gets information generated by other people in the company. However, I-D is concerned about the internet sources of information because "…there is a lot of competition (and) media houses want to sell papers". Also, I-D believes that "there is a lot of negativity" in the news. I-D sometimes participates in discussions on global issues but mostly avoids such conversations because they are challenging. I-D states: "Friends don't like your opinion, I mean frank talk…I don't like it…I'm too, maybe, radical".

I-D does not trust the media and believes that the media are biased. Also I-D believes that some journalists may have hidden agendas. I-D thinks that the media are powerful and need to be controlled: “If it’s not properly coordinated and controlled, it can cause war”. I-D does not think that one could rely on media information but does scan the media for information. I-D says: “I’ll just get a sense …(the) media is a first line of information”. I-D does not know about other sources of information apart from the media that could provide perspectives on the global future.

I-D lacks confidence to make judgements on the future due to the changing nature of the global environment and does not have an understanding of how foresight works. I-D states that there are limitations on I-D’s ability to make a judgement about the future: “I’m limited…I can’t foretell …what I see for the future, something else can come up from somebody else to change it, it’s a changing world”.

MILES analysis and findings

I-D’s SELF is distrustful of the media. I-D’s inert mental state-IID perceives the media as biased, having an agenda and being too powerful to the point of having the ability to cause war. Hence, I-D believes that the media need to be controlled. I-D’s IED behaviour is not to rely on the media for information but only to utilise it for initial scanning to get an overview of global developments, i.e. undirected and conditioned viewing. I-D has no knowledge of sources other than the media that could provide a different perspective on SED global issues as these relate to the global future.

The process dynamics in terms of I-D’s scope of scanning regarding the SED contextual global environment are predominantly poor (Table 5.18). I-D only occasionally utilises public scanning to obtain information about the general global STEEP areas and does not cover the SED contextual global developments comprehensively. I-D mostly utilises domain-specific scanning within the narrow ESP job focus areas. I-D avoids discussions on global issues with other people outside of the work environment but when it does occur I-D is a passive participant. I-D’s scanning scope is too narrow and limited to enhance I-D’s knowledge base regarding the SED global environment.

Table 5.18: Person I-D’s scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow					
Domain ES Narrow		(X+)			
Public ES Wide			X-		
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-D’s utilisation of the scanning modes regarding the SED contextual global environment are predominantly poor (Table 5.19). In this regard, the undirected

viewing mode is generally utilised to keep abreast of the broader SED contextual global developments. I-D utilises formal searching to obtain information from the internet regarding the narrow ESP focus areas. Information generated by the company is obtained by I-D through conditioned viewing but limited to the narrow ESP focus areas. I-D's utilisation of the viewing and searching modes is too restricted to the ESP focus areas to enhance knowledge of the SED contextual global environment.

Table 5.19: Person I-D's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X			
Conditioned Viewing		(X)			
Informal Search					
Formal Search				(X)	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-D's level of knowing regarding the SED contextual global environment is predominantly poor (Table 5.20) because I-D mostly scans for information on the Litany Level of Knowing to obtain information about SED contextual global developments. The narrow domain-specific scanning includes the Litany, Social Causes and Discourse-Worldview Levels of Knowing in descending order of importance as these relate to the narrow ESP focus areas. I-D searches the internet for narrow ESP-related information that covers the Litany and Social Causes Levels of Knowing. Occasionally, limited company-generated information is obtained from the Discourse-Worldview Level of Knowing regarding the ESP focus areas. I-D's limited exposure to discussions outside of the work environment mostly covers the Litany Level of Knowing. No deeper levels of knowing are scanned by I-D in terms of contextual SED global issues that may have a bearing on how the global future could develop. I-D's approach lacks depth in the inquiry by failing to fully explore the deeper levels of knowing. Hence, I-D's knowledge base is not enhanced in terms of the SED contextual global environment.

Table 5.20: Person I-D's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes			(X)		
Discourse-Worldview				(X-)	
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-D are generally average regarding the SED contextual global environment and I-D's narrow ESP focus areas (Table 5.21). The internet as main source of I-D's information suggests access to mainly the SED and IED quadrants and limited CID and IID quadrants. The narrow domain-specific scanning accesses mostly the SED and IED quadrants and to a lesser extent also the CID and IID quadrants while discussions outside the work environment will be predominantly in the SED and IED quadrants. I-D does not follow an approach where all the reality dimensions are comprehensively accessed and formally integrated for holistic scanning to enhance knowledge creation.

Table 5.21: Person I-D's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED					
SED/IED & CID/IID (-)			X		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-D accesses regarding SED contextual global developments are predominantly poor (Table 5.22). The information is generally a combination of distorted and factual information based on I-D's scanning scope and modes, levels of knowing and reality dimensions. I-D's scanning is done within a narrow domain-specific focus area with limited scanning of the public domain. Also, I-D mostly accesses the Litany Level of Knowing and mostly the external dimensions of reality. I-D has limited access to the company's concealed information as it relates to I-D's narrow ESP focus areas. However, this is not sufficient to improve the quality of information in terms of the SED contextual global developments. I-D shows awareness of possible distortions regarding internet sources but does not indicate any moderation of these distortions to improve I-D's information quality on the SED contextual global developments. I-D's

quality of information, therefore, has narrow depth and little potential to enhance I-D's knowledge base regarding the SED contextual global environment.

Table 5.22: Person I-D's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X		
Concealed information				(X-)	
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-D's foresight is one-dimensional and generally bad regarding the SED contextual global environment. In this regard, I-D has an under-developed understanding of foresight and an under-developed capacity for making judgements about the global future. I-D does not have the necessary futures toolkit to develop a range of views on possible futures or to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-C's knowledge base, judgement and foresight of the global future are poor, i.e. the inquiry is mostly of a superficial depth because of limitations in scanning scope and mode, levels of knowing and information quality (Table 5.23).

Table 5.23: Person I-D's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope		I-D			
ES Modes		I-D			
Levels of Knowing		I-D			
Reality Dimensions			I-D		
Information Characteristics		I-D			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional	I-D				
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-D is contributing by creating a better world through patriotism, loving the country and the continent of Africa, and by rendering a service by working as an ESP. I-D states: “As long as I am here, I just render my services for the best”.

I-D believes something should be done to create a better world, specifically by developing a common understanding of the desired future. In this regard, I-D states: “If you can have a common understanding then you can have a same picture towards the future”. However, I-D believes that developing a common understanding about the future is difficult and that, “it can only be realised when there’s something that has happened …you see, that is a problem.”

MILES analysis and findings

I-D’s SELF has a negative disposition towards the state of the world (Table 5.24). Here, I-D’s inert mental state-IID perceives the world as ambiguous with various challenges that will continue into the future. I-D does not have a flexible mental state about the state of the world and remains pessimistic about the global future.

I-D is of the opinion that everyone (IID and CID) has a responsibility to create a better world by working towards a common understanding of the global challenges. However, I-D acknowledges that such an approach might be idealistic and only realisable in the aftermath of a global event. I-D is making a limited passive contribution to make the world a better place through the ESP job only, i.e. I-D intentionally (IID) adopted behaviour (IED) to only contribute passively to improve the SED contextual environment.

Table 5.24: Person I-D’s actionability analysis

State of the world	Acute	Dismal	***Ambiguous***	Good	Excellent
Whose responsibility	Individual	Society	Government	International	***All***
Own contribution	None	***Passive: Job***	Passive: Society	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-D has a relatively good future consciousness. I-D predominantly scans for information on the Litany Level of Knowing in terms of the general SED contextual global issues. I-D acknowledges that sufficient knowledge does not exist to make a judgement about the global future. In this regard, I-D's knowledge, judgement and foresight regarding the global future are poor, i.e. it mostly has superficial depth. I-D's mental constructs about the probable future is influenced by an inert mental state-IID with no flexibility for change about the probable future. I-D has a one-dimensional and generally bad image of the global future with no capacity to foresee alternative global futures. I-D only contributes passively through the ESP job in creating a better global future.

5.2.4 Person E (ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee E (I-E) thinks short to medium term about the future of South Africa and sometimes Africa but not necessarily the global future as these relate to global events or developments such as "the natural disasters, the wars, the economy". I-E has a specific narrow task as an ESP in the company and scans and analyses specific problem areas related to South Africa. I-E's long-term thinking is about the future of the children: "In the long term, I am only thinking along the lines of what will be left when my kids are adults".

I-E's disposition towards the future is pessimistic. I-E states that, "I just see a bleak kind of future" due to the influence of negative forces. This is in contrast to I-E's statement that, "I am generally an optimistic person." Although I-E is pessimistic about the future, I-E remains hopeful that the contribution made as an ESP in the company "may be can make a difference" and "maybe if I do my work right …something can be done to avert the bleak future that I am seeing".

I-E's pessimistic disposition towards the future is mostly the result of what I-E sees through the lens of an ESP focusing on a specific narrow task. I-E indicates that the specific problem areas that I-E is tasked to scan and analyse will only change if there is political will and decisive action to overcome those problem areas. Hence, I-E believes that a mind shift is required by the institutions tasked to deal with the problem areas. Those institutions also need to follow a holistic approach regarding the underlying causes of the problem areas. However, until such time that a mind shift occurs, I-E's feeling of hopelessness will prevail.

MILES analysis and findings

I-E's future consciousness is relatively good in terms of general futures thinking (Table 5.25). However, it is mostly limited to a specific ESP-focused task and under-developed in terms of the global future. I-E's SELF is generally optimistic but I-E's disposition towards the future is

pessimism-hopelessness. I-E's inert mental state-IID has a futures image influenced negatively by the narrow ESP focus area that predominantly scans for specific problems in the contextual environment.

I-E does not show a disposition change towards the future. In this regard, I-E does not have a flexible mental state that could change I-E's feelings about the probable future. I-E generally knows what is broadly needed to change the future for the better but is not particularly hopeful that the role players are up to the task. I-E's only hope is that the ESP job contribution could somehow make an impact that will lead to a better ideal future.

I-E's inert mental state-IID as it relates to future consciousness is:

- Short- to medium-term ESP focus issues and long-term concern for the future of the children
- Pessimism-hopelessness about the probable future
- Hopeful about ESP contribution to create a better ideal future

Table 5.25: Person I-E's future consciousness analysis

Futures Thinking	**Short Term** Problems		**Medium Term**		**Long Term** What future for children
Futures Disposition	Fear	**Pessimism** Negative forces	**Hope**	Optimism	Realism
Futures Image	Possible		**Probable** Bleak future	Preferable	**Ideal** Better world
Disposition Change	**None**	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-E views global events via Twitter feeds. These newsfeeds cover "everything …politics, entertainment…breaking news, whatever happens …that's how I keep track of the world". I-E does not utilise other media sources of information. Although I-E's occupation is that of an ESP, I-E does not actively search for information. I-E says: "In terms of our work we are supposed to do environmental scanning but I honestly do not have the time …Instead, in the course of my work I pick up the things". I-E gets occupational information through interacting with other companies. In this regard, I-E says: "…you get a lot of information from them which are of value, so, that exposes

me to more information". I-E only specifically scans for more information should there still be an information gap. In this regard, the interaction with other companies enables I-E to scan "the environment on the topics that I'm focused on". I-E does discuss issues with friends who have the same interests "because most of my friends are in the same environment that I'm in in terms of work, so, we understand each other". I-E does not discuss global issues with other people because "they do not pay attention to world issues".

I-E generally does not trust the media as a source of information because I-E believes that the media "are actually influenced by other people, so it does not necessarily reflect a person's view, it doesn't thoroughly reflect facts all the time". I-E does believe that the media could be a source of information but with the provision that it "has to be viewed with a cup of salt". I-E would search the internet for more reliable information about global issues and would engage with knowledgeable people on specific topics of interest because I-E believes that "through engagement you get more than when you're reading somewhere on the internet".

I-E acknowledges a lack of sufficient knowledge to make a judgement of the future. The main reason appears to be that I-E is mainly focused on a specific ESP job-related area of interest that excludes developments and events on the global level. Also, I-E is not interested in history and politics and is more a natural science person. I-E states: "In terms of my career and my interests …I was not interested in history and the things about the world …I was never interested in politics, so my things was science, I'm that kind of person".

In terms of I-E's work as an ESP with a narrow focus area, I-E does, however, take note of global developments as presented by colleagues during company meetings but I-E is of the opinion that it is insufficient to claim knowledge about global developments. I-E says that in the ESP job environment, "… (I) now open my mind to hear about (global issues)" and "…where I'm working …I pay attention to certain things but I don't think I'm equipped to be able to look beyond anything about the world".

MILES analysis and findings

I-E's SELF is distrustful of the general media. I-E's inert mental state-IID perceives the media as influenced by external role players as well as failing to fully provide factual information. I-E's IED behaviour is to scan the media for information but with an awareness of the problems with the quality of the information. If there is a need, I-E would look for more reliable alternative sources of information on the internet regarding SED contextual global issues and engage with experts in strategic conversations on specific issues of interest in the SED and on the global future.

The process dynamics in terms of I-E's scope of scanning regarding the SED contextual global environment are predominantly bad (Table 5.26). I-E is disinterested in global issues and mostly utilises public scanning to obtain information about general global STEEP areas but within a narrow scope. In this regard, I-E mostly utilises Twitter newsfeeds and no other public sources of

information. I-E mostly utilises domain-specific scanning within a narrow ESP focus area. In this regard, limited secondary information is obtained from other companies as well as I-E's own company. I-E does engage with other people, albeit only like-minded friends, outside the work environment in discussions on SED global issues. I-E does not cover the SED global developments comprehensively. I-E's disinterest in global issues and the narrow scanning scope are not conducive to develop I-E's knowledge base regarding the SED contextual global environment.

Table 5.26: Person I-E's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow	(X+)				
Domain ES Narrow		(X+)			
Public ES Wide					
Domain ES Wide					
Complete ES Wide					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-E's utilisation of the scanning modes regarding the SED contextual global environment are predominantly poor (Table 5.27). In this regard, I-E mostly utilises undirected viewing to keep abreast of general SED contextual global developments and occasional conditioned viewing regarding company information. I-E avoids searching for information despite it being a job requirement. The searching scanning modes are only used by I-E when information gaps on the narrow ESP focus areas need to be filled, and only after exhausting all other scanning modes. The unfocused nature of the undirected viewing mode favours information creation over knowledge creation, which limits I-E's knowledge base regarding the SED global contextual environment.

Table 5.27: Person I-E's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing	X+				
Conditioned Viewing		(X-)			
Informal Search			(X-)		
Formal Search				(X-)	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-E's level of knowing in terms of the SED global contextual environment is predominantly poor (Table 5.28) because I-E's public scanning mostly covers the Litany Level of Knowing to obtain

information on general issues of interest while being disinterested in contextual SED global issues. I-E's scanning relates more to the narrow ESP-specific focus areas and covers the Litany and Social Causes Levels and to a limited extent the Discourse-Worldview Levels of Knowing with regard to company-generated information. I-E also has discussions with other people, mostly like-minded friends, but such discussions are more work-related and do not cover general contextual SED global issues. No deeper levels of knowing are scanned by I-E in terms of contextual SED global issues that may have a bearing on how the global future could develop. I-E's approach lacks depth in the inquiry by having a narrow focus. This approach does not enhance I-E's knowledge base regarding the SED contextual global environment.

Table 5.28: Person I-E's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		(X+)			
Social Causes			(X)		
Discourse-Worldview				(X-)	
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-E are generally poor in terms of the SED global contextual environment (Table 5.29). In this regard, the reality dimensions of I-E's scanning depends on the scope of scanning. The ESP narrow focus areas access mostly the SED and IED quadrants, and to a lesser extent, also the CID and IID quadrants. This includes I-E's own company and other company information. The broader SED global issues of interest are mostly on the Litany Level of Knowing through newsfeeds. I-E's knowledge base is mostly informed by developments in the external dimensions of reality, which precludes knowledge of the interrelationship between the internal and external dimensions.

Table 5.29: Person I-E's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED		X+			
SED/IED & CID/IID (-)			(X-)		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-E accesses in terms of SED contextual global developments are predominantly poor (Table 5.30). The information is generally a combination of distorted and factual information based on I-E's scanning scope and modes, levels of knowing and reality dimensions. I-E's scanning is done narrowly within both the public and domain-specific areas and mostly covers the external dimensions of reality on the Litany Level of Knowing by using the undirected viewing mode. I-E occasionally obtains concealed company information on I-E's narrow ESP focus areas. However, this is not sufficient to improve the quality of information as it relates to the SED contextual global developments. I-E shows awareness of possible distortions regarding media reporting and would search for additional information when required. I-E's quality of information, therefore, has narrow depth that is insufficient to enhance I-E's knowledge base in terms of the SED global contextual environment.

Table 5.30: Person I-E's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X		
Concealed information				(X-)	
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-E's foresight is one-dimensional and generally bad in terms of the SED contextual global environment. In this regard, I-E's knowledge base is too limited regarding SED contextual global developments. I-E is also not much interested in the general global future. I-E is very much tasked-orientated in terms of the narrow ESP focus areas and linearly projects these limited ESP perspectives as the probable future. I-E, therefore, does not have a capacity to make an appropriate judgement about the future. I-E does not have a futures toolkit to develop a range of views on possible futures or to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-E's knowledge base, judgement and foresight of the global future are primarily bad, i.e. with no depth in the inquiry, mainly because of limitations regarding all the elements of I-E's knowledge base (Table 5.31).

Table 5.31: Person I-E's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope	I-E				
ES Modes		I-E			
Levels of Knowing		I-E			
Reality Dimensions		I-E			
Information Characteristics		I-E			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional	I-E				
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-E is not specifically making a contribution to create a better world although I-E thinks that something needs to be done to improve the world. I-E says: "It should be done by various states because the future of the world starts with the future of each country, so it depends on what various governments do to preserve, to ensure a better future".

I-E believes that cooperation is a key element to ensure a better future. In this regard, I-E states that governments and their various departments "must work towards one goal and whatever programmes run …these programmes should be inter-linked with others …to be cost effective to deal with issues".

MILES analysis and findings

I-E's SELF has a negative disposition towards the state of the world (Table 5.32). Here, I-E's inert mental state-IID perceives the world as being controlled by negative forces. I-E does not have a flexible mental state about the state of the world and believes that the world has a bleak future.

I-E is of the opinion that it is the responsibility of governments to create a better world. In this regard, I-E believes that each government needs to work effectively to address country-specific challenges, which will hopefully have a positive global impact. I-E is making a limited passive contribution through the ESP job only, i.e. I-E intentionally (IID) adopted behaviour (IED) to only contribute passively to improve the SED contextual environment.

Table 5.32: Person I-E's actionability analysis

State of the world	Acute	***Dismal***	Ambiguous	Good	Excellent
Whose responsibility	Individual	Society	***Government***	International	All
Own contribution	None	***Passive: Job***	Passive: Society	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-E has a relatively good future consciousness. I-E predominantly scans for information on the Litany Level of Knowing in terms of general SED contextual global issues. I-E acknowledges that sufficient knowledge does not exist to make a judgement about the global future. I-E's knowledge base, judgement and foresight regarding the global future are primarily bad, i.e. it lacks any depth. I-E's mental constructs about the probable future is influenced by an inert mental state-IID with no flexibility for change about the probable future. I-E has a one-dimensional and generally bad image of the global future with no capacity to foresee alternative global futures. I-E only contributes passively through the ESP job in creating a better global future.

5.2.5 Person F (ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee F (I-F) thinks about the future in a "standardised" methodical way with clear short-, medium- and long-term timeframes to deal with global issues that may arise "to mitigate and resolve those kind of things in the future". This approach relates to I-F's ESP occupation in the company.

I-F's disposition towards the global future is mixed because "things will be very challenging in the future …there are a lot of new things that are going to impact". To some extent, I-F believes that the challenging issues of the present will linearly arise in the future and is speeding up due to the role of social media. In this regard, I-F says that "the social media …has changed the way we do things in many areas". As an example, I-F refers to the challenges of global terrorism that has increases in scope due to its utilisation of social media.

I-F's mixed feelings about the future stems from the impact that global challenges will have on the stability of the global order, which will eventually become localised. I-F highlights some of these global challenges as religious extremism and the clash of value systems. Nevertheless, I-F believes that the global challenges can be overcome by global introspection where "somehow people need to go back to basics and really look at the way we are living in order to co-exist because ultimately …one will not win against the other without paying a heavy price".

MILES analysis and findings

I-F's future consciousness is relatively well-developed in terms of general futures thinking within the context of an ESP occupational approach covering a short- to long-term timeframe (Table 5.33). The disposition of I-F's SELF towards the global future is mixed feelings but favouring pessimism given the SED contextual global challenges. I-F's inert mental state-IID has a futures image that sees a challenging probable global future, which will linearly unfold from the present global challenges to become localised.

I-F does not show a disposition change towards the future. In this regard, I-F does not have a flexible mental state that could change I-F's feelings about the probable global future. I-F imagines an ideal future of peaceful co-existence following global introspection on the CID level.

I-F's inert mental state-IID as it relates to future consciousness is as follows:

- A standardised ESP timeframe (short to long) approach towards the future
- Mixed feelings but favouring pessimism about the probable global future
- Hopefulness that co-existence could create an ideal global future

Table 5.33: Person I-F's future consciousness analysis

Futures Thinking	**Short Term** Challenges	**Medium Term** Mitigate challenges		**Long Term** Mitigate challenges	
Futures Disposition	Fear	**Pessimism-Mixed** Global Challenges	**Hope**	Optimism	Realism
Futures Image	Possible	**Probable** Challenging	Preferable		**Ideal** Co-existence
Disposition Change	**None**	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-F reads internet news sites while also watching various international news channels to obtain a multiple perspective on global events. I-F says: "… (to) look at multiple sources … (is) very important because …if you subject yourself to a favourite …you will miss the other view … (so) it always (is) important to have various ones so that you are able to build your own picture and own perspective on it". I-F mostly scans for political and economic information because I-F believes developments in these two areas influence any other areas of interest. Information is obtained through searching various sources on the internet to make comparisons and to get background information to fill information gaps. Searching for background information is important for I-F to develop an understanding of current events. I-F states that, "you …need to further search to understand the background (because) it will bring you to where you are now and where something may have started". I-F does discuss global events with friends to develop further understanding of issues and to broaden I-F's own thinking on issues. In this regard, I-F states that, "sometimes you can get things which you've never realised …and you always sort of have this particular view …and when you go and look at it …(then you) either reconcile the views or you realise (your) view was always correct".

I-F believes that the media is a commercial enterprise with a mix of reliable and unreliable reporting of issues. Hence, I-F believes that multiple sources of information should be scanned for information. I-E says: "You need to look at multiple sources of information …to build your own picture. You can get media which over-exaggerate things …the media operates within a commercial space …the bottom line has to be looked at …it can even be compromise of quality, those things do happen". I-F would search Google to get multiple sources of information. In this regard, I-F says that "the search engine …would most likely come up with various sources of information …maybe some will be useful, maybe some may not be useful, it's natural".

I-F believes that adequate knowledge exists to "make certain judgements". I-F mainly has this opinion based on experience and intuition. In this regard, I-F says that "it goes with two things …it goes with experience and sometimes it goes with what I'll call intuition, but which is also based on experience". I-F, therefore, believes that I-F has the necessary understanding based on experience to have foresight about the global future.

MILES analysis and findings

I-F's SELF generally trusts the media albeit with an awareness of possible quality problems with media information. I-F's inert mental state-IID perceives media reporting as a combination of reliable and unreliable information due to the commercial nature of the general media. I-F's IED behaviour is to scan different media sources widely to obtain a more reliable perspective on global issues. I-F is aware of the Litany Level of Knowing problem of media reporting that could

compromise the quality of the information and would look for multiple sources of information on the internet to moderate these problems. I-F is mindful that such information might not be sufficient for information on SED contextual global issues or the global future. However, this information would predominantly be on the Litany Level of Knowing.

The process dynamics in terms of I-F's scope of scanning regarding the SED global contextual environment are predominantly good (Table 5.34). I-F utilises public scanning widely to maximise information on SED contextual global issues. Although the area of coverage is mostly the political and economic areas of STEEP due to I-F's view that other areas are influenced by these two areas, I-F's scanning scope is enhanced by accessing multiple sources of information for comparative purposes. Similarly, I-F's domain scanning is wide-ranging in terms of the ESP focus areas and includes discussions with other people to broaden perspectives on global issues. I-F has a good coverage of SED global developments. I-F's scanning scope is well-developed, albeit favouring public over domain scanning, and enhances I-F's knowledge base of the SED global contextual environment.

Table 5.34: Person I-F's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow					
Domain ES Narrow					
Public ES Wide			X+		
Domain ES Wide				X	
Complete ES Wide					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-F's utilisation of the scanning modes regarding the SED global contextual environment are predominantly good (Table 5.35). In this regard, I-F's mode of scanning is undirected and conditioned viewing of internet news and international TV news channels. This is followed by informal and formal searching of internet sources to get additional information on SED contextual global issues to fill information gaps. I-F's approach to the utilisation of the viewing and searching modes enhances I-F's knowledge base, albeit still lacking formal integration of the two modes in a structured way.

Table 5.35: Person I-F's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing	X+				
Conditioned Viewing		X+			
Informal Search			X		
Formal Search				X	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-F's level of knowing regarding the SED global contextual environment is predominantly poor (Table 5.36) because I-F mostly scans the Litany Level of Knowing as it relates to the contextual SED global issues of interest. This entails scanning public-domain sources of information as these relate to internet news and international TV news channels. I-F does formal searching on the internet to compare information sources but it mostly accesses the Litany Level of Knowing and, to a limited extent, the Social Causes Level of Knowing. The same applies to discussions on global issues with colleagues and friends. No deeper levels of knowing are scanned by I-F as these relate to contextual SED global issues that may have a bearing on how the global future could develop. Also, I-F's over-reliance on the Litany Level of Knowing for information, leads to information creation rather than knowledge creation and is not conducive to an enhanced knowledge base on the SED global contextual environment.

Table 5.36: Person I-F's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany	X+				
Social Causes		X-			
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-F are generally average regarding the SED global contextual environment (Table 5.37). In this regard, the reality dimensions of I-Fs scanning depend on the scope of scanning. The internet news and international TV news channels mostly reports on issues in the SED and IED quadrants. Some CID and IID information is obtained through formal internet searches as well as discussions with other people. I-F does not follow an approach where all the reality dimensions are comprehensively accessed and formally integrated for holistic scanning to enhance knowledge creation.

Table 5.37: Person I-F's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED					
SED/IED & CID/IID (-)			X		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-F accesses in terms of SED global developments are predominantly average (Table 5.38). Although the information is a combination of distorted and factual information, it has a greater bias towards factual information based on I-F's scanning scope and modes, levels of knowing and reality dimensions. I-F is, however, aware of possible distortions of information and attempts to obtain factual information and to limit distortions by comparing different information sources. This is done mostly on the Litany but also Social Causes Level of Knowing regarding the external and, to a limited extent, the internal reality dimensions. I-F's quality of information, therefore, has limited depth to enhance I-F's knowledge base regarding the SED global contextual environment.

Table 5.38: Person I-F's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X+		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-F's foresight is one-dimensional and generally average regarding the SED contextual global environment. I-F sees the present SED global challenges protracting linearly in the future to create the probable future. Nevertheless, I-F is aware that addressing the current SED contextual global challenges could moderate their impact in the future. Given I-F's knowledge base regarding SED contextual global developments, I-F has an average capacity to make judgements about the global future. However, I-F's one-dimensional approach regarding the global future is indicative of an insufficient futures toolkit to develop a range of views on possible futures and to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-F's knowledge base, judgement and foresight of the global future are average, i.e. it has a limited depth, mainly because of limitations regarding the levels of knowing, reality dimensions and information quality in terms of the global contextual environment (Table 5.39).

Table 5.39: Person I-F's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope				I-F	
ES Modes				I-F	
Levels of knowing		I-F			
Reality Dimensions			I-F		
Information Characteristics			I-F		
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional			I-F		
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-F believes that a better world can be created by teaching your children to interact properly with the world and that such an approach will have a "ripple effect" in society and the world. In this regard, I-F says that "if in your community… (you)…work towards (a better future) …the things that you will teach your children …it will help …you must look at the ripple effects".

I-F does not believe it is the task of governments or world leaders to create a better world but that each individual should make a contribution. I-F says: "It's not the …governments or the president of this or the president of that …as human beings, I think, that's a human being issue …as human beings that is what we should strive to do". I-F, furthermore, believes that teaching and doing go hand-in-hand as it "brings a lot of integrity" and builds trust in the effort to create a better world.

MILES analysis and findings

I-F's SELF has a negative disposition towards the state of the world (Table 5.40). I-F's inert mental state-IID perceives the world as ambiguous with many global challenges that will be exacerbated in the future. I-F does not have a flexible mental state about the state of the world and foresees the manifestation of the current global challenges in the future. I-F is of the opinion that it is the responsibility of every individual to create a better world. In this regard, I-F believes that teaching children proper values will have a beneficial impact on society and the world. I-F is not contributing to make the world a better place, i.e. I-F intentionally (IID) shows behaviour (IED) that is indifferent to the SED contextual environment.

Table 5.40: Person I-F's actionability analysis

State of the World	Acute	Dismal	**Ambiguous**	Good	Excellent
Whose responsibility	Individual	Society	Government	International	**All**
Own contribution	**None**	Passive: Job	Passive: Society	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-F has a relatively well-developed future consciousness. I-F predominantly scans for information on the Litany Level of Knowing as it relates to the general SED contextual global issues. I-F believes that sufficient knowledge exists to make some judgement about the global future. However, I-F's knowledge base, judgement and foresight regarding the global future are average, i.e. which means it has limited depth. I-F's mental constructs about the probable future are influenced by an inert mental state-IID with no flexibility for change about the probable future. I-F has a one-dimensional and generally average image of the global future and a limited capacity to foresee alternative global futures. I-F is not contributing to create a better global future.

5.2.6 Person G (Non-ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee G (I-G) thinks about the future both short to long term. The short- to medium-term focus is about daily necessities and the political and economic situation. Long term thinking also covers these issues albeit more in terms of whether a possible future will be sustainable on a personal level, especially as it concerns the future of I-G's children.

I-G is pessimistic mixed with a hopeful disposition towards the future. I-G projects the present global challenges into the future. According to I-G, these challenges are war situations in general, technology advancement, climate change with violent storms and earthquakes as well as specific recent violent events in countries. I-G's articulation of the possible future is negative, with comments such as: "feelings of …where is it going?"; "…taking from the earth but what are we giving back?"; "the greed and the corruption"; "I don't think that's ever going to change"; "It's probably going to get worse and it's probably going to be the end of us …humanity as we know it". I-G's hopefulness appears to be more of a short-term mental survival strategy; it is not based on

any positive elements observed in the present situation. Consequently, I-G says: “Without hope, does one give up today?…Why then do we do what we do?”

I-G sees the current global challenges as a reality that will continue into the future, but I-G is not pre-occupied with it. In this regard, I-G states: “It’s how one handles it …I think about it but I don’t let it take over my life, I don’t let it create in my mind, well, this is it”. However, I-G is alert to any possible changes in the immediate environment, which will prompt I-G “to look at it differently”, for example; emigrating from South Africa should the situation deteriorate.

MILES analysis and findings

I-G’s future consciousness is relatively well-developed in terms of general futures thinking by having a short-term awareness of personal and global issues and the anticipated implications for the long-term future (Table 5.41). The disposition of I-G’s SELF towards the future is pessimistic but mixed with hope. I-G’s inert mental state-IID has a futures image that sees many negative SED contextual global challenges, which are linearly projected as the probable future.

I-G does not show a possible disposition change towards the future. In this regard, I-G remains pessimistic about the future and expects the worst. As a result, I-G has alertness for possible more negative SED global developments.

I-G’s inert mental state-IID in terms of future consciousness is as follows:

- Short- to medium-term focus on daily and global issues and long term concern for the future of children
- Pessimism mixed with hope about the probable global future
- Alertness for possible more SED negative global developments but hopeful for change that will lead to a better ideal future

Table 5.41: Person I-G’s future consciousness analysis

Futures Thinking	**Short Term** Daily issues		**Medium Term** Global issues		**Long Term** What future for children
Futures Disposition	Fear	**Pessimism-Mixed** Global challenges	**Hope**	Optimism	Realism
Futures Image	Possible	**Probable** Worse than now		Preferable	**Ideal** Change
Disposition Change	**None**	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-G reads widely on various topics from the internet. In this regard, I-G says: “I’m an avid reader …so on a daily basis I scroll through …a lot of different things going on out there”. I-G also scans through the newspapers at work and gets news headlines from Twitter. I-G does not watch TV news because, “I find sitting through a whole news bulletin at night far too depressing these days”. The short snippets from Twitter are “very useful” for I-G because the headlines give an overview of daily developments in the world. I-G would search for more detail on issues if they are interesting. I-G says: “I would research it or Google it”. I-G also finds it easy to get more information on interesting topics: “If something catches your attention, it’s easy to go in and find more information on a particular topic”.

I-G believes that the media is a reliable source of information but that one has to view media reporting with open-mindedness. In this regard, I-G says: “I suppose a lot of it is (reliable) but you just have to have an open mind”. I-G comments that, “…they are going to obviously exaggerate or add on details for commercial reasons ...especially your sensational type of stories …to make it more attractive to people to buy the newspaper”. I-G also believes that competition between the different media groups and the speed of reporting add to the problem. In this regard, I-G says that journalists are under pressure “to keep up the Twitter feeds …to find things to say”, which leads to the journalists adding irrelevant or inaccurate information to an event. I-G follows Twitter feeds to keep up to date and would do a Google search for more information on events.

I-G is of the opinion that some knowledge exists to make a judgement about global developments and events. In this regard, I-G says: “I think I have a good idea because …I do read a lot about where the world is going, I keep an eye on different parts of the world, of what’s happening there in different ways”.

MILES analysis and findings

I-G’s SELF trusts the general media but with the proviso that open-mindedness needs to be applied. I-G’s inert mental state-IID perceives the media as functioning within a commercial environment with competition among media groups, hence the sensationalism and exaggeration of media reporting. I-G, therefore, is aware of the Litany Level of Knowing problem of media reporting and the need to be open-minded when obtaining information from the media. I-G would utilise the internet to obtain more information on SED contextual global issues of interest. However, this information would predominantly be on the Litany Level of Knowing.

The process dynamics in terms of I-G’s scope of scanning regarding the SED global contextual environment are predominantly average (Table 5.42). I-G’s scope of scanning is wide public scanning, i.e. Twitter headlines, newspapers and internet news. Twitter news headlines are the main source of information on SED contextual global events. The specific areas of coverage are

not mentioned, but I-G follows SED contextual global events on various topics widely. It is, therefore, assumed that these topics cover the STEEP areas adequately. I-G covers SED global events comprehensively and the wide scanning scope enhances I-G's knowledge base regarding the SED global contextual environment.

Table 5.42: Person I-G's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow					
Domain ES Narrow					
Public ES Wide			X+		
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-G's utilisation of the scanning modes regarding the SED global contextual environment are predominantly poor (Table 5.43). In this regard, I-G utilises mostly the undirected viewing mode, albeit widely, to obtain information on SED contextual global developments. I-G also utilises conditioned viewing and informal/formal searching in a limited way for issues of interest. The unfocused nature of the undirected viewing mode favours information creation over knowledge creation, and therefore, limits I-G's knowledge base regarding the SED global contextual environment.

Table 5.43: Person I-G's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X+			
Conditioned Viewing		X-			
Informal Search			X-		
Formal Search				X-	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-G's level of knowing regarding the SED global contextual environment is predominantly poor (Table 5.44) because I-G mostly engages in public scanning on the Litany Level of Knowing to obtain information about SED contextual global developments. I-G searches for detailed information on issues of specific interest but this is mostly Litany Level of Knowing internet sources of information with limited Social Causes Level of Knowing content. No deeper levels of knowing are scanned by I-G on SED contextual global issues that may have a bearing on how the global

future could develop. Therefore, I-G's knowledge base mostly has to contend with the superficial information of the Litany Level of Knowing.

Table 5.44: Person I-G's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes			X-		
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-G are generally poor in terms of the SED global contextual environment (Table 5.45). In this regard, I-G mostly accesses information in the SED-IED quadrants as represented by the media on the Litany Level of Knowing. Nevertheless, informal and/or formal searching on specific issues of interest would also access information in CID and IID. I-G's knowledge base mostly has to contend with information about the external dimensions with limited information about the internal dimensions giving rise to the external developments.

Table 5.45: Person I-G's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED		X+			
SED/IED & CID/IID (-)			X-		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of the information that I-G accesses in terms of SED global developments are predominantly poor (Table 5.46). The information is mostly a combination of distorted and factual information based on I-G's scanning scope and modes, levels of knowing and reality dimensions. In this regard, I-G's scanning is done widely within the public domain mainly on the Litany Level of Knowing, and accessing mostly the external dimensions of reality by utilising the undirected viewing mode. To some extent, I-G moderates the poor quality of information by doing additional searching but only on issues of interest. I-G's quality of information has narrow depth, which is not conducive for enhancing I-G's knowledge base.

Table 5.46: Person I-G's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-G's foresight is one-dimensional and generally poor regarding the SED contextual global environment. In this regard, I-G projects the present SED contextual global challenges, which are primarily seen in a negative context, linearly as the probable future. This results in I-G being overly alert to more negative SED global developments, which may require action steps for personal survival. Given I-G's limited knowledge base on SED global developments, I-G has an under-developed capacity for making judgements about the global future. Also, I-G does not have the necessary futures toolkit to develop a range of views on possible futures and to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-G's knowledge base, judgement and foresight of the global future are poor, with only superficial depth, mainly because of limitations regarding the scanning modes, levels of knowing, reality dimensions and information quality in terms of the contextual environment (Table 5.47).

Table 5.47: Person I-G's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope			I-G		
ES Modes		I-G			
Levels of knowing		I-G			
Reality Dimensions		I-G			
Information Characteristics		I-G			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional		I-G			
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-G contributes to make the world a better place through the influence I-G has on the pupils being taught while on a personal level I-G tries to improve the environment through recycling various

items. In this regard, I-G states: “I try to educate more than just a subject …We are dealing with young people so we have a lot of influence on their development …their views and their morals and their behaviour”. I-G also says that, “from an environmental point of view …I do recycling of bottles and papers and that kind of thing.”.

I-G believes that it is human nature to create a better future world despite the damage that is also done. I-G believes that a significant amount of charitable work is being done to create a better world, and that everyone “in our own small way” does something “towards bettering our own little world and I suppose the bigger picture”.

I-G thinks that it is up to every individual to consciously make an effort “not destroying and not taking away and adding a little bit”. Yet, I-G is unsure whether all these individual efforts will succeed because, “Will it ever be out lived by the culture of greed and corruption, may be not …I don’t think so?”

MILES analysis and findings

I-G’s SELF has a negative disposition towards the state of the world (Table 5.48). Here, I-G’s inert mental state-IID perceives the world as beset with various challenges. I-G does not have a flexible mental state about the state of the world and believes that the current SED global challenges will also be the future reality.

I-G believes everyone has a responsibility to create a better world by making a conscious effort in that regard. I-G is of the opinion that much has already been done by various charitable organisations but that all these efforts might not be enough to counter the destructive human behaviour. I-G is contributing to create a better world through passive job contributions, which address human values, and by actively recycling various materials. This means I-G intentionally (IID) adopted behaviour (IED) to create a better world.

Table 5.48: Person I-G’s actionability analysis

State of the world	Acute	Dismal	***Ambiguous***	Good	Excellent
Whose responsibility	Individual	Society	Government	International	***All***
Own contribution	None	***Passive: Job***	Passive: Society	Active: Job	***Active: Society***

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-G has a relatively well-developed future consciousness. I-G predominantly scans for information on the Litany Level of Knowing in terms of general SED contextual global issues. I-G believes that sufficient knowledge exists to make some judgement about the global future. However, I-G's knowledge base, judgement and foresight regarding the global future are poor, which means it only has superficial depth. I-G's mental constructs about the probable future are influenced by a flexible mental state-IID, which foresees an undesirable probable global future under certain circumstances. I-G has a one-dimensional and generally poor image of the global future and no capacity to foresee alternative global futures. I-G is contributing passively through the job and actively in society to create a better global future.

5.2.7 Person H (Non-ESP)

FUTURE CONSCIOUSNESS

Summary of views

I-H thinks about the future in both the short to long term. Short term thinking is about personal issues such as the work environment and current situation in South Africa while long term thinking is about global issues. I-H's disposition towards the future is "mostly positive" because of a view that globally people are more involved in dealing with global issues. In this regard, I-H says: "People are busy to wake up about how the world is functioning …they are handling things in a totally different way"; "I am definitely more positive about how people are doing things".

I-H's disposition will change should there be more governance influence to the detriment of people participating in global issues. I-H's states the following: "…more influence by governments …definitely. Yes, the less people make decisions …yes, definitely, this will make me more negative".

MILES analysis and findings

I-H's future consciousness is relatively well-developed in terms of general futures thinking (Table 5.49). I-H has short-term thinking about personal issues and the immediate environment and long-term thinking about global issues. The disposition of I-H's SELF towards the future is positive. I-H's inert mental state-IID has a futures image that sees a positive involvement of people in addressing global issues.

I-H does show a possible disposition change towards the future. In this regard, I-H has a flexible mental state that could change I-H's feelings about the global future. This change could be negative should the influence of the IED in the SED be limited by governments and institutions.

I-H's inert mental state-IID in terms of future consciousness is as follows:

- Short-term thinking about immediate issues and medium- to long term thinking about global issues
- Positive about the probable global future
- Negativity about possible global futures that limit the influence of people in favour of more governance

Table 5.49: Person I-H's future consciousness analysis

Futures Thinking	**Short Term** Immediate issues		**Medium Term** Global issues		**Long Term** Global issues
Futures Disposition	Fear	**Pessimism**	Hope	**Optimism** Popular participation	Realism
Futures Image	**Possible** More Governance	**Probable** More populism		Preferable	Ideal
Disposition Change	None	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-H scans for information on a daily basis, "both the general news and …alternative news" with the aim to compare information emanating from different news sources and perspectives. I-H also reads "some historical things because everything repeats itself." I-H usually reads on financial issues and "not so much on politics". The focus on financial issues is job-related to get a view of "how the financial world is changing". I-H also follows up on issues of interest but does not specifically engage with other people on these issues. However, should I-H come across something of interest with regard to job-related issues, I-H will discuss it with colleagues. I-H will not discuss these things with friends.

I-H believes that information from newspapers and the radio is "garbage". As an alternative source of information, I-H would search the internet because it provides for wider choices of information. Hence, I-H would "mostly …look at YouTube things …any type of news channel that discusses something different".

I-H states that sufficient knowledge exits to make a judgement about the future of the world based on the comparative approach that I-H adopted in evaluating information on global issues. In this

regard, I-H says: “I listen to what ordinary people say; the mainstream …and I listen to those people that nobody is talking about …So, I try to compare those two categories with each other.”

MILES analysis and findings

I-H is distrustful of the general media. I-H’s inert mental state-IID perceives the general media as reporting useless information and presenting limited information options. I-H’s IED behaviour in terms of the media is to scan both the general media and alternative media to compare information on global issues. I-H is aware of the Litany Level of Knowing problem of general media reporting, hence the need for comparative alternative sources of information. I-H would look for alternative sources of information on the internet , including YouTube, to obtain independent views on global issues. However, these alternative sources still function on the Litany Level of Knowing.

The process dynamics in terms of I-H’s scope of scanning regarding the SED contextual global environment are predominantly poor (Table 5.50). I-H mostly utilises public scanning to obtain information on SED contextual global developments but with a narrow focus on limited STEEP areas of interest. Also, the nature of the sources accessed via public scanning appears to be mostly non-mainstream sources of information. I-H also does domain-specific scanning but with a narrow focus on job requirements, which are limited to economic and financial issues. Discussions are also held with colleagues on financial issues, but are not specifically initiated by I-H. I-H does not cover the SED global developments comprehensively. I-H’s scanning scope is too narrow and incomplete regarding the STEEP areas to enhance I-H’s knowledge base on the SED contextual global environment.

Table 5.50: Person I-H’s scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow	(X+)				
Domain ES Narrow		(X+)			
Public ES Wide					
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-H’s utilisation of the scanning modes regarding the SED contextual global environment are predominantly average (Table 5.51). In this regard, I-H mostly utilises conditioned viewing as it relates to the narrow focus areas of interest. I-H will also do formal searching to compare and follow up on issues of interest. I-H does not follow an approach to formally and seamlessly integrate the viewing and searching modes to achieve holism in scanning and to enhance knowledge creation.

Table 5.51: Person I-H's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing					
Conditioned Viewing		(X+)			
Informal Search					
Formal Search				(X)	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-H's level of knowing regarding the SED contextual global environment is predominantly poor (Table 5.52) because the public scanning and narrow domain-specific scanning mostly access information from the Litany Level of Knowing and, to a limited extent, the Social Causes Levels of Knowing. The alternative news sources that I-H scans for comparative purposes also function mostly on the Litany Level of Knowing and, to a limited extent, on the Social Causes Levels of Knowing. No deeper levels of knowing are scanned by I-H in terms of contextual SED global issues that may have a bearing on how the global future could develop. Therefore, I-H's knowledge base mostly has to contend with the superficial information of the Litany Level of Knowing.

Table 5.52: Person I-H's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes		(X-)			
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-H are generally average regarding the SED contextual global environment (Table 5.53). I-H accesses information in the SED-IED quadrants as well as the CID-IID quadrants as represented by the alternative media sources of information on the Litany Level of Knowing. I-H does not follow an approach where all the reality dimensions are comprehensively accessed and formally integrated for holistic scanning to enhance knowledge creation.

Table 5.53: Person I-H's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED					
SED/IED & CID/IID (-)			(X)		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-H accesses regarding SED contextual global developments are predominantly poor (Table 5.54). The information and perspectives from general and alternative news sources include combinations of false, distorted and factual information based on I-H's scanning scope and modes, levels of knowing and reality dimensions. I-H's scanning is done narrowly within the public and domain-specific areas on the Litany Level of Knowing by utilising mostly the conditioned viewing mode. Although I-H uses the different news sources for comparative purposes to moderate possible distortions of information, most of the sources appear to be of an alternative nature as opposed to mainstream sources of information, which makes the characteristics of the information problematic with a greater possibility of being exposed to false information. I-H's quality of information has narrow depth, which is not conducive to enhancing I-H's knowledge base.

Table 5.54: Person I-H's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False	(X)				
Distortion		(X)			
Facts			(X)		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-H's foresight is one-dimensional and generally poor regarding the SED contextual global environment. In this regard, I-H bases much of the long-term thinking about the narrow STEEP global issues on a perspective that historical events have a repetitive impact on the global future. Given I-H's limited knowledge base regarding SED global developments, I-H has an under-developed capacity for making judgements about the global future. Also, I-H does not have the

necessary futures toolkit to develop a range of views on possible futures or to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-C's knowledge base, judgement and foresight of the global future are poor, with only superficial depth, mainly because of limitations in the scanning scope, levels of knowing and information characteristics (Table 5.55).

Table 5.55: Person I-H's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope		I-H			
ES Modes			I-H		
Levels of knowing		I-H			
Reality Dimensions			I-H		
Information Characteristics		I-H			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional		I-H			
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-H is not making a specific contribution to create a better world but uses the financial advisor job to influence people's lives in some small way. I-H does not believe that it should be up to governments to create a better world. Instead, people should start in their own communities to affect change through small groups. In this regard, I-H says: "The normal man in the street needs to act …There is a different agenda in politics (which) …is not concerned about the people". I-G also says: "If you can get a small group to make changes …with the people around you and at work…this is how you can start change".

MILES analysis and findings

I-H's SELF has a neutral disposition towards the state of the world (Table 5.56). Here, I-H's inert mental state-IID perceives the world as needing change in the way it is functioning to make it better for the future. I-H does have a flexible mental state about the state of the world and believes that individual and group action (IID and CID) could bring improvements in the SED.

I-H believes everyone up to societal level should cooperate to create a better world and that government involvement should be limited in this regard. I-H is not contributing to make the world a better place, although I-H believes that some influence is exerted within the job context, i.e. I-H intentionally (IID) shows behaviour (IED) that is indifferent to the SED contextual environment.

Table 5.56: Person I-H's actionability analysis

State of the world	Acute	Dismal	***Ambiguous***	Good	Excellent
Whose responsibility	***Individual***	***Society***	Government	International	All
Own contribution	***None***	Passive: Job	Passive: Society	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-H has a relatively well-developed future consciousness. I-H scans mostly on the Litany Level of Knowing but also the Social Causes Level of Knowing as it relates to general SED contextual global issues. I-H believes that sufficient knowledge exists to make a judgement about the global future. However, I-H's knowledge base, judgement and foresight regarding the global future are poor, which means it only has superficial depth. I-H's mental constructs about the probable future are influenced by a flexible mental state-IID, which foresees an undesirable probable future under certain circumstances. I-H has a one-dimensional and generally poor image of the global future and an under-developed capacity to foresee alternative global futures. I-H is not contributing to create a better global future.

5.2.8 Person J (Non-ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee J (I-J) thinks about the future constantly in the short- to medium-term (five years) and if long-term, than no longer than ten years. I-J's futures thinking ranges from personal issues to South African and global issues. I-J's disposition towards the future is pessimism. I-J says: "Concern, concern…I would say probably very big negativity, apprehensiveness". I-J's disposition originates from the news media as well as from information I-J receives from family members abroad. I-J highlights various global challenges such as a lack of resources, over-population and governance issues like taxation, which is not country-specific, but "it is like that all over the world".

I-J leaves little scope for change in the future. In this regard, I-J believes that only a global event of a large magnitude would bring a global rethink of the present global situation. I-J says: "There needs to be a serious event that takes place world-wide, that'll change our opinion about things…not necessarily a world war…a big event, you realise what is important and what is not". I-

J believes that such a global event will prompt governments to “remove the red tape of politics to actually resolve all the issues”. However, strong leadership is required following such an event.

MILES analysis and findings

I-J has a relatively well-developed future consciousness in terms of general futures thinking that ranges from short- to long-term thinking about personal and global issues (Table 5.57). The disposition of I-J’s SELF is pessimism with apprehensiveness. I-J’s inert mental state-IID has a futures image that sees various SED contextual global challenges.

I-J does not show a disposition change towards the future. In this regard, I-J does not have a flexible mental state that could change I-J’s feelings about the probable global future. I-J sees the need for strong leadership following a high-impact global event in the SED as a preferable scenario for an ideal future that would lead to a global rethink in the IID and CID to affect change in IED behaviour towards the SED environment.

I-J’s inert mental state-IID in terms of future consciousness is as follows:

- Short-term thinking about personal issues and medium- to long-term thinking about global issues
- Pessimism-apprehension about the probable global future
- Hopeful for an ideal global future based on strong global leadership

Table 5.57: Person I-J’s future consciousness analysis

Futures Thinking	**Short Term** Personal issues		**Medium Term** Global issues		**Long Term** Global issues
Futures Disposition	Fear	**Pessimism** Global Challenges	**Hope**	Optimism	Realism
Futures Image	Possible	**Probable** Global Challenges	Preferable		**Ideal** Strong Leadership (after global event)
Disposition Change	**None**	Global Event	More Governance Less Populism	Values/Morals	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-J is interested in global events and developments to "keep myself abreast of issues". I-J mostly listens to talk radio programmes on a daily and continuous basis. In this regard, I-J says: "That's kind of my staple for information …I listen to it all the time. It is in the background the whole time." I-J also has a journalist friend who regularly sends news items. I-J will do online searches and "subscribe to a few things …and for the rest of it I just fish it from the internet …If I'm interested in something I will just Google it and read up about it". I-J is mostly interested in political, human affairs and sports issues, and "not really technological …or economics". I-J, however, does encounter economic information on a daily basis as part of I-J's job, "but that's not something that I look for after hours for my own interest". I-J's specific interests also result from having family abroad. I-J indicated that, "…with them being overseas I like to know what's going on …see and compare with what's happening there with here to see if ever we need to leave". I-J does discuss issues and events of interest with close family and friends but "not acquaintances, not colleagues, not people I don't know very well". I-J is cautious to have wider discussions because "people can be quite opinionated about things".

I-J believes that media reporting is good albeit not "necessarily the best" and sensationalised. I-F states that, "Statistically, the research is very good in the way they present it but often the research is skewed …a lot of it, I think, is manipulated". I-J states that if there was a desire to find out more about global issues, I-J would read academic journals and would not rely on the general media for information. I-J says: "If it were on environmental issues, I would read environmental journals that are published by professors, by people in the industry and wouldn't necessarily take stuff off the radio, off the TV, off the news type of thing".

I-J acknowledges that sufficient knowledge does not exist to make a judgement about the global future. In this regard, I-J believes that, "It's too technical for us to really understand what's going on in the future. I just get it after all the information has been processed already, what the media wants me to get." I-J can make a judgement on job-related issues such as what may happen in the economy "but for the rest of the stuff, I just listen and I have my own opinion but I don't think it is very accurate". I-J mainly thinks that judgements about the future are an area for experts, or "educated people that are in the fields that I would rather have their opinions". I-J is not much interested in views about the future, and states that, "it's not something that I have an active interest in". I-J is, therefore, not particularly interested in having foresight capability about the global future apart from I-J's job-related focus area, which is economics.

MILES analysis and findings

I-J's SELF trusts the general media. I-J's inert mental state-IID perceives the media as good for general reporting on SED contextual global issues. I-J, however, has an awareness of the Litany

Level of Knowing problems of the media, specifically sensationalism and bias. I-J would look for information on the Social Causes Level of Knowing to obtain greater perspectives on SED contextual global issues and the global future.

The process dynamics in terms of I-J's scope of scanning regarding the SED contextual global environment are predominantly poor (Table 5.58). I-J mostly utilises public scanning but limited to political and social issues. I-J also does domain specific scanning as it relates to the job requirements but limited to economic issues. Discussions on general SED contextual global issues are only held with close family and friends. I-J does not cover SED contextual global developments comprehensively. I-J's scanning scope is too narrow and incomplete in terms of the STEEP areas to enhance I-J's knowledge base regarding the SED contextual global environment.

Table 5.58: Person I-J's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow		(X+)			
Domain ES Narrow			(X+)		
Public ES Wide					
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamic in terms of I-J's utilisation of the scanning modes regarding the SED contextual global environment are predominantly poor (Table 5.59). In this regard, I-J mostly utilises undirected viewing to keep abreast of SED contextual global issues and limited informal and formal searching on issues of interest. Within the job context, I-J will do both viewing and searching aimed at a specific narrow focus area. The unfocused nature of the undirected viewing mode favours information creation over knowledge creation, which limits I-J's knowledge base regarding the SED global contextual environment.

Table 5.59: Person I-J's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X+			
Conditioned Viewing					
Informal Search			(X-)		
Formal Search				(X-)	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-J's level of knowing regarding the SED contextual global environment is predominantly poor (Table 5.60) because I-J mostly scans for information on the Litany Level of Knowing to obtain information about SED contextual global developments. I-J also accesses the Social Causes Level of Knowing to a limited extent when looking for information on issues of interest. No deeper levels of knowing are scanned by I-J in terms of contextual SED global issues that may have a bearing on how the global future could develop. Therefore, I-J's knowledge base mostly has to contend with the superficial information of the Litany Level of Knowing.

Table 5.60: Person I-J's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes		X-			
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-J are generally poor regarding the SED contextual global environment (Table 5.61). I-J mostly accesses information in the SED-IED quadrants – this applies to I-J's narrow job focus area as well. Therefore, I-J's knowledge base has to content with information about the external dimensions only, without information about the internal dimensions that give rise to the external developments.

Table 5.61: Person I-J's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED		X+			
SED/IED & CID/IID (-)					
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-J accesses in terms of SED contextual global developments are predominantly poor (Table 5.62). The information is generally a combination of distorted and factual information based on I-J's scanning scope and modes, levels of knowing and reality dimensions. I-J's scanning is done narrowly within the public and domain-specific areas and mostly on the Litany Level of Knowing through accessing the external reality dimension by mostly utilising the undirected viewing mode. I-J shows awareness of possible media distortions and

would search for information on the Social Causes Level of Knowing should there be a need. I-J's quality of information has narrow depth and is not conducive to enhancing I-J's knowledge base

Table 5.62: Person I-J's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			X		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-J's foresight is one-dimensional and generally poor in terms of the SED contextual global environment. In this regard, I-J linearly projects the present SED contextual global challenges as the probable future. I-J does not see any other possible futures emerging. Given I-J's limited knowledge base regarding SED global developments, I-J has a poorly developed capacity for making judgements about the global future. Also, I-J does not have a futures toolkit to develop a range of views on possible futures or to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-J's knowledge base, judgement and foresight of the global future are poor, with only superficial depth in the inquiry, mainly because of limitations on all levels regarding I-J's knowledge base (Table 5.63).

Table 5.63: Person I-J's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope		I-J			
ES Modes		I-J			
Levels of knowing		I-J			
Reality Dimensions		I-J			
Information Characteristics		I-J			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional		I-J			
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-J makes a contribution to create a better world through environmental actions such as recycling, and electricity and water conservation, as well as donations to various animal welfare organisations. In this regard, I-J says: “I am very big on water conservation, electricity…We recycle. We do a lot of donations and work for…animals”. I-J believes that “everything needs to be improved” but that political leaders are not up for the task. I-J says: “I always thought world leaders but I mean the G8 and G20 summits don’t provide us with much…I would normally have said political leaders but I think that they just hide behind things and they don’t do much”.

At present, I-J does not have an opinion on an alternative leadership group that can take action to improve the global situation and thinks that a serious global event is needed for someone to emerge and rescue the situation. In this regard, I-J says: “I would probably say strong political leaders” when serious problems arise. I-J says: “You need a Winston Churchill…But I have no idea who they are right now.”

MILES analysis and findings

I-J’s SELF has a negative disposition towards the state of the world (Table 5.64). Hence, I-J’s inert mental state-IID perceives the world as having many SED contextual global challenges that will manifest in the future. I-J does not have a flexible mental state about the state of the world and remains apprehensive about the global future.

I-J believes global political leaders should act to create a better world but does not see this happening unless a serious global event forces them to act. I-J is contributing actively to create a better world through recycling material as well as limited conservation steps. Also, I-J makes contributions and actively assists with animal welfare. Hence, I-J intentionally (IID) adopted behaviour (IED) to create a better world.

Table 5.64: Person I-J’s actionability analysis

State of the world	Acute	***Dismal***	Ambiguous	Good	Excellent
Whose responsibility	Individual	Society	Government	***International***	All
Own contribution	None	Passive: Job	Passive: Society	Active: Job	***Active: Society***

Source: Own compilation.

Research Question Sub-Conclusions

I-J has a relatively well-developed future consciousness. I-J predominantly scans on the Litany Level of Knowing as it relates to general SED contextual global issues. I-J acknowledges that sufficient knowledge does not exist to make a judgement about the global future. I-J's knowledge base, judgement and foresight regarding the global future are poor, with only superficial depth. I-J's mental constructs about the probable future are influenced by an inert mental state-IID with no flexibility for change about the probable future. I-J has a one-dimensional and generally poor image of the global future and a poor capacity to foresee alternative global futures. I-J is contributing actively in society to create a better global future.

5.2.9 Person K (Non-ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee K (I-K) thinks about the future but more in terms of I-K's work environment where the timeframe is medium to long-term. However, short-term daily thinking about the future is also done. I-K's disposition towards the future is mixed. I-K is more of an optimist than a pessimist. However, all the global challenges "sometimes make you a bit negative". I-K cites over-population and a lack of resources as examples of global challenges, stating, "We will face quite severe challenges in future". However, I-K expresses hopefulness that these global challenges will be overcome by technological advancement and artificial intelligence, which "will definitely assist in alleviating those pressures and challenges we will face".

I-K's mixed disposition towards the future will become more positive should there be greater global governance cooperation to resolve the global challenges. I-K says: "If people start working together, that will to a large extent overcome the challenges." I-K believes that such cooperation was already demonstrated during the global financial crisis of 2008-2009 when "there was quite good leadership demonstrated by the world leaders, working together (to) put a few measures in place quite quickly to alleviate some of the chaos".

MILES analysis and findings

I-K has a relatively well-developed future consciousness in terms of general futures thinking that relates to the job requirement for a medium- to long-term timeframe and limited short-term thinking (Table 5.65). The disposition of I-K's SELF towards the future is mixed feelings within the context of I-K being an optimist by nature. I-K's inert mental state-IID has a futures image that sees diverse SED contextual global challenges that will become severe in the probable current future.

I-K does show a possible disposition change towards the future. In this regard, I-K has a flexible mental state that could change I-K's feelings about the probable global future to the positive side should CID global cooperation be enhanced to address the challenges in the SED environment.

I-K's inert mental state-IID in terms of future consciousness is as follows:

- Short-term thinking about immediate issues and medium- to long-term thinking about global issues but from an occupational perspective
- Mixed feelings but pessimism about the probable global future
- Hopeful that technology could lead to better ideal futures

Table 5.65: Person I-K's future consciousness analysis

Future Thinking	**Short Term** Immediate issues		**Medium Term** Work context global issues		**Long Term** Work context global issues
Future Disposition	Fear	**Pessimism-Mixed** Global challenges	**Hope**	Optimism	Realism
Future Image	Possible		**Probable** Severe global challenges	Preferable	**Ideal** Tech/AI solution
Disposition Change	None	Global Event	More Governance Less Populism	Values/Morals	**Global Cooperation**

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-K regularly reads various internet sites to obtain information about global issues. I-K indicated that such scanning of websites are "not on a daily basis but at least two, three times a week". I-K is not just viewing the news headlines but tries to read at least an article or two, so that I at least have a bit more of an in-depth experience not just superficial scanning". I-K's main areas of interest are technology and economics while noting developments in other areas such as politics and social and environmental trends. I-K does search for information but with a "mixed approach" depending on "how much time I have". I-K says: "I usually have these specific websites that I visit on a regular basis but then also, if there is a certain phrase that I find interesting, then I will search for that". I-K will discuss global issues with other people, "specifically if it is something that relates to my immediate work environment". I-K, however, finds these discussions problematic because "most people are quite superficial and focus on the surface and it is actually not so many people that you could really engage on a more in-depth level".

I-K believes that the media is a mix of good and poor reporting, and that good media sources of information can be found by specifically searching for it. In this regard, I-K says that, “there is good information and there is superficial information. I basically avoid superficial stuff as far as possible … (it) is just based on sensation”. Depending on the context, I-K would search for specific reputable sources of information. In this regard, I-K says that, “…the *Financial Times*, IMF, World Bank, World Economic Forum …are all good sources of information in terms of economics. If the context is technology then there are things like KurzweilAI, Wired Magazine and New Scientist”.

I-K acknowledges a lack of sufficient knowledge to make a judgement about the future although such capacity does exist in terms of I-K’s immediate environment over which I-K has control. I-K states: “I have my own opinions and so on, but in terms of how much I can control it …there are lots of very powerful players that change things on a macro-level and there is obviously also the interrelationship of things…And so, you can’t always control things”. I-K equates sufficient knowledge about the future with the amount of control I-K has over specific areas. I-K states: “There are certain elements that I have control over in terms of financial planning, you can do some planning and so on …And there are also things I have control over in terms of personal development …your personal environment, your family and so on. So, in general, things that I have control over.” Therefore, I-K’s foresight capacity is limited to environments over which I-K has control, and excludes the broader global environment that is impacted by more powerful role-players.

MILES analysis and findings

I-K’s SELF trusts the general media. I-K’s inert mental state-IID perceives the media as a mix of good and poor reporting. I-K is aware of the Litany Level of Knowing problem of the media and actively tries to avoid information of a superficial nature focusing more on quality sources of information. I-K would search for reputable sources of information on the internet but within the context of the Social Causes Level of Knowing as it relates to SED contextual global issues and the future.

The process dynamics in terms of I-K’s scope of scanning regarding the SED contextual global environment are predominantly poor (Table 5.66). I-K utilises public scanning narrowly to obtain information on SED contextual global issues. The public scanning is mostly on limited STEEP areas of focus while noting developments in other areas. I-K also does domain-specific scanning aimed at the job focus areas and on limited STEEP areas. I-K discusses SED contextual global issues with colleagues as these relate to the work environment, which gives I-K enhanced insight and understanding regarding the issues of focus. I-K does not cover SED global developments comprehensively. I-K’s scanning scope is too narrow and incomplete regarding the STEEP areas to enhance I-K’s knowledge base in terms of the SED contextual global environment.

Table 5.66: Person I-K's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow		(X+)			
Domain ES Narrow			(X+)		
Public ES Wide					
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-K's utilisation of the scanning modes regarding the SED contextual global environment are predominantly poor (Table 5.67). In this regard, I-K mostly utilises undirected and conditioned viewing. Limited informal and formal searching regarding issues of interest is also utilised depending on the time available. The conditioned viewing mode is mostly used for specific websites of interest. The predominant utilisation of the viewing modes favours information creation over knowledge creation which limits I-K's knowledge base in terms of the SED global contextual environment.

Table 5.67: Person I-K's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X+			
Conditioned Viewing			X+		
Informal Search				(X-)	
Formal Search					(X-)
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-K's level of knowing regarding the SED contextual global environment is predominantly poor (Table 5.68) because I-K mostly scans for information on the Litany Level of Knowing to obtain information about SED contextual global developments. Occasionally, scanning will also be done on the Social Causes Level of Knowing on issues within I-K's narrow scope of interest. No deeper levels of knowing are scanned by I-K in terms of contextual SED global issues that may have a bearing on how the global future could develop. Therefore, I-K's knowledge base mostly has to contend with the superficial information of the Litany Level of Knowing.

Table 5.68: Person I-K's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes		(X)			
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-K are generally average regarding the SED contextual global environment (Table 5.69). In this regard, I-K mostly accesses information in the SED-IED quadrants and to a limited extent the CID-IID quadrants based on the relatively narrow STEEP areas of focus. I-K's knowledge base mostly has to contend with information about the external dimensions and only some information about the internal dimensions that give rise to the external developments.

Table 5.69: Person I-K's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED		X+			
SED/IED & CID/IID (-)			(X)		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-K accesses regarding SED contextual global developments are predominantly poor (Table 5.70). The information is generally a combination of distorted and factual information based on I-K's scanning scope and modes, levels of knowing and reality dimensions. I-K's scanning is done narrowly in the public and domain-specific areas mostly on the Litany Level of Knowing accessing the external dimension of reality mostly by utilising the two viewing modes. I-K's factual information mostly arises from searching for specific articles on the narrow issues of interest. I-K's quality of information has narrow depth to enhance I-K's knowledge base regarding the SED contextual global environment.

Table 5.70: Person I-K's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			(X+)		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-K's foresight has some multi-dimensional elements but is generally poor regarding the SED contextual global environment. Although I-K linearly projects the present SED contextual global challenges as the possible future, I-K nevertheless foresees possible alternative ways the future could develop, e.g. the possible dominance of technology and artificial intelligence that could moderate the current SED contextual global challenges to create alternative possible futures. I-K has a limited futures toolkit to develop a range of views on possible futures but may lack sufficient understanding to develop perspectives on sustainable alternative global futures.

In summary, I-K's knowledge base, judgement and foresight of the global future are poor, with only superficial depth in the inquiry, mainly because of poor information quality. Also, I-K's multi-dimensional approach towards the future is not well-developed (Table 5.71).

Table 5.71: Person I-K's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope		I-K			
ES Modes		I-K			
Levels of knowing		I-K			
Reality Dimensions			I-K		
Information Quality		I-K			
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional					
Multi-dimensional		I-K			

Source: Own compilation.

ACTIONABILITY

Summary of views

I-K is not directly contributing to make the world better but is doing so indirectly through I-K's job. Hence, I-K says: "The type of organisation that I work for is all about the greater good …and I really believe that as part of the organisation I do make a difference".

I-K believes that world leaders have a responsibility to cooperate and to create a better world which means they have to move beyond their own agendas to focus on the bigger context as well. In this regard, I-K says: "There are forums like the UN and World Economic Forum but it seems like people still have their own agenda …If you want to make an impact in terms of environmental change and so on, then world leaders need to collaborate".

MILES analysis and findings

I-K's SELF has a negative disposition towards the state of the world (Table 5.72). Hence, I-K's inert mental state-IID perceives the world as having many SED contextual global challenges that will become severe in the future. I-K does have a flexible mental state about the state of the world and believes that the SED contextual global challenges could be overcome by technology and artificial intelligence.

I-K believes that it is the responsibility of world leaders to cooperate and to create a better world. However, I-K believes this is not currently being done effectively. I-K is not contributing to create a better world, although I-K believes that indirectly a contribution is made within the job context. This means I-K has intentionally (IID) adopted behaviour (IED) that is indifferent to the SED contextual environment.

Table 5.72: Person I-K's actionability analysis

State of the world	Acute	Dismal	***Ambiguous***	Good	Excellent
Whose responsibility	Individual	Society	Government	***International***	All
Own contribution	***None***	Passive: Job	Passive: Society	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-K has a relatively well-developed future consciousness. I-K predominantly scans for information on the Litany Level of Knowing as it relates to general SED contextual global issues. I-K

acknowledges that sufficient knowledge does not exist to make a judgement about the global future. I-K's knowledge base, judgement and foresight regarding the global future are poor, which means it only has superficial depth. I-K's mental constructs about the probable future are influenced by a flexible mental state-IID, which foresees a desirable probable future under certain circumstances. I-K has a multi-dimensional and generally average image of the global future and some capacity to foresee alternative global futures. I-K is not contributing to create a better global future.

5.2.10 Person L (Non-ESP)

FUTURE CONSCIOUSNESS

Summary of views

Interviewee L (I-L) thinks about the future constantly because I-L has children whose future is a concern. I-L's timeframe covers both medium- and long-term thinking about the future. I-L is more concerned about the immediate future as it relates to daily experiences but also recent developments globally.

I-L's disposition towards the future is mixed. I-L is a positive person who "always tries to see the best in everything" but various global challenges are a concern for I-L making "you a bit more negative about our future but I see the world on a balance at the moment". I-L is concerned about various global challenges, such as global warming ("things are going backwards"), conflict and terrorism in the Middle East ("big warning light"), religious extremist events in Europe as well as ideological and political divergence. The more recent global events make I-L "more negative about the future than a year ago".

I-L finds it difficult to be more positive about the world despite trying to have a global perspective on these events. In this regard, I-L recognises that people continue with their lives undisturbed regardless of the negative events mainly because "you cannot live your whole life in doom and gloom." Nevertheless, I-L maintains that "for mankind, we are at a delicate point".

MILES analysis and findings

I-L has a relatively well-developed future consciousness in terms of general futures thinking and thinks about the immediate and global future over the entire timeframe (Table 5.73). The disposition of I-L's SELF towards the future is mixed feelings with a tendency towards the negative and within the context of I-L being an optimistic person by nature. I-L's inert mental state-IID has a futures image that sees many SED contextual global challenges putting the world at risk.

I-L does show a possible disposition change towards the future. In this regard, I-L has a flexible mental state that could change I-L's feelings about the probable global future negatively based on

the scope of SED challenges. I-L has a somewhat idealistic view where changes in the CID value system could lead to an improved preferable global future.

I-L's inert mental state-IID in terms of future consciousness is as follows:

- Short to medium-term thinking about immediate and global issues and long-term concern for the future of the children
- Mixed feelings leaning towards the negative side about the probable global future
- Idealism with regard to achieving an ideal global future

Table 5.73: Person I-L's future consciousness analysis

Future Thinking	**Short Term** Immediate issues		**Medium Term** Global issues		**Long Term** What future for children
Future Disposition	Fear	**Pessimism-Mixed** Global Challenges	**Hope**	Optimism	Realism
Future Image	Possible	**Probable** Global Challenges	Preferable		**Ideal** Global attitude change
Disposition Change	Nothing	Global Event	More Governance Less Populism	**Values/Morals**	Global Cooperation

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

Summary of views

I-L reads on a daily basis. "So, I keep myself informed. I know what is going on in the world." I-L mainly reads the internet versions of newspapers and watches TV news channels such as BBC, Sky News and Al Jazeera. I-L mostly views political and security related news about the world in general and Africa specifically, "because I'm interested in Africa". I-L also reads "economic stuff" and receives daily information on South African economic trends from a financial website. I-L would search for information on specific issues of interest. "I would read every article I see on it and (follow) a link to more (information)". I-L says that, "I like to know and to be informed about developments in the world". I-L also believes that children should be educated to know what is going on in the world because "…you get children that have no idea of what's happening (in the world)…" I-L does engage with colleagues, friends and family in discussions on global developments and events. These discussions are informative for I-L, who says: "The people around me are interested in what is going on in the world. So, one knows what is going on."

I-L believes that the general media, especially in South Africa, are too sensational and focus too much on negative events without having a proper global perspective on issues. I-L also thinks that social and electronic media have made printed media irrelevant due to the speed of their reporting, especially by using Twitter feeds. However, I-L does believe that printed media with in-depth articles and analyses are an important source of information, "covering all angles with scenarios", and that without such in-depth reporting the general media are not worthwhile. I-L specifically refers to good and useful media sources such as the *Financial Times* and *Newsweek* as well as the BBC and Al Jazeera. I-L will do Google searches to get information that is useful but states that, "It is (not) always safe to believe what you read but it is the easiest and quickest". I-L would also read blogs to get a different perspective on issues. I-L concludes by saying that, "You have your standard sources that you believe are trustworthy or relatively investigative open sources".

In general terms, I-L does not think that anyone can claim to have sufficient knowledge about the future. However, I-L does believe that I-L can make a judgement in terms of "the trends and danger signs out there. I have a good idea that we are destroying the planet with the things we are doing". I-L believes that global developments are cyclical. It appears, therefore, that I-L finds such a cyclical approach to global events useful to make certain judgements although I-L still maintains that it is "a very difficult question" to answer regarding the global future.

MILES analysis and findings

I-L's SELF trusts the general media albeit with awareness of reliability problems. I-L's inert mental state-IID perceives the media as having limited depth in reporting on SED contextual global issues and with too much negativity and sensationalism but providing quick access on SED contextual global developments. I-L's IED behaviour regarding the media is to scan for in-depth articles and analyses. I-L is aware of the Litany Level of Knowing problem of the media, hence the need for more in-depth sources of information. I-L would look for in-depth information on the internet as it relates to the Social Causes Level of Knowing to obtain more information on SED contextual global issues and the global future.

The process dynamics in terms of I-L's scope of scanning regarding the SED contextual global environment are predominantly poor (Table 5.74). I-L utilises public scanning to obtain information on general SED contextual global developments but limited to the political-security and economic areas of STEEP. I-L also discusses SED contextual global developments with other people to widen perspectives. I-L does not cover SED contextual global developments comprehensively. Also, I-L's scanning scope is too narrow and incomplete on the STEEP areas to enhance I-L's knowledge base regarding the SED contextual global environment.

Table 5.74: Person I-L's scanning scope

ES SCOPE	Bad	Poor	Average	Good	Excellent
Public ES Narrow		(X+)			
Domain ES Narrow					
Public ES Wide					
Domain ES Wide					
Complete ES					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The process dynamics in terms of I-L's utilisation of the scanning modes regarding the SED contextual global environment are predominantly good (Table 5.75). In this regard, I-L utilises undirected and conditioned viewing but will also do formal searching on specific SED contextual global developments to increase understanding. However, I-L does not follow an approach where the viewing and searching modes are formally and seamlessly integrated to achieve holism in scanning and to enhance knowledge creation.

Table 5.75: Person I-L's scanning modes

ES MODES	Bad	Poor	Average	Good	Excellent
Undirected Viewing		X			
Conditioned Viewing			X		
Informal Search					
Formal Search				(X)	
All Modes fully					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-L's level of knowing regarding the SED contextual global environment is predominantly average (Table 5.76). In this regard, I-L mostly scans for information on both the Litany and Social Causes Levels of Knowing to obtain information about SED contextual global developments. The Litany Level of Knowing relates to I-L's general interest in SED contextual global developments while the Social Causes Level of Knowing is accessed to explore specific issues of interest. No deeper levels of knowing are scanned by I-L as these relate to contextual SED global issues that may have a bearing on how the global future could develop. I-L's approach lacks depth in the inquiry and does not enhance I-L's knowledge base on the SED contextual global environment.

Table 5.76: Person I-L's levels of knowing

LOK	Bad	Poor	Average	Good	Excellent
Litany		X+			
Social Causes		(X+)			
Discourse-Worldview					
Myth-Metaphor					
All Levels of Knowing					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The reality dimensions accessed by I-L are generally poor regarding the SED contextual global environment (Table 5.77). In this regard, I-L mostly accesses information in the SED-IED quadrants. Information from specific articles also covers the CID and IID quadrants but within the relatively narrow STEEP areas of focus. I-L's knowledge base mostly has to contend with information about the external dimensions and only limited information about the internal dimensions that gives rise to the external developments.

Table 5.77: Person I-L's reality dimensions of scanning

REALITY	Bad	Poor	Average	Good	Excellent
IED					
SED/IED		X+			
SED/IED & CID/IID (-)			(X-)		
SED/IED & CID/IID (+)					
IED/SED & IID/CID Holism					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

The characteristics of information that I-L accesses regarding SED global developments are predominantly average (Table 5.78). The information contains distortions but more factual information based on I-L's scanning scope and modes, levels of knowing and reality dimensions. Also, I-L's factual information mostly arises from searching specific articles on issues of interest to get a better understanding of these issues. I-L's scanning is done narrowly within the public domain and mostly on the external but also internal dimensions of reality on the Litany and Social Causes Levels of Knowing, using the viewing and searching modes of scanning. I-L's quality of information has narrow depth to enhance I-L's knowledge base regarding the SED contextual global environment.

Table 5.78: Person I-L's characteristics of information

INFO Characteristics	Bad	Poor	Average	Good	Excellent
False					
Distortion		X			
Facts			(X+)		
Concealed information					
Mainly Factual & Concealed					

X- : Limited X: Generally X+: Mostly ( ): Narrow focus areas

Source: Own compilation.

I-L's foresight is one-dimensional and generally poor regarding the SED contextual global environment. In this regard, I-L sees the present SED contextual global challenges, especially the more recent challenges, linearly becoming the probable future. Given I-L's average knowledge base regarding SED contextual global developments, I-G has a limited capacity for making judgements about the global future. Also, I-L does not have the necessary futures toolkit to develop a range of views on possible futures or to understand this well enough to have perspectives on sustainable alternative global futures.

In summary, I-L's knowledge base, judgement and foresight of the global future are poor, with mostly a superficial depth in the inquiry, mainly because of a narrow scope of the global contextual environment (Table 5.79).

Table 5.79: Person I-L's global knowledge base and foresight proficiency

KNOWLEDGE BASE	Bad	Poor	Average	Good	Excellent
ES Scope		I-L			
ES Modes				I-L	
Levels of knowing			I-L		
Reality Dimensions		I-L			
Information Quality			I-L		
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional		I-L			
Multi-dimensional					

Source: Own compilation.

ACTIONABILITY

Summary of views

I-L contributes to making the world a better place within I-L's immediate environment by being involved in church upliftment programmes, teaching appropriate value systems to children, and helping to save the environment. In this regard, I-L says that, "The world is a little bit too wide and

big for me to make a difference, (but) you are involved in your community, and to correctly educate your children …But I don't know necessarily how big a difference I make".

I-L believes that it will take a global team effort to create a better world: "not only the governments, the private sector and business leaders - it is going to take a team effort from each one of us to change attitudes. But if you look for a worldwide strategy, everyone needs to get together".

MILES analysis and findings

I-L's SELF has a negative disposition towards the state of the world (Table 5.80). I-L's inert mental state-IID perceives the world as being in a precarious position given the various SED contextual global challenges, especially in view of more recent political-security threats in the world. I-L finds it difficult to have a flexible mental state, and has become progressively more negative about the state of the world.

I-L believes that it is the responsibility of everyone to create a better world, and that a global team effort is required to achieve this. I-L is contributing actively to create a better world through recycling materials and participating in upliftment programmes in society. However, I-L is unsure whether such efforts are making a real impact. I-L has intentionally (IID) adopted behaviour (IED) to create a better world.

Table 5.80: Person I-L's actionability analysis

State of the world	Acute	Dismal	***Ambiguous***	Good	Excellent
Whose responsibility	Individual	Society	Government	International	***All***
Own contribution	None	Passive: Job	Passive: Society	Active: Job	***Active: Society***

Source: Own compilation.

RESEARCH QUESTION SUB-CONCLUSIONS

I-L has a relatively well-developed future consciousness. I-L scans on both the Litany and Social Causes Levels of Knowing as these relate to general SED contextual global issues. I-L believes that sufficient knowledge exists to make some judgement about the global future. I-L's knowledge base, judgement and foresight regarding the global future are poor to average, ranging from a superficial to a limited depth. I-L's mental constructs about the probable future is influence by a limited flexible mental state-IID, which foresees an undesirable probable future under certain circumstances. I-L has a one-dimensional and generally poor image of the global future and a

limited capacity to foresee alternative global futures. I-L is contributing actively in society to create a better global future.

5.3 CASE-ORIENTED ANALYSIS: GROUPS

5.3.1 ESPs

FUTURE CONSCIOUSNESS

The future consciousness of all the ESPs is relatively good. They think about the future but with diverse objectives in mind. Two ESPs (I-C and I-E) have personal long-term future concerns, namely personal happiness and the future of children. Two ESPs (I-B and I-F) have ESP job focus area concerns regarding the medium- to long-term future as it relates to global issues. One ESP (I-D) has a theoretical approach to the future timeframe without making any issues explicit.

Four ESPs (I-C, I-D, I-E and I-F) have pessimistic dispositions towards the global future. This pessimism is mainly the result of the current global challenges they observe. These challenges are cross-cutting and cover all the STEEP areas: over-population and limited resources, religious extremism and terrorism, the wealth gap between rich and poor, and technological inequality between the developed and developing countries. One ESP (I-B) has a realistic disposition about the global future despite the existing global challenges. I-B's realism is the result of observations that some kind of global equilibrium exists due to the actions of world leaders and institutions to moderate the global challenges.

The futures dispositions of all the ESPs underlie their images of the future. They linearly project the current global challenges into the future as the expected probable global future. In this regard, they all see the probable future as complex, challenging, confusing, bleak and fluid. Nevertheless, four ESPs (I-C, I-D, I-E and I-F) are hopeful that an ideal future could be achieved, leading to a better world. Such an ideal future they believe could be realised through global learning, a common understanding among nations and peaceful coexistence. However, they fail to indicate the substance for achieving such ideal futures within the context of the current global contextual environment. Only one ESP (I-B) visualises a possible future resulting from an unexpected global event but is, nevertheless, of the opinion that equilibrium will be restored.

Four ESPs (I-C, I-D, I-E and I-F) do not show a flexible mental state with regard to their futures disposition, i.e. their feelings about the probable global future are fixed. One ESP (I-B) shows some flexibility albeit only temporarily should a high impact unexpected event occur; such an event would change I-B's optimism to pessimism about the global future. In summary, the majority of the ESPs have a pessimistic disposition towards the probable global future although remaining idealistically hopeful for a better world.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

All of the ESPs scan the media for information albeit in ways that range from looking for (active mode) factual information only to looking at (passive mode) information to get an overview of global developments. However, all of the ESPs show awareness of the Litany Level of Knowing problems associated with the media. The majority of the ESPs (3) are distrustful of the general media while the rest trust the media but with reservations. Those who distrust the media believe that the media are biased, have agendas, do not provide all the facts and are too powerful in influencing global developments. Those who trust the media believe that the media are too simplistic in their reporting and exaggerate global developments. Three ESPs also scan other sources of information to either add to or verify media reporting.

The knowledge and foresight competencies of the ESPs predominantly range from poor to average, with superficial to limited depth (Table 5.81).

Table 5.81: ESP global knowledge and foresight

KNOWLEDGE	Bad	Poor	Average	Good	Excellent
ES Scope	I-E	I-B,I-D	I-C	I-F	
ES Modes		I-C, I-D, I-E		I-B, I-F	
Levels of knowing		I-B, I-C, I-D, I-E, I-F			
Reality Dimensions		I-C, I-E	I-B, I-D, I-F		
Information Characteristics		I-C, I-D, I-E	I-B, I-F		
FORESIGHT					
One-dimensional	I-D, I-E	I-B, I-C	I-F		
Multi-dimensional					

Source: Own compilation.

In this regard, the majority of the ESPs (3) are in the Bad and Poor categories of the Environmental Scanning Scope due to their predominantly narrow public and domain-specific environmental scanning. The remaining two ESPs are respectively in the Average and Good categories due to their wider environmental scanning scope. The majority of the ESPs (3) are in the Poor category of the Environmental Scanning Modes because they mostly (albeit not exclusively) utilise the viewing modes. The remaining two ESPs are in the Good category due to a balanced utilisation of both the viewing and searching modes.

All the ESPs are in the Poor category in terms of Levels of Knowing. This means they all have superficial depth, because they mostly scan on the Litany Level of Knowing to obtain information on the SED contextual global developments. Although scanning is usually also done on the Social

Causes Level of Knowing and, to a limited extent, Discourse-Worldview Level of Knowing in terms of company information, such scanning is limited to the narrow domain-specific ESP areas of focus.

The majority of the ESPs (3) are in the Average category of the Reality Dimensions as they mostly scan the SED-IED dimensions but also to some extent the CID-IID dimensions. The remaining two ESPs are in the Poor category of the Reality Dimensions because their scanning is only done in the SED-IED dimensions.

The majority of the ESPs (3) are in the Poor category of information characteristics because their information predominantly has a combined distorted and factual quality. The quality of information of the remaining two ESPs is in the Average category as they mostly scan information with a combined distorted and factual quality but which also includes limited concealed information in terms of the narrow domain-specific ESP areas of focus.

All the ESPs are on the One-Dimensional level of Foresight because they linearly project the current SED contextual global challenges as the probable global future while showing no comprehension for possible alternative ways the global future could develop. In this regard, two ESPs are in the Bad category (no depth) because of their predominantly narrow ESP focus that limits their knowledge base regarding SED contextual global developments, and their lack of understanding of these global developments to make judgements about the global future. Two ESPs are in the Poor category (superficial depth) because of their predominantly narrow ESP focus that limits their knowledge base regarding SED contextual global developments, and an inadequate capacity to make judgements about the global future. One ESP is in the Average category (limited depth) due to a wider focus regarding SED contextual global developments but a limited capacity for making judgements about the global future.

ACTIONABILITY

The majority of the ESPs have an inert mental state-IID worldview that the current state of the world (SED) is either dismal or ambiguous (Table 5.82). Only ESP I-B sees the SED as generally good although there is scope for improvement. Furthermore, the majority of the ESPs' inert mental state-IID disposition towards improving the world is that everyone shares the responsibility to create a better future world. It is only ESP I-E who shifts this responsibility to the government. None of the ESPs is making a personal contribution to create a better future world. Yet, all of them believe they are passively contributing to a better world through their jobs.

Thus, although the majority of the ESPs have an inert mental state-IID disposition that the world (SED) needs improvement, such worldview does not motivate the ESPs to actively contribute towards realising a preferable or ideal future world. Their IED behaviour is to remain passive regardless of the SED reality.

Table 5.82: ESP actionability analysis

State of the World	Acute	Dismal I-C I-E	Ambiguous I-D I-F	Good I-B	Excellent
Whose responsibility	Individual	Society	Government I-E	International	All I-B I-C I-D I-F
Own contribution	None I-C I-F	Passive: Job I-B I-D I-E	Passive: Society I-B	Active: Job	Active: Society

Source: Own compilation.

RESEARCH QUESTION CONCLUSIONS

The majority of the ESPs (3) have a relatively well-developed future consciousness while the remaining ESPs (2) have relatively good future consciousness. The ESPs predominantly scan for information on the Litany Level of Knowing in terms of the general SED global issues. The ESPs are evenly balanced between thinking they have sufficient knowledge to make a judgement about the global future and acknowledging that they do not have sufficient knowledge to do this. One ESP (I-B) did not want to indicate whether sufficient knowledge exists to make a judgement. The ESPs knowledge base, judgement and foresight regarding the global future are generally poor, which means it is characterised by superficial depth. The ESPs' mental constructs about the probable future are influenced by an inert mental state-IID with no flexibility for change about the probable future; the exception is one ESP with a temporary flexible mental state towards a pessimistic disposition regarding the global future should a high-impact unexpected event occur. All of the ESPs have a one-dimensional approach to the global future and generally no or a poor capacity to foresee alternative global futures. The ESPs are evenly balanced between a bad and a poor image of the global future with one ESP having an average image, i.e. limited depth in judging the global future. The ESPs are either contributing passively through their jobs or not at all in creating a better global future.

5.3.2 Non-ESPs

FUTURE CONSCIOUSNESS

The future consciousness of all the Non-ESPs is relatively good. All the Non-ESPs think about the future with medium- to long-term concerns regarding various SED contextual global challenges. One Non-ESP (I-L) has a concern with the future of the children while another Non-ESP (I-K) viewed the global challenges from an occupational perspective.

Four of the Non-ESPs (I-G, I-J, I-K and I-L) have pessimistic dispositions towards the global future. This pessimism is mainly the result of the current global challenges they observe. These challenges are cross-cutting and cover all the STEEP areas: war situations, ideological and political divergence, religious extremism and terrorism, climate change, lack of resources, over-population, technology issues and governance problems. One Non-ESP (I-H) has an optimistic disposition about the global future based on a belief that increased popular participation will make a difference for the better.

The futures dispositions of all the Non-ESPs underlie their images of the future. They linearly project the current global challenges into the future as the expected probable future. In this regard, four Non-ESPs (I-G, I-J, I-K and I-L) see the probable future as ranging from much the same as currently to becoming worse and more severe. Nevertheless, they are hopeful that an ideal future and a better world could be achieved. Such an ideal future they believe could be realised through strong leadership, technological advancement, and improved morals and values. However, with the exception of realisable technological advancement, they fail to indicate the substance for achieving such ideal futures within the context of the current global contextual environment. One Non-ESP (I-H) is concerned that a possible future could be realised where world leaders deliberately stifle popular participation in addressing global challenges.

Four Non-ESPs (I-G, I-H, I-J and I-L) do not show a flexible mental state with regard to their futures disposition, i.e. their feelings about the probable global future are fixed. One Non-ESP (I-K) shows flexibility and believes that technological advancement could overcome the global challenges. In summary, the majority of the Non-ESPs have a pessimistic disposition towards the probable global future with varying degrees of hopefulness for a better world.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

All of the Non-ESPs scan the general media for information and show awareness of the Litany Level of Knowing problems associated with the general media. The majority of the Non-ESPs (4) trust the general media but acknowledge that the media information is characterised by too much negativity, sensationalism, exaggerations, biases and lack of depth. One Non-ESP (I-H) is distrustful of the general media due to a view that the media presents limited information options, which means that they do not cover certain issues, while most of their information is worthless.

Four of the Non-ESPs will look for additional information on the internet to get a better understanding of issues presented by the general media. One Non-ESP (I-H) will explore alternative information sources on the internet for comparative purposes.

The knowledge and foresight competencies of the Non-ESPs range from mostly poor to average, i.e. having mostly superficial depth to some limited depth (Table 5.83).

Table 5.83: Non-ESP global knowledge and foresight

KNOWLEDGE	Bad	Poor	Average	Good	Excellent
ES Scope		I-H, I-J, I-K, I-L	I-G		
ES Modes		I-G, I-J, I-K	I-H	I-L	
Levels of knowing		I-G, I-H, I-J, I-K	I-L		
Reality Dimensions		I-G, I-J, I-L	I-H, I-K		
Information Characteristics		I-G, I-H, I-J, I-K	I-L		
FORESIGHT					
One-dimensional		I-G, I-H, I-J, I-L			
Multi-dimensional		I-K			

Source: Own compilation.

In this regard, the majority of the Non-ESPs (4) are in Poor category due to their public scanning which is limited to only some STEEP areas of focus. One Non-ESP (I-G) is in the Average category of the Environmental Scanning Scope due to public scanning of a wide variety of issues of the STEEP areas of focus. The majority of the Non-ESPs (3) are in the Poor category of the Environmental Scanning Modes because they mostly view information with limited searching for additional information. The remaining two ESPs are respectively in the Average and Good categories due to varying degrees of balance between the viewing and searching modes of scanning.

The majority of the Non-ESPs (4) are in the Poor category of the Levels of Knowing, which means they only have superficial depth because they mostly scan on the Litany Level of Knowing to obtain information regarding the SED contextual global developments. Some scan on the Social Causes Level of Knowing, but to a limited extent. One Non-ESP (I-L) is in the Average category of the Levels of Knowing due to a balanced approach in scanning on both the Litany and Social Causes Levels of Knowing.

The majority of the Non-ESPs (3) are in the Poor category of the Reality Dimensions as they predominantly scan the SED-IED dimensions. The remaining two Non-ESPs also access the CID-IID dimensions to some extent.

The majority of the Non-ESPs (4) are in the Poor category of information quality as they predominantly scan information that has a combined distorted and factual quality. One Non-ESP is in the Average category because of a stronger emphasis on searching for factual information to develop some understanding of SED contextual global developments.

The majority of the Non-ESPs (4) are on the One-Dimensional level of Foresight because they linearly project the current SED contextual global challenges as the probable global future while showing no comprehension for possible alternative ways the global future could develop. In this regard, the four Non-ESPs are in the Poor category (superficial depth) because of their public scanning, which is limited to only some STEEP areas of focus. This limits their knowledge base regarding SED contextual global developments and leads to an inadequate capacity to make judgements about the global future. One Non-ESP (I-K) is on the Multi-Dimensional level of Foresight in the Poor category because of the utilisation of knowledge to develop foresight of possible alternative ways the future could develop.

ACTIONABILITY

The majority of the Non-ESPs have an inert mental state-IID worldview that the current state of the world (SED) is ambiguous (Table 5.84). Only Non-ESP I-J has a worldview that the SED is dismal. The Non-ESPs' inert mental state-IID disposition towards responsibility for improving the world is diverse. Two Non-ESPs (I-G and I-L) believe that such responsibility is shared by everyone while two Non-ESPs (I-J and I-K) are of the opinion that international governance structures have the main responsibility. Only Non-ESP I-H thinks improving the world is an individual (IID) and societal (CID) responsibility. The majority of the Non-ESPs are actively contributing on society level (CID) to create a better future world. Only Non-ESPs I-H and I-K make no contributions in this regard.

Thus, the majority of Non-ESPs have an inert mental state-IID that the world (SED) needs improvement and they are also motivated to actively contribute to realise a preferable or ideal future world. Their IED behaviour is to actively contribute towards improving the SED reality.

Table 5.84: Non-ESP actionability analysis

State of the world	**Acute**	**Dismal** I-J	**Ambiguous** I-G I-H I-K I-L	**Good**	**Excellent**
Whose responsibility	**Individual** I-H	**Society** I-H	**Government**	**International** I-J I-K	**All** I-G I-L
Own contribution	**None** I-H I-K	**Passive: Job** I-G	**Passive: Society**	**Active: Job**	**Active: Society** I-G I-J I-L

Source: Own compilation.

RESEARCH QUESTION CONCLUSIONS

All the Non-ESPs have relatively well-developed future consciousness. The Non-ESPs predominantly scan for information on the Litany Level of Knowing in terms of the general SED global issues. The majority of the Non-ESPs (3) believe they have sufficient knowledge to make a judgement about the global future while the remaining Non-ESPs acknowledge that a lack of sufficient knowledge exists. The Non-ESPs' knowledge base, judgement and foresight regarding the global future are mostly poor, i.e. it is characterised by superficial depth. The Non-ESPs' mental constructs about the probable future is influenced by an inert mental state-IID with some flexibility for change about the probable future; one Non-ESP has an inert-mental state-IID with no flexibility for change about the probable global future. All of the Non- ESPs, except one Non-ESP, have a one-dimensional approach to the global future and generally poor capacity to foresee alternative global futures. The majority of the Non-ESPs (4) have a poor image of the global future with one ESP having an average image, i.e. limited depth in judging the global future. The majority of the Non-ESPs (3) are contributing actively in society to create a better global future while the remaining two Non-ESPs are not making a contribution.

5.3.3 Comparative analysis: ESP and Non-ESP

FUTURE CONSCIOUSNESS

There is no real qualitative difference between ESPs and Non-ESPs regarding futures consciousness (Table 5.85). The timeframes of their futures thinking are basically the same with some ESPs having a more occupational focus in terms of SED contextual global issues. For most

ESPs and Non-ESPs personal short-term issues and long-term global issues predominate their futures thinking.

The majority of ESPs (4) and Non-ESPs (4) have a pessimistic futures disposition. This pessimism results from the SED contextual global challenges they are currently observing. The majority of both groups, ESPs (all) and Non-ESPs (4), imagine a probable future that is much the same or worse than the current global situation. However, most of them remain hopeful that a better ideal future could be realised. The Non-ESPs imagine an ideal future that is achievable through more practical, realisable actions. The majority of both groups (four each) show an inert mental state-IID for global change with no flexibility. Only one person in each group has a flexible mental state with regard to possible global change.

Table 5.85: ESP and Non-ESP future consciousness comparison

	ESP	Non-ESP
Futures Thinking	**Short to Long term** Diverse Reasons (Personal-global)	**Short to Long term** Various global challenges
Futures Disposition	**Pessimism** Global challenges (4) **Realism** Global equilibrium (1)	**Pessimism** Global challenges (4) **Optimism** Popular participation (1)
Futures Image	**Probable Future** Confusing, challenging, bleak, complex, fluid (5) **Ideal Future** Better world via global learning, common understanding, peaceful coexistence (4) **Possible Future** Shock Global Event (1)	**Probable Future** Same as currently, worse, and severe challenges (4) **Ideal Future** Better world via strong leadership, tech advancement, improved morals and values (3) **Possible Future** More governance (1)
Disposition Change	**Flexible** Global event (1) **Fixed** No change (4)	**Flexible** Technology (1) **Fixed** No change (4)

Source: Own compilation.

KNOWLEDGE, JUDGEMENT AND FORESIGHT

There are qualitative differences between the ESPs and Non-ESPs regarding their knowledge base and foresight proficiency (Table 5.86).

Table 5.86: ESP and Non-ESP knowledge and foresight comparison

KNOWLEDGE	Bad		Poor		Average		Good		Excellent	
	ESP	N-ESP	ESP	N-ESP	ESP	N-ESP	ESP	N-ESP		
ES Scope	I-E		I-B I-D	I-H I-J I-K I-L	I-C	I-G	I-F			
ES Modes			I-C I-D I-E	I-G I-J I-K		I-H	I-B I-F	I-L		
Levels of knowing			I-B I-C I-D I-E I-F	I-G I-H I-J I-K		I-L				
Reality Dimensions			I-C I-E	I-G I-J I-L	I-B I-D I-F	I-H I-K				
Information Quality			I-C I-D I-E	I-G I-H I-J I-K	I-B I-F	I-L				
FORESIGHT										
One-dimensional	I-D I-E		I-B I-C	I-G I-H I-J I-L	I-F					
Multi-dimensional				I-K						

Source: Own compilation.

Overall, the ESPs generally have a knowledge base advantage over the Non-ESPs. In this regard, more ESPs are in the Good category and fewer in the Poor category than Non-ESPs. An equal number of ESPs and Non-ESPs are in the Average category. However, the Non-ESPs have an

advantage over the ESPs regarding foresight proficiency. Here, two ESPs are rated in the Bad category.

All of the ESPs and the Non-ESPs scan the general media for information on the SED contextual environment. However, the majority of the ESPs (3) are distrustful of the media while the majority of Non-ESPs (4) trust the media. Although both groups show awareness of the Litany Level of Knowing problems associated with the general media, the two groups differ in the degree to which they rate these media problems. In this regard, the ESPs view the media as much more powerful in influencing global developments, hence the ESPs greater distrust of the media. The majority of both groups would scan additional sources of information to obtain enhanced perspectives on global developments.

The Environmental Scanning Scope differs between the two groups. The majority of the ESPs (3) have predominantly narrow public and domain-specific scanning scopes while all the Non-ESPs have wide public scanning scopes. Nevertheless, the majority of both groups have limited STEEP areas of focus, making their knowledge base regarding global issues incomplete.

The majority of both groups are in the Poor category of the Environmental Scanning Modes as they mostly utilise the viewing modes. The ESPs have an advantage over the Non-ESPs with more ESPs in the Good category as they have a better balance in utilising both the viewing and searching modes.

The majority of both groups are in the Poor category of the Levels of Knowing due to too much scanning on the Litany Level of Knowing to obtain information on the SED contextual global developments. Only one Non-ESP has a more balanced approach by scanning both on the Litany and Social Causes Levels of Knowing.

The ESPs (Average rating) also have an advantage over the Non-ESPs (Poor rating) regarding the Reality Dimensions scanned. The ESPs access the SED-IED but also the CID-IID dimensions, which enhance their insight and understanding of SED contextual global developments.

The Information Quality of the majority of ESPs (Average rating) is better than those of the Non-ESPs (Poor rating). In this regard, the quality problems associated with the Litany Level of Knowing scanning are moderated by the ESPs' access to some concealed information albeit limited to the narrow domain-specific ESP focus areas.

There is a qualitative difference between the two groups regarding their foresight proficiency. The Non-ESPs have better foresight proficiency than the ESPs, with four Non-ESPs in the One-Dimensional Poor category and one Non-ESP in the Multi-Dimensional Poor category. The ESPs did not performed well on foresight proficiency with two ESPs in the One-Dimensional Bad category, two ESPs in the Poor category, and one ESP in the One-Dimensional Average category rating. This qualitative difference could be ascribed to the ESPs' predominantly narrow public and

domain-specific focus areas in terms of their ESP jobs, which limit their proficiency in terms of foresight of the SED contextual global future.

ACTIONABILITY

The majority of the ESPs and Non-ESPs have an inert mental state-IID worldview that the current state of the world (SED) is dismal and/or ambiguous (Table 5.87). The majority of the ESPs and Non-ESPs, i.e. six out of 10, have an inert mental state-IID that the responsibility for creating a better world is shared by everyone. However, the ESPs are only passively contributing (if at all) in creating a better world while the majority of Non-ESPs are actively making a contribution.

Thus, although the ESPs and the Non-ESPs have an inert metal state-IID disposition in favour of improving the SED, only the Non-ESPs display IED behaviour to actively realise a preferred-ideal future SED.

Table 5.87: ESP and Non-ESP actionability comparison

State of the world	**Acute**	**Dismal** I-C (ESP) I-E (ESP) ---------- I-J (N-ESP)	**Ambiguous** I-D (ESP) I-F (ESP) ---------- I-G (N-ESP) I-H (N-ESP) I-K (N-ESP) I-L (N-ESP)	**Good** I-B (ESP)	**Excellent**
Whose responsibility	**Individual** I-H (N-ESP)	**Society** I-H (N-ESP)	**Government** I-E (ESP)	**International** I-J (N-ESP) I-K (N-ESP)	**All** I-B (ESP) I-C (ESP) I-D (ESP) I-F (ESP) ---------- I-G I-L

Own contribution	**None** I-C (ESP) I-F (ESP) --- I-H (N-ESP) I-K (N-ESP)	**Passive: Job** I-B (ESP) I-D (ESP) I-E (ESP) --- I-G (N-ESP)	**Passive: Society** I-B (ESP)	**Active: Job**	**Active: Society** I-G (N-ESP) I-J (N-ESP) I-L (N-ESP)

Source: Own compilation.

RESEARCH QUESTION CONCLUSIONS

There is a marginal qualitative difference between the ESPs and Non-ESPs regarding future consciousness with all Non-ESPs having a well-developed future consciousness in contrast to only three ESPs having the same proficiency in future consciousness. There is also a qualitative difference between the ESPs and Non-ESPs with regard to sufficient knowledge perceptions, their image of the global future, the flexibility of their inert mental state-IID about the global future, and their contributions to create a better world.

The ESPs and the Non-ESPs predominantly scan for information on the Litany Level of Knowing in terms of the general SED global issues. The majority of the Non-ESPs believe they have sufficient knowledge to make a judgement about the global future while the ESPs are evenly balanced between thinking they have sufficient or insufficient knowledge. The knowledge base, judgement and foresight of the ESPs as well as the Non-ESPs regarding the global future are generally poor, with only superficial depth. The ESPs' mental constructs about the probable future are influenced by an inert mental state-IID with no flexibility for change about the probable future while the Non-ESPs mental constructs are influenced by an inert mental state-IID with some flexibility for change about the probable future.

Most of the ESPs and Non-ESPs have a one-dimensional approach to the global future and a poor capacity to foresee alternative global futures. Although most Non-ESPs have a poor image of the global future, i.e. superficial depth in judging the global future, the ESPs are evenly balanced between a bad and a poor image of the global future. The ESPs are either contributing passively through their jobs or not at all in creating a better global future while most of the Non-ESPs are contributing actively in society. Two Non-ESPs are not making a contribution on societal level.

5.4 THEME-ORIENTED ANALYSIS

5.4.1 Future consciousness

The future consciousness of all the interviewees is relatively well-developed in that they think about the future as well as anticipate and imagine possible, probable and ideal futures (Table 5.88). The

majority of the interviewees, i.e. six out of 10, have short- to long-term future thinking about various SED contextual global challenges. An additional three interviewees' future thinking has personal perspectives contextualised in terms of the SED global challenges. In this regard, two interviewees specifically expressed concern for the future of their children while one interviewee had a concern for future happiness. One interviewee did not explicitly contextualise future thinking in practical terms.

Table 5.88: Future consciousness theme

	Interviewees (10)
Futures Thinking	**Short to Long term** Global challenges (6) Various personal issues (3) No specifics (1)
Futures Disposition	**Pessimism** Global challenges (8) **Realism** Global equilibrium (1) **Optimism** Popular participation (1)
Futures Image	**Probable Future** Same as currently, worse, severe challenges, confusing, challenging, bleak, complex, fluid, (9) **Ideal Future** Better world via global learning, common understanding, peaceful coexistence, strong leadership, technological advancement, improved morals and values (7) **Possible Future** Shock Global Event (1) More governance, less popular participation (1)
Disposition Change	**Flexible** Technology (1) Global event (1) **Fixed** No change (8)

Source: Own compilation

The majority of the interviewees, i.e. eight out of 10, have pessimistic futures dispositions due to various global challenges they are observing in the SED contextual environment. These challenges have been identified as the following:

- Primary challenges: Over-population, limited resources, climate change and natural disasters, conflict situations such as war and terrorism, and cultural conflicts inclusive of religious extremism.
- Secondary challenges: Governance problems, technological inequality, lack of security, the wealth gap between rich and poor, and the speed of change.

The majority of the interviewees, i.e. nine out of 10, imagine a probable global future that will be undesirable. This is mostly because they linearly project the current global challenges as the probable future. In this regard, the Interviewees state that the global future will be as follows: bleak and fluid; much the same or worse than currently; characterised by severe challenges, confusion and complexity.

The majority of the interviewees, i.e. seven out of 10, imagine an ideal global future that could be better than the current situation. Such ideal future are imagined as: peaceful co-existence; nations having a common understanding to overcome conflict; all of humanity having better morals and values; technological advancement that could moderate the global challenges; strong global leadership to improve the global situation; and global learning for a better world.

The majority of the interviewees, i.e. eight out of 10, have a relatively fixed mental state-IID regarding their global future disposition. Two of them do not foresee the possibility of anything positive happening that will change their disposition towards the global future. Also, five interviewees' future idealism can be deemed as a fixed mental state-IID because of the naive nature of their proposed future solutions in terms of the SED contextual global challenges. A flexible mental state-IID is present in one interviewee who presented more realisable goals for global future change, i.e. technological advancement. One interviewee's disposition change is linked to a shocking unexpected global event emanating from the global challenges that will change the interviewee's current realism to pessimism.

5.4.2 Knowledge, judgement and foresight

The majority of the interviewees have poor knowledge, judgement and foresight of the global future, i.e. a superficial depth, as it relates to their coverage of global events and the STEEP areas of focus (Table 5.89). The interviewees knowledge base was appraised on their environmental scanning scope and modes, levels of knowing, quality of information, and the reality dimensions accessed during the scanning process.

Table 5.89: Knowledge, judgement and foresight theme

KNOWLEDGE	Bad	Poor	Average	Good	Excellent
ES Scope	1	6	2	1	
ES Modes		6	1	3	
Levels of knowing		9	1		
Reality Dimensions		5	5		
Information Quality		7	3		
TOTAL	**1**	**33**	**12**	**4**	
FORESIGHT					
One-dimensional	2	6	1		
Multi-dimensional		1			
OVERALL TOTAL	**3**	**40**	**13**	**4**	

Source: Own compilation.

The majority of the interviewees, i.e. six out of 10, have a poor scanning scope. This suggests that the scope of their scanning is too narrow, which means that they only have a partial coverage of global developments and/or it is limited to only some STEEP areas of focus. Two interviewees have an average scanning scope, i.e. limited depth, while one interviewee's scanning scope has no depth, and another's scope has some depth. The majority of the interviewees, i.e. six out of 10, have a poor utilisation of the scanning modes. This suggests that they predominantly utilise the viewing modes of scanning with a limited application of the searching modes to obtain information on global developments. This results in superficial depth regarding knowledge about global developments. One interviewee has an average utilisation and three interviewees a good utilisation of the scanning modes, leading to limited depth and some depth respectively regarding knowledge of global developments.

The majority of interviewees, i.e. nine out of 10, achieved poor ratings on levels of knowing in terms of the global future. They predominantly scan for information on the Litany Level of Knowing to obtain information about global developments with limited scanning on the Social Causes Level or deeper levels of knowing. This suggests that these interviewees have a superficial understanding of the SED reality by being subjected to the media's version of problems and trends with limited exposure to alternative analyses of the SED reality. One interviewee has an average rating on levels of knowing based on increased exposure to the Social Causes Level of Knowing; this moderates the superficial depth of the Litany Level of Knowing to some extent.

The interviewees are also evenly balanced in terms of scanning the different reality dimensions. Half of the interviewees achieved a poor rating as they predominantly scan the SED-IED reality dimensions where the depth of information is superficial. The other half of the interviewees have an average rating as they scan the SED-IED reality dimensions but also to a limited extent the CID-IID reality dimensions when they occasionally search for information to fill information gaps. This provides these interviewees with limited depth.

Most of the interviewees, i.e. seven out of 10, achieved a poor rating on the information quality that they scan. They predominantly scan for information with both distorted and factual characteristics, providing superficial depth of the SED reality. Three interviewees have an average rating based on information with both distorted and factual characteristics moderated by either some concealed information or searching for additional comparative information to obtain a better understanding of issues in the SED.

The majority of the interviewees, i.e. nine out of 10, have a one-dimensional foresight approach while one interviewee has a multi-dimensional approach. The majority of the nine interviewees with a one-dimensional approach, i.e. six out of nine, have a poor rating. In this regard, they all linearly project the present global challenges as the probable future with no or a limited capacity for making judgements about the global future. They also do not have the necessary futures toolkit to develop a range of views on possible future paths or to understand this well enough to have perspectives on sustainable alternative global futures. The interviewee with a multi-dimensional approach has a poor rating. Although this interviewee also linearly projects the present global challenges as the probable future, possible alternative ways the future could develop are foreseen to achieve more sustainable alternative global futures.

5.4.3 Actionability

The majority of the interviewees, i.e. six out of 10, believe that the state of the world is ambiguous while three interviewees view the state of the world as dismal (Table 5.90). One interviewee is of the opinion that the world is in a relatively good state when a historical perspective is adopted.

Table 5.90: Actionability theme

State of the world	**Acute**	**Dismal** 3	**Ambiguous** 6	**Good** 1	**Excellent**
Whose responsibility	**Individual** 1	**Society** 1	**Government** 1	**International** 2	**All** 6
Own contribution	**None** 4	**Passive: Job** 3	**Passive: Society** 1	**Active: Job**	**Active: Society** 3

Source: Own compilation.

The majority of the interviewees, i.e. six out of 10, believe that it is everyone's responsibility to create a better future world. The remaining four interviewees have diverse views. In this regard, two interviewees believe that international governance structures should take the lead while one interviewee believes that national governments have this responsibility. One interviewee does not want any involvement from any governance structures and believes that a better world should be created by individuals and their societies; this Interviewee, however, does not make any contribution to create a better future world.

The majority of the interviewees, i.e. seven out of 10, do not make any contribution (4) or only passively through their jobs (3) to create a better future world. One interviewee passively contributes both through the job and indirectly in society. A minority of interviewees, i.e. three out of 10, are actively involved in society to contribute towards creating a better world.

Research question conclusions

The majority of the interviewees (8) do have a relatively well-developed future consciousness. Their capacity to imagine the future ranges from personal to SED contextual global issues. Most of them have a pessimistic disposition and as a result imagine an undesirable global future. Their images of an ideal future range from naïve to reasonable idealism. The majority of interviewees do not imagine or foresee possible alternative global futures. Also, they have an inert mental state-IID that is relatively fixed, i.e. they do not realistically foresee any global developments that could change their disposition towards the global future.

The interviewees do not have sufficient knowledge to develop good judgement and foresight of the global future. In this regard, their knowledge, judgement and foresight are poor, with only superficial depth in their inquiry. They also have a one-dimensional approach to foresight by linearly projecting the current global challenges as the probable future. Furthermore, the majority of

the interviewees make no active contribution towards creating a better global future. The minority who do make an active contribution do so in their local environments.

5.5 CONCLUSION

The case- and theme-oriented perspective, based respectively on the formal semi-structured interviews with the ESPs and Non-ESPs and the pre-determined themes, show that there were marginal qualitative differences between the ESPs and Non-ESPs regarding future consciousness. A qualitative difference was noticeable between the ESPs and Non-ESPs with regard to sufficient knowledge perceptions, their image of the global future, the flexibility of their inert mental state-IID about the global future, and their contributions to create a better world. Both groups predominantly scan for information on the Litany Level of Knowing in terms of the general SED global issues. The knowledge base, judgement and foresight of the ESPs as well as the Non-ESPs regarding the global future are generally poor, with only superficial depth. Most of the ESPs and Non-ESPs have a one-dimensional approach to the global future and a poor capacity to foresee alternative global futures. The ESPs are either contributing passively through their jobs or not at all in creating a better global future while most of the Non-ESPs are contributing actively in society.

CHAPTER 6

SURVEYS: THEME-ORIENTED PERSPECTIVE

6.1 INTRODUCTION

This chapter provides a theme-oriented perspective of the quantitative phase of the multi-strand concurrent mixed-method research design of this investigation. The quantitative phase consists of the primary QuestionPro survey and secondary Telefónica-Financial Times survey. The results of the surveys are presented as qualitising narratives. Thematic qualitative text analysis is utilised to identify and categorise themes based on the respondents' answers, leading to a theme-oriented perspective of the two surveys.

The analysis of the surveys to arrive at a theme-oriented perspective of the research question is structures as follows:

- A qualitising narrative is produced for each of the surveys (see §3.4.2 for an explanation of this approach). Each survey is analysed based on the MILES method (see Figure 4.14 and 4.15) in order to arrive at the findings.
- The conclusions for each survey provide a theme-oriented perspective on the research question.

6.2 PRIMARY SURVEY: QUESTIONPRO

6.2.1 Introduction

The QuestionPro web-based online survey (Q-P) titled "Future of the World" commenced in May 2013 and was concluded in May 2015. The survey was viewed by 624 people, of which 138 started and 105 completed the survey giving a completion rate of 76%. A total of 51 respondents (52.04%) were in the age group 36 to 55 years, followed by 29 respondents older than 55 years (29.59%) and, 14 respondents between 25 and 35 years (14.29%). Four respondents (4.08%) were between 18 and 24 years old (Figure 6.1).

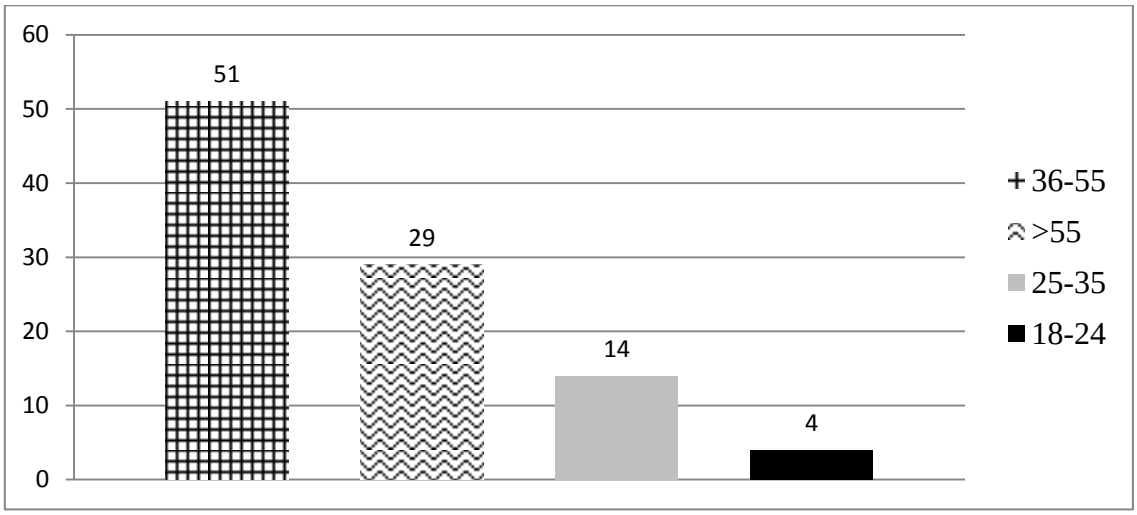

Figure 6.1: Q-P age per number of respondents

Source: Own compilation.

The respondents lived in six world regions, viz. Europe, Asia, North America, South America, Africa and Australasia-Oceania. The majority of respondents lived in Africa (53 respondents, 54.64%), followed by Europe (18 respondents, 18.56%) and North America 11 respondents (11.34%). Australasia/Oceania had seven respondents (7.22%), South America had five respondents (5.15%) and Asia had three respondents (3.09%). The Middle East region had no respondents (Figure 6.2). Of those respondents living in Africa, 85% lived in South Africa; of those living in Europe, 70% lived in the UK; and of those living in North America, 58% lived in the United States.

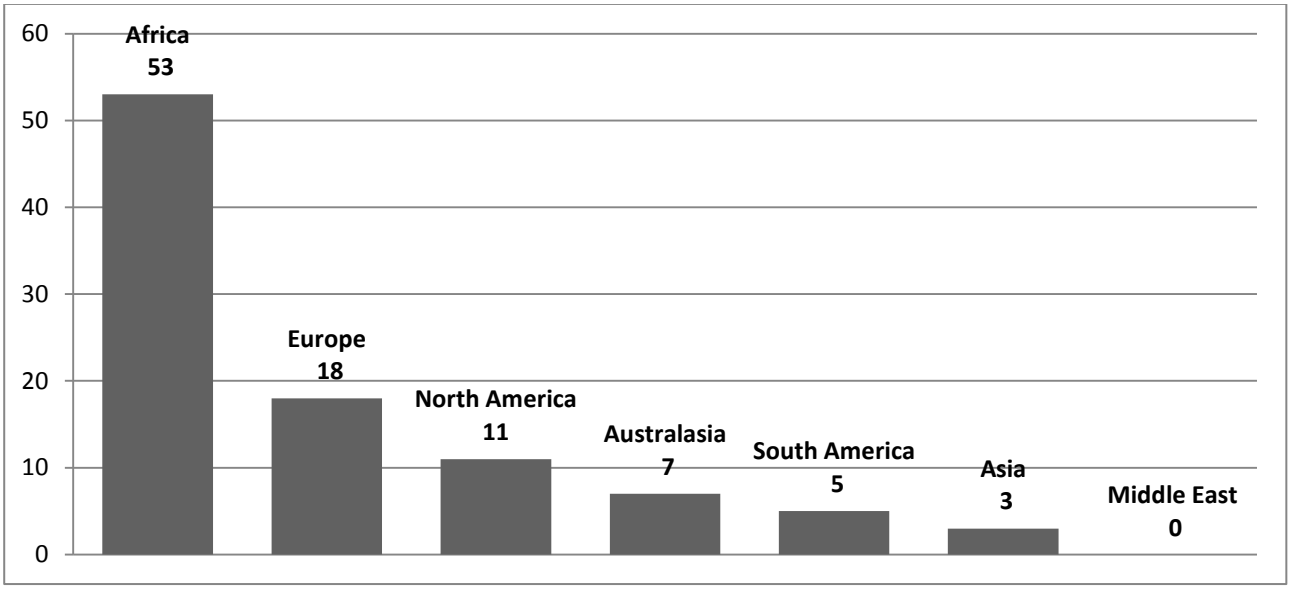

Figure 6.2: Q-P regions per number of respondents

Source: Own compilation.

The survey consisted of seven questions of which three addressed the demographic data of the respondents and four addressed the research question (Appendix E). The four questions that addressed the research question were as follows:

- When you think about the future of the world, do you have feelings of optimism, pessimism, hope, fear, no specific feelings, and other feelings?
- Do you think the world has a good or bad future?
- The reasons why you think the world's future is good or bad are because of advancements or problems in the following areas? social, technology, economics, environment, and politics?
- From which sources do you get your information about the world?

These four questions answer the research question as it relates to future consciousness and knowledge, judgement and foresight.

6.2.2 Qualitising narrative

The first substance question determined the respondents' feelings about the future of the world and measured their future consciousness. In total, 99 respondents answered this future consciousness question on their feelings towards the global future – the "FC-Disposition Question" (Figure 6.3).

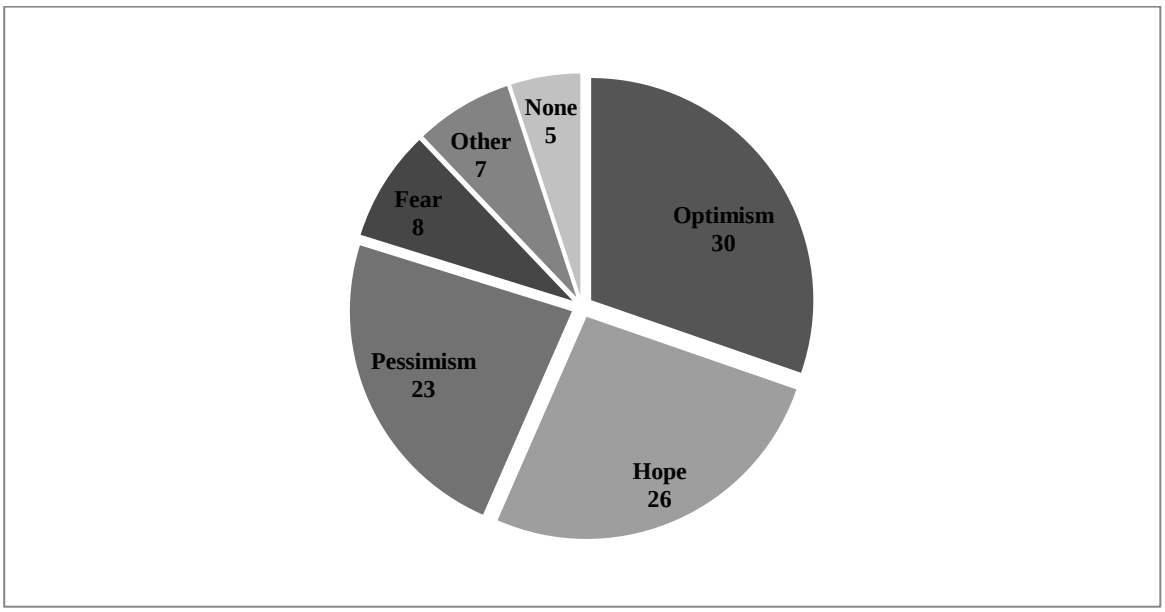

Figure 6.3: Q-P global futures disposition per number of respondents

Source: Own compilation.

In total, 30 respondents (30.3%) expressed optimistic feelings about the future of the world while 26 respondents (26.26%) expressed feelings of hope for the global future. Together, these 56

respondents (56.56%) had an optimistic-hopeful disposition towards the global future. This group was called the Optimistic-Hopeful (O-H) group.

In total, 23 respondents (23.23%) expressed pessimistic feelings about the future of the world while eight respondents (8.08%) expressed feelings of fear when thinking about the global future. Together, these 31 respondents (31.31%) had a pessimistic-fearful disposition towards the global future. This group was called the Pessimistic-Fearful (P-F) group. Five respondents (5.05%) expressed no specific feelings about the future. This group was called the No Feel (N-F) group. In the Other (O) group, seven respondents (7.07%) answered the Disposition Question in various ways.

In the O-H group, 30 respondents (53.6%) had an optimistic disposition while 26 respondents (46.4%) were hopeful about the global future. In the P-F group, 23 respondents (74%) were pessimistic of the global future while eight respondents (26%) expressed fearfulness about the global future. Five of the seven respondents in the O-group expressed the following feelings about the future: (a) “hope mixed with pessimism”, (b) “concern”, (c) “trepidation”, (d) “concern for future generations”, and (e) “mixed feelings”. These feelings tended to align more with those of the P-F group than with the O-H group. Hence, the 99 respondents who answered the future consciousness question on their feelings about the global future have the following disposition (Table 6.1):

Table 6.1: Q-P respondents’ global futures disposition

Group	Optimism	Hope	Pessimism	Fear	Aligned	None	Total
O-H	30	26					**56**
P-F			23	8	5		**36**
N-F						5	**5**
Other						2	**2**
Total	**30**	**26**	**23**	**8**	**5**	**7**	**99**

Source: Own compilation.

In the follow-up question – the “Follow-Up Question” – all the respondents were asked whether they thought the world had a good or a bad future. Four respondents who answered the Disposition Question did not answer the Follow-Up Question. It is assumed that these “drop-outs” came from the O-group mainly because they did not make a specific choice, i.e. optimism, pessimism, hope, or fear, regarding their disposition towards the global future. This assumption is based on the Disposition Question answers from at least three of the O-group respondents, namely: (a) “all of the above”, (b) “next question too simplistic”, (c) “this cannot be reduced to a good versus bad debate.”

Nevertheless, the majority of the respondents showed some consistency in answering the Disposition Question and Follow-Up Question. In total, 95 of the respondents answered the Follow-

Up Question, which is four less than the 99 who answered the Disposition Question. Answering the Follow-Up Question, 61 respondents said the probable global future will be good (the "Good Future") while 34 respondents said that the probable global future will be bad (the "Bad Future") (Figure 6.4).

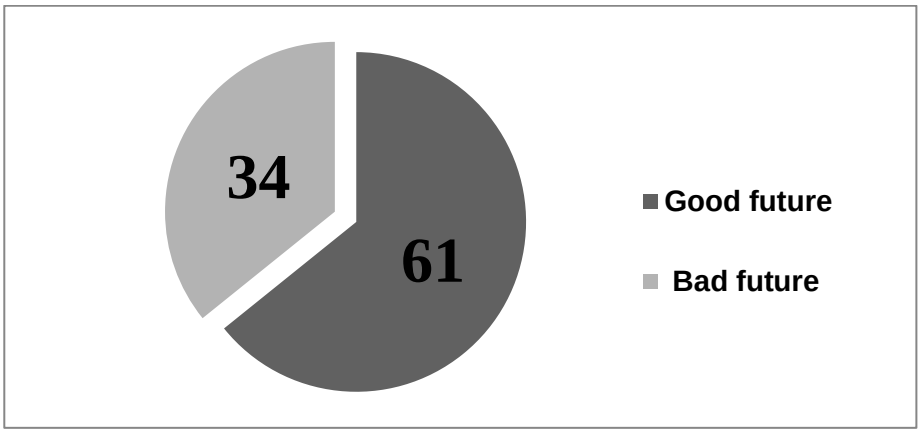

Figure 6.4: Q-P future image per number of respondents

Source: Own compilation.

The O-H and P-F groups appeared to have stayed true to their respective futures dispositions when making a choice for either a good or bad global future (Table 6.2).

Table 6.2: Q-P respondents' futures disposition and futures image

Group	Optimism	Hope	Pessimism	Fear	Aligned	None	Total
O-H	30	26					**56**
P-F			23	8	5		**36**
N-F						5	**5**
Other						2	**2**
Total	**30**	**26**	**23**	**8**	**5**	**7**	**99**
	Good Future		**Bad Future**				
	61 (56 + 5)		**34** (31 + 3)				**95** (99-4)

Source: Own compilation.

In this regard, it is likely that the O-H group stayed true to their optimistic-hopeful futures disposition by indicating a preference for the Good Future. It is assumed that these 56 O-H respondents would not have supported a bad global future because of their optimistic-hopeful futures disposition. In total, 61 respondents opted for the Good Future response, most likely the 56 O-H respondents plus the five supporters of the N-F group who initially expressed no feelings in terms of the future consciousness question (FC-Disposition Question), although it is not clear from the survey why they would have supported the Good Future.

It is also likely that the P-F group stayed true to their pessimistic-fearful futures disposition by indicating a preference for the Bad Future. In this regard, it is assumed that the 31 respondents of the P-F group would not have supported a good global future because of their pessimistic-fearful futures disposition. The Bad Future has 34 respondents and probably acquired three supporters from the O-group who were more aligned towards the pessimistic-fearful futures disposition, as argued above and illustrated in Table 6.1. The final outcome is that 64.21% of the respondents viewed the world's future as good while 35.79% saw the future of the world as bad.

The Disposition Question and the Follow-Up Question were evaluated against the respondents' scanning of the five STEEP (Social, Technology, Environment, Economic, Political) areas of focus in the global contextual environment with the ES-STEEP Question. It is assumed that the respondents could only make a particular choice regarding the ES-STEEP Question if they also had knowledge of the possible interrelationship between particular STEEP areas and the good-bad future they foresaw. Such knowledge is obtained through scanning particular STEEP areas. The purpose of the ES-STEEP Question was to determine which STEEP area of focus dominated the respondents general disposition towards the future (Figure 6.5).

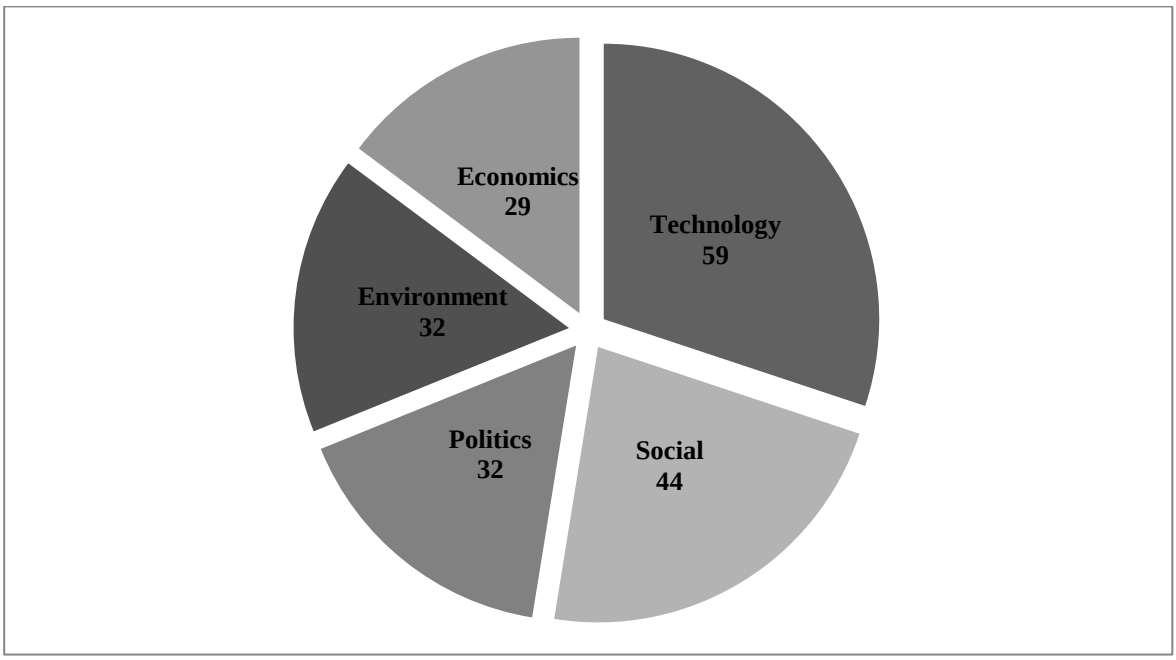

Figure 6.5: Q-P STEEP scanning per number of respondents

Source: Own compilation.

The ES-STEEP Question had five possible answers, and the respondents were given multiple-choice options. The total count of the respondents who answered the ES-STEEP Question was 196. The respondents identified *technology* as the most important STEEP area that influenced their disposition towards the future. In this regard, 59 respondents (30.1%) chose technology as the most important driver of their futures disposition. This was followed by *social issues* with 44 respondents (22.45%). *Politics* and the *environment* were rated third, with 32 respondents

(16.33%) each, followed by the *economy,* which received the least support with 29 respondents (14.8%).

The last question of the survey determined the levels of knowing of the respondents through the "Levels of Knowing" (LOK) Question. The LOK question provided six multiple-choice options, which included "Other" to present respondents with an opportunity to supply additional information that maybe related to the four levels of knowing. In total, 267 respondents answered the LOK Question. Sixteen responses (6%) were recorded in the "Other" category where the respondents expanded on the sources of their information that underpinned their knowledge of the world (Figure 6.6).

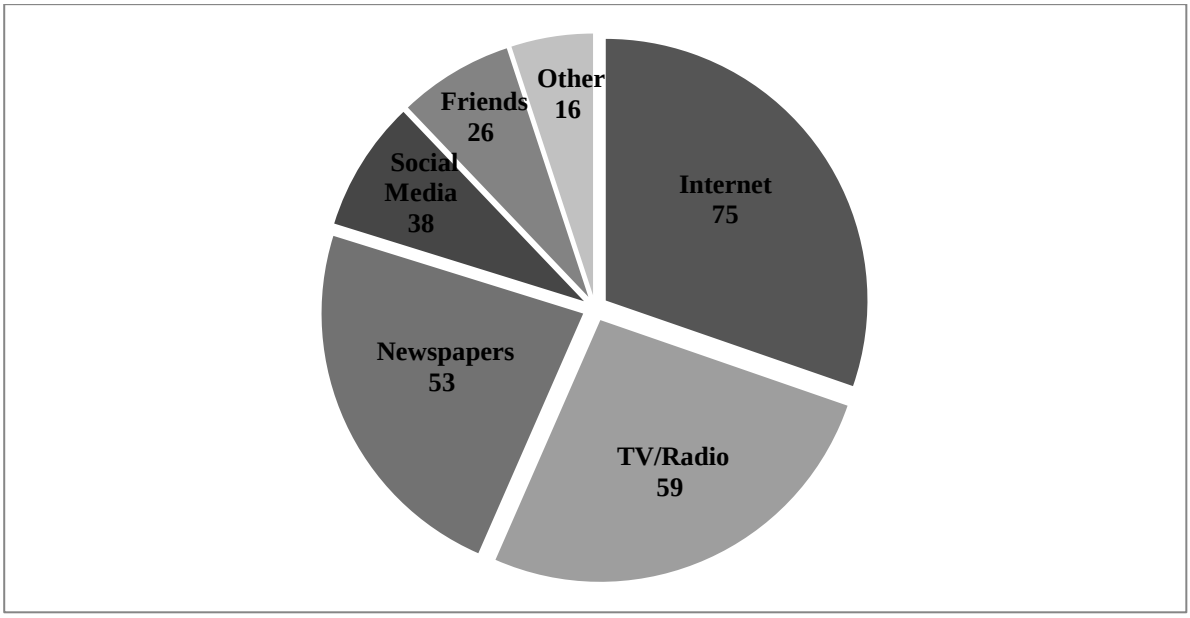

Figure 6.6: Q-P information sources per number of respondents

Source: Own compilation.

The internet was chosen by 75 respondents (28.09%) as their preferred source of information about the world. This was followed by TV/Radio with 59 respondents (22.1%) and newspapers with 53 respondents (19.85%). Social media and friends as sources of information were selected by 38 respondents (14.23%) and 26 respondents (9.74%) respectively. These five categories of information sources are predominantly on the Litany and Social Causes Levels of Knowing. The category "Other" was chosen by 16 respondents who cited the following as sources of information in terms of their Levels of Knowing:

- Litany level:
  - "All of the above"; "very mixed bunch"; "family"; "travel observations"
- Social Causes level:
  - "Podcasts"; "academic papers"; "websites, blogs and specialists"
- Discourse-Worldview level:
  - "Extensive scanning"; "expert networks"; "journals"; "research papers"; "scientific books"; "futurist work"

- Myth-Metaphor level:
  - "Belief system"; "pure instinct"

6.2.3 MILES analysis and findings

6.2.3.1 Future consciousness

All the respondents showed that they have a general future consciousness by thinking about the future when asked about their feelings on the future of the world. Also, they could articulate a disposition towards the global future and create images of a probable global future (Table 6.3).

Table 6.3: Q-P future consciousness theme

	Q-P respondents (99)
Futures Thinking	General thinking about the future Feelings about the future Images of the future
Futures Disposition	**O-H Group – 56** Optimism (30) Hope (26) **P-F Group - 31** Pessimism (23) Fear (8) **N-F Group - 5** No specific feelings (5) **O-Group - 7** Other (7)
Futures Image	**G-F Group - 61** Good probable future (61) **B-F Group - 34** Bad probable future (34)
Disposition Change	Not measurable

Source: Own compilation.

The process dynamics of the respondents' disposition towards the future suggested that the SELF of the O-H group was optimistic-hopeful while the SELF of the P-F group was pessimistic-fearful of

the future. The SELF of the N-F group was undecided. However, based on the earlier assumption that the N-F group supported the O-H group in the Follow-Up Question, favouring the Good Future, it could be argued that the SELF of the N-F group supported the optimism-hopeful disposition towards the future.

It is posited that the O-H group and the N-F group (collectively the Good Future group – G-F group) had an inert mental state-IID in support of a good probable future for the world. This suggests that the process dynamics of the G-F group most likely have a synergetic interrelationship between the three types of tapping activity systems, viz. the outward-directed, inward-directed and self-directed tapping systems, which supports a favourable disposition towards the future of the world. This means that the respondents of the G-F group scan the reality dimension of the SED contextual environment in terms of the STEEP areas of focus, and obtain information that creates mental constructs that make the respondents feel optimistic and hopeful about the probable future.

The P-F group together with at least three respondents from the O-group who expressed negative feelings in terms of the global future, collectively called the Bad Future group (B-F group) had an inert mental state-IID in support of a bad probable future for the world. This suggests that the process dynamics of the B-F group most likely have a synergetic interrelationship between the three types of tapping activity systems, which supports a negative disposition towards the future of the world. This means that the respondents in the B-F group scan the reality dimension of the SED contextual environment in terms of the STEEP areas of focus, and obtain information that creates mental constructs that make the respondents feel pessimistic and fearful about the probable future.

The specific underlying reasons for the respondents' futures disposition (e.g. specific global challenges or opportunities) and possible disposition changes could not be determined due to the situational contingencies of the QuestionPro survey, as discussed in §3.5.3.1.

6.2.3.2 Knowledge, judgement and foresight

The majority of the respondents had poor knowledge, judgement and foresight of the global future, which means their knowledge in this regard only had superficial depth, as it relates to their coverage of global events and the STEEP areas of focus (Table 6.4). The respondents knowledge bases were appraised on their environmental scanning scope, levels of knowing, reality dimensions and quality of information.

Table 6.4: Q-P respondents rating on knowledge and foresight

KNOWLEDGE	Bad	Poor	Average	Good	Excellent
ES Scope			X		
ES Modes	Not measured				
Levels of knowing		X			
Reality Dimensions		X			
Information Quality		X			
FORESIGHT					
Foresight		X			

Source: Own compilation.

The process dynamics of 94% of the respondents' scope of scanning regarding the SED global contextual environment are predominantly average, with a limited depth of inquiry. In this regard, the scanning scope is wide-ranging in the public domain as determined by the respondents' information sources, i.e. the internet, TV/Radio, newspapers, social media and friends. The specific areas of coverage are unknown but could include most STEEP areas as indicated under the ES-STEEP question.

The remaining 6% of the respondents had a poor scope of scanning due to their narrow domain-specific scanning of the SED contextual global environment, as indicated by them in the "Other" category of information sources. On average, the respondents collectively covered the SED global contextual events comprehensively while the wide scanning scope enhanced their knowledge base about the SED global contextual environment, albeit with a limited depth in their inquiry. The respondents' modes of scanning could not be determined due to the situational contingencies with the QuestionPro questionnaire.

Scanning for information in terms of the levels of knowing indicated that 94% of the respondents primarily accessed the Litany Level of Knowing, albeit not necessarily restricted to only this level of knowing. In this regard, the respondents' scanning of the levels of knowing was indicated as the internet (in general terms), TV/Radio, newspapers, friends and social media. These respondents, therefore, achieved poor ratings for their levels of knowing. This means they access information on levels with only superficial depth.

The 6% of respondents who provided specific examples of information sources in the "Other" category indicated the following levels of knowing in relation to the total responses:

- Litany Level: 1.5%
- Social Causes Level: 1.5%

- Discourse-Worldview Level: 2.3%
- Myth-Metaphor Level: 0.75%

The implication is that only 3.05% of the respondents actually accessed the deeper levels of knowing, i.e. the Discourse-Worldview and Myth-Metaphor Levels of Knowing. These respondents, therefore, achieved average to good ratings for their levels of knowing, i.e. they accessed information on levels with some depth in the inquiry. The balance of the respondents in the "Other" category usually accessed the Litany and Social Causes Levels of Knowing, which are devoid of depth in the inquiry when scanning for information.

The reality dimensions accessed by 96.95% of the respondents were generally poor regarding the SED global contextual environment. This was deduced from the respondents' scanning of information sources primarily on the Litany Level of Knowing. These sources of information mostly cover global events in the SED-IED quadrants of the reality dimensions. The CID-IID reality dimensions was accessed by the 3.05% of the respondents who scanned information sources on the deeper levels of knowing, which means they achieved average to good ratings.

The quality of information scanned by 96.95% of the respondents achieved a poor rating. This was based on the respondents' scope of scanning, levels of knowing and reality dimensions where the characteristics of the information were mostly a combination of distorted and factual information that provided superficial depth of the SED global contextual environment. The 3.05% of the respondents who used information sources on the deeper levels of knowing and the internal dimensions of reality could access information with mostly factual characteristics and, to some extent, possibly also concealed information. They, therefore, achieved average to good ratings on the quality of their information.

The respondents' foresight of the SED global contextual environment could not be determined directly due to situational contingencies with the survey. However, a determination could be made indirectly based on the interrelationship of the scope of scanning and the characteristics of information within the context of judgement and foresight, as explained in §2.4.2 and illustrated in Figure 2.11. In this regard, 96.95% of the respondents had a public scanning scope, obtaining information from the contextual environment, with characteristics that are mostly a combination of distortion and facts. Also, public scanning was primarily on the Litany Level of Knowing where the depth of the inquiry is superficial. Therefore, it can be concluded that these respondents most likely have poor judgement and foresight of the SED global contextual environment.

The 3.05% of the respondents who scanned information on the deeper levels of knowing and who had access to information with mostly factual characteristics and possibly also some concealed information, will have better judgement and foresight, albeit not necessarily of the complete SED global contextual environment due to their narrow scope of scanning.

6.3 SECONDARY SURVEY: TELEFÓNICA-FINANCIAL TIMES

6.3.1 Introduction

Telefónica together with Financial Times (T-FT) conducted the 2013 Global Millennial Survey. The survey commissioned 12 171 online quantitative interviews among people aged between 18 and 30 years residing in 27 countries in North America, Latin America, Western Europe, Central and Eastern Europe, Asia, the Middle East and Africa. The purpose of the study was to "look at the hopes, fears and dreams of the millennial generation" (Telefónica, 2013). Penn Schoen Berland conducted the survey from 11 January to 4 February 2013. Country sample sizes represented in the global number were weighted by the percentage of the population in each country with access to the internet. The global margin of error (MOE) was given as +/-0.9% (Appendix J).

The 2013 Global Millennial Survey asked 190 questions of which 41 questions related to the research question of this study. In this regard, 12 survey questions related to the futures consciousness category, four questions related to the levels of knowing category, six questions related to the sufficient knowledge category, nine questions related to the good judgement and foresight category, and 10 questions related to the actionability category of the research question.

6.3.2 Qualitising narrative

The future consciousness of the respondents was revealed by eight survey questions. These questions surveyed the following:

- Life Satisfaction
- 10-Year Future Image
- Future Disposition
- Future Quality of Life
- Future Concerns.

The respondents' Life Satisfaction (Figure 6.7) indicated that the majority (80%) had a positive disposition towards life. In this regard, 56% of the respondents said that they were "somewhat satisfied" while 24% said that they were "very satisfied with life. The respondents who had a negative Life Satisfaction indicated that they were "not very satisfied" (18%) while 2% said that they were "not at all satisfied" with life.

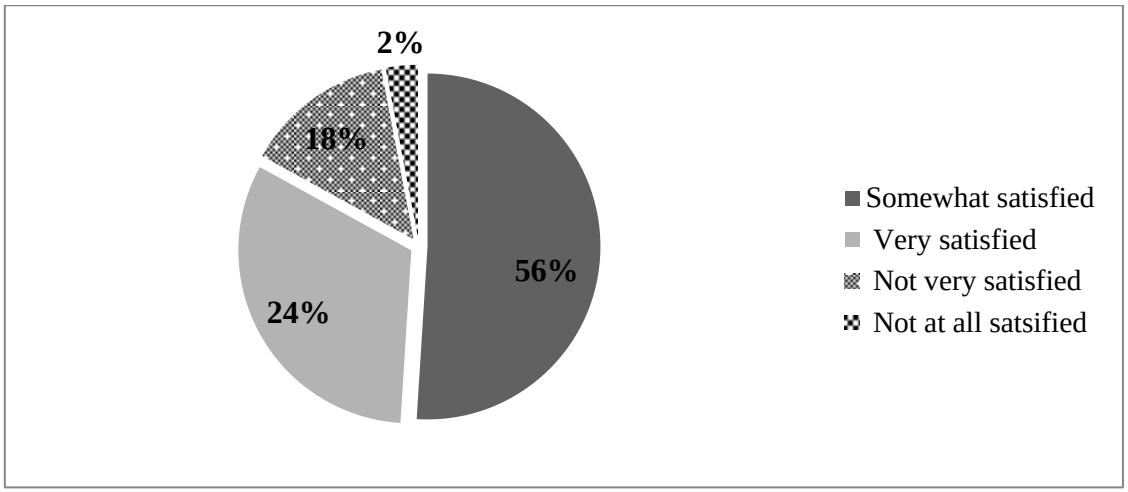

Figure 6.7: T-FT life satisfaction percentage of respondents

Source: Own compilation.

The respondents' 10-Year Future Image suggested that the majority (75%) had some image of where they wanted to be in the long term. In this regard, 49% "somewhat agreed" and 26% "strongly agreed" that they knew exactly where they wanted to be in 10 years' time. The respondents who could not imagine their long term future indicated that they "somewhat disagreed" (19%) or "strongly disagreed" (6%) on knowing exactly where they would be in 10 years' time.

The respondents' Futures Disposition (Figure 6.8) indicated that the majority (83%) had an optimistic disposition towards their personal future. Here, 51% said that they were "somewhat optimistic" while 32% said that they were "very optimistic" about their future. The respondents with a negative disposition towards their personal future said that they were "somewhat pessimistic" (14%) or "very pessimistic" (3%) about their future.

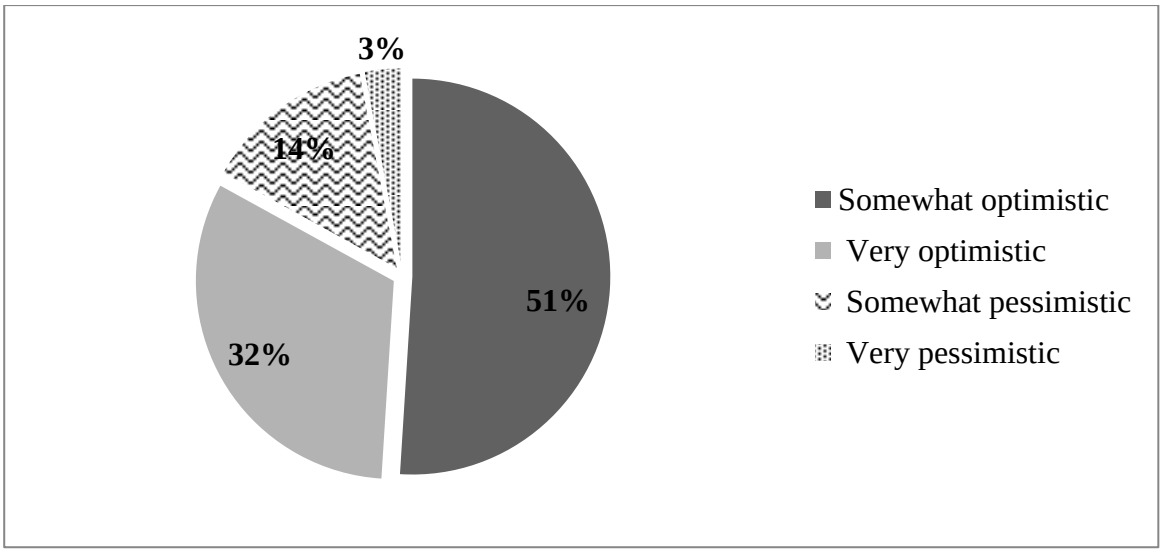

Figure 6.8: T-FT futures disposition percentage of respondents

Source: Own compilation.

The respondents' Future Quality of Life (Figure 6.9) indicated that just over half of them (52%) thought that the quality of life of the next generation or that of their children would be worse than their current quality of life.

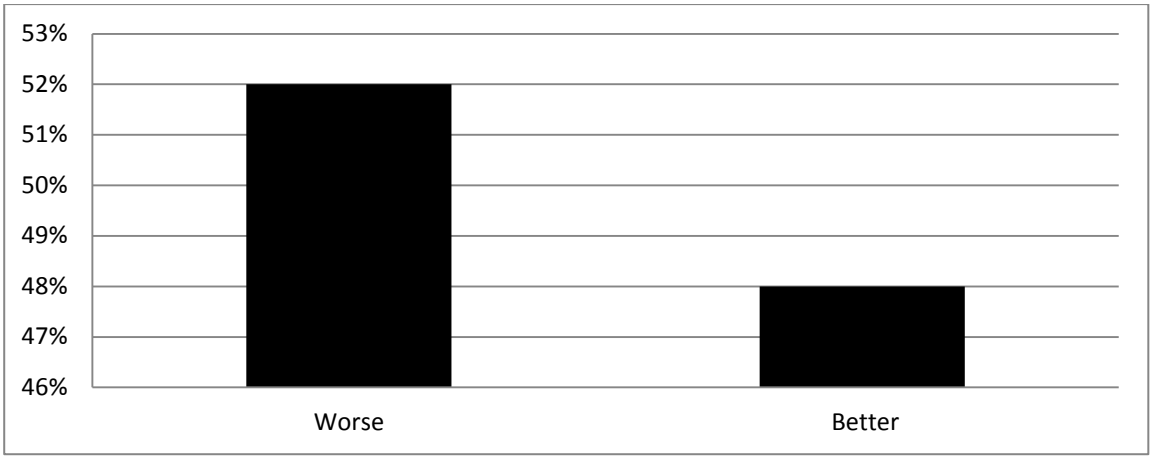

Figure 6.9: T-FT respondents' future quality of life

Source: Own compilation.

The survey determined the respondents' Future Concerns by asking them to identify the three key issues that concerned them most when thinking about the future. The respondents on average identified various personal issues (70%), followed by issues in the global contextual environment (30%) as the most concerning issues for the future. A related question prompted the respondents to identify the most important current issue facing the world (Figure 6.10). In this regard, the following global issues were identified: the economy (20%), social inequality (16%), the environment (13%), poverty (12%), political unrest/instability (11%), terrorism (7%), and war (6%). Just over half of the respondents (52%) also indicated that the global economy was heading in the wrong direction while 90% believed that issues of environmental conservation and climate change needed urgent attention.

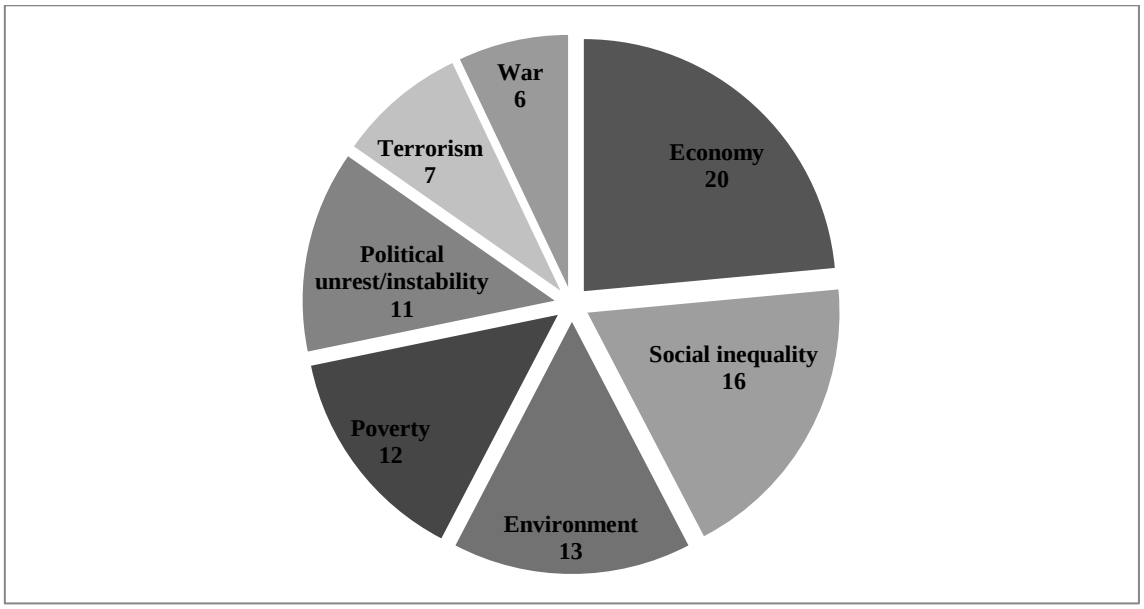

Figure 6.10: T-FT global challenges

Source: Own compilation.

The respondents' information sources and activities were revealed by five survey questions. These questions surveyed the following:

- Online activities
- Sources of general information
- Sources of in-depth coverage of social issues
- Sources of credible coverage of news
- Sources of developing news stories.

The respondents' online activities mostly consisted of surfing websites (79%). This was followed by social media (66%), shopping (61%), reading (56%) and research (54%). The respondents indicated that most of their general information (Figure 6.11) was obtained by using search engines (58%) and from personal interaction (on average 55%) with friends, family and colleagues. This was followed by sourcing information from the TV (47%), social media (46%), newspapers/magazines (36%), news-websites (29%), critic-reviewed websites (19%) and peer-reviewed websites (18%).

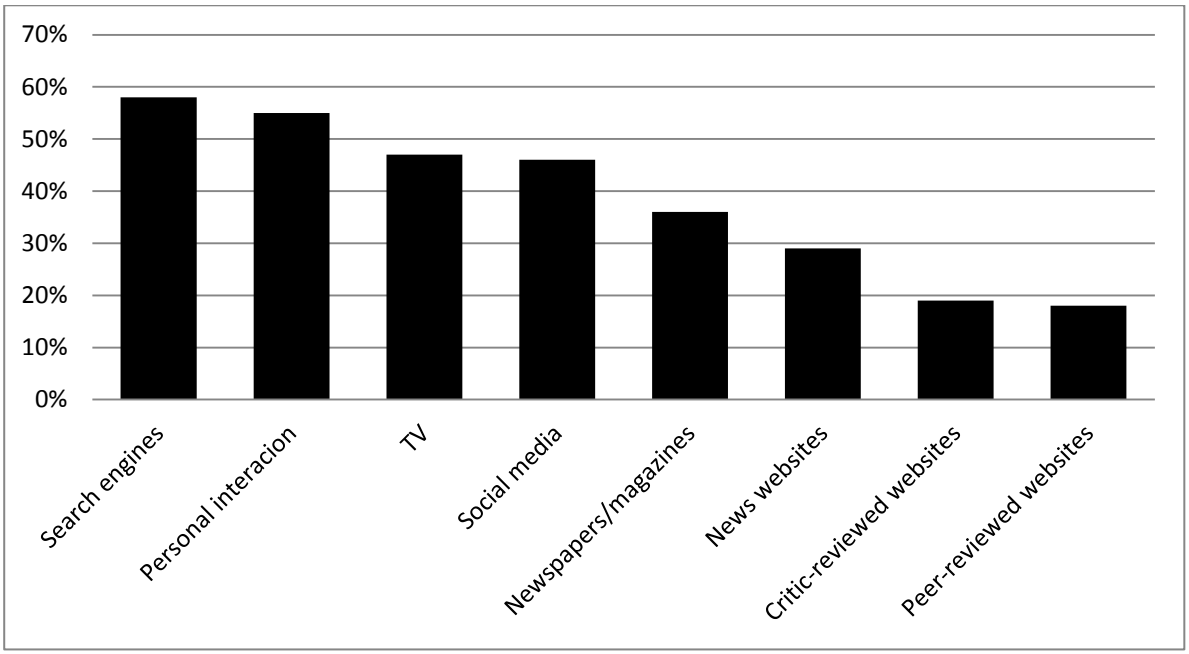

Figure 6.11: T-FT respondents' general information sources

Source: Own compilation.

The respondents indicated that their best sources for credible coverage of news were the internet (37%) and TV (36%), followed by printed newspapers/magazines (15%) and social media (8%). The utilisation of the internet increased to 45% when information on a developing news story or crisis was sought. This was followed by TV (34%), social media (9%) and printed newspapers/magazines (8%). The respondents' best source of information on in-depth social issues was the internet (44%), TV (26%), printed newspapers/magazines (14%) and social media (13%).

The respondents' disposition towards creating a better world was measured by six questions, which centred around ways to make a difference in the world on a local or global level. The majority of the respondents (60%) did not believe that they could make a global difference while 51% indicated that one person cannot make a global difference. Furthermore, 59% of the respondents said that it was more important to support a local cause than a global cause, with 62% indicating that they believed they could make a difference on a local level. The majority of the respondents (69%) said that it was more important to donate time rather than money when contributing towards creating a better world.

The respondents were also requested to indicate three of the most important ways to make a difference in the world. The three top responses were:

- Improving the access to and quality of education (42%)
- Protecting our environment (41%)
- Eliminating poverty (39%).

The majority of the respondents (71%) said that they participated in their countries' political processes. Of these respondents, 43% sometimes participated while 28% always participated. Nonetheless, 54% of the respondents were of the opinion that one person's participation in their country's political system would not make a difference.

6.3.3 MILES analysis and findings

6.3.3.1 Future consciousness

The Respondents have a relatively well-developed future consciousness. In this regard, they expressed their views in terms of their life satisfaction, the concerns they have about the future, their futures disposition, the quality of life in the future, and a 10-year image of the future (Figure 6.6).

Table 6.5: T-FT future consciousness theme

	T-FT respondents (12171)
Futures Thinking	Life satisfaction 10-year futures image Future quality of life Future concerns
Futures Disposition	**Optimism (83%)** Satisfied with life (80%) Somewhat optimistic (51%) Very optimistic (32%) Know long term personal future (75%) **Pessimism (17%)** Dissatisfied with life (20%) Somewhat pessimistic (14%) Very pessimistic (3%) Do not know long term personal future (25%)
Futures Image	**Probable Future** Quality of life will be worse in future (52%) Quality of life will be better in future (48%) **Future issues of concern** Personal challenges (70%) Global contextual challenges (30%)
Disposition Change	Future Optimism 83% but better Future Quality of Life 48% Future Pessimism 17% but worse Future Quality of life 52%

Source: Own compilation.

The process dynamics of the respondents' general futures disposition suggested that the SELF of the majority of the Respondents (80%) was satisfied with their lives and had an optimistic (83%) outlook about their future. Only 20% of the respondents were dissatisfied with their lives and expressed a pessimistic (17%) futures disposition. The optimism of the SELF towards the future

also supported the majority's (75%) SELF image of their long-term future in that they could imagine where they would be in 10 years' time.

However, the inert mental state-IID of the respondents as it related to the probable future did not support the current optimism of the respondents' SELF. In this regard, the majority of the respondents (52%) imagined the probable future of their children and the next generation as worse than the current situation. The reasons for this apparent change in disposition could be related to the future concerns expressed by the respondents where 70% raised various personal issues (transactional environmental issues) while 30% raised various issues in the SED global contextual environment. The process dynamics of the respondents as these related to their futures image were, therefore, predominantly inward-directed towards the inert mental state-IID and the SELF and less outward-directed regarding the SED global contextual environment.

It is posited that the respondents' scanning of the SED contextual environment may have influenced their inert mental state-IID to view the probable future less favourably than the optimism that their SELF held. In this regard, the synergetic interrelationship between the three types of tapping activity systems of the respondents, viz. the outward-directed, inward-directed, and self-directed tapping systems, most probably changed the respondents' image of the probable future when their transactional environment was evaluated against the SED contextual environment. This suggests that three of the most important SED contextual issues raised by the respondents as concerns, viz. the economy (20%), social inequality (16%) and poverty (12%), could have directly or indirectly influenced the respondents' disposition regarding their concerns with personal issues. These issues included "my life trajectory/future" (41%), "my personal finances" (40%), and "my career ambitions" (26%). This means that the respondents linearly projected their current concerns as the probable future based on what they had learned through scanning the SED global contextual environment.

6.3.3.2 Knowledge, judgement and foresight

The respondents had relatively poor knowledge, judgement and foresight of the global future, which means there was superficial depth in the inquiry (Table 6.6). This appraisal of their knowledge base was based on their environmental scanning scope and modes, levels of knowing, reality dimensions and quality of information.

Table 6.6: T-FT respondents rating on knowledge and foresight

KNOWLEDGE	Bad	Poor	Average	Good	Excellent
ES Scope			X		
ES Modes			X		
Levels of knowing		X			
Reality Dimensions		X			
Information Quality		X			
FORESIGHT					
One-dimensional		X			

Source: Own compilation.

The process dynamics as these related to the respondents' scope of scanning regarding the SED global contextual environment were predominantly average to good, which meant it had limited or some depth in the inquiry. In this regard, the scanning scope was wide-ranging in the public domain as determined by the respondents' information sources that they accessed for information about the world, i.e. the internet, TV, printed newspapers/magazines and social media. It was assumed that the respondents covered most if not all STEEP areas as they indicated that their online activities consisted generally of surfing websites but specifically also reading and doing research.

The process dynamics relating to the respondents' utilisation of the scanning modes regarding the SED global contextual environment were predominantly average, with limited depth in the inquiry. The respondents mostly utilised the viewing modes, i.e. surfing websites (79%), social media (66%) and shopping (61%), which mostly led to information creation. The respondents also utilised the searching modes, i.e. doing research (54%) and reading (56%), which mostly led to knowledge creation.

The respondents' levels of knowing regarding the SED global contextual environment were predominantly poor, with superficial depth in the inquiry, because they mostly engaged in public scanning on the Litany Level of Knowing. In this regard, information on specific SED global contextual developments ("best sources for credible news") was obtained from the internet (37%), TV (36%), printed newspapers/magazines (15%) and social media (8%). The Litany Level of Knowing also predominated when the respondents scanned for information on in-depth social issues. Here, TV (26%), printed newspapers/magazines (14%) and social media (13%) collectively provided 53% of the information. It was also assumed that the Social Causes and Discourse-Worldview Levels of Knowing were accessed as the respondents indicated that 54% of their online activities also consisted of research. However, it is not clear whether the research covered the

SED global contextual environment or specific narrow focused areas of interest. The research was not specified but it was assumed that such research included the 18% of respondents who indicated that peer-reviewed websites were a source of information.

The reality dimensions accessed by the respondents were generally poor regarding the SED contextual global environment, which means the reality dimensions only had superficial depth in the inquiry. This was deduced from the respondents' scanning of public information sources, which were primarily on the Litany Level of Knowing. These sources of information mostly covered global events in the SED-IED quadrants of the reality dimensions. Researching specific areas of interest may also have covered the CID and IID quadrants; but this was not clear from the survey results. Therefore, the respondents knowledge base mostly had to contend with information about the external dimensions and possibly also some information about the internal dimensions that gave rise to the external developments.

The reality dimensions of the SED global contextual environment that were scanned by the respondents in terms of the STEEP areas of focus were not explicitly mentioned because it was not specifically asked in the survey. Nevertheless, a deduction could be made regarding the STEEP areas in terms of the future concerns raised by the respondents. The STEEP areas of focus appeared to be:

- Social (28%): social inequality (16%) and poverty (12%)
- Political-security related (24%): political unrest/instability (11%), terrorism (7%) and war (6%)
- Economy (20%)
- Environment (13%).

The quality of information scanned by the respondents would be poor, with superficial depth in the inquiry, because of their limited levels of knowing and the limited reality dimensions scanned for information. In this regard, the characteristics of information from the internet, TV, printed newspapers/magazines and social media would mostly be a combination of distortion and facts that provided superficial depth of the SED global contextual environment. Those respondents who undertook research might had access to better quality information but the nature of such research is unknown with regard to the SED global contextual environment.

The majority of the respondents' foresight was one-dimensional and generally poor regarding the SED contextual global environment. In this regard, the respondents identified the present SED contextual global challenges as the economy (20%), social inequality (16%), the environment (13%), poverty (12%), political unrest/instability (11%), terrorism (7%) and war (6%), with 52% believing that the global economy was heading in the wrong direction. Although the respondents did not directly link these global challenges to their image of a probable future, it is plausible to posit that the respondents linearly projected the current global challenges into the future to arrive at their conclusion that the quality of life will be worse in the probable future. This also meant that

they did not foresee possible alternative ways the future could develop. Given the respondents' relatively poor knowledge base regarding SED contextual global developments, they had a limited capacity for making judgements about the global future.

In summary, the knowledge base, judgement and foresight of the global future of the majority of the respondents were poor, with superficial depth, mainly because of limitations with their levels of knowing, reality dimensions and the quality of their information in terms of the SED global contextual environment.

6.3.3.3 Actionability

The respondents did not give a direct opinion on the state of the world, but it could be deducted from their answers to the survey questions on the most important issues facing the world as well as the future direction of the global economy that they at least viewed the state of the world as ambiguous (Table 6.7).

Table 6.7: T-FT respondents rating on actionability

State of the world	**Acute**	**Dismal**	**Ambiguous** X	**Good**	**Excellent**
Whose responsibility	**Individual** X (Local)	**Society** X (Local)	**Government** X (Global)	**International** X (Global)	**All**
Own contribution	**None**	**Passive: Job**	**Passive: Society** X+ (Local)	**Active: Job**	**Active: Society** X- (Local)

X- : Limited X: Generally X+: Mostly ( ): Focus areas

Source: Own compilation.

The respondents' disposition towards creating a better world favoured contributing on a local level and not a global level. In this regard, 60% of the respondents had an inert mental state-IID that a contribution on a global level would not make a difference while 62% believed that a difference could be made on a local level. Although the respondents did not explicitly indicate who should take responsibility for creating a better world, it is deduced that this responsibility is shared between individuals acting on a local level and governance structures acting on a global level. This conclusion was based on the answers to the question on the three most important ways to make a difference in the world. These three answers drew the most responses, and can be seen as the primarily domain of national and global governance structures:

- Improving the access to and quality of education (42%)
- Protecting our environment (41%)

- Eliminating poverty (39%).

The respondents also provided these solutions, which would be achievable by individuals and their collectives on a local level:

- Providing basic food and shelter to people (24%)
- Promoting sustainable energy (24%)
- Helping people live healthier lives (23%)
- Fighting for human rights (22%)
- Research to cure disease (22%).

The respondents did not indicate whether they were actually contributing to create a better world in terms of the areas they have identified on the local level. However, 71% of the respondents did indicate that they participated in their countries' political processes. It can, therefore, be assumed that their contributions to create a better world were at least passive at the local level. A lack of active contribution to create a better world from the local perspective probably resulted from 54% of the respondents' disposition that "one person's participation does not make a difference" regarding their countries' political systems. Also, the respondents were more concerned about their personal challenges in the transactional environment (70%) than the global contextual environment (30%), which enhanced their focus on the local level issues.

6.4 CONCLUSION

The respondents of both surveys show a general future consciousness as they clearly thought about the future and could express various feelings. Both groups generally had an optimistic futures disposition with the QuestionPro respondents being optimistic-hopeful and the T-FT respondents showing great optimism. However, the two groups differed on their images of a probable future. Here, the QuestionPro respondents had images of a good probable future in contrast to the respondents of the T-FT survey who had images of a pessimistic probable future.

The respondents did not have sufficient knowledge to develop good judgement and foresight of the global future. While their scanning scope was wide-ranging within the public domain, their knowledge base was limited as they mostly scanned the superficial Litany Level of Knowing for information. Also, they mostly scanned the external dimensions of reality with limited information on the interior dimensions that give rise to developments in the global contextual environment. In addition, the quality of their information was characterised by a mixture of distorted and factual information.

The disposition of the QuestionPro respondents towards imagining and pursuing more sustainable alternative futures are unknown as this could not be determined by the survey. The disposition of the T-FT respondents towards imagining and pursuing more sustainable alternative futures was influenced by a belief that they could not make a difference on a global level. However, they could

make a difference on a local level to create a better world. Such local level contributions appeared to be mainly passive in nature.

CHAPTER 7

DISCUSSION: MEASURING, IMAGINING AND MAKING THE FUTURE

7.1 INTRODUCTION

This chapter discusses the analyses and findings of the interview and survey inquiries within the context of measuring, imagining and making the future as it relates to the contextual framework and the MILES approach. Each inquiry is discussed separately in accordance with the research design that follows two specific strands, namely the qualitative and quantitative strands. The discussions represent the inferential stage of each strand. Next, the two strands are fused to conclude this chapter with the meta-inferences that are developed from the inferences of the separate strands. In this way, the complementary strengths of each strand (qualitative and quantitative) are utilised to enhance insight, depth and understanding of the research problem to adequately answer the research question.

The holistic futures thinking process forms the basis of each discussion as it relates to the contextual framework and the MILES approach. In this regard, measuring the future will be discussed in terms of the knowledge perspective within the context of the environmental scanning scope and modes, the levels of knowing, the reality dimensions and the quality of information. Imagining the future will be discussed in terms of the future consciousness perspective within the context of futures thinking, futures disposition and futures images. Making the future will be discussed in terms of the actionability perspective within the context of perceptions of the state of the world, the locus of responsibility for creating sustainable alternative futures and the disposition towards making a contribution to create a better future world.

7.2 INTERVIEW CASE- AND THEME-ORIENTED PERSPECTIVE

7.2.1 Measuring the future: Knowledge perspective

The interviewees' measuring of the future is discussed within the context of their knowledge base. Sufficient knowledge to have good judgement and foresight of the global future is obtained through a holistic environmental scanning methodology posited as Constructive Environmental Scanning (CES). Holism in environmental scanning is achieved in the following ways: (a) an extensive scope of scanning by utilising all the scanning modes in an effective and balanced way, (b) scanning the deeper levels of knowing to overcome the problems associated with the superficial levels of knowing, (c) having an integral approach of scanning both the external and internal dimensions of reality, and (d) obtaining information of a high quality.

A holistic approach turns environmental scanning into a learning tool to create knowledge and understanding about the future; it leads to good judgement and foresight of the future and reduces the uncertainty and remoteness of possible future events. However, these attributes of

environmental scanning will only be realised if it is done proficiently, intelligently, effectively, comprehensively, in-depth and with a consciousness for what is not seen in the contextual environment (holistic peripheral vision). Also, environmental scanning must be done on a higher level of knowledge creation and not on a lower level of information creation.

7.2.1.1 Scope and mode of environmental scanning

The interviewees' environmental scanning scope was not comprehensive enough to bring about the necessary learning required for knowledge creation. The environmental scanning scope of the majority of the interviewees (two ESPs: I-B, I-D; and four Non-ESPs: I-H, I-J, I-K, I-L), were poor, i.e. they have a superficial depth. One ESP (I-E) had a bad rating, which meant that there was no depth in the inquiry. This resulted from their narrow public and domain-specific scanning, which was also limited to only a few STEEP areas of focus. Also, these interviewees had no or only limited discussions with other people to broaden their narrow perspective on global developments. Although the ESPs did have some discussions within a company context, these discussions were by their own admission limited to the narrow, domain-specific areas of focus, and did not have a wider global contextual scope.

The consequences of their narrow scope are their limited view and perspective of developments in the global contextual environment. There are too many areas that they do not see or know about, i.e. they lack holistic peripheral vision. The implications are that they will be unable to analyse how different contexts on a global scale could possibly interact or to determine accurately how these contexts and related trends intersect, interact and change direction, even as these relate to their narrow focus areas. As a result, they will fail to develop holistic perspectives of contextual global developments which leaves them open to contextual surprises.

Those interviewees with average to good ratings (two ESPs: I-C, I-F; and one Non-ESP: I-G) generally had wide public and/or domain-specific environmental scanning scopes (albeit not covering all the STEEP areas of focus) while also engaging with other people more comprehensively in discussions on contextual global developments. They had the advantage of a broader perspective of developments in the global contextual environment, which was only moderated by their lack of scanning all the STEEP areas of focus. Their holistic peripheral vision was not comprehensive enough. They lacked the necessary STEEP information to determine how different contexts and related trends intersected, interacted and changed direction. Hence, their analysis of contextual global developments will be less accurate and leave them vulnerable to discontinuities in the contextual environment.

The marginal qualitative difference between the ESPs and Non-ESPs regarding their environmental scanning scope is noteworthy. Although it was expected that ESPs would have narrow, domain-specific areas of focus, they should at least have scanned the public domain with a wider scope that included all the STEEP areas of focus. Such an approach would empower them

to contextualise the developments in their narrow focus areas more accurately against the backdrop of the wider contextual global situation. They would then be better equipped to determine how different contexts and related trends intersected, interacted and changed direction to impact their focus areas of responsibility. This will provide them with the necessary contextual depth to have good judgement and foresight.

The inadequate environmental scanning scope was complicated by a poor utilisation of the scanning modes by the majority of the interviewees. Six interviewees (three ESPs: I-C, I-D, I-E; and three Non-ESPs: I-G, I-J, I-K) used the scanning modes poorly and mostly engaged in undirected viewing to obtain information on the contextual global environment. The undirected viewing mode was not conducive to develop a sufficient knowledge base because it was a passive form of scanning, i.e. casual and unfocused, too general in nature and leading to an information overload where information was discarded relatively easily and quickly.

These interviewees, therefore, were susceptible to an information overload due to their passive scanning approach. The result was an emphasis on information creation rather than knowledge creation, which increased their perceived uncertainty and complexity of the contextual environment while decreasing their understanding of it. This means their sense-making ability was reduced by the information overload that resulted from their passive scanning. This situation created a negative feedback loop of information creation and information destruction in an effort to make sense of the causality of developments in the contextual environment (Figure 7.1).

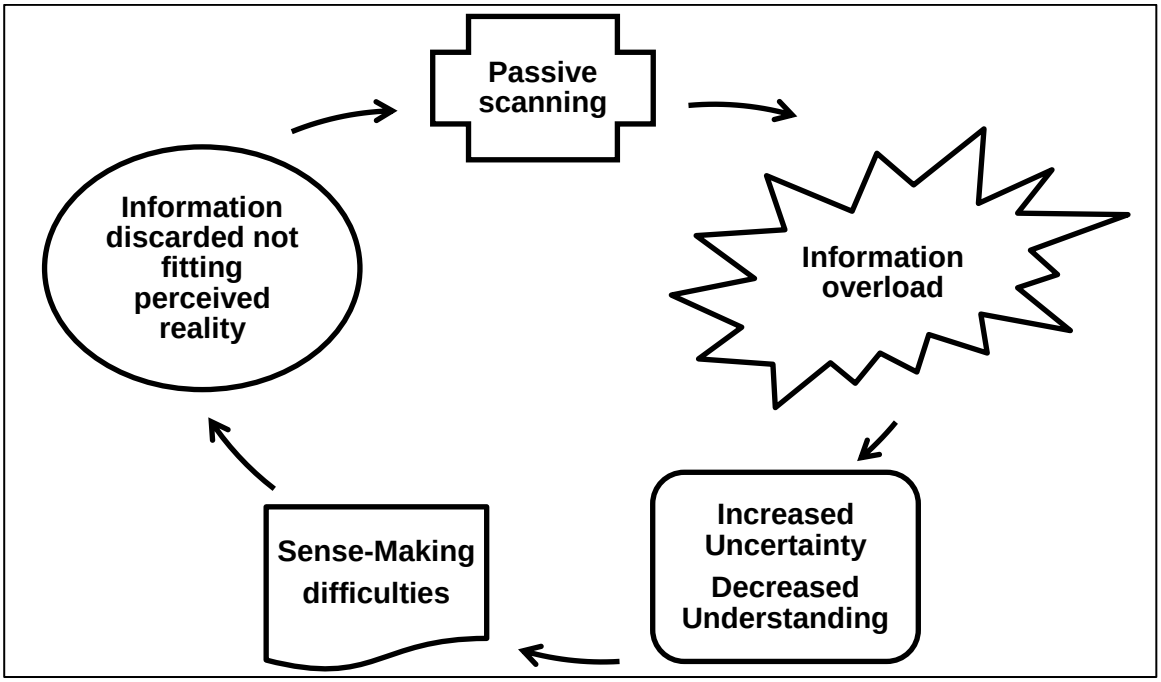

Figure 7.1: Passive scanning negative feedback loop

Source: Own compilation.

The interviewees' passive scanning mode was only beneficial for peripheral vision of weak signals on the contextual global horizon if used in support of the searching modes by moving progressively in a structured way from the viewing to searching modes. However, the interviewees did not follow this approach and used the searching modes only occasionally to either fill information gaps or to explore general issues of interest. Furthermore, the information overload associated with their undirected viewing mode complicated sense-making of any significant weak signals they might have encountered. Also, peripheral vision of weak signals demands greater environmental scanning vigilance. In this context, the interviewees' passive approach precluded such scanning vigilance.

The four interviewees (two ESPs: I-B, I-F; and two Non-ESPs: I-H, I-L) with average to good ratings for the utilisation of the scanning modes balanced the viewing and searching modes adequately, albeit with more emphasis on the viewing modes. Their stronger emphasis on the viewing modes remained problematic in their environmental scanning methodology and in their creation of a knowledge base about the global future. The problems associated with information overload would have a negative impact on their sense-making abilities to gain an understanding of the contextual global developments. Nevertheless, their more extensive utilisation of the searching modes would to some extent moderate the problems associated with the viewing modes because it was done proactively and it required formal methodologies to obtain information. Therefore, they were in a better position to achieve knowledge creation through their environmental scanning approach than the interviewees with poor ratings.

There is no qualitative difference between the ways in which the ESPs and Non-ESPs used the environmental scanning modes. However, the ESPs were more inclined to use the searching modes due to their occupational requirements while the Non-ESPs would engage in the searching modes to obtain a better understanding of the issues that generally interested them in the contextual global environment. The majority of the ESPs predominantly utilised the undirected viewing mode of scanning, which was unexpected. It was assumed that ESPs, by nature of their occupation, would be highly proficient in the environmental scanning modes and that they would move progressively in a structured way from the viewing modes to the searching modes to create knowledge rather than information.

7.2.1.2 Levels of knowing

The knowledge base of the interviewees was also determined by the levels of knowing that were accessed through the environmental scanning methodology. It is posited that the interviewees' insufficient knowledge base also resulted from their excessive scanning of media sources on the Litany Level of Knowing with limited scanning on the deeper levels of knowing for information about the contextual global developments. Too much reliance on information from the Litany Level of Knowing is not conducive for them to develop sufficient knowledge about the global future.

The media information on the Litany Level of Knowing lacked depth in the inquiry due to a narrative fallacy problem underlying media reporting. The media narrative fallacy is analogous with Taleb's (2008: 63) narrative fallacy that influences people's mental constructs. In this regard, the media over-interprets and then over-simplifies events by weaving stories around the facts to develop an understanding of its causes, which is then presented as reality. The media, therefore, removes the complexity of causes of developments by forging a logical link upon the facts to enhance understanding of global events. These media distortions become the unquestioned view of reality for those who predominantly scan the media for information on global developments.

Six of the interviewees (three ESPs: I-D, I-E, I-F; and three Non-ESPs: I-G, I-J, I-L) were greatly exposed to the media Litany Level of Knowing problem as they primarily scanned the general media to obtain an overview of contextual global developments. Although all of them had an awareness of the Litany Level of Knowing problems associated with the media, only the three Non-ESPs (I-G, I-J, I-L) also accessed the Social Causes Level of Knowing in an effort to moderate possible distortions in media reporting by looking for deeper perspectives. Nevertheless, such an approach did not deepen the knowledge base of these Non-ESPs because, as Inayatullah (2009: 8) posited, the explanations and analyses on the Social Causes Level of Knowing failed to deepen the inquiry beyond the prevailing paradigms that frame societal problems. The three ESPs (I-D, I-E, I-F) who scanned the media to get an overview of contextual global developments but without accessing any deeper levels of knowing were confined to the lower level of information creation. As a result, their understanding of the forces and factors that influenced the contextual environment remained limited while their perceived uncertainty and complexity of the contextual environment continued to complicate their sense-making.

Two interviewees (ESPs: I-B, I-C) only scanned the media for factual information, but with awareness of possible factual distortions. Hence, they searched for analyses and perspectives on the Social Causes Level of Knowing to verify the factual information and to enhance their understanding of contextual global developments. However, they also encountered Inayatullah's Social Causes Level of Knowing problem with the depth of the inquiry, which was limited to the prevailing paradigms framing societal problems. The two remaining interviewees (Non-ESPs: I-H, I-K) followed diverse approaches: I-H accessed information in the general media and searched for alternative media sources of information but these sources of information were limited to the Litany Level of Knowing, which enhanced uncertainty and complexity. I-K, although not regularly scanning the general media, opted for quality information sources on the Litany and Social Causes Levels of Knowing and as a result had a marginally better albeit limited understanding of the prevailing paradigms framing societal problems.

Again, it is worth noting that there was no qualitative difference between the ESPs and Non-ESPs regarding their levels of knowing. Four of the interviewees (three ESPs: I-D, I-E, I-F; and one Non-ESP: I-H) only accessed the Litany Level of Knowing for information, while six interviewees (two

ESPs: I-B, I-C; and four Non-ESPs: I-G, I-J, I-K, I-L) accessed both the Litany and the Social Causes Levels of Knowing for information, which gave the Non-ESPs a negligible advantage. All the interviewees, therefore, had an insufficient knowledge base due to their limited access to deeper levels of knowing.

The ESPs were expected to have a clear advantage over the Non-ESPs because occupational requirements were thought to prompt the ESPs to access the deeper levels of knowing. However, this was not the case: three ESPs (I-D, I-E, I-F) were limited to the superficial Litany Level of Knowing while only two ESPs (I-B, I-C) additionally accessed the Social Causes Level of Knowing with limited depth. Holism in their environmental scanning would only be achievable if they adopted an approach where they continuously scan up, down and across the four levels of knowing to obtain information about the contextual global environment, as illustrated in §4.4 and Figure 4.13.

7.2.1.3 Reality dimensions

The knowledge base of the interviewees was also determined by the extent to which the external and internal dimensions of reality were scanned. It is important to note Harman's consciousness (1998: 10) as causal reality, in terms of which the internal dynamism of people's mental processes has a direct impact on developments in the external environment. Similarly, Slaughter (1999: 442) believed that the internal dimensions of reality gave rise to the complexity associated with developments in the external contextual environment, and that depth with the environmental scanning methodology could only be achieved if both dimensions were scanned. In this way, understanding and knowledge are enhanced through a holistic approach to environmental scanning.

The interviewees achieved mixed results with the scanning of the reality dimensions. Five interviewees (three ESPs: I-B, I-D, I-F; and two Non-ESPs: I-H, I-K) achieved an average rating indicative of limited depth in the inquiry. They generally scanned the external dimensions with partial access to the internal dimensions that gave rise to the developments in the contextual global environment. Due to their limited depth in the inquiry, they lacked knowledge and understanding of the intentional subjective realm of individuals' inner world (IID), as well as the social inter-subjective realm of the collective internal world of the cultural and shared meaning of groups (CID) as indicated by Hines (2003: 51-52), Voros (2001: 537), and 6 and Bellamy (2012: 231). As the MILES approach has indicated in §4.5.1, a holistic approach is vital to determine the psychological and cultural dimensions of reality that may have a bearing on the dynamism and complexity in the contextual SED external environment in order to have good judgement and foresight about the contextual global future. These interviewees did not have the necessary information to develop an understanding of the interior reality dimensions of individuals and groups, and the associated process dynamics that determined the disposition towards and actions in the contextual SED external environment. Therefore, they cannot claim to have sufficient

knowledge as their understanding of the interrelationship between the external and internal dimensions of reality was incomplete.

The five interviewees (two ESPs: I-C, I-E; and three Non-ESPs: I-G, I-J, I-L) who achieved poor ratings on their scanning of the reality dimensions were in a worse predicament due to the superficial depth in their inquiry. They mostly scanned for information in the external reality dimensions where they could only see the outcome of people's behaviour and actions in the contextual SED external environment but without knowledge and understanding of the interior reality dimensions that gave rise to this behaviour and actions.

As expected, the ESPs had an advantage over the Non-ESPs in their scanning of the reality dimensions due to their occupational requirement for more depth with their inquiry of developments in the contextual SED external environment. Nevertheless, their scanning depth was still limited or superficial. Hence, they could not claim to have sufficient knowledge to have good judgement and foresight about the contextual SED global environment and the future. However, they may have the required knowledge regarding their narrow ESP focus areas but it is questionable to what extent such knowledge has sufficient contextual depth to provide a holistic image of reality.

7.2.1.4 Characteristics of information

A holistic environmental scanning methodology also requires access to high-quality information to develop sufficient knowledge of the contextual global future (Figure 7.2).

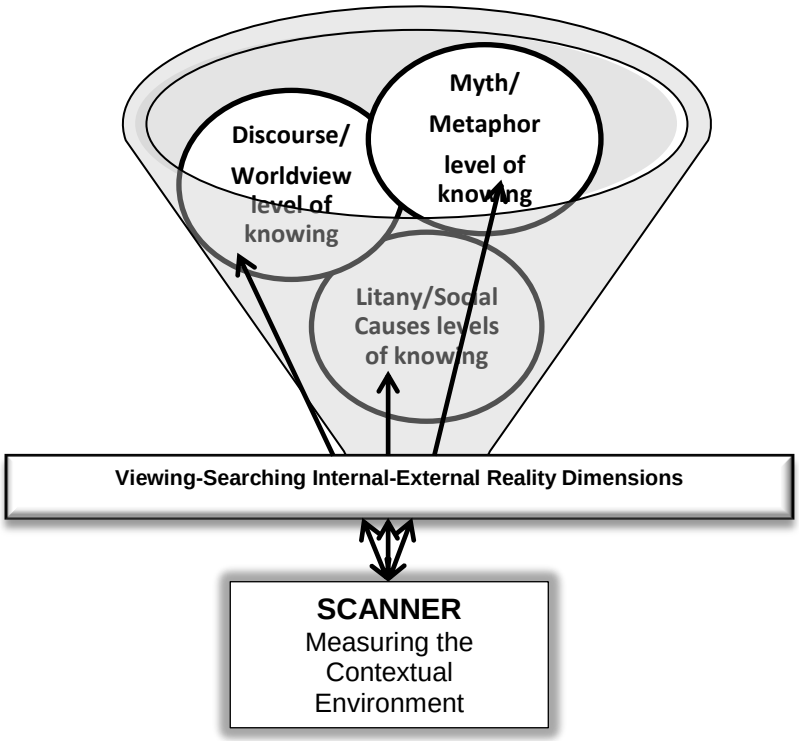

Figure 7.2: Information quality and holistic environmental scanning

Source: Own compilation.

As posited in §2.4.2, high-quality information relates to the characteristics of information, namely, false, distortion, explicit facts and concealed information, within the context of environmental scanning to acquire judgement and foresight of the contextual environment. Dervin (1998: 37) cautioned that information has limitations regardless of its quality and can only partially address the unknown; hence, it is vital to uncover as much as possible of the unknown through an effective environmental scanning methodology. Within this context, the goal of holistic environmental scanning should be to obtain high-quality information.

The interviewees' information quality depended to a large degree on the characteristics of the information that they obtained through environmental scanning in relation to the scanning scope and modes, the levels of knowing and the reality dimensions. In this regard, three interviewees (two ESPs: I-B, I-F; and one Non-ESP: I-L) achieved average ratings signifying information quality with limited depth in the inquiry. Seven interviewees (three ESPs: I-C, I-D, I-E; and four Non-ESPs: I-G, I-H, I-J, I-K) achieved poor ratings signifying information quality with superficial depth in the inquiry.

The interviewees with an average rating had an advantage over those with a poor rating, mostly because they made better use of the scanning modes, levels of knowing and reality dimensions, which improved the quality of their information. Their scanning modes included both viewing (looking at) and searching (looking for) information, albeit not in a formal integrated way to achieve holism in scanning. Although they had to contend with both distortions and factual information in their scanning modes, the bias leaned towards the factual information related to the searching modes. Their levels of knowing were mostly the Litany Level of Knowing where it is problematic to distinguish clearly between distortions and facts. Yet, they also accessed the Social Causes Level of Knowing where the information characteristics tend to be more factual than distortion due to rigour in the technical and academic analysis processes. Their reality dimensions were mostly the external dimensions where a combination of distortions and facts characterised the information quality. However, they also, to a limited extent, accessed the internal dimensions of reality that give rise to developments in the external dimensions. The deeper inquiry represented by the internal dimensions will be more favourable for obtaining factual than distorted information.

The interviewees with poor ratings had a disadvantage compared to the interviewees with the average ratings, mainly because of a poor utilisation of the scanning modes, levels of knowing and reality dimensions impacting the quality of their information negatively. Their scanning modes were mostly confined to the two viewing modes, i.e. mostly looking at information whether undirected or conditioned with limited searching for information. The viewing modes made it difficult to clearly distinguish between distorted and factual information due to the information overload associated with the viewing modes. Their levels of knowing were predominantly the Litany Level of Knowing where it is problematic to distinguish clearly between distortions and facts. This mainly resulted from the media narrative fallacy problem, where there is little rigour in the analysis processes.

Their reality dimensions were predominantly the external dimensions where a combination of distortions and facts characterised the information quality.

The ESPs were expected to have a clear advantage over the Non-ESPs because occupational requirements were assumed to prompt the ESPs to access better quality information through utilising all the scanning modes, accessing all reality dimensions and scanning all levels of knowing in a structured, formal and integrated way (Figure 7.3). This was not the case. Only two ESPs (I-B, I-F) have achieved a better rating on the quality of information they accessed while one Non-ESP (I-L) achieved the same. Three ESPs (I-C, I-D, I-E) were on par with the four Non-ESPs (I-G, I-H, I-J, I-K) who achieved poor ratings for the quality of their information.

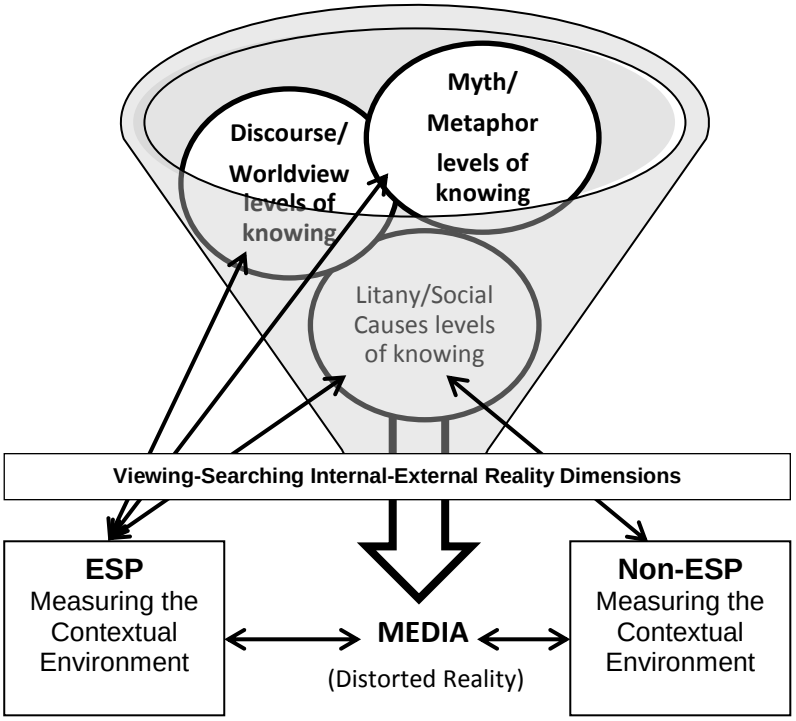

Figure 7.3: ESP/Non-ESP information quality scanning assumptions

Source: Own compilation.

From an occupational point of view, the three ESPs were not contributing effectively to enhance the collective knowledge base of their company to achieve its objectives. Although the narrow focus areas may contribute to such a situation, the expectation was for the ESPs to have sufficient knowledge and understanding of the global contextual environment to enable them to have good judgement and foresight regarding their narrow focus areas within the context of the global environment that impacts the very same focus areas.

7.2.1.5 Conclusions: Measuring the future

The interviewees' proficiency in measuring the global future was lacking because they did not have a holistic environmental scanning methodology that enabled them to create sufficient knowledge for good judgement and foresight of the global contextual environment. Their scanning scope was

too narrow for sufficient contextual depth while their utilisation of the scanning modes was more suited to information creation rather than knowledge creation. They also lacked depth in the inquiry by scanning predominantly on the Litany Level of Knowing. Similarly, their scanning of mostly the external dimensions of reality led to incomplete knowledge of the interrelationship between the subjective internal and objective external reality dimensions in the causality of events in the global contextual environment.

The ESPs had a marginal qualitative advantage over the Non-ESPs regarding the reality dimensions and the scanning scope mainly because their occupational requirements prompted them to deepen the inquiry by scanning more comprehensively. The ESPs' failure to move progressively in a structured way from the viewing to the searching modes put them on parity with the Non-ESPs regarding the scanning modes. The ESPs unexpectedly had a marginal disadvantage regarding the levels of knowing because most of them failed to move beyond the Litany Level of Knowing in their inquiry.

7.2.2 Imagining the future: Future consciousness perspective

The interviewees' images of the future were discussed within the context of their future consciousness, which in this study entailed the interrelationship between their futures thinking, futures disposition and futures images. All the interviewees had a relatively good to well-developed general future consciousness in terms of Lombardo's (2008: 2, 3) broad definition. They showed a capacity to be conscious of the future, have images of the future, and some goals and plans for the future, albeit somewhat vague.

The interviewees' images of the future were a result of their knowledge base of the current global contextual environment and the proficiency of their environmental scanning methodology that informed their knowledge base, i.e. the way they measured the future and what they have learnt from this measuring informed their knowledge about the future. At the very basic level, learning about the future must be seen in the context of the general purpose of environmental scanning, which is to anticipate and survive (Roux, 2007: 1) by identifying both opportunities and threats emanating from the contextual environment (Bell, 2007; Gordon *et al*., 2009: 1). All the interviewees had futures thinking and dispositions towards the future where images of threats preoccupied their inert mental state. This means that their inner process dynamics of scanning the contextual environment saw the current global challenges exclusively in terms of threats.

Although the expectation could be for a more balanced approach from the ESPs, i.e. giving equal weight to identifying both opportunities and threats, this was not the case as none of the interviewees saw environmental scanning within the context of opportunities. Yet, the identification of opportunities is just as important for survival as the identification of threats. Even the interviewees' over-simplified images of an ideal global future did not relate the content of an ideal future with any opportunities to that effect in the current contextual global environment. The only

exception is Non-ESP I-K who saw an opportunity in technological advancement as possibly moderating global challenges in the future. This is a more balanced approach where the future is more open and where alternative futures images are allowed to develop.

The impact of the prevalent threat perception of the interviewees was evident in their futures disposition. The majority of the interviewees (four ESPs: I-C, I-D, I-E, I-F; and four Non-ESPs: I-G, I-J, I-K, I-L) had a pessimistic disposition towards the future, i.e. they had negative prospective emotions (Lombardo, 2008: 14) regarding the future. These negative prospective emotions were a manifestation of their reaction to developments in the current global contextual environment as well as their anticipated probable future. The interviewees' threat perception of the current and future global situation was an underlying cause for their pessimistic futures disposition, i.e. they saw the current global situation as dismal and ambiguous and the probable future as much the same or even worse.

The pessimistic futures disposition related to Newberg's constructive and destructive beliefs typology (2010) where beliefs were constructive when they assisted to develop positive feelings of optimism and hope, while destructive when they led to feelings of pessimism, stress and fear. It is, therefore, posited that the interviewees' predominant scanning of the contextual global threats became destructive beliefs in the process dynamics of their inert mental state and that the reality dimensions associated with their IID also became emerged in these beliefs to create mental constructs that have a pessimistic disposition towards the global future. Thus, as Lombardo (2008: 20) indicated, they were in danger of developing a depressed state of future consciousness that could lead to nihilism and negativity by only seeing what can go wrong.

The interviewees' perception of reality as a world under threat due to various global challenges created mental constructs that blocked information that did not correlate with this perception. This was a particular problem for most of the interviewees. Seven interviewees (four ESPs: I-C, I-D, I-E, I-F; and three Non-ESPs: I-G, I-J, I-L) have shown that their mental constructs in terms of their futures disposition were rigid, i.e. they had inert mental states that did not allow for flexibility in their futures disposition. Two interviewees (one ESP: I-C and one Non-ESP: I-G) were particularly rigid and were not open-minded to any change in futures disposition.

Therefore, the information obtained by all the interviewees through their scanning of the contextual global environment was filtered by their rigid mental constructs. Wurman's four selective processes (1989: 247) that acted as rings of defence against external stimuli (§2.4.3, Figure 2.13) depicted this filtering process succinctly; this has been adapted in a revised format as depicted in Figure 7.4.

- Selective exposure to global threats: Exposure to global threat information strengthens behaviour and attitudes.
- Selective attention to threats: Respond to stimuli selectively (i.e. only threats).

- Selective threat perception: Do personal filtering to see only threats.
- Selective threat retention: Recollect information about threats coherent with existing threat perception.

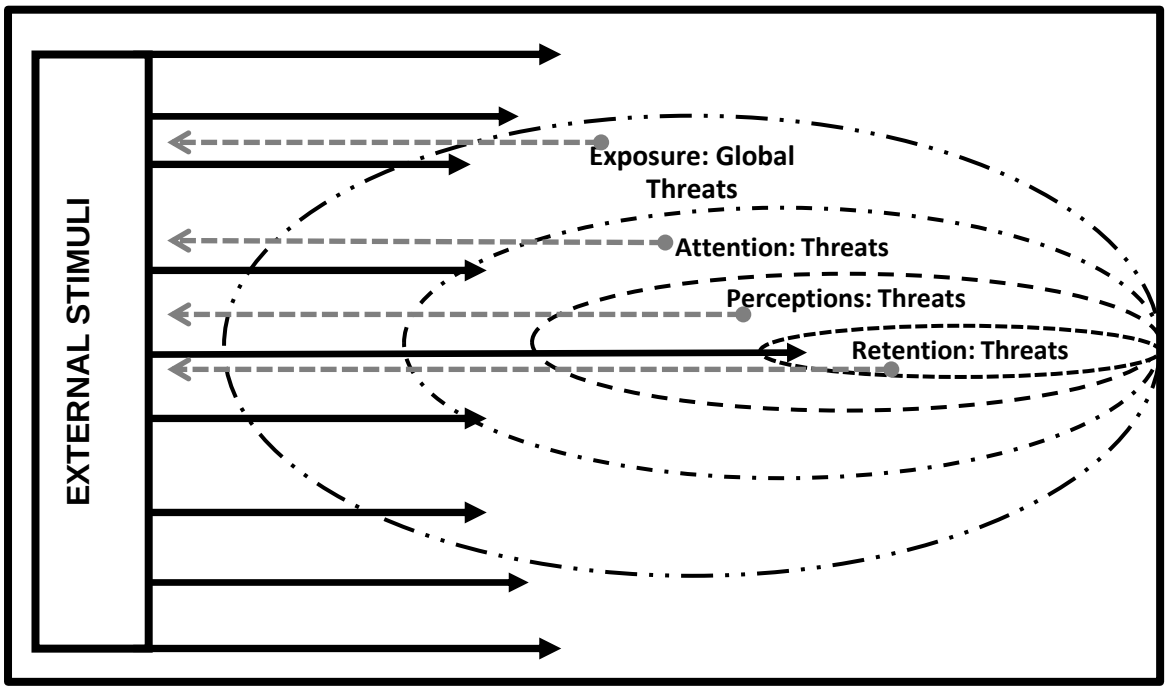

Figure 7.4: Mental construct filtering regarding scanning external stimuli

Source: Own compilation.

The interviewees' mental construct filtering predisposed them to Taleb's narrative fallacy (2008: 63), especially in terms of their mental construction of futures images. Their selective exposure to global threats became the content they projected onto Slaughter's futures "blank screen" (2012: 47) to choreograph their images of the future. As Taleb has pointed out, these projections are the over-interpreted and over-simplified "facts" around which they weaved their stories and images of the future. This was problematic because their reality about the future, i.e. their image of the future, was flawed. They discarded information that in their minds did not appear to play a role in the causality of global contextual events.

As Kahneman (2011: 87) pointed out, the reality construction of the interviewees' minds did not allow for information they did not have, which made it easier for them to fit everything they knew into a coherent pattern based on their narrative fallacy. By so doing the interviewees actually deliberately created information gaps that complicated sense-making of these events. As Case (2007: 337) has indicated (§2.4.3), sense-making requires as much information as possible, not less information, to fill information gaps and to deal with the discontinuities in the global contextual environment.

The interviewees' futures images were also distorted by their perceived uncertainty about the future, which resulted from their inner process dynamics. This uncertainty emanated from an ineffective environmental scanning process that failed to help them cope with the global contextual environment and an uncertain future (Stoffels, 1994: 1). In this regard, they had difficulty in coping with the global contextual turbulence as they showed an inability to contextualise the speed, scope and significance (S^3) of the turbulence associated with the global challenges in the contextual environment. The global challenges that they had identified appeared to be a clustering of issues which they saw as inevitable threats. As Heidrick and Struggles (2015: 8) pointed out, the only way to deal with this problem is to disentangle the S^3 in relation to the global challenges – the interviewees did not engage in such a disentanglement process. Furthermore, the interviewees' uncertainty was exacerbated by adding more threat-based information to their knowledge base of the global challenges without looking for meaningful new information to develop an objective meaning structure for sense-making about the future.

The interviewees' futures images could be contextualised in terms of Dator's (1998) four cross-cultural generic images of the future (Figure 7.5). This determined to what extent their images of the future related to the broad categories posited by Dator, viz. the continuation, collapse, disciplined society and transformational society categories.

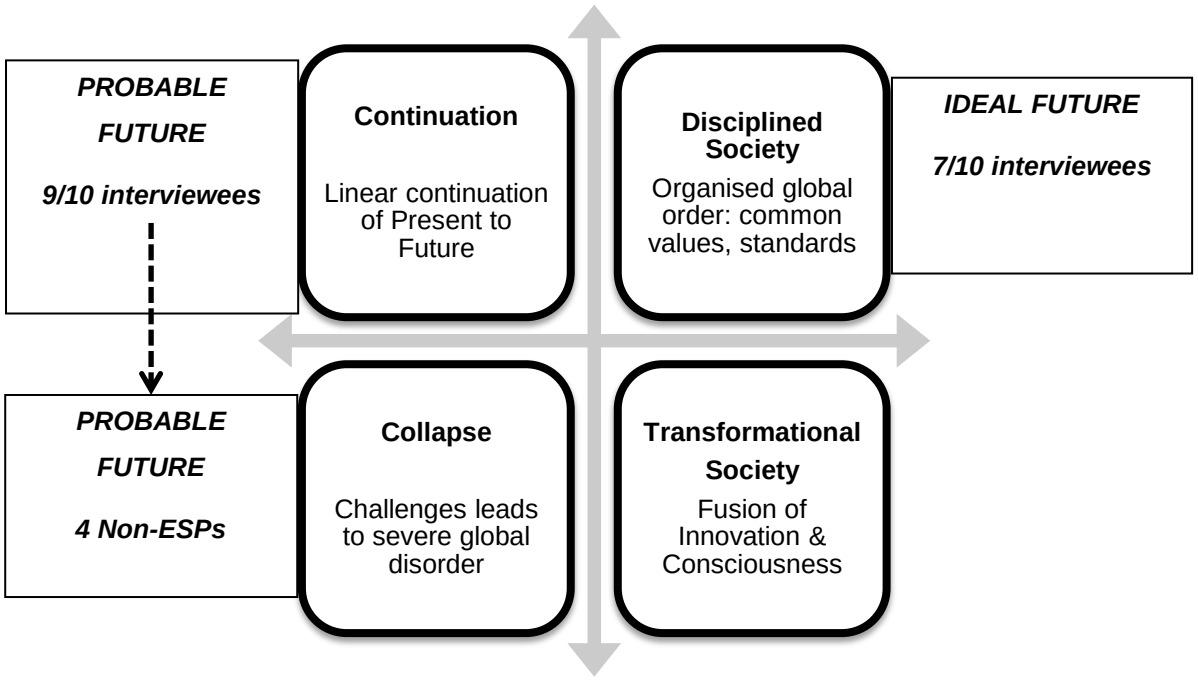

Figure 7.5: Interviewees' futures images

Source: Adapted from Dator, 1998.

The majority of the interviewees (9 out of 10) were in the continuation category, with their images of the future based on a linear continuation of the present global challenges as the probable global future. Such an approach deviated from Bell's specific futures studies assumption (2005) that

future things may not have existed in the past or in the present leaving scope for new thoughts, understandings and approaches (see §3.3.1). Furthermore, the global challenges of the probable future were such that some interviewees indirectly foresaw a possible collapse of the global order. In this regard, four Non-ESPs (I-G, I-J, I-K, I-L) imagined futures that would be worse than the current situation. Since they did not foresee any sustainable alternative futures, the outcome of their thinking about the future would linearly continue in the direction of the collapse category.

The ESPs' thinking was confined to the continuation category as they indicated that the probable future would be confusing, challenging, bleak, complex and fluid. Hence, their thinking about the future did not cross over into the collapse category. A plausible reason for this could be their predominantly narrow ESP focus areas of concern, i.e. they primarily scanned for information related to their narrow focus areas, and only secondarily had a global view. They were, therefore, less preoccupied with the broader global contextual environment and, as a result, less alarmed about developments. Only one ESP (I-B) foresaw a collapse in the global order as a possible future, but resulting from an unforeseen unexpected global event and not from any current or future global challenges.

The interviewees' images of an ideal future were aligned with the disciplined society category. Seven interviewees (4 ESPs and 3 Non-ESPs) anticipated ideal futures in this category. This category entails an organised global order of sorts based on common values and standards. The ESPs foresaw such organised society based on global learning and cooperation, and common understanding and peaceful coexistence. The Non-ESPs saw such a society based more on strong leadership, technological dominance and improved morals and values. One Non-ESP (I-H) saw a disciplined society as a possible future but within the context of a negative development that would stifle popular participation in global affairs.

Significantly, none of the interviewees had images of the future relating to the transformational society category where higher-order living through fusion of innovation and consciousness predominates. An underlying reason for the interviewees' lack of thinking regarding such a society could be the result of their linear thinking. In this regard, Naude (2009: 51, 52) indicated that linear thinking within the context of material monism as the predominant ethos led to dystopian images of a probable future characterised by unsustainability on all levels, while a transformational society was achievable through Harman's consciousness as causal reality.

The interviewees' dystopian thinking about the future was underpinned by a material monism context and led to Gelatt's paradigm paralysis problem (1993: 11; §2.4.3), preventing thinking about sustainable alternative futures. As a result, they did not think within the context of a transformational society due to an inability to shift their thinking (Harman, 1998: 159; §2.4.3) to become open-minded about sustainable alternative futures. In this regard, they (a) did not see the connectedness of everything with everything, (b) did not shift the locus of authority from external to

internal and (c) did not fully comprehend that the objective external was caused by the subjective internal dimensions of reality.

7.2.2.1 Conclusions: Imagining the future

All the interviewees had a relatively good to well-developed general futures consciousness by showing a capacity to be conscious of the future, having images of the future, and some goals and plans for the future. However, their inner process dynamics of scanning the contextual environment created futures thinking and dispositions towards the future exclusively in terms of a threat perception.

Their scanning in terms of a threat perception created destructive beliefs and mental constructs, leading to selective processes that filter information to create flawed images of the future. This was evident in the rigid pessimistic disposition that most of the interviewees had towards the future. The current challenges were linearly projected to create images of the probable future that were much the same or even worse than the current global situation. For some interviewees, the global challenges could even lead to severe global disorder. Most of the interviewees would like to see a disciplined society as the ideal future but none of them thought of a transformational society due to an inability to shift their thinking beyond the external reality of the global contextual environment.

7.2.3 Making the future: Actionability perspective

The extent of the interviewees' contribution to create a better world, i.e. to make the future, was determined within the context of their actionability. In this regard, three interrelated aspects were considered, viz. their views of the state of the world, who they thought should take responsibility, and what contributions they made to create a better world.

The interviewees' disposition towards the future carried the potential to (a) achieve a preferred future by actively making such future (see Bell's specific futures studies assumption in §3.3.1) or (b) realise an undesirable future by inaction as posited by De Jouvenel (1967: 4) and Poli (2001: 70) (Figure 7.6). The majority of the interviewees (nine out of 10) saw the state of the world (futures image) as dismal and ambiguous. This view of the world also correlated with their pessimistic disposition towards the current global situation and their linearly projected view that the probable global future would generally be the same or worse than currently. They also showed no change in their disposition towards the current global situation or the probable future. Therefore, they had relatively rigid dystopian dispositional mental constructs about the state of the world that would influence their actionability, i.e. their making of the future.

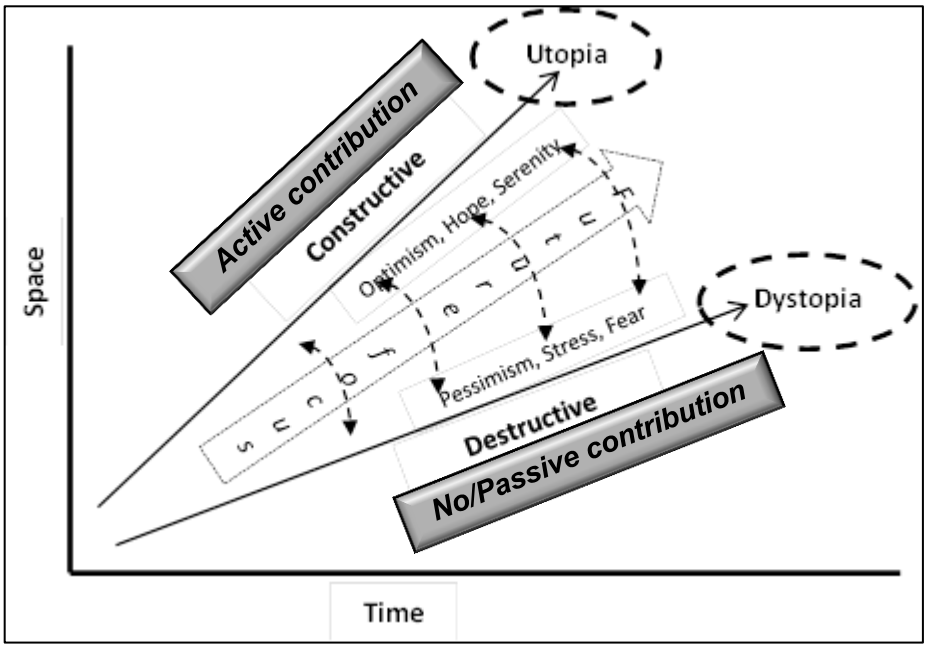

Figure 7.6: Impact of futures disposition on actionability

Source: Own compilation.

The interrelationship between their actionability and their rigid dystopian disposition must be seen in terms of the holistic futures thinking process (§3.3.1). In this regard, future consciousness utilises rational thinking to purposefully engage with the future, i.e. to take a conscious decision to actively do something about or change the perceived future. However, rational thinking is impacted by the disposition towards the future. The interviewees' rigid dystopian disposition towards the future negatively influenced their holistic futures thinking process at the level of rational thinking. The implication was that their making of the future (actionability) became "derailed" at the rational thinking level, and hence failed to access the systems thinking and foresight levels to develop deeper insight and understanding of how the future takes shape. This was evident from the interviewees' responses on making a contribution to create a better world. Only three interviewees (Non-ESPs: I-G, I-J, I-L) actively contributed to society to create a better world. Four interviewees (ESPs: I-C, I-F; Non-ESPs: I-H, I-K) made no contribution while three interviewees (ESPs: I-B, I-D, I-E) passively contributed through their occupations.

The interviewees' lack of contribution to create a better world may also be seen in terms of Rubin's (1996: 500) reactive approach towards the future based on negative futures dispositions. Within the context of the reactive approach, the interviewees, who passively contributed through their occupations or made no contributions, felt powerless to act or influence the situation. They assumed the role of De Jouvenel's (167: 5) "man in his role as cognizant being" where uncertainty about the future predominated and where little or no action was taken, in contrast to "man in his role as an active agent" who makes the non-existent future real in time and space. The three interviewees who did make an active contribution to society also had negative futures dispositions. However, their active contributions were limited to their transactional environment, i.e. to their

immediate local area of influence. Hence, their feelings of powerlessness related to the contextual environment where they felt they had no control to influence the situation.

The interviewees' inaction correlated with Lombardo's (2008: 18) discussion of the impact of negative emotional states on future consciousness. He posited that such negative emotional states created immobility and avoidance, leading to mental and behavioural paralysis. This supports Gelatt's (1993: 11) notion of paradigm paralysis, where the future is perceived to be one of imminent disaster and catastrophe (Dator's typology of the continuation and collapse categories of futures images), leading to inaction on the part of the perceiver.

The interviewees' lack of making the future did not only derive from their images of the future but also related to their measuring of the future. In this regard, they mainly scanned media sources on the Litany Level of Knowing with limited scanning of the deeper levels of knowing for information about the contextual global developments. As Inayatullah (2009: 36) has pointed out, responses to societal problems on the Litany Level of Knowing that are too problematic to solve, lead to despair, inaction and the transfer of responsibility to an external authority. The Litany Level of Knowing scanning problem was evident among the interviewees. As indicated above, their rigid dystopian futures dispositions were the result of the contextual global challenges that were too difficult to solve.

In addition, they also transferred the responsibility to solve the contextual global challenges to an external authority. Only three interviewees (Non-ESPs: I-G, I-J, I-L) were not transferring this responsibility to an external authority and were making an active contribution to society, albeit only in their transactional environment. This was despite six interviewees (four ESPs: I-B, I-C, I-D, I-F; and two Non-ESPs: I-G, I-L) indicating that it was the responsibility of everyone (ranging from individuals to international governance structures), and one interviewee (Non-ESP I-H) indicating that it was the responsibility of only individuals and society to create a better future. Three interviewees (one ESP: I-E; two Non-ESPs: I-J, I-K) believed the responsibility resided only with national and international governance structures, a clear transfer of responsibility.

The contrast between the ESPs and Non-ESPs in taking responsibility for creating a better world was noticeable. As indicated, three Non-ESPs took responsibility for creating a better world while three ESPs (I-B, I-D, I-E) passively contributed through their occupations. However, contributing through their occupations was another form of transferring the responsibility for solving societal problems and the contextual global challenges to an external authority. So, they expected their company to take responsibility, while making no active contribution themselves.

7.2.3.1 Conclusions: Making the future

Most of the interviewees believed that it was everyone's responsibility to create a better world but only three interviewees were actually making an active contribution and then only in their transactional environment. The reasons for this responsibility-inaction contradiction can be found in

the interviewees' internal mental processes. Their pessimistic disposition towards the future negatively impacted the rational thinking of their futures thinking holism processes and led to inaction before the future could be fully engaged mentally. Similarly, their disposition created a reactive approach towards the future with feelings of powerlessness to influence the situation. Since the pessimistic disposition is a negative emotional state, immobility and avoidance prevailed. There is a correlation between the interviewees' inaction and the transfer of responsibility to an external authority to solve societal problems and their excessive scanning on the Litany Level of Knowing.

7.3 SURVEY: THEME-ORIENTED PERSPECTIVE

7.3.1 Measuring the future: Knowledge perspective

The measuring of the future by the respondents of both the QuestionPro and the Telefónica-Financial Times surveys is discussed within the context of their knowledge base. As posited in §7.2.1, sufficient knowledge to have good judgement and foresight of the global future is obtained through a holistic environmental scanning methodology such as Constructive Environmental Scanning (CES). This holism in environmental scanning can create knowledge rather than information in relation to the knowledge base of the scanner. The knowledge base is created through the interrelationship of the scope and modes of scanning, the levels of knowing, the reality dimensions and the characteristics of information.

7.3.1.1 Scope and modes of environmental scanning

The environmental scanning scope of the respondents was comprehensive but it had limitations regarding knowledge creation. The majority of the respondents had a scanning scope with an average to good rating, i.e. it had limited to some depth in the inquiry. These limitations resulted from their scanning, which was limited to the public domain. The T-FT respondents had a marginal advantage over the Q-P respondents regarding the general scope of their scanning as they also solicited information from friends, family and colleagues. However, this type of information was more of a practical nature within their transactional environment, e.g. entertainment and shopping information, and did not relate to information about the global contextual environment.

The respondents' wide public scanning scope provided them with a relatively good overview of developments in the global contextual environment. This should enable them to have peripheral vision of global developments. However, this depended on how comprehensively they covered the STEEP areas, but more importantly, on how proficiently they utilised the modes of scanning to create knowledge from their wide public scanning of the global contextual environment. The respondents covered the STEEP areas well albeit not giving equal weight to the different areas. In this regard, social, political and economically related information were the most important areas of coverage.

The scanning modes of the respondents were average, with limited depth in the inquiry, which reduced the efficacy of the respondents' wide scanning scope in terms of knowledge creation. This appraisal was based on the responses of the larger T-FT respondent group because the Q-P respondents did not give an indication of their modes of scanning. Although the respondents utilised both the viewing and searching modes, the emphasis was more on the viewing modes. Also, the viewing modes were mainly utilised for information on their transactional environment. This approach in their environmental scanning methodology was not conducive to knowledge creation regarding the global contextual environment as too much emphasis on the viewing modes could lead to an information overload that could have an adverse impact on their sense-making abilities of developments in the global contextual environment.

Utilising the searching modes within the context of research was a moderating factor to counter the effect of the viewing modes. In this regard, the searching modes offered a proactive way to look for information, and required formal methodologies to obtain information. Although there was no indication from the respondents what the research entailed, it was, nevertheless, conducive to knowledge creation in the focus areas, albeit not necessarily on a wider global scale that would create comprehensive knowledge of the global contextual environment.

7.3.1.2 Levels of knowing

The levels of knowing that were accessed by the respondents through their environmental scanning methodology helped to determine their knowledge base. The respondents' level of knowing was poor, i.e. they had superficial depth in the inquiry. This led to an insufficient knowledge base due to the respondents' predominant public scanning of the general media sources on the Litany Level of Knowing. The Litany Level of Knowing was not conducive to creating sufficient knowledge about the global contextual environment and the global future; sufficient knowledge also required scanning on the deeper levels of knowing to develop an understanding of the causal factors underlying the external manifestation of events.

The narrative fallacy problem with the information of the general media on the Litany Level of Knowing, as posited in §7.2.1.2, created shallowness in the inquiry. This is mainly because the media tend to over-interpret and over-simplify the developments in the global contextual environment for sense-making purposes. The respondents, therefore, encountered information on the Litany Level of Knowing that was sterile due to the removal of the complexity underlying the causes of the global contextual environment. The information was also a distorted representation of reality due to the replacement of the complexity with a simplified version of causality.

It is assumed that the respondents who utilised the internet for research purposes did access the deeper levels of knowing, even though it is not clear what the research entailed. The T-FT survey did not relate the research of the respondents to the questions regarding the "in-depth coverage of social issues", "credible coverage of news" or the best sources regarding "a developing

story/crisis". Therefore, it is assumed that information on these global contextual issues is not covered adequately through the deeper levels of knowing.

7.3.1.3 Reality dimensions

The reality dimensions that were accessed by the respondents through their environmental scanning methodology also helped to determine their knowledge base. The underlying importance of the reality dimensions in knowledge creation through environmental scanning relates to consciousness as causal reality within the context of the dynamism of people's mental processes, as posited in §7.2.1.3. In this regard, the interrelationship between the internal and external reality dimensions needs to be understood, which requires comprehensive scanning to achieve holism in the environmental scanning methodology.

The respondents achieved poor ratings on the reality dimensions, i.e. their reality dimensions had superficial depth in the inquiry. They mostly scanned the public domain on the Litany Level of Knowing where information relates mostly to the external dimensions of reality. The respondents who undertook research probably accessed the internal dimensions of reality but, as indicated previously, the nature of the research was unclear from the survey results.

The respondents' superficial depth in the inquiry limited knowledge creation regarding the interrelationship between the internal and external dimensions of reality. Hence, these respondents also lacked or had a superficial understanding of the impact on the external reality of the intentional subjective realm of individuals' inner dynamism as well as the social inter-subjective realm of the collective inner dynamism of the cultural and shared meaning of groups, as indicated earlier in §7.2.1.3. These limitations regarding the respondents' knowledge base negatively affected their judgement and foresight about the contextual global future as they will have a poor comprehension of the dynamism and complexity of the global contextual environment. They lacked the required information to develop an understanding of the interior reality dimensions of individuals and groups that may have a bearing on developments in the global contextual environment. The respondents, therefore, did not have sufficient knowledge because they lacked understanding of the interrelationship between the internal and external dimensions of reality.

7.3.1.4 Characteristics of information

The characteristics of the information accessed by the respondents through their environmental scanning methodology were the final determining factor of their knowledge base. The aim of holism in environmental scanning is to obtain information of a high quality to uncover as much as possible of the unknown in the contextual environment. The characteristics of the information, as suggested in §2.4.2, are important in determining the quality of information. These characteristics range from false information and distortions to factual and concealed information, and depend to a large

degree on a proficiency to scan comprehensively and effectively on all the levels of knowing and all the reality dimensions.

The respondents' information quality was poor with superficial depth in the inquiry in terms of their scanning scope and modes, their levels of knowing and the reality dimensions they accessed for information. Their scanning was wide-ranging albeit confined to the public domain. However, by utilising mostly the viewing modes, they were exposed to an information overload, which made it difficult to effectively distinguish between distortions and factual information. The viewing modes in conjunction with the Litany Level of Knowing also confined them to a combination of distortions and factual information due to the narrative fallacy problem of the general media sources that dominates the Litany Level of Knowing.

It is acknowledged that deeper levels of knowing were possibly also accessed by the respondents who engaged in research. However, as indicated earlier, the surveys did not unpack the nature of the research. Therefore, it is assumed that access to deeper levels of knowing was limited to narrow research focus areas, which did not improve the quality of information regarding the global contextual environment comprehensively.

Scanning the reality dimensions in mostly the external dimensions contributed to the respondents' poor quality of information. This was mainly because the general media were used as major source of information on developments in the external dimensions. The characteristics of information in this context are a combination of distorted and factual information.

7.3.1.5 Conclusions: Measuring the future

The respondents' proficiency in measuring the global future was underdeveloped because they did not have the required holistic environmental scanning methodology to create sufficient knowledge in order to have good judgement and foresight of the global contextual environment. Although they had a wide public scanning scope, sufficient contextual depth was limited by the superficial depth in the inquiry relating to their scanning modes, levels of knowing, reality dimensions and the quality of information.

7.3.2 Imagining the future: Future consciousness perspective

The respondents' images of the future were discussed within the context of their futures consciousness with specific reference to the interrelationship between their futures thinking, futures disposition and futures images. The respondents had a relatively well-developed futures consciousness by giving expression to their feelings about the future, their life satisfaction, their future quality of life, and their concerns about the future.

The respondents' imagining of the future followed one of two pathways: a pathway that projected a personal future (Pathway 1) and a pathway that projected a "next-generation" collective future (Pathway 2). The majority of the respondents had an optimistic disposition towards their personal

future, i.e. they had positive prospective emotions. As Lombardo (§3.3.1, Table 3.2) indicated, these positive prospective emotions had the potential to stimulate higher levels of futures consciousness in the respondents and facilitated possibility thinking and action in the respondents to achieve their goals. This potential was noticeable among 75% of the respondents who expressed confidence that they knew what their long-term futures would be like. However, their personal futures disposition related to their transactional environment and did not necessarily extend to the global contextual environment. As Van der Heijden (2005: 115) indicated, the transactional environment is the domain over which the respondents have substantial control while the contextual environment is the domain over which they have weak or no control (§2.3.1, Figure 2.1).

Imagining the future in terms of Pathway 1 (personal future) involved their transactional environment while imagining the future in terms of Pathway 2 ("next-generation" collective future) involved their contextual environment (Figure 7.7). There was an apparent difference in the respondents' personal and global futures disposition in terms of their transactional and contextual environments. This difference was significant in the respondents' change in futures disposition when they had to evaluate their own future against those of future generations. While 83% of the respondents were optimistic about their own future, this optimism was not projected into the future of future generations. Just over half of the respondents (52%) believed that future generations would have a poorer quality of life. Here, the respondents' futures thinking was transformed from thinking in terms of their "controllable" transactional environment to thinking in terms of the "uncontrollable" global contextual environment.

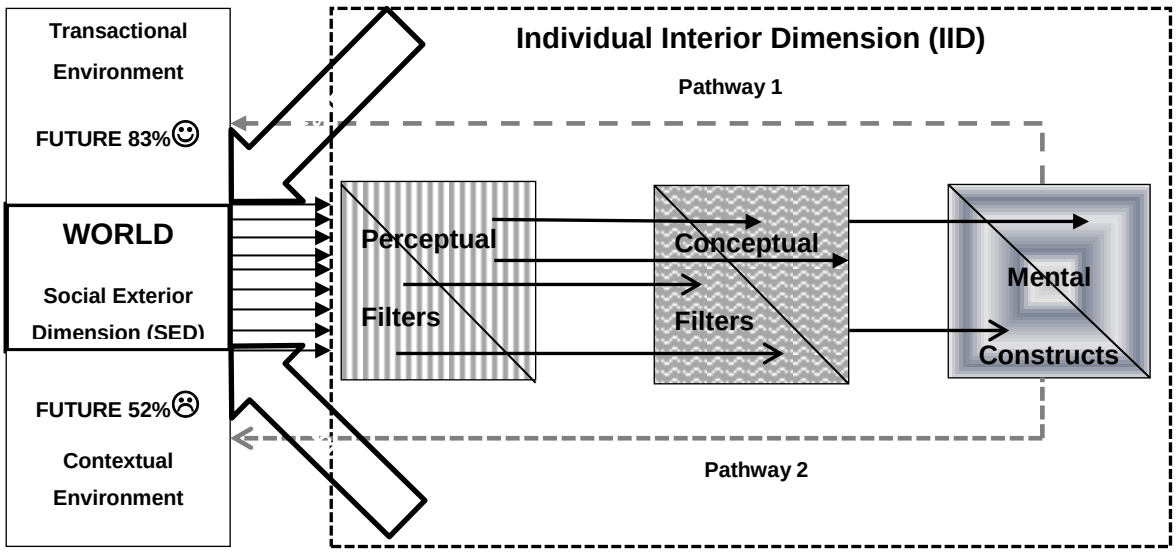

Figure 7.7: Futures disposition pathways

Source: Adapted from Boisot and Canals, 2004.

The respondents' change in their futures disposition also represented a change from positive prospective emotions to negative prospective emotions when they thought about the global future in the long term. Therefore, thinking about the global future shifted the focus of the respondents from their transactional to the contextual environment, and generated images of what could go wrong. Although the surveys did not measure a shift from optimism to pessimism directly, Lombardo (2008: 14) indicated that pessimism and fear are specific negative prospective emotions. Hence, it could be argued that a sizeable number of the respondents who were optimistic about their personal futures became pessimistic when imagining the future of the next generations within the global contextual environment.

A shift from optimism to pessimism is also supported by Newberg (2010) in terms of the constructive and destructive belief system, as discussed in §7.2.2. It was posited that the respondents' optimistic constructive beliefs regarding their personal future when viewed from the perspective of their transactional environment changed to pessimistic destructive beliefs when futures thinking was expanded to the global contextual environment. Therefore, they were not contextualising their personal futures adequately within the context of the global contextual environment, i.e. their futures thinking did not merge the two futures thinking pathways.

It is posited that the respondents' images of the global contextual future (Pathway 2) were distorted by their insufficient knowledge base about the global contextual environment. In this regard, various deficiencies with their measuring of the future, as indicated in §7.2.1, have led to information creation and a lack of knowledge creation about the global future, and hence distorted global futures images. Therefore, their futures thinking lacked the necessary insight and understanding of the factors and forces that could have a bearing on the way the global future takes shape. In this regard, they raised various global challenges as future concerns – such as the global socio-economic situation, the environment, political unrest/instability, terrorism and war. Apparently , these same concerns did not influence their personal futures disposition.

The respondents' perception of reality within the context of the global challenges created mental constructs that discarded information that did not correlate with their perception of the world. In this regard, their image of the contextual environment was rigid with an inert mental state that did not allow for flexibility in their futures disposition – hence the differences in disposition between Pathway 1 and Pathway 2, as illustrated in Figure 7.7.

The mental constructs of their personal futures (transactional environment) were not filtered in the same way as their futures images of the contextual environment. Consequently, they had a different, more optimistic futures disposition (Figure 7.8).

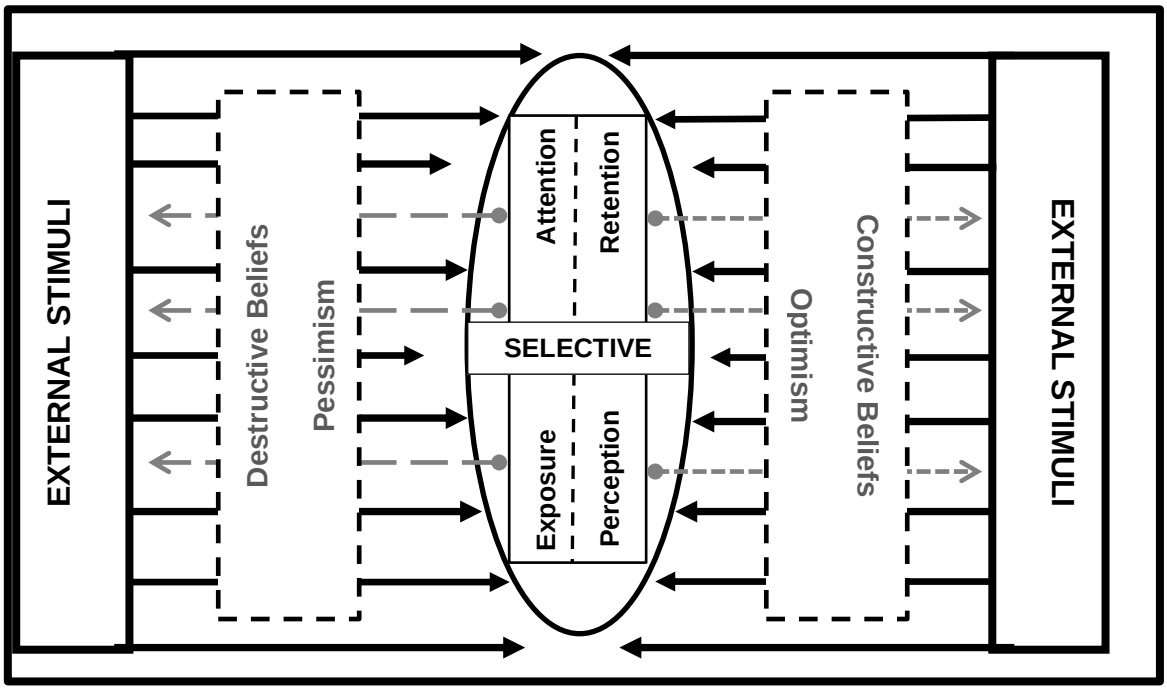

Figure 7.8: Mental construct filtering regarding transactional environment stimuli

Source: Own compilation.

If the mental filters of the respondents' contextual environment were utilised, then their personal futures would have replicated the futures disposition of their contextual environment. In this regard, Van der Heijden (2005: 186) pointed out that bias and subjectivity were the main problems when a person viewed the world from the perspective of the transactional environment. This again reflects on Wurman's (1989: 247) four selective processes that act as reigns of defence against external stimuli, as discussed in §2.4.3. Although selective exposure, selective attention, selective perception and selective retention to global challenges are applicable to the contextual environment, the process works differently when dealing with the transactional environment.

It is posited that the process dynamics of scanning the transactional environment create an inert mental state that is different from scanning the contextual environment. Scanning the transactional environment contributes to a more flexible mental state due to the greater influence (perceived or otherwise) a person has over the immediate, local environment. The person feels more empowered to develop an advantage over the challenges of the transactional environment. This also contributes to the SELF in developing constructive beliefs of optimism and hope as opposed to the destructive beliefs of fear and pessimism regarding the contextual environment.

It is also posited that the reality dimensions are different from the perspective of the transactional environment. In this regard, the inner process dynamism relating to the intentional subjective realm (IID) has different mental constructs (perceptions, aspirations and goals, meaning of life, anticipations of the future, etc.) in comparison to the contextual environment. The respondents' futures images would be less distorted by perceived uncertainty because the scanning of the transactional environment had to contend with less turbulence. This created an increased ability to

contextualise the speed, scope and significance of change as it will be easier to disentangle the S^3 for sense-making and to construct a manageable meaning structure of the developments in the transactional environment. The individual's external behaviour, i.e. the way a person acts externally, will also change by viewing the social external transactional environment as less challenging than the social contextual external environment.

The respondents' futures images relating to the contextual environment could be viewed to a limited extent in terms of Dator's (1998) cross-cultural four generic images of the future, as illustrated in §7.2.2 (Figure 7.5). In this regard, the various global challenges raised by the respondents as future concerns fall into Dator's continuation category as the present challenges are linearly projected as the probable global future that will make the next generations' quality of life worse than the present. It was not possible to evaluate the respondents' perspectives on Dator's other categories, viz. collapse, disciplined society and transformational society, because the survey answers did not elaborate on these issues.

7.3.2.1 Conclusions: Imagining the future

The respondents had a relatively well-developed futures consciousness. Their images of the future had both a personal transactional and global contextual perspective. They were optimistic about the future of their transactional environment but pessimistic about the future of the contextual environment. The transactional environment generated images of the future characterised by stronger subjectivity and greater confidence in controlling the challenges of the environment. The contextual environment generated images of the future, which were based on the uncontrollable global challenges and an insufficient knowledge base about the future.

7.3.3 Making the future: Actionability perspective

The respondents' disposition towards creating a better world, i.e. making the future, was determined within the context of their actionability. Three interrelated aspects were considered, viz. their views of the state of the world, who should take responsibility, and what contributions they would make to create a better world.

The respondents generally saw the state of the world as ambiguous. Their actionability to create a better world correlated with the two pathways in their thinking and their images of the future (Figure 7.9).

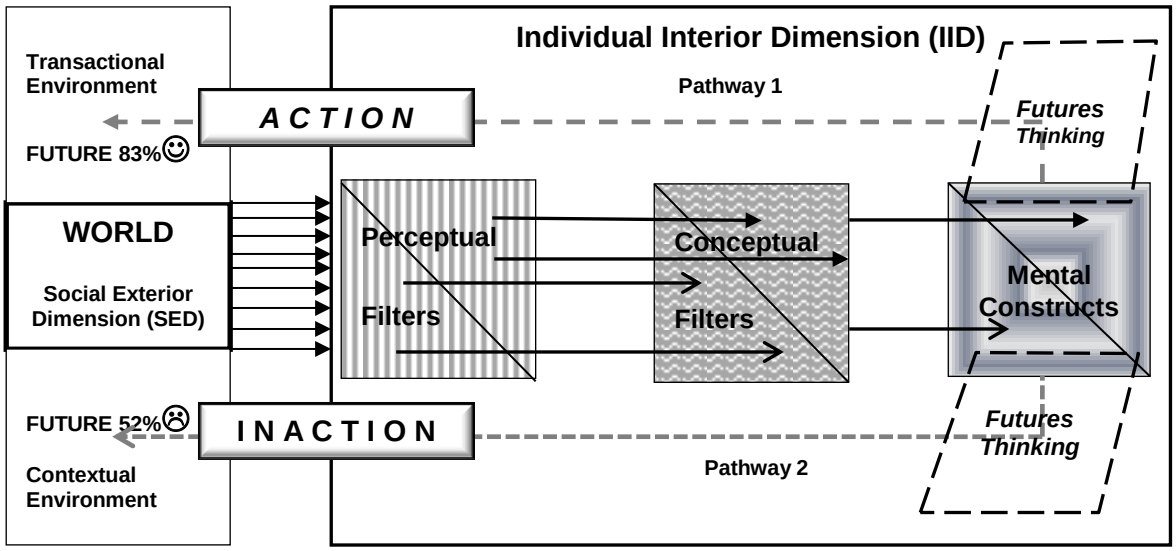

Figure 7.9: Actionability and futures disposition pathways

Source: Own compilation.

The respondents' generally optimistic personal futures within the transactional environment motivated them to make a contribution on the local level. In contrast, their wider view of the contextual environment was more pessimistic in terms of the future of the next generation, and was also the area where they believed they could not make a difference to create a better world. Their inaction regarding the contextual environment, therefore, made them vulnerable to realise an undesirable global future, as indicated by De Jouvenel (1967: 4) and Poli (2001: 70).

The respondents had relatively flexible optimistic dispositional mental constructs about their transactional environment but rigid dispositional mental constructs about the contextual environment. This again showed the interrelationship between their futures disposition and actionability within the context of the holistic futures thinking process (§3.3.1). In this regard, their future consciousness in relation to their rational thinking about the future led to conscious decision-making to create a better world. However, this was only true for their transactional environment. Here, their rational thinking was impacted by their generally optimistic futures disposition. The implication is that their making of the future is enhanced at the rational thinking level, which then moves to the systems thinking and foresight levels to obtain better insight and understanding of how their personal future takes shape, hence their strong focus (70%) on personal challenges as future concerns. This again relates to their belief that they can make a difference on the local level to create a better future, even though such contribution is mostly passive by participating in their country's political system.

In contrast, their rational thinking regarding the contextual environment follows a different track within the context of holistic futures thinking. Their more pessimistic futures disposition towards the contextual environment impacts their rational thinking negatively and they fail to develop better insight and understanding of how the contextual global future takes shape, hence their limited

focus (30%) on the global contextual challenges. This is probably also the reason why they believe they cannot make a difference on a global level to create a better world and, therefore, transfer the responsibility to national and international governance structures.

The respondents' two pathways in actionability, which correlate with their two pathways regarding their images of the future, support Rubin's (1996: 500) notion of a gap between the transactional and contextual futures dispositions. Rubin indicated that the transactional futures disposition mostly consists of a combination of hope and optimism, where actionability is goal-directed and purposeful. On the other hand, the contextual futures disposition is mostly negative and pessimistic, where actionability is geared towards coping with the challenges of the environment. Thus, making a contribution in the transactional environment to create a better future supports De Jouvenel's (1967: 5) "man in his role as an active agent" with the purpose of actualising the future, while his "man in his role as cognizant being" who refrains from making a contribution, relates to the respondents' approach towards the contextual environment. Similarly, the two pathways of actionability relate to the emotional states in futures consciousness (Lombardo, 2008: 18). The respondents' approach in the transactional environment relates to a futures consciousness with a positive emotional state that generates action while their approach in the contextual environment relates to a futures consciousness with a negative emotional state that generates immobility and avoidance.

The respondents' lack of contribution regarding the contextual environment also related to their measuring of the future. They had a poor knowledge base of the global contextual environment because they mostly scanned the general media sources on the Litany Level of Knowing. Hence, they accessed the superficial levels of knowing, which contribute to their lack of insight and understanding of the global contextual developments and which lead to a reactive approach of trying to cope with the global challenges. The societal problems, as projected on the Litany Level of Knowing, seemed too difficult to solve and created despair and inaction, and a transfer of responsibility to an external authority to solve the problems (Inayatullah, 2009: 36).

Although it could be argued that such scanning could also have an adverse effect on their disposition towards their transactional environment and actionability, such effect appeared to be moderated by their feeling of greater control over the transactional environment. In this regard, it is clear from their survey answers that they are not oblivious to the societal problems in their transactional environment. Hence, they have a disposition that they could make a difference on a local level but not beyond such level.

7.3.3.1 Conclusions: Making the future

The respondents' actionability followed the two pathways of their images of the future. Their general optimism about their future in the transactional environment impacted their rational thinking that fosters a belief that they could make a difference on the local level to create a better future. However, their pessimism about the global contextual future is a demotivation and they transferred

the responsibility for action to an external authority. Scanning on the Litany Level of Knowing contributed to their lack of action in the contextual environment.

7.4 META-INFERENCES

The meta-inferences are based on the analysis and findings relating to the majority of the interviewees and respondents in both inquiries. The purpose is to use the complementary strengths of the qualitative interview methodology and the quantitative survey methodology to develop meta-inferences to obtain comprehensive insight and understanding of their measuring, imagining and making of the future to answer the research question.

The purpose of environmental scanning is to create knowledge by learning about the environment as comprehensively as possible and to avoid a situation where scanning only leads to information creation and overload that will complicate understanding, insight and sense-making of the contextual environment.

It is posited that wide public and domain-specific environmental scanning will create the necessary contextual perspective to determine how different contexts and related trends intersect, interact and change direction to avoid contextual surprises. In this regard, public wide scanning includes all the STEEP areas comprehensively while domain-specific scanning scans from the specific domain focus to all the STEEP areas comprehensively to obtain contextual depth.

The survey inquiry suggested that people generally engage in wide public scanning that covers most STEEP areas, which potentially should provide them with a relatively good overview of developments in the global contextual environment. It potentially also creates peripheral vision of the contextual environment to see possibilities beyond the present and the transactional environment. The interview inquiry confirms that narrow public and narrow domain-specific scanning restricts peripheral vision of the contextual environment. Although knowledge is created about the narrow focus areas, narrow domain-specific scanning limits contextual depth because it fails to contextualise the narrow developments against the backdrop of the comprehensive contextual environment.

It is posited that the utilisation of the environmental scanning modes in support of the scanning scope in an effective and structured way is important for knowledge creation about the contextual environment. Both inquiries suggest that the viewing modes are mostly utilised to keep abreast of developments in the transactional and contextual environments. Also, the searching modes are utilised occasionally but in an unstructured way for purposes of own interest or occupational requirements. There is too much reliance on the viewing modes, which is not conducive to knowledge creation. In this regard, the viewing modes are too casual and unfocused, leading to an information overload that increases perceived uncertainty and complexity while decreasing understanding and sense-making of the contextual environment.

It is, thus, posited that people's predominant utilisation of the viewing modes reduces the benefits obtained with the wide scanning scope in terms of knowledge creation because it is not integrated seamlessly with the searching modes. In this regard, the inquiries show that there was no progressive movement in a structured way from the viewing to the searching modes. They did not have a comprehensive integrated view of the developments in the transactional and contextual environments and lacked the necessary peripheral vision to develop a holistic futures perspective.

It is posited that people generally do environmental scanning on the Litany Level of Knowing with limited scanning on the deeper levels of knowing. The inquiries show that scanning, regardless of the scope and modes, are mostly confined to the superficial Litany Level of Knowing. Limited scanning of the deeper levels of knowing is only done for narrow self-interest or narrow occupational requirements. Also, there is no clear attempt to move up and down or across the four levels of the Causal Layered Analysis methodology to deepen knowledge, insight and understanding of the contextual global environment.

This leads to insufficient knowledge due to the dominance of media information on the Litany Level of Knowing. Media information suffers from a narrative fallacy problem that combines distorted and factual information to create an unquestioned view of reality. The interviewees have shown that people are generally aware of the Litany Level of Knowing problem associated with the media but do not deliberately seek out the deeper levels of knowing to moderate distortions in media reporting regarding the contextual environment. Therefore, people are confined to the lower levels of information creation that limit knowledge, understanding, insight and sense-making of global contextual developments.

It is posited that environmental scanning of mostly the Litany Level of Knowing has a direct impact on people's scanning of the external and internal dimensions of reality. Both inquiries show that scanning is mostly done on the social external dimension of reality and, to some extent, also the individual external dimension of reality. However, limited scanning is done of the individual and cultural dimensions of reality. Such scanning is mainly confined to occupational requirements in very narrow focus areas. The Litany Level of Knowing does not expose people to information that adequately explains the interrelationship between the external and internal dimensions of reality. Learning is limited if scanning is mostly done of the external dimensions of reality, which will negatively affect people's judgement and foresight about the contextual global future. Their comprehension of the external developments will be restricted without knowledge and understanding of the interior reality dimensions that give rise to behaviour and actions in the external dimensions of reality.

It is posited that people generally rely on poor quality information about the contextual global environment due limitations of their scanning scope and modes that access mostly the Litany Level of Knowing and the external dimensions of reality. The inquiries show that both the interviewees and survey respondents accessed poor quality of information due to challenges with their

environmental scanning scope and modes, levels of knowing and the reality dimensions. They were predominantly exposed to information that lacked depth in the inquiry and had combinations of distorted and factual characteristics. Their judgement and foresight are, therefore, poor as confirmed by both inquiries. In this regard, their inadequate knowledge base of the contextual environment prompted them to linearly project the present global challenges as the probable global future without imagining possible alternative global futures.

It is posited that people's environmental scanning of respectively the transactional and contextual environments lead to images of the future that are respectively optimistic-hopeful and pessimistic-fearful. Both the inquiries tend to support the pessimistic-fearful futures disposition towards the global contextual environment relating to the probable global future. The QuestionPro survey is an exception albeit only because of the situational contingencies with the survey where a disposition change could not be measured.

An underlying reason for such negative prospective emotions and destructive beliefs about the contextual future appears to be related to the inner process dynamics of scanning the contextual environment. In this regard, the scanning of the current contextual environment leads to a predominantly threat perception as opposed to perceptions of possible opportunities. This was clearly apparent in the interview inquiry. Although the same threat perception is not so explicit in the survey inquiry, it is nevertheless present as challenges rather than threats. Also, both inquiries did not see possible opportunities in the contextual environment.

It is furthermore posited that the mental construct filtering of scanned information tend to be more alert to threats and challenges in the contextual environment than to similar threats and challenges in the transactional environment. Here, the four selective processes that act as rings of defence against external stimuli (Wurman, 1989: 247) and the inner process dynamics related to Taleb's (2008: 63) narrative fallacy interact to create images of threats and challenges. Thus, information that does not fit these threat-challenges images is not scanned or is discarded to maintain the threats-challenges coherent patterns and images of the contextual environment. This is illustrated in Figure 7.10 by using Gordon *et al.*'s (2009: 1) environmental scanning as a hierarchical system.

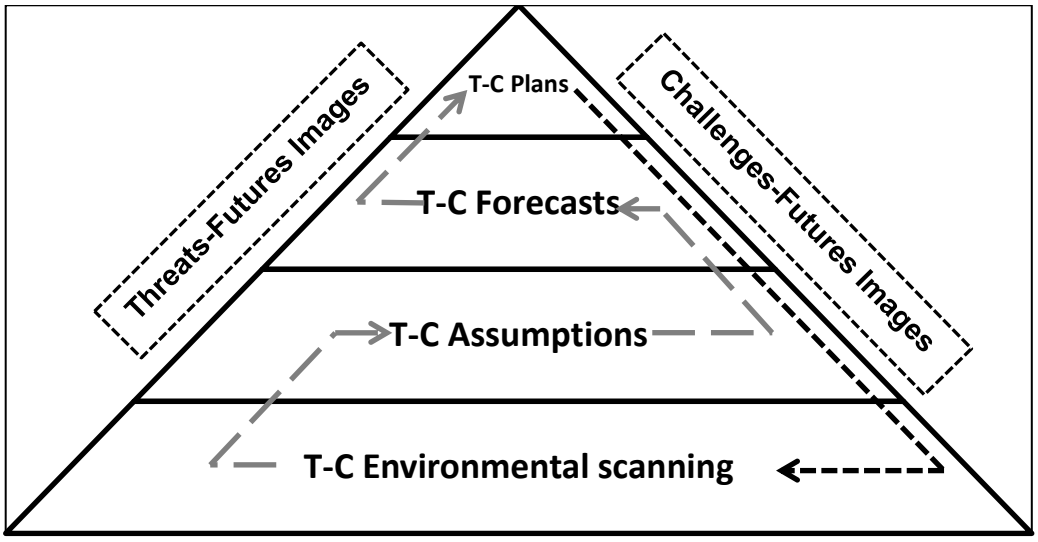

Figure 7.10: Threats-challenges ES as hierarchical system

Source: Adapted from Gordon *et al*. 2009: 1.

The threats-challenges based environmental scanning leads to threats-challenges assumptions, which are used to develop threats-challenges forecasts regarding the contextual global future for which counter-threats-challenges plans need to be made to cope with the perceived turbulent, uncertain and complex contextual environment. Such a threats-challenges approach also explains why the interviewees and respondents fall into Dator's (1998) continuation category regarding images of the future; their probable global futures images are based on a linear continuation of the present threats and challenges into the future.

It is posited that people generally are not inclined to make a contribution to create a better world when they view the future from the perspective of the contextual environment. However, they are willing to contribute on a local level to create a better world when they view the future from the perspective of the transactional environment. Such willingness is derived from relatively flexible optimistic dispositional mental constructs about their transactional environment. Their future consciousness has a positive emotional state that creates perceptions of control and that act as a motivational factor for contributing on the local level to create a better world. It is posited that the perspective from the transactional environment is generally unaffected by insufficient knowledge about the global contextual environment due to the narrow scope of the transactional environment.

The inclination to inaction in the contextual environment appears to be the result of rigid dystopian futures dispositions and negative emotional states of people's future consciousness, which is related to the superficial information of their ineffective environmental scanning approach. This leads to a reactive approach and mental and behavioural paralyses that create immobility and avoidance. People feel powerless to act because the contextual challenges appear too difficult to solve, hence the transfer of such responsibility to an external authority.

Although the contextual environment is the area over which people have no control, it is a mental fallacy that action, whether individually or collectively, cannot affect change on a global contextual scale. As Harman (1998: 159) has indicated, it needs a shift in thinking in favour of open-mindedness to create sustainable alternative futures. It is posited that such thinking is possible within the context of a holistic futures thinking process that is based on holistic knowledge obtained through Constructive Environmental Scanning (CES).

Finally, the MILES method showed that it is possible to deepen the inquiry to achieve holism with environmental scanning. However, it was found from the interviews and surveys that scanners generally did not know that their scanning lacks the necessary depth or that they contemplated the need to deepen their scanning to empower themselves to have good judgement and foresight of the contextual environment.

7.5 CONCLUSION

The multi-strand research approach achieved its objective to enhance insight, depth and understanding of the research problem to answer the research question. The qualitative strand (interviews) provided a clear perspective of people's measuring of the global future, the impact of this measuring on people's images of the global future and the influence that these images have on people's actions to create a better world. It shows that people generally have insufficient knowledge of the contextual global developments. People also have a pessimistic-fearful disposition towards the global future and mostly do not contribute or contribute passively in creating a better world. However, the inquiry of the qualitative strand provided perspectives exclusively within the framework of the contextual environment.

The quantitative strand (surveys) supported the perspectives of the qualitative strand in general terms. However, it provided additional and significant insights showing that people's measuring, imagining and making of the future follow a different track when seen from the perspective of the transactional environment. It showed that despite having insufficient knowledge of the contextual environment, people have an optimistic-hopeful disposition towards their personal future and are positively inclined towards making an active contribution on the local level to create a better world.

CHAPTER 8

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

This chapter presents the conclusions of the study in the context of the research question, as stated in §1.2. This is followed by a summary of findings that cover the interviews, the surveys and the meta-inferences. Conclusions regarding the research question are presented as well as suggestions for further research. The study's limitations are highlighted, and a summary of the study's contribution to the field of research is provided.

8.2 SUMMARY OF FINDINGS

8.2.1 Interviews: Summary of findings

The interviewees have a future consciousness capacity to create images of the future based on short- to long-term thinking. Their disposition towards the future is mostly pessimistic due to various current global challenges; they see the current state of the world as dismal and ambiguous. Their image of the probable global future remains pessimistic as they believe that the current global challenges will also characterise the future but in a severe state. They also have over-simplified images of an ideal future that will seemingly arise by itself. Their pessimistic disposition towards the global future is relatively rigid as they do not realistically foresee any global developments that could change their disposition towards the global future.

The interviewees mostly believe that they do have some knowledge albeit not necessarily sufficient to make a judgement about the global future. However, their knowledge base, judgement and foresight of the global contextual environment are inadequate as it has a superficial depth. All the interviewees predominantly scanned on the Litany Level of Knowing. Their environmental scanning scope, modes of scanning and levels of knowing were generally poor and devoid of sufficient depth in the inquiry. The quality of the information that they scanned is a combination of distortion and factual information while the reality dimensions were predominantly the external dimensions with limited consideration for the internal dimensions. This resulted in a reduced depth in their inquiry. The interviewees' foresight capacity was predominantly one-dimensional in that they projected the current contextual global challenges linearly into the future to imagine a probable future with similar or worse problems.

All the interviewees but one failed to imagine sustainable alternative global futures. The majority of the interviewees believed that it is everyone's responsibility to create a better future world. However, the majority are either not contributing or they are contributing passively through their occupations only to create a better future world. The minority of the interviewees who made an active contribution did so in their immediate local environment.

Based on the interviews, there is a marginal qualitative difference between the ESPs and the Non-ESPs regarding their future consciousness. Their futures thinking is similar, but the ESPs have a stronger occupational focus in terms of the contextual global issues. There is a qualitative difference between the ESPs and Non-ESPs regarding their knowledge base and foresight proficiency. The ESPs generally have a knowledge base advantage over the non-ESPs but the latter have a slight advantage over the ESPs regarding their foresight proficiency. There is a qualitative difference between the ESPs and Non-ESPs regarding actionability. The ESPs are either contributing passively through their occupations or not at all to create a better world while the Non-ESPs are mostly contributing actively albeit on a local level.

8.2.2 Surveys: Summary of findings

The respondents in the QuestionPro survey have a general futures consciousness by thinking and having feelings about the future and creating images of a probable future. The majority of the respondents have an optimistic-hopeful futures disposition while the rest have a pessimistic-fearful futures disposition.

The majority of the QuestionPro respondents have poor knowledge and foresight of the global contextual environment. Although their scope of scanning is wide within the public domain, their scanning of the levels of knowing, reality dimensions, and their information quality are poor, with only superficial depth in the inquiry. As a result, they also have poor judgement and foresight of the global contextual environment.

The respondents in the Telefónica-Financial Times survey have a relatively well-developed future consciousness by thinking about their life satisfaction, the concerns they have about the future, their disposition towards the future, where they want to be 10 years into the future, and the quality of life in the probable future. The majority of the respondents are optimistic about their future but believe the quality of life of future generations will be worse than currently. Most of the concerns about the future relate to personal challenges within their transactional environment. Global contextual challenges are a secondary concern.

The respondents have relatively poor knowledge, judgement and foresight of the global future. Their scanning scope is wide ranging with in the public domain. However, their scanning modes, levels of knowing, reality dimensions and quality of information are poor, with a superficial depth in the inquiry. Hence, the majority of the respondents have poor foresight that is also one-dimensional in approach as they do not foresee possible alternative futures.

The majority of the respondents do not believe they can make a difference on a global level to create a better world but they can make a difference on a local level. These local level contributions appear to be mainly passive in nature.

8.2.3 Summary of meta-inferences

An environmental scanning scope that covers the public and domain-specific areas of focus creates the necessary contextual perspective to determine how different contexts and related trends intersect, interact and change direction to avoid contextual surprises. Also, the utilisation of the environmental scanning modes in support of the scanning scope in an effective and structured way is important for knowledge creation about the contextual environment. However, the interviews and surveys indicated that peoples' predominant utilisation of the viewing modes reduced the benefits obtained with the wide scanning scope in terms of knowledge creation because the viewing and searching modes were not formally and seamlessly integrated.

The interviews and surveys indicated that people generally do environmental scanning on the Litany Level of Knowing with limited scanning on the deeper levels of knowing. As a result, they also mostly scanned on the social external dimension of reality and accessed poor-quality information about the global contextual environment, leading to insufficient knowledge.

People's scanning of the contextual environment generally leads to a futures disposition of pessimism and fear. This results from their mental constructs that tend to be more alert to threats and challenges in the contextual environment. These mental constructs filter the scanned information in accordance with their threat perceptions. Also, scanning of the contextual environment makes people less inclined to contribute actively to create a better future world. In contrast, people's scanning of the transactional environment generally leads to a futures disposition of optimism and hope. Their mental constructs tend to be less alert to threats and challenges. This means the perceived threats and challenges of the contextual environment do not predominate their mental constructs in the transactional environment. Their scanning of the transactional environment makes people willing to contribute actively on the local level to create a better future world.

Judged against the MILES method, scanners generally are unaware that they lack depth in their environmental scanning methodology, and, therefore, also lack good judgement and foresight of the contextual environment.

8.3 RESEARCH QUESTION CONCLUSIONS

The research question, which consists of two parts, has been adequately addressed by this study. The first part of the question primarily investigated whether people who scan on the Litany Level of Knowing have sufficient knowledge to develop good judgement and foresight of the global future to facilitate the development of the necessary paradigms required to imagine and pursue more sustainable alternative futures. The study confirmed that the Litany Level of Knowing is a superficial level of knowing as it relates to the global contextual environment. This level of knowing mostly contains information about the external reality dimension with limited information regarding

the internal dimensions of reality that give rise to developments in the contextual environment. Also, this level of knowing mainly consists of a combination of distorted and factual information that complicates sense-making of the developments in the contextual environment.

The study posits that sufficient knowledge to develop good judgement and foresight of the global future necessitates a holistic environmental scanning methodology. Such holism is required in support of futures thinking to create knowledge of the contextual environment and to gain an understanding of the forces and factors that create the future. In this regard, holism in environmental scanning is achieved by:

- Using all the scanning modes in an effective and balanced way;
- Scanning the deeper levels of knowing to overcome the problems associated with the superficial levels of knowing;
- Following an integrated approach of scanning both the external and internal dimensions of reality, and
- Obtaining information of a high quality.

Constructive Environmental Scanning (CES) has been posited in this study as a holistic environmental scanning methodology. CES is based on a new MILES approach to deepen the inquiry and to achieve the required holism in scanning in support of futures thinking holism. The constructive component of CES is proposed to develop the positive feelings of optimism and hope required to create the mental constructs to motivate people to imagine and pursue more sustainable alternative futures.

The outcomes of the interviews and surveys suggest that people generally have a good to well-developed future consciousness. However, this future consciousness mostly has a rigid pessimistic-fearful disposition towards the contextual global future, which creates dystopian future images about the probable future. Also, the interviewees and respondents did not have sufficient knowledge that would empower them to develop good judgement and foresight of the contextual global environment. Their knowledge is lacking due to deficiencies in their environmental scanning methodology. Hence, they have an underdeveloped futures thinking process that lacks holism. As a result, their foresight is one-dimensional by projecting the current global contextual challenges and developments linearly into the future. In this regard, they have no prospective thinking about possible alternative ways the future could develop and they do not understand this sufficiently well to imagine and pursue more sustainable alternative futures. Therefore, they do not make an active contribution to create a better world on the contextual global environmental level and would rather opt to contribute passively on a transactional local environmental level.

The second part of the research question wanted to determine whether there is a qualitative difference between environmental scanning professionals (ESP) and non-professionals (Non-ESP) with regard to the primary research question. Qualitative differences between ESPs and Non-ESPs

were noticeable, but not as assumed initially. Marginal qualitative differences exist with respect to futures consciousness. The ESPs' occupational requirements prompted them to have a stronger focus on contextual global issues. Unexpected differences were noted on the knowledge, judgement and foresight theme. The ESPs have the expected knowledge base advantage over the Non-ESPs, but this advantage is marginal and only related to their access to concealed information regarding their narrow occupational focus areas. No clear advantage is noticeable in terms of the other elements of their knowledge base. It was not expected that the ESPs would use the undirected viewing mode to such a great extent as they do. It was also not expected that the ESPs would mostly scan on the Litany Level of Knowing but utilise the Social Causes and Discourse/Worldview Levels of Knowing to deepen their inquiry.

The Non-ESPs' slight advantage over the ESPs with regard to foresight proficiency is unexpected. The ESPs' poor foresight is mainly due to the ESPs' narrow occupational focus areas and lack of a comprehensive contextual perspective. The Non-ESPs have the clear advantage regarding actionability as they actively contribute on a local level to create a better world while the ESPs are of the opinion that they do enough to achieve the same outcome through their occupation.

8.4 SUGGESTIONS FOR FURTHER RESEARCH

This study investigated whether people have sufficient knowledge of their contextual environment to develop good judgement and foresight of the global future to eventually contribute in creating a better world. The findings regarding the interview and survey inquiries suggest that people's disposition towards the future is, among others, linked to their global contextual perspective. However, the survey inquiry additionally indicated that people's disposition towards the future follows a two-path approach, viz. a local transactional perspective and a global contextual perspective. It is, therefore, suggested that further research be undertaken to inquire about the interrelationship between these two approaches in people's disposition towards the future, especially as it relates to their disposition to contribute towards creating more sustainable alternative futures. A related inquiry could investigate the dynamism of people's individual interior dimensions, i.e. their intentional process dynamics, which underpin their perception that a contribution on a global contextual level will not make a difference in creating a better world. Such inquiry should develop an approach to bridge the divide between the transactional and contextual perspectives in creating more sustainable alternative futures.

The study did not specifically undertake a practical application of the MILES method due to the situational contingencies as highlighted in §3.5 and §3.5.2. Nevertheless, a practical application of the MILES method could be tested in the following way:

- Identify a group of ESPs to participate in a MILES workshop.
- Allocate a scanning topic to each ESP for them to scan to obtain knowledge about the topic, prior to the workshop.

- Test the EPS knowledge on their topic through a questionnaire that require them to answer the what, where, who, why, and how of the topic.
- Conduct the workshop by introducing the ESPs to the MILES method's three underlying meta-theories, viz. biomatrix system thinking, integral futures and casual layered analysis.
- Let the ESPs again do scanning on their respective topics, but based on the MILES method of inquiry.
- Test the ESPs knowledge again through the questionnaire that require them to answer the what, where, who, why, and how of the topic.
- Compare the first and second questionnaire results to determine whether more depth has been obtained through the second inquiry.
- Conduct interviews with the ESPs to determine whether they found the MILES method useful and as a deeper form of environmental scanning and for knowledge creation.

8.5 STUDY LIMITATIONS

The study has certain limitations that need to be acknowledged. The qualitative interviews were the primary research instrument of the study to address the research question. The quantitative surveys were the secondary research instruments in support of the primary instrument. The interviewees of the pilot study and the primary research instrument were a relatively small sample from South Africa. A South Africa-only interviewee group gave a unique South African perspective to the inquiry as the interviewees were from diverse cultural and gender backgrounds, which emphasised the diversity of South African society. However, the small sample size of South Africans limited generalisations as it relates to the findings of the interviews to a broader global community. These limitations were moderated by the secondary global Telefónica-Financial Times survey results, which provide a complementary perspective regarding the inquiry.

The situational contingencies with the QuestionPro survey limited the survey's usefulness in terms of the specific themes under investigation. Not all the themes were covered adequately by this survey but the outcome is deemed sufficient to serve as a complementary perspective in the inquiry. The more comprehensive Telefónica-Financial Times survey filled the void of the QuestionPro survey to a large extent to ensure meaningful results based on the qualitative dominant multi-strand concurrent mixed-method research design.

8.6 SUMMARY OF RESEARCH CONTRIBUTIONS

The contribution of this study to research must be seen within the context of the limitations of the study and its specific focus area. It is acknowledged, therefore, that wider applicability might not necessarily be achieved. The main focus of the study was environmental scanning as a Futures Studies method and tool. Nevertheless, this study made a contribution to the general information-seeking discipline and more specifically to the Futures Studies discipline as it focuses on

environmental scanning as a method and tool. As indicated in §2.2, the literature suggests that information seeking or environmental scanning requires further study to develop a better understanding of information seeking and behaviour (Bates, 2010) and, within a business context, a theoretical understanding (Choo, 2001). In this regard, CES based on the MILES approach makes both theoretical and practical contributions to the general field of information seeking, and more specifically to environmental scanning.

The MILES approach of CES provides understanding and insight on a theoretical level regarding the process dynamics within a systems thinking context. This is done by integrating the integral futures and the CLA approaches with the Biomatrix systems approach to deepen the scanning proficiency. CES is, therefore, posited as an extension of the current environmental scanning methodology to broaden the scope of environmental scanning beyond the business context to be a practical tool for global change on all levels possible. Therefore, people could benefit by applying their minds to create knowledge if they look for information beyond the superficial levels of inquiry.

A contribution is made with regard to developing a better understanding of people's approach towards the future as it relates to holistic thinking within the context of the three core elements of futures studies, viz. measuring, imagining and making sustainable alternative futures. It contributed by emphasising that people's measuring of the future is too superficial and that they lack knowledge about the future. In addition, the study emphasises that people create images of the contextual future that are predominantly within the context of a threat perception with limited scope for the possible opportunities that the future may hold. However, images of the future becomes less threatening when the focus is on the transactional environment. Lastly, the study contributed by emphasising that people's making of sustainable alternative futures are seen as more viable within the context of the transactional environment while the responsibility for creating sustainable alternative contextual futures are transferred to external authorities.

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APPENDIX A:
FUTURES CONCEPTS

Table A.1: Futures concepts

Concept	Meaning
Alternative Futures	A core concept about the non-deterministic nature of the future – the utilisation of foresight and decision-making capacities to select from a wide range of future paths and outcomes.
Constructive and Destructive beliefs	Beliefs are constructive when it assists an individual to develop positive feelings of optimism and hope. Beliefs are destructive when it leads to feelings of stress, fear and pessimism (Newberg, 2010)
Critical Futures Studies	An approach of “looking more deeply” into something.
Empowerment Principle	The view that fears and concerns about futures can be resolved by (1) acknowledging the validity of the source of the fear, (2) moving the focus of attention away from the fear to exploring a range of responses, and (3) developing a process to discover and implement high-quality responses.
Environment	Transactional: The area of the business environment over which a person or organisation has significant influence, i.e. the ability to influence outcomes and being influenced by them, to develop strategies to acquire an advantage. Contextual: The area of the business environment over which a person or organisation has little or no influence but where own affairs need to be arranged in such a way that survival is ensured regardless of developments in this environment (Van der Heijden, 2005: 115).
Fatalism	The view that one is powerless to change the course of events.
Foresight	The capacity to think ahead and consider, model, create, and respond to future eventualities. The process of developing a range of views on possible ways the future could develop, and understanding these sufficiently well to be able to decide what decisions can be taken today in order to create the best possible tomorrow (Horton, 1999: 6)

Future	A dimension of human existence which extends ‘forward’ beyond the present and functions as a principle of present action. Makes it possible for humans to have plans, purposes, goals, intentions and meanings. It follows that without the futures dimension, and these active capacities, the present becomes 'thin' and incapable of supporting human activity of any kind. Hence, the future is not the blank space, or unknowable realm that it is popularly thought to be. It has tangible content and can be explored, colonised, imaged and created. It cannot be predicted and there are no future facts. The future is perhaps best seen as the realm of interpretive knowledge.
Holism	The attempt to see the world in all its diversity as being essentially interconnected and whole.
Optimism and Pessimism	Opposite attitudes often associated with the future. A basic starting point for enquiring about people’s disposition towards the future but with ambiguous implications as both attitudes could potentially motivate or inhibit an approach to the future.
Short-term thinking	A major barrier to the implementation of foresight.
Sustainability	The notion that human use of a system, resource or environment could take place indefinitely without significant deterioration of impact.
Visioning	A process of making images of the future sufficiently real and compelling to act as goals to achieve.

Source: Adapted from Slaughter, 2005a (unless cited otherwise).

APPENDIX B:

MULTI-STRAND CONCURRENT MIXED DESIGN

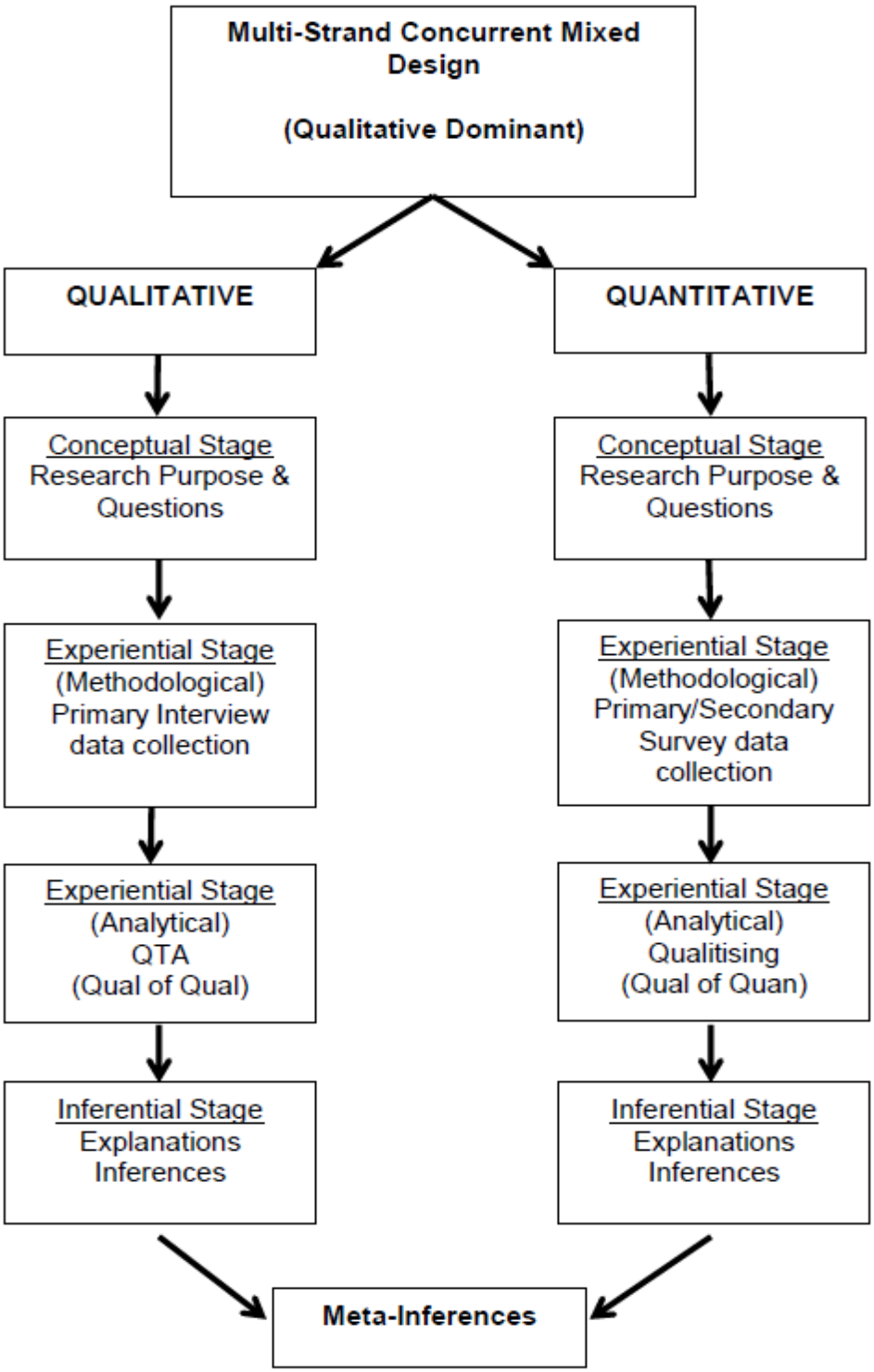

Figure B.1: Multi-strand concurrent mixed design.

Source: Own compilation.

APPENDIX C:

MAXQDA MEMORANDA

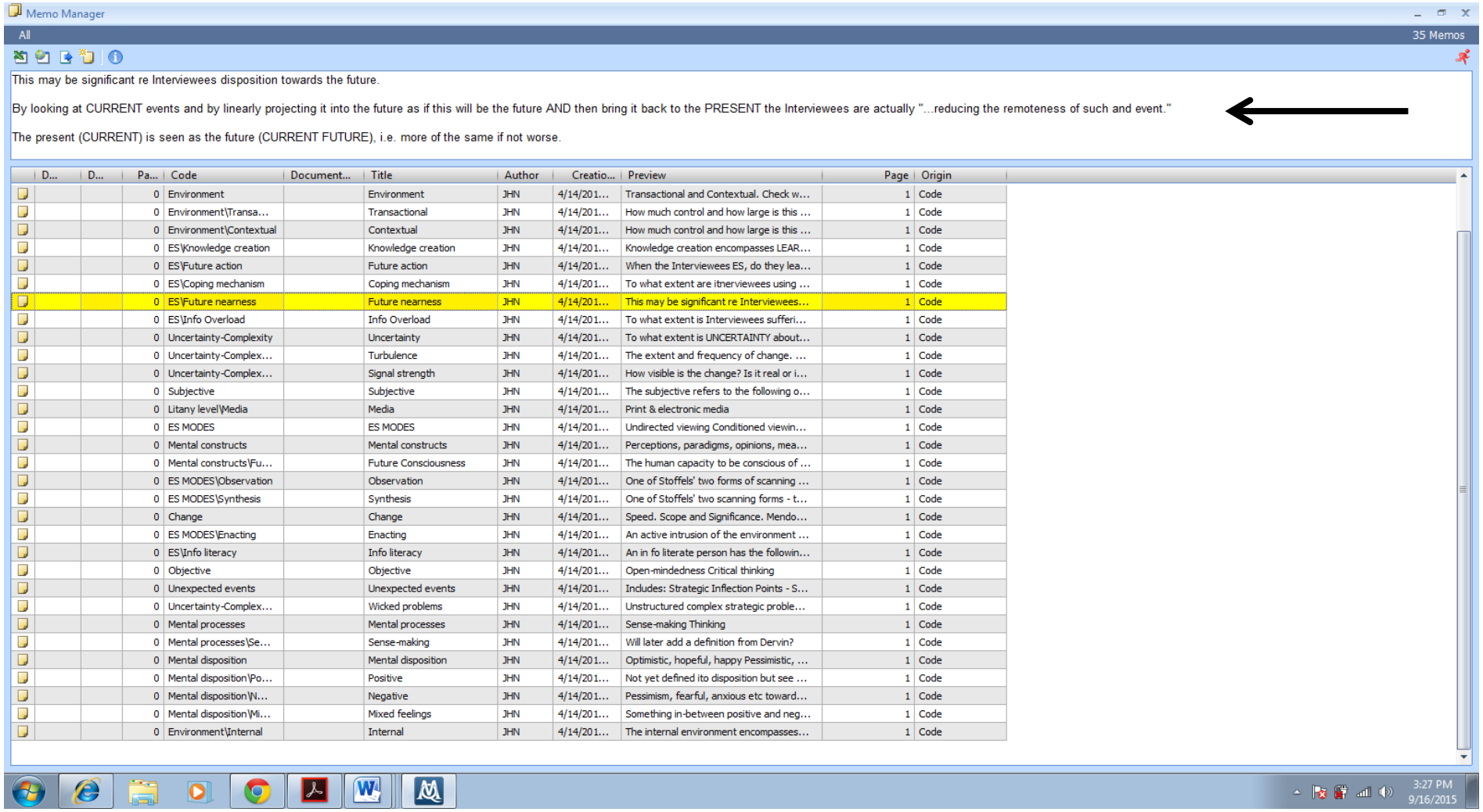

Figure C.1: MAXQDA memoranda

APPENDIX D:

MAXQDA CODING: MAIN CATEGORIES

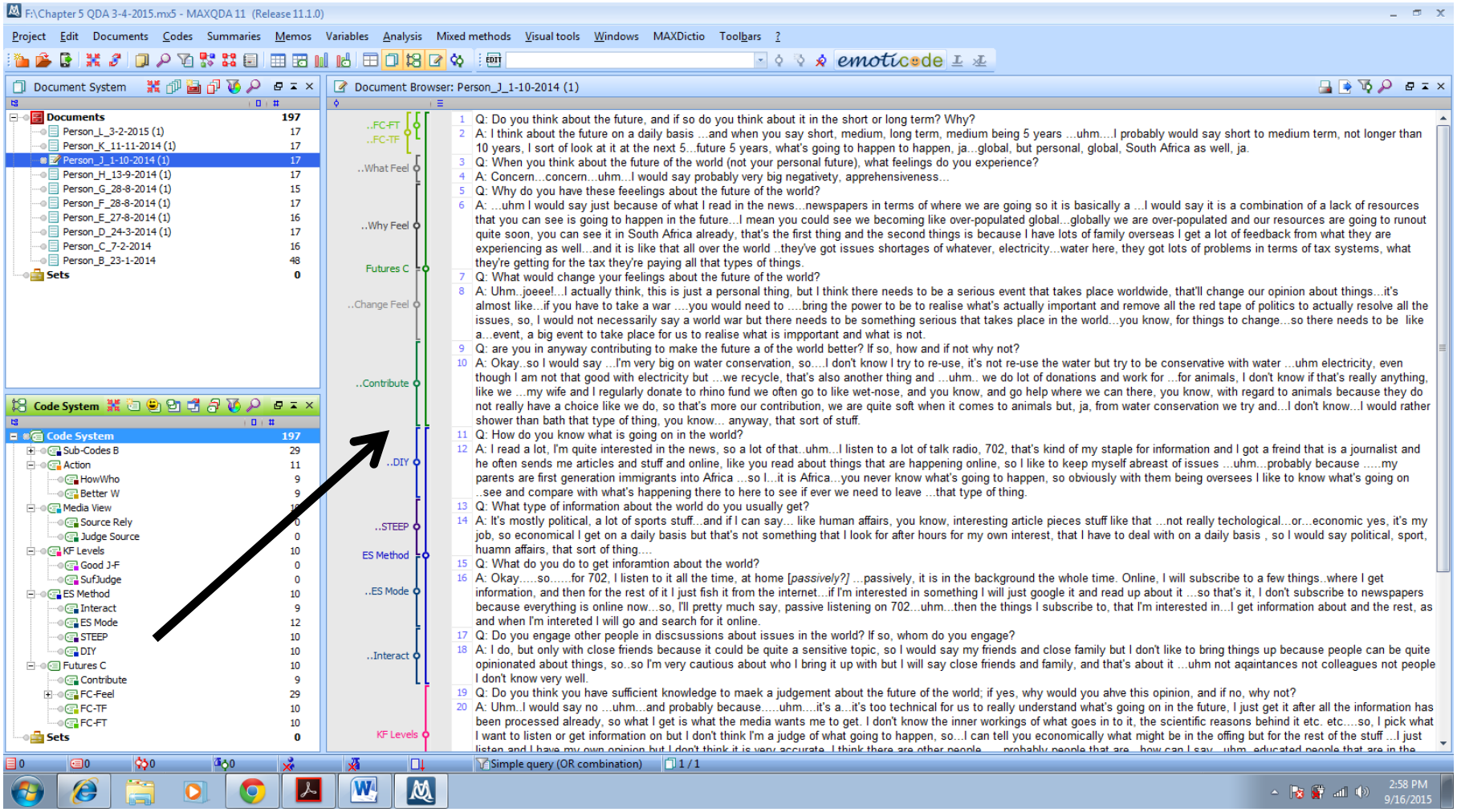

Figure D.1: MAXQDA Coding: Main categories

APPENDIX E:

MAXQDA 2nd CODING: SUB-CATEGORIES

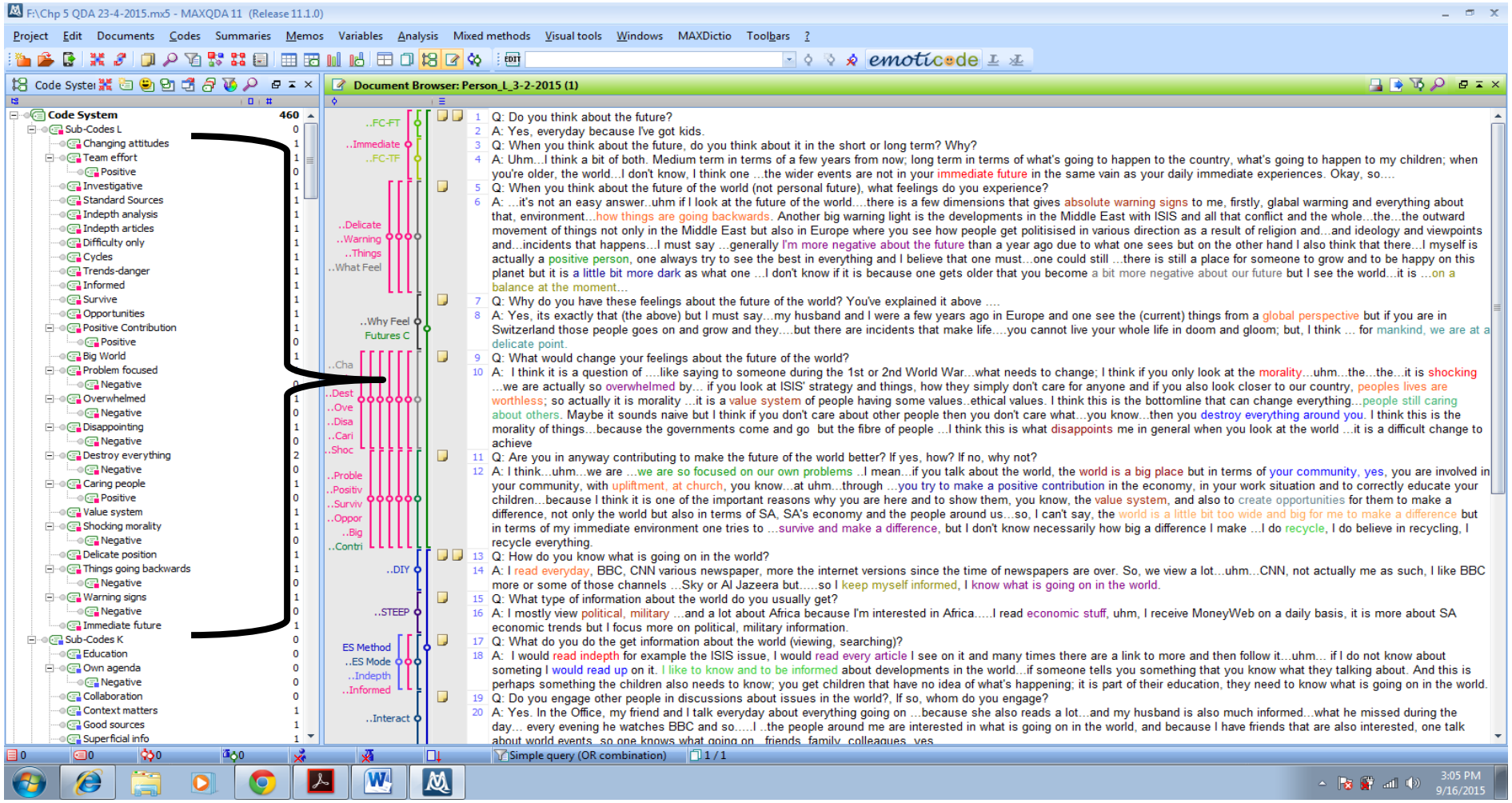

Figure E.1: MAXQDA 2nd Coding: Sub-categories

APPENDIX F:

CASE- AND THEME-ORIENTED PROFILE MATRIXES

Table F.1: Case-oriented (Individuals) Profile/Thematic Matrix

KNOWLEDGEBASE	Bad	Poor	Average	Good	Excellent
ES Scope					
ES Modes					
Levels of knowing					
Reality Dimensions					
Information Characteristics					
FORESIGHT	**Bad**	**Poor**	**Average**	**Good**	**Excellent**
One-dimensional					
Multi-dimensional					

Source: Own compilation.

Table F.2: Case-oriented (Groups) Profile/Thematic Matrix

Persons / *Themes*	ESP	Non-ESP
Futures Thinking	**Short to Long term** On what issues	**Short to Long term** On what issues
Futures Disposition	**Pessimism** Reasons why (Number of persons) **Realism** Reasons why (Number of persons)	**Pessimism** Reasons why (Number of persons) **Optimism** Reasons why (Number of persons)
Futures Image	**Probable Future** Reasons why (Number of persons) **Ideal Future** Reasons why (Number of persons) **Possible Future** Reasons why (Number of persons)	**Probable Future** Reasons why (Number of persons) **Ideal Future** Reasons why (Number of persons) **Possible Future** Reasons why (Number of persons)
Disposition Change	**Flexible** Reasons why (Number of persons) **Fixed** Reasons why (Number of persons)	**Flexible** Reasons why (Number of persons) **Fixed** Reasons why (Number of persons)

Source: Own compilation.

Table F.3: Theme-oriented Profile/Thematic Matrix

	Interviewees
Futures Thinking	**Short to Long term** On what issues
Futures Disposition	**Specific Disposition** Reasons why
Futures Image	**Type of Future** Reasons why
Disposition Change	**Flexible** Reasons why **Fixed** Reasons why

Source: Own compilation.

Table F.4: Quality of information analysis

Characteristics / ES areas	False (Bad quality)	Distortions (Poor quality)	Facts (Average quality)	Concealed Info (Good quality)
ES Scope				
Public ES	X	X	X	
Domain ES		X	X	
Complete ES		X	X	X
ES Modes				
Undirected Viewing	X	X	X	
Conditioned Viewing		X	X	
Informal Searching		X-	X+	
Formal Searching			X+	X#
Levels of Knowing				
Litany	X	X	X	
Social Causes		X	X	
Discourse-Worldview			X+	X-
Myth-Metaphor				X*
Reality Dimensions				
External (SED-IED)	X	X	X	
Internal (CID-IID)		X-	X	X^

X-	*Limited exposure to*
X+	*Mostly exposed to*
X#	*Concealed information depends on the depth of the inquiry*
*X**	*Concealed information in terms of consciousness (unconscious beliefs) as causal reality*
*X^*	*CID-IID as deeper levels of inquiry as it relates to levels of knowing (Discourse-Worldview & Myth-Metaphor)*

Source: Own compilation.

Table F.5: ESP and Non-ESP future consciousness comparison

	ESP	Non-ESP
Futures Thinking	**Short to Long term**	**Short to Long term**
Futures Disposition	**Pessimism** **Realism**	**Pessimism** **Optimism**
Futures Image	**Probable Future** **Ideal Future** **Possible Future**	**Probable Future** **Ideal Future** **Possible Future**
Disposition Change	**Flexible** **Fixed**	**Flexible** **Fixed**

Source: Own compilation.

Table F.6: ESP and Non-ESP knowledge and foresight comparison

KNOWLEDGE	Bad		Poor		Average		Good		Excellent	
	ESP	N-ESP	ESP	N-ESP	ESP	N-ESP	ESP	N-ESP		
ES Scope										
ES Modes										
Levels of knowing										
Reality Dimensions										
Information Quality										
FORESIGHT										
One-dimensional										
Multi-dimensional										

Source: Own compilation.

APPENDIX G:

QUESTIONPRO: SURVEY

Table G.1: QuestionPro: Introductory statement

FUTURE OF OUR WORLD

12%

Exit Survey

Hello:
You are invited to participate in my survey on people's views regarding the FUTURE OF OUR WORLD for the purpose of my PHD in Futures Studies. This survey does NOT measure your views about the future of your country or of your personal life, only the Global Future, i.e. the future of our world, Earth. It will take approximately 5 minutes to complete the questionnaire.

Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. It is very important for me to learn your opinions.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential. If you have questions at any time about the survey or the procedures, you may contact Jan Naude by email at the email address nikao217@yahoo.com
Thank you very much for your time and support. Please start with the survey now by clicking on the Continue button below.

Table G2: QuestionPro questionnaire

FUTURE OF OUR WORLD

100%

Back Exit Survey

In which age group are you?

- Younger than 25 years
- Between 25 and 35 years
- Between 36 and 55 years
- Older than 55 years

Are you living in an

- Urban area
- Rural area

Do you think the world has a

- ○ Good future
- ○ Bad future

The reasons why you think the world's future is good/bad are because of advancements/problems in the following areas:

- ☐ Social
- ☐ Technology
- ☐ Economics
- ☐ Environment
- ☐ Politics

From which sources do you get your information about the world?

- ☐ TV/Radio
- ☐ Newspapers
- ☐ Internet
- ☐ Friends
- ☐ Social Media
- ☐ Other

In which Region of the World are you living?

- Europe
- Asia
- Middle East
- North America
- South America
- Africa
- Australasia/Oceania

APPENDIX H:

THREE METHODS OF MILES

Table H1: Correlation of three methodological approaches

Biomatrix (Process)	**Integral Futures (Dimensions of Reality)**	**CLA (Ways of Knowing)**
Inward-directed tapping: Inert Mental State – to maintain/enhance integrity of Entity	Individual Interior Dimension (IID) - intentional Cultural Interior Dimension (CID) – shared meaning	Litany – trends & problems Social Causes – quantitative interpretation Discourse/Worldview – deeper assumptions Myth/Metaphor – unconscious dimensions
Inward-directed contribution: Flexible Mental State (change or maintain) - to maintain/enhance integrity of Entity	Individual Interior Dimension (IID) - intentional Cultural Interior Dimension (CID) – shared meaning	Litany – trends & problems Social Causes – quantitative interpretation Discourse/Worldview – deeper assumptions Myth/Metaphor – unconscious dimensions
Outward-directed tapping: Environmental scanning – obtain information & create knowledge of contextual environment	Individual Exterior Dimension (IED) - behaviour Social Exterior Dimension (SED) – physical world	Litany – trends & problems Social Causes – quantitative interpretation Discourse/Worldview – deeper assumptions Myth/Metaphor – unconscious dimensions
Outward-directed contribution: Active or passive response to outer environment to benefit Entity	Individual Exterior Dimension (IED) - behaviour Social Exterior Dimension (SED) – physical world	Litany – trends & problems Social Causes – quantitative interpretation Discourse/Worldview – deeper assumptions Myth/Metaphor – unconscious dimensions
Self-directed tapping: Unconscious beliefs - disposition towards scanning: full or selective exposure	Individual Exterior Dimension (IED) – behaviour (SED) – physical world Individual Interior Dimension (IID) - intentional Cultural Interior Dimension (CID) – shared meaning	Litany – trends & problems Social Causes – quantitative interpretation Discourse/Worldview – deeper assumptions Myth/Metaphor – unconscious dimensions
Self-directed contribution: Motivated-demotivated to contribute to outer environment to benefit Entity	Individual Exterior Dimension (IED) - behaviour (SED) – physical world Individual Interior Dimension (IID) -intentional Cultural Interior Dimension (CID) – shared meaning	Litany – trends & problems Social Causes – quantitative interpretation Discourse/Worldview – deeper assumptions Myth/Metaphor – unconscious dimensions

Source: Own compilation.

APPENDIX I:

T-FT SURVEY QUESTIONS RELATED TO STUDY

Telefonica-Financial Times Survey 2013: Questions addressing the Research Question

1. Litany Level

Table q79 - What sources do you primarily use for information on restaurants, shopping, nightlife, entertainment, services, etc. in your area? Please select all that apply.
Table q106 - Which of the following have influenced your financial knowledge and actions? Please select all that apply.
Table g142[..].mA_Columns - In your opinion, what is the best source for each of the following?

- In-depth coverage of a social issue
- Credible coverage of news
- Entertainment
- A developing news story/crisis

- Television
- Radio
- Printed newspapers/magazines
- Internet
- Social media

Table q150 - Which activities do you participate in online?

- Surf websites
- Read
- Research
- Shop
- Game
- Consume media
- Social media
- Email
- Other

2. Sufficient Knowledge

Table q78 - Of the following, which three have been the most influential in shaping your outlook on life to date?
Table q128 - How would you describe your personal knowledge and comfort level with technology?
Table q141 - What is your preferred method of connecting and communicating with others?
Table q154 - Thinking about the impact of technology on the ability to make a difference, which of the following do you agree with more?

- Technology helps make a difference more on a local level
- Technology helps make a difference more on a global level

Table q165 - How strongly do you agree or disagree with the following statement? Technology has made me better informed about political issues in my country
Table qAUSS2 - What is the highest level of formal education that you have completed?

3. Good Judgement & Foresight

Table q5 - In general, do you think your country's best days are ahead, or behind?
Table q6 - In your opinion, what is the most important issue facing the world today?
Table q7 - In your opinion, what is the most important issue facing the region where you live?
Table q7 - In your opinion, what is the most important issue facing the region where you live?
Table q9 - In your opinion, which one of the following countries in this region (North America) is best prepared for the future?
Table q10 - In your opinion, which one of the following countries in this region (Latin America) is best prepared for the future?

Table q11 - In your opinion, which one of the following countries in this region (Western Europe) is best prepared for the future?
Table q12 - In your opinion, which one of the following countries in this region (Eastern Europe) is best prepared for the future?
Table q13 - In your opinion, which one of the following countries in this region (Asia) is best prepared for the future?
Table q14 - In your opinion, which one of the following countries in this region (Middle East/Africa) is best prepared for the future?

4. Paradigms/Imagine Futures/Actionability

IMAGE of Future
Table q5 - In general, do you think your country's best days are ahead, or behind?
Table q6 - In your opinion, what is the most important issue facing the world today?
Table q7 - In your opinion, what is the most important issue facing the region where you live?
Table q7 - In your opinion, what is the most important issue facing the region where you live?
Table q9 - In your opinion, which one of the following countries in this region (North America) is best prepared for the future?
Table q10 - In your opinion, which one of the following countries in this region (Latin America) is best prepared for the future?
Table q11 - In your opinion, which one of the following countries in this region (Western Europe) is best prepared for the future?
Table q12 - In your opinion, which one of the following countries in this region (Eastern Europe) is best prepared for the future?
Table q13 - In your opinion, which one of the following countries in this region (Asia) is best prepared for the future?
Table q14 - In your opinion, which one of the following countries in this region (Middle East/Africa) is best prepared for the future?
Table g67[..].mA_Columns - How strongly do you agree with each of the following statements?
I know exactly where I want to be in 10 years

Table q82 - How optimistic are you about your future?

Table q172 - Which of the following do you think are the three most important ways to make a difference in the world?

Improving the access to and the quality of education
Providing basic food and shelter to people
Supporting programs for youth
Providing disaster relief / humanitarian efforts
Eliminating poverty
Research to cure disease
Protecting our environment
Supporting the visual and/or performing arts
Fighting for human rights
Supporting the charitable endeavors of my religious group
Helping people live healthier lives
Promoting sustainable energy
Helping people to look for work
Promoting democracy around the world
Other

5. ACTION

Table q52 - How often do you participate in your country's political process (e.g. voting, contributing money to a political candidate, etc.)?

Table q55 - Which of the following statements most closely represents your opinion about the impact individual participation has in your current political system?

One person's participation does make a difference

One person's participation does not make a difference

Table q156 - Which of the following statements do you agree with more?

Technology helps people engage with society

Technology helps people disengage from society

Table q162 - Thinking about the impact of social media on the dialogue of today, which of the following do you agree with? Social media makes it...

Easier to listen to the dialogue of today

Easier to contribute to the dialogue of today

Easier to listen AND contribute to the dialogue of today

Table q163 - How strongly do you agree or disagree with the following statement? Social media plays an important role in current political events and movements in my country

Table q164 - In your opinion, which of the following is the best use of social media? Please select one of the following.

Keeping in touch with family, friends, colleagues, etc.

Getting news

Being an activist

Following celebrities

Keeping up with brands/companies you are interested in

Table q173 - Do you think it is more important to donate time or money?

Table q174 - Do you think it is more important to support a local cause or a global cause?

Table q176 - Which of the following statements comes closer to your view?

I believe 1 person can make a global difference

I don't believe 1 person can make a global difference

Table q178 - Do you believe you can make a global difference?

APPENDIX J:

T-FT SAMPLE SIZE AND MOE

Table J.1: Telefónica Methodology: Sample sizes and MOE

Region/Country		Sample Size	MOE
North America	US	1000	+/-3.1%
	Canada	151	+/-8.0%
Latin America	Brazil	1028	+/-3.1%
	Mexico	503	+/-4.4%
	Argentina	500	+/-4.4%
	Peru	150	+/-8.0%
	Chile	500	+/-4.4%
	Colombia	150	+/-8.0%
	Venezuela	150	+/-8.0%
Western Europe	Spain	915	+/-3.2%
	UK	900	+/-3.3%
	Germany	919	+/-3.2%
	Italy	251	+/-6.2%
	France	251	+/-6.2%
Central & Eastern Europe	Czech Republic	500	+/-4.4%
	Russia	500	+/-4.4%
	Poland	264	+/-6.0%
Asia	India	1000	+/-3.1%
	China	1003	+/-3.1%
	Japan	150	+/-8.0%
	Korea	151	+/-8.0%
	Australia	151	+/-8.0%
ME/Africa	Turkey	251	+/-6.2%
	Israel	150	+/-8.0%
	KSA	232	+/-6.4%
	Egypt	250	+/-6.2%
	South Africa	201	+/-6.9%
TOTAL		**12 171**	**+/- 0.9%**

Source: Telefónica, 2013.