

**Validation of individual consciousness in
Strong Artificial Intelligence: An African
Theological contribution.**

By

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submitted in accordance with the requirements

for the degree of

DOCTOR OF THEOLOGY

in the subject of

SYSTEMATIC THEOLOGY

at the

UNIVERSITY OF SOUTH AFRICA

PROMOTER: PROF CW DU TOIT

JUNE 2006

Abstract:

The notion of identity has always been central to the human person's understanding of self. The question "who am I?" is fundamental to human being. Answers to this question have come from a wide range of academic disciplines. Philosophers, theologians, scientists, sociologists and anthropologists have all sought to offer some insight.

The question of individual identity has traditionally been answered from two broad perspectives. The objectivist approach has sought to answer the question through empirical observation – you are a mammal, you are a homo-sapien, you are male, you are African etc. The subjectivist approach has sought to answer the question through phenomenological exploration – I understand myself to be sentient, I remember my past, I feel love etc.

A recent development in the field of computer science has however shown a shortcoming in both of these approaches. Ray Kurzweil, a theorist in strong artificial intelligence, suggests the possibility of an interesting identity crisis. He suggests that if a machine could be programmed and built to accurately and effectively emulate a person's conscious experience of being 'self' it could lead to a crisis of identity. In an instance where the machine and the person it is emulating cannot be either objectively distinguished (i.e., both display the same characteristics of the person in question), or subjectively distinguish themselves (i.e., both believe themselves to be the 'person in question' since both have an experience of being that person. This experience could be based on memory, emotion, understanding and other subjective realities) how is the true identity of the individual validated? What approach can be employed in order to distinguish which of the two truly is the 'person in question' and which is the 'emulation of that person'?

This research investigates this problem and presents a suggested solution to it. The research begins with an investigation of the claims of strong artificial intelligence and discusses Ray Kurzweil's hypothetical identity crisis. It also discusses various approaches to consciousness and identity, showing both their value and shortfall within the scope of this identity conundrum. In laying the groundwork for the solution offered in this thesis, the integrative theory of Ken Wilber is presented as a model that draws on the strengths of the objectivist and subjectivist approaches to consciousness, yet also emphasises the need for an approach which is not only based on individual data (i.e., the objectivist – you are, or subjectivist – I am). Rather, it requires an intersubjective knowing of self in relation to others.

The outcome of this research project is an African Theological approach to self-validating consciousness in strong artificial intelligence. This takes the form of an African Theology of relational ontology. The contribution falls within the ambit of Christian anthropology and Trinitarian theology – stressing the Christian belief that true identity is both shaped by, and discovered in, relationship with others. The clearest expression of this reality is to be found in the African saying *Umuntu ngumuntu ngabantu* (A person is a person through other persons).

Key words:

Identity, artificial intelligence, strong artificial intelligence, Moore's law, Turing test, the law of accelerating returns, consciousness, objective, subjective, neuro-theology, integral theory, holon, Holarchy, quadrant, non-dual, perennial philosophy, *ubuntu*, African, intersubjective, relational ontology, Trinity, anthropology, Soteriology, *perichoresis*

Declaration

Student number: **838-857-1**

I declare that,

“Validation of individual consciousness in Strong Artificial Intelligence: An African
Theological contribution”

is my own work and that all sources I have used or quoted have been indicated and
acknowledged by means of complete references

SIGNED: _____ DATE: _____

Rev D A Forster

Acknowledgements: *Umuntu ngumuntu ngabantu – We are, therefore I am.*

I am deeply indebted to Professor Cornel W du Toit who has patiently listened to me, carefully and critically read my work, and wisely directed my discoveries in this research project. He is a highly regarded scholar and a deeply valued mentor.

I also gratefully acknowledge the input of my colleagues in the Education for Ministry and Mission Unit of the Methodist Church of Southern Africa – the Reverends Victor Tshangela, Charmaine Morgan, Sidwell Mokgothu, Madika Sibeko, Phidian Matsepe, Ruth Jonas, and Neville Richardson. I am thankful for the time and freedom I have been given over the last three years to complete this research project. I thank the Reverends Peter Grassow and Peter Woods for challenging me to think outside of the box, yet remain true to the Christian faith. My close friends George Marchinkowski and Christopher Judelsohn, are a constant source of inspiration – always reminding me that theology is the servant of the Church. In the process of the research I have learned a great deal from my students at John Wesley College and the University of South Africa, many of who have a far better understanding of the concept of community and *ubuntu* than I will ever have. I am thankful for the prayers and support of the members of the Bryanston Methodist Church. You minister to me so much more than I could ever minister to you. I want to thank the following friends and colleagues for their guidance, encouragement, and practical advice: Doctors Kevin Snyman, Derek Verrier, Neville Richardson, Jennifer Slater, Wessel Bentley and Professor Louise Kretzschmar. I also wish to acknowledge the input Professors Dirkie Smit (Stellenbosch), Ernst Conradie (UWC), Wentzel van Huyssteen (Princeton), and Fraser Watts (Cambridge) who helped to shape and form the initial thoughts that lead to this research. They invested time and energy in me. They gracefully listened to my fledgling attempts at articulating what I felt but could not yet express.

The expression of theological concepts is a complex task, and even more so when one struggles with a poor grasp of English grammar! I am eternally grateful to Mrs Joan Hartshorne, my aunt, for her masterful skill in framing my thoughts and sharpening my use of the English language.

I need to pay tribute to my family who have shaped my identity and constantly bless me with the gift of life. I deeply value my parents Ian and Margaret Forster, who encouraged me to follow my calling in ministry; and Brian and Brenda Seviour for accepting me into their family, for their prayers and interest in my work. To my wife Megan, and daughter Courtney, whose loving care and sincere Christian faith are the closest things to *ubuntu* I have ever experienced. Without you I am not. And then, to our unborn child – we do not yet know you, however, your life is the crowning gift of this body of work. You will come to understand in due course.

Lastly, and most importantly, to my great ancestor, the firstborn of creation, Jesus Christ – to him I owe not just my gratitude; I owe him my whole life.

Table of contents

Title page

Summary and key words

Declaration

Acknowledgements

Table of contents

1. INTRODUCTION: STATING THE RESEARCH PROBLEM, OUTLINING THE RESEARCH METHOD, PROCESS AND STRUCTURE..... 6

1.1. Background to the research problem. 7

1.2. Statement of the research question and how this research aims to investigate it..... 10

1.3. The goals of this research. 12

1.4. Motivation for the research..... 15

1.5. Research design. 16

1.5.1. The research approach. 17

1.5.2. The research strategy. 18

1.6. An overview of the relevant literature. 19

1.6.1. Literature in computer science, Artificial Intelligence and philosophy that is relevant to this research. 19

1.6.2. Literature in consciousness studies and the brain that is relevant to this research. 22

1.6.3. Literature in integral philosophy that is relevant to this research. 23

1.6.4. Literature in African cosmology, views of personhood, identity, and theology that are relevant to this research..... 25

1.7. An outline of the study. 30

2. A CRISIS OF IDENTITY: UNDERSTANDING HOW THE HYPOTHETICAL CONSCIOUSNESS ASSERTIONS OF RAY KURZWEIL’S STRONG ARTIFICIAL INTELLIGENCE ACCENTUATE THE PROBLEM OF SELF-VALIDATING INDIVIDUAL HUMAN CONSCIOUSNESS AND IDENTITY CLAIMS. 33

2.1. Meaning and identity in an ever-changing world: The Hypothetical identity crisis that arises from consciousness emulation in Strong Artificial Intelligence. 34

2.2. Artificial consciousness. A discussion of the hypothesis of Strong Artificial Intelligence leading to an emulative consciousness.....	39
2.2.1. Pierre Teilhard de Chardin’s evolution of consciousness as a theological model that suggests that evolution has an intent much larger than the evolution of human beings.....	40
2.2.2. Ray Kurzweil and Bill Joy’s naturalistic assumptions relating to cosmic evolution.....	47
2.2.3. The functioning of computational devices in relation to Moore’s law.....	49
2.2.4. What is a computer?	50
2.2.5. How computers emulate intelligence: Artificial Intelligence (AI) and the Chinese room.....	58
2.2.6. Kurzweil’s additions: Whereto from Moore’s Law? The law of accelerating returns.....	66
2.2.7. The claims of Strong Artificial Intelligence.....	74
2.2.8. “I’m lonely and bored; please keep me company”. Is computational consciousness truly such an incredible notion?	77
2.3. Critiques of the claims of Strong Artificial Intelligence.....	82
2.3.1. The argument from scientific progress.....	83
2.3.2. The argument from technological progress.....	85
2.3.3. The argument against views of the human brain as a machine.....	87
2.3.4. The argument against progress in Artificial Intelligence.....	88
2.3.5. The argument against the Church-Turing thesis.....	89
2.4. Concluding remarks on Strong Artificial intelligence and the hypothetical identity crisis introduced by Ray Kurzweil.....	91
3. CONSCIOUSNESS AND THE FUNCTIONING OF THE HUMAN BRAIN: A DISCUSSION OF BIOLOGICAL, PHYSICAL AND PHILOSOPHICAL THEORIES RELATING TO INDIVIDUAL HUMAN CONSCIOUSNESS AND THE BRAIN.....	94
3.1. Brain, mind, and the mystery of human consciousness.....	97
3.1.1. Consciousness and evolution.....	98
3.1.2. Consciousness and the processing of information.....	100
3.1.3. Consciousness and inner experience.....	102
3.2. Twelve major schools of consciousness studies.....	104
3.3. First, (second) and third person approaches to consciousness: Challenges and values.....	111
3.4. Nothing but neurons? The biological functioning of the human brain.....	121
3.4.1. The biology of the brain.....	121
3.4.2. Intelligence and spirituality in the formation of identity and individual consciousness.....	127
3.4.2.1. Three types of intelligence.....	129

3.4.2.1.1.	Serial thinking – the brain’s IQ.....	131
3.4.2.1.2.	Associative thinking – the brain’s EQ.....	132
3.4.2.1.3.	Unitive thinking – the brain’s SQ.....	135
3.4.3.	Consciousness and the Brain: Two representational models.....	140
3.4.3.1.	A computational model of the conscious brain: A perspective from classical physics.....	143
3.4.3.2.	A holographic model of the conscious brain: A perspective from quantum physics.....	147
3.5.	Conclusion: Why objective or subjective approaches to consciousness are not sufficient to solve the problem of Kurzweil’s hypothetical identity crisis.....	152
4.	PARTS AND THE WHOLE: UNDERSTANDING HOLARCHIC CONSCIOUSNESS IN THE INTEGRAL THEORY OF KEN WILBER.....	156
4.1.	Self and other? A discussion of the Newtonian / Cartesian world-view and its impact upon studies in consciousness.....	157
4.2.	Ken Wilber’s integral theory of consciousness.....	164
4.2.1.	Ken Wilber’s Integral Philosophy in relation to consciousness.....	165
4.2.2.	Ken Wilber’s understanding of consciousness from the perennial philosophy: A neo-perennial philosophy.....	167
4.2.3.	A mapping of consciousness: Ken Wilber’s understanding of consciousness as Holarchic.....	175
4.3.	Holistic consciousness in relation to Ken Wilber’s four quadrants of reality.....	185
4.3.1.	“A view from within”: Interiority and consciousness.....	189
4.3.2.	The Four existential realms.....	194
4.3.3.	Ken Wilber’s notion of the Four Quadrants.....	199
4.3.4.	The interrelations among the Four Quadrants.....	205
4.3.5.	Validity claims in relation to Wilber’s Four Quadrants.....	208
4.3.6.	Common Reductionist pitfalls in relation to the four quadrants.....	214
4.4.	Conclusion.....	216
5.	AN AFRICAN THEOLOGICAL CONTRIBUTION TO THE DEBATE ON SELF-VALIDATING CONSCIOUSNESS IN STRONG ARTIFICIAL INTELLIGENCE.....	219
5.1.	Introduction.....	219
5.2.	Why an African approach to consciousness?	221
5.2.1.	An ‘old voice’ that is seldom heard.....	223
5.2.2.	Relating the African world-view to the integrated model of consciousness..	230

5.3. What is meant by the notion of ‘African thought’ in the context of this research?	234
5.4. Understanding the African genesis: Significant elements of the Southern African world-view that underpin and inform the concepts of <i>ubuntu</i> and <i>botho</i>..	238
5.4.1. Two important creation Myths in the Southern African world-view.	238
5.4.2. The Southern African world-view and the emphasis on wholeness and harmony in the Kosmos: Some general comments that will help to give a better understanding of the African concept of human identity.	242
5.5. The human person in the Southern African world-view: The Southern African concepts of <i>ubuntu</i> / <i>botho</i>.	246
5.6. The primacy of inter-relationship in African cosmology and the importance thereof in validating claims of individual identity.	253
5.7. Intersubjectivity in African relational ontology.	259
5.7.1. Identity is shaped through communication.	268
5.7.2. Identity is shaped through engagement.	271
5.7.3. Co-creation and the shaping of identity.	273
5.8. What makes the intersubjective knowing of self in African relational ontology a unique and novel contribution to the debate on individual self-validating consciousness?	275
5.8.1. Who do I say that I am?	276
5.8.2. Who do you say that I am?	278
5.8.3. Who do we discover me to be?	280
5.9. The theological confluence between African relational ontology, individual identity, and Christian theology: Towards an African Theological perspective of integrated relational ontological identity.	285
5.9.1. An African theology of relational ontological identity and the Trinity	286
5.9.1.1. Identity in relationship.	286
5.9.1.2. Being in interaction.	288
5.9.2. An African theology of relational ontological identity and Christian Anthropology.	291
5.9.3. An African theology of relational ontological identity and Soteriology.	293
5.10. A critical evaluation of the African perspective of personhood.	296
5.11. Conclusion.	298
6. CONCLUSIONS ON AFRICAN RELATIONAL ONTOLOGY AS A MODEL FOR VERIFICATION OF INDIVIDUAL IDENTITY AND CONSCIOUSNESS.	300

6.1. How this African theological approach to individual consciousness and identity can satisfy and resolve some of the identity problems that arise in Kurzweil’s hypothetical identity crisis.	301
6.2. An evaluation of the research project.....	309
6.3. Recommendations for further theological research in this area.....	313
6.4. Suggestions for the application of an African theology of relational ontological identity.....	317
6.4.1. Contextual reflection, community engagement, and the development of liturgy and African Christian devotional life.	318
6.4.2. African relational ontology, true humanness and technology.....	323
6.5. Conclusion.....	326
7. SELECT BIBLIOGRAPHY.	328

Chapter 1

1. Introduction: Stating the research problem, outlining the research method, process and structure.

1.1. Background to the research problem.

Research into human consciousness is very much in vogue in the academy at the moment. In a wide range of disciplines, scholars are seeking to approach the mystery and complexity of human consciousness from different angles, each hoping to add some new insight and further our knowledge of the human self.

This study aims to approach human consciousness from a novel perspective. The critical outcome of this research project will be an approach to the human self from a theological perspective that has not yet been completely investigated in consciousness studies. In particular, no scholar has yet attempted the approach of using an African theological understanding of relational ontology to engage emulative models of self-validating consciousness.

The impetus for this research arose out of a personal interest in developments in the field of computer science, particularly as such developments relate to philosophical possibilities that emerge from the claims of Strong Artificial Intelligence. Credible and scholarly work in Artificial Intelligence has postulated the plausibility of developing computational machines that are capable of accurately emulating human consciousness¹.

¹ This discussion will be presented in 2.2 below.

Naturally there are some significant critiques of these theories, which will be presented in the course of this study. However, in spite of these critiques, the possibility of such consciousness emulating machines being developed raises a pertinent philosophical conundrum.

Namely, if a machine is programmed to believe that it is a particular person, let's call that person 'Dave', how will an interrogator be able to ascertain who 'Dave' truly is when questioning both the human subject and the emulated version of the human subject? The crux of the matter is that both human 'Dave' and emulated 'Dave' draw on the same data and stimuli that validate their identity i.e. both would say that they are truly 'Dave' because they both have a memory of being 'Dave'; both feel like 'Dave'; both have the conscious experience of being a particular person named 'Dave'. The matter is further complicated if one introduces the possibility of nanotechnology² creating a 'copy' of a person's physical body. In such an instance the experience of self would not only be subjectively confusing (i.e., who do I say that I am? – based on a subjective experience of self), but also objectively confusing (i.e., who do you say that I am? – based on your observation of my physical body and communicable traits). This manner of validating self is common to most humans. We say "I am me, because I feel like me. I have my memories. I look like me..." etc. Moreover, third party observers validate our identity through some form of observation and comparison with what is known or expected of the

² Nanotechnology is the understanding and control of matter at a dimension of roughly 1 to 100 nanometres. One nanometer is roughly equal to one millionth of a millimeter. Nanotechnology has many applications in mechanical engineering, physics, chemical engineering, and bioengineering. In relation to mechanical engineering and bioengineering this discipline has a multitude of possibilities, not the least of which is that it could be used to engineer physical reproductions of human organs (or indeed even whole human persons) on a scale that is both highly accurate (in a representational sense) and highly functional.

observed subject. They say “Yes, that is him, because it looks, sounds and behaves like him”.

Again, the problem does not arise because this emulative ‘self’ is a *scientific certainty*. Rather, it is the *philosophical identity crises* that could arise from this hypothetical that are of interest here.

This hypothetical identity conundrum highlights a number of deficiencies in the way in which scholarship in consciousness studies has dealt with the notion of individual identity and the validation of such identity. This research will show that studies of, and approaches toward, an understanding of the notion of ‘self’ have fallen into two broad categories. They are: subjective approaches which seek to validate individual identity by drawing on data obtained from within the individual (psychology and spirituality are two of the most commonly known approaches in this regard), and objective approaches which seek to validate how the individual constructs his or her identity through observing the subject in relation to his or her surroundings and influences. These could even be observable biological influences such as brain function (sociology and neuroscience are the two most commonly known approaches in this regard).

In relation to the hypothetical identity conundrum alluded to above none of these approaches is able to offer a satisfactory approach which is able to aid the interrogator in deciding which of the two interview subjects truly is ‘Dave’. It was out of a realisation

that such a deficiency exists in consciousness studies and the related area of theology that this research project arose and took shape.

No doubt there will be some persons who question the necessity of a study such as this, particularly in light of the fact that neither the claims of strong artificial intelligence, nor nanotechnology, can be upheld with certainty. To such critics I would say that the success of either of those disciplines is not what frames the problem that has been presented. Even if either, or both, of these disciplines fail in achieving their postulated outcomes, the identity crisis, which is raised by their possibility, still remains³. As was suggested earlier this identity crisis raises a deficiency in scholarship in consciousness studies and theological anthropology, and thus the notion of individual self-validating identity, needs to be addressed.

1.2. Statement of the research question and how this research aims to investigate it.

The problem discussed above led to the formulation of a research question that could be investigated. The following research question captures the core intent of this research project:

How can one validate individual consciousness in a situation where both a human and a machine possess an experience of being the same conscious person?

³ This research will nonetheless present an argument for the plausibility of such developments taking place in 2.2.5 and 2.2.7.

The answer to this question will be the outcome of this thesis. In order to reach that outcome it will be necessary to follow a rigorous and wide reaching analysis of various issues relating to the research problem, and the answers that can be given to the research question.

This analysis will include an investigation into the scholarship and research that led to the development of the research problem in the mind of other scholars. In particular, it will be necessary to present the findings of investigations into claims of strong artificial intelligence. Namely, what is strong artificial intelligence; what does it claim it will achieve; how plausible are such claims, and what is the critique of such claims from various scholarly disciplines?

Furthermore, this research will need to present research into the wide-ranging attempts that scholars from various disciplines are making in trying to understand and express understanding of the complex notion of human consciousness and identity. Naturally, since this research suggests that there is a problematic deficiency in scholarship relating to individual identity, it will be necessary to ask why the current approaches cannot adequately solve the hypothetical identity crisis presented by possible developments in strong artificial intelligence.

Having presented the possibility and claims of strong artificial intelligence, and an overview of approaches to consciousness and individual identity that are unable to

adequately resolve the hypothetical identity crisis presented by strong artificial intelligence, it will be necessary to make some suggestions about what kind of approach, or model, could more successfully address the deficiencies which have been discussed.

After make such a suggestion, the research will need to make some concrete suggestions that can answer the research question and offer some solutions to the research problem which precedes the research question. The content of this last section will be the new contribution to this area of scholarship.

Naturally this research will be able to offer some new insight and scholarship to aid in finding a solution to the research problem. However, there are always areas in which the findings of a research project are unable to meet all of the goals of the research, sometimes because such solutions are simply not yet attainable, at other times because an attempt to find a particular solution may lead the research outside of its particular scope and focus. Hence, this research will also need to point out areas that warrant further study, and further questions and problems that have been raised and encountered during the course of the study.

1.3. The goals of this research.

A research project of this nature has a number of goals. I will first give an overview of the subsidiary goals before going on to a brief discussion of the chief goal and aim of this research project.

- i) Since this research centres on an identity problem raised by possible developments in consciousness emulating technology, an important secondary aim of the research will be to survey credible research in artificial intelligence in order to ascertain the plausibility of the development of such consciousness emulating machines.
- ii) A further important aim of this research is to gain critical insight into a wide range of approaches to human consciousness, particularly as such approaches relate to individual identity. The importance of this aim is to gain an understanding of how the subject of human identity has been approached from various perspectives, and why such attempts would not be able to satisfactorily resolve the hypothetical identity crisis presented by possible developments in strong artificial intelligence.
- iii) A final secondary aim of this research is to find, and present, an integrated model of consciousness and human being that can satisfactorily harmonise with the central tenets of an African theological approach to relational ontology.
- iv) The primary goal of this research is thus to present a theological approach to individual identity and consciousness of being ‘self’ that can balance some of the deficiencies of other approaches to consciousness and individual identity which were unable to offer solutions to the research problem discussed in 1.1 and 1.2 above, and add further theological insight into the purpose and nature of discovering true identity.

Thus, the primary aim of the research is to make a novel contribution towards scholarship in theology from an African theological perspective as it relates to individual consciousness and identity. One of the observations that I have made during this research is that a great deal of study in the area of individual identity is done simply to further the field of knowledge. Although this is valuable, this research will suggest that there is a more noble and purposeful reason for wanting to establish the nature of true individual identity; that is so that the individual can take up his or her place in shared common identity of humanity (which is God's gift of human dignity) and through that participate in the establishment of the true eschatological identity that God desires for all creation.

In order to achieve this, the study will present an approach to individual identity that is able to address some of the major concerns of the identity conundrum discussed above (cf. 1.1 and 1.2). In particular this research aims to present a unique approach to the notion of 'self' that is not bound by the constraints of subjectivity or objectivity, but rather to present an approach that draws on the valuable insights that can be gained from these approaches and goes further than these by presenting an intersubjective approach to individual identity and the notion of consciousness.

The uniqueness of this contribution is that it draws on a perspective of identity that has been much ignored in Western theological scholarship, namely a perspective of identity and consciousness that stems from insights gained through a study of the human person from an African theological perspective. What makes the African perspective of

personhood and individual identity unique is the emphasis on relational ontology and intersubjective formation of such identity. These notions will be presented and discussed in detail in Chapter 5 of the research.

1.4. Motivation for the research.

I believe that a research project of this nature is both valuable and necessary. Firstly, it is valuable because no other scholar within the context of self-validating identity and consciousness has yet explored the contribution of African relational ontology that emerges from this research. The African perspective allows one to approach the notion of individual identity in a unique manner that avoids many of the individualistic pitfalls of subjectivity, and the reductionist pitfalls of objectivity. Hence, even though this research does not propose an all-encompassing solution, it does open the way for new models and opportunities for scholarship in consciousness and individual self-validating identity.

Secondly, this study is necessary since there clearly is not yet a satisfactory answer to the problem of self-validating identity in consciousness studies. Any research project that can foster debate, generate discussion and further thought in this area is necessary for the development of critical scholarship.

Lastly, this research project allows for the presentation of a valuable theological perspective that has long been silenced and disregarded. Any scholarly work that allows

for the gathering of material from an African perspective, and the articulation thereof, is of immeasurable value in adding to the body of knowledge about the richness of the African perspective. The voice of the African scholar must continue to gain prominence in the international academic arena. There can be very little doubt that worldwide scholarship benefits from an increase in diversity and complexity that arises from many varied and valuable perspectives.

1.5. Research design.

A project of this nature requires careful planning. There are two primary reasons for this. Firstly, the arenas of academic research in computer science and consciousness studies are extremely popular at the moment. Hence, there are a huge number of research projects and publications to wade through in order to gain a clear picture of the state of research in each field at the present moment. It is not possible to present some of the subtler and more intricate findings of research in these fields within the limited scope of a Doctoral thesis. As such it has been necessary to read and research as widely as possible in order to gain a good understanding of the areas of research, and the most commonly accepted scholarly issues that are presented in each field. However, even once this was done it was necessary to further delineate the research to include only those elements that were of direct value and interest to the specific outcomes and aims of this research project.

A second difficulty was to find suitably presented scholarly research on the African approach to personhood and identity. This proved to be a somewhat arduous task. Whilst one could say that there is too much material to give attention to in the general areas of computer science and consciousness studies, it would be equally fair to say that there is not enough scholarly material on the African perspective of personhood and identity. The solution was thus to use what was available in order to draw necessary conclusions and insights. Where this was not possible it was necessary to conduct further direct research in the form of interviews in order to validate assumptions and clarify points that have not yet been clearly presented. Some evidence of this will be seen in Chapter 5 of the research project.

A final difficulty, which I assume is common to all researchers at this level, was the task of crafting a novel and insightful contribution to scholarly research in this area. Whilst I found this task extremely engaging and stimulating, it demanded a great deal of testing, writing, and adapting, in order to arrive at both the research design (so that it would be sensible to the reader) and the final outcome of the research.

1.5.1. The research approach.

Since this research project is primarily in theology, it took on a phenomenological, rather than an epistemic, approach. The methods, procedures and techniques employed were large in keeping with traditional research in Systematic Theology and Philosophy, i.e., gathering relevant and necessary materials (most often in the form of published papers,

articles and books), analysing such works, and interpreting them in a manner that would both give insight and allow for sensible critique.

As was pointed out in 1.5 above, it was also necessary to conduct some personal interviews to check and confirm certain assumptions that are not yet documented or recorded for scholarly research.

1.5.2. The research strategy.

The research strategy was first to identify the particular problem, and in doing so, to try and understand it and articulate what makes it a problem. Next, it was necessary to read as widely and deeply as possible in order to ascertain what research had already been conducted in this area, and from this to understand where this research was not capable of resolving the specific research project at hand. Having done this preliminary literature survey, the research began to take shape under the guidance of the research Supervisor, Prof Cornel du Toit in the Research Institute for Theology and Religion at the University of South Africa. At each stage of the project the results of the research were collated and recorded in writing. The final step of the process was the articulation of each of the aims of the research (see 1.3 above) in an edited format that is suitable to an academic thesis for examination for the degree of Doctor of Theology.

1.6. An overview of the relevant literature.

Before moving on to an overview of the various sections of the research, it is necessary to offer a brief insight into the literature that makes up the body of this research, showing both what was dealt with and why it was deemed as being of value to this research project. As a first point of departure the select bibliography at the end of this Thesis records all works that were used and consulted both in the initial research, and in the development of this final work. From within this list there are a number of publications and authors who made significant contributions towards the content and structure of this thesis. These will be highlighted below.

1.6.1. Literature in computer science, Artificial Intelligence and philosophy that is relevant to this research.

The first section of this research discusses the plausibility of the claims of theorists in strong artificial intelligence with regards to consciousness emulating machines. This is a necessary first step in order to frame the hypothetical identity crisis that Kurzweil proposes (cf. both Kurzweil in Richards 2002:13-34, and Kurzweil 1999:3, 66-87).

There is general agreement among researchers in Artificial Intelligence that computers are making increasingly bold strides in emulating human persons (cf. Jonscher (1999 and Puddefoot 1996, as well as Joy 2001 and Kurzweil 2002 and 1999). These emulating processes are based on fundamental principles of information processing that arise from

Alan Turing's research into logic gates (cf. Turing 1964 and Penrose's succinct discussion of Turing's thesis in Penrose 1987, 1995, 1999 as listed in the Bibliography, for accessible presentations of Turing's work see Puddefoot 1996:13ff., and Jonscher 1999:97 ff.). Whilst the initial Turing machines were only capable of processing fairly simply information in a slow process, technological developments led to an increase in power, speed and accuracy of these logic machines (which later became known as computational devices or computers). This increase in speed, accuracy and capacity is the next fundamental piece in the puzzle. In 1965 Gordon Moore predicted that the speed and capacity of such a computer would double approximately every 24 months. Thus, whilst the capabilities of such information processing machines were fairly rudimentary some four decades ago, the capacity has significantly increased over that time. In fact Moore's law has not only been upheld, but has in fact been surpassed over these four decades (cf. Kurzweil in Richards 2002:20 and Kurzweil 1999:33 and chapter 10).

Regardless, after four decades we do not yet have computers that are able to flawlessly emulate human consciousness. This is where Kurzweil's unique contribution to the debate on Artificial Intelligence comes in. Kurzweil presents the argument of accelerating returns (cf. Kurzweil in Richards 2002:23-27 and Kurzweil 1999:25-33). This 'law' postulates that by 2029 we will have a \$1000 computer that will have the same cognitive capacity as a single human person (for a detailed discussion of this argument, and the critique of it, see Chapter 2 below, and in particular see 2.2.3 and 2.2.6).

There are a number of significant critiques of these claims. In particular Roger Penrose suggests that a mathematical model of the human brain (such as that employed in any Turing machine, or computer) will never be able to adequately represent the subtleties of human consciousness (cf. Penrose 1995 and 1999).

A counter to this argument is that which comes from the philosopher John Searle who presents the argument for emulative validity which is not necessarily based on person's understanding of what he or she is doing or responding to (cf. Searle's discussion of the 'Chinese Room', 1980 and 1985, and Puddefoot's presentation thereof, 1996:14ff.).

Of far greater importance to this research is the assertion by Puddefoot that just because such a machine does not yet exist, or such accurate emulation is not yet possible, it does not mean that it will never be possible (1996:8-10).

However, whether such an emulative machine is possible, or not, is not crucial to the argument of this research. What is important is that scholarship and research in the area of strong artificial intelligence has raised the possibility of an identity crisis that cannot be adequately addressed by approaches to self-validating consciousness that have been presented by scholars in this area of research up to this point.

1.6.2. Literature in consciousness studies and the brain that is relevant to this research.

The literature that was used in this section of the research is fairly wide and varied. It was an extremely daunting task to sift through the vast sea of material that is available on human consciousness from disciplines as wide ranging as anatomy and biology to spirituality and psychology.

The emphasis in this chapter was to trace some significant approaches to scholarship in consciousness. Thus some general works were consulted to sketch the broad landscape. These included VS Ramachandran (2003), Zohar and Marshall (2000), Zohar (1991), and Wilber (particularly 1997). Walmsley (2002) offered some significant and useful insight into the development of consciousness as a philosophical phenomenon of human being. When it came to discussing the two broad approaches to consciousness studies, various relevant sources were used.

For the objectivist approaches, two primary authors were used. Firstly, in relation to the biological functioning of the human brain in relation to consciousness, d'Aquili and Newberg (1999 and 2001), and Mc Crone (2002) were used. Secondly, when discussing the subjective approaches to human consciousness (which included spirituality, psychology and introspection) Zohar (1991) and Zohar and Marshall (2000), Macdonald (2003), and Wilber (1997) were used.

The outcome of this chapter was the conclusion that neither subjective, nor objective, approaches to consciousness could be applied to the hypothetical identity crisis in order to resolve it in a satisfactory manner. Thus, some other approach would be necessary to do justice to the research problem presented in this research.

This does not mean that the approaches discussed in this chapter are not of any value. On the contrary, each of the approaches that is discussed adds some significant insight and value to the field of consciousness studies. However, none is capable of resolving the hypothetical identity crisis on its own. What this research argues is that these models and approaches need to be taken into account, but there is a need for a further input that is not just subjective or objective in nature, but rather draws on the subjective and objective approaches, and brings together their valuable elements in an intersubjective model.

1.6.3. Literature in integral philosophy that is relevant to this research.

Whilst Ray Kurzweil is the seminal author who informs this research's view of the possibilities of strong artificial intelligence, Ken Wilber is the author who most clearly gives shape and content to an approach to consciousness studies that is non-dual and integrated. Wilber is highly regarded amongst both scientist and philosophers. Palmer writes that he is currently "the world's foremost integral philosopher" (in Wilber 2004:ix).

The integral approach is an approach to reality that is non-dualistic i.e., it does not apply a radical distinction between the individual and the social, and neither does it accept the complete ‘otherness’ of spirit and matter. Rather, the integral approach to reality accepts that the individual and the corporate (social), and the interior and exterior elements of life are all intrinsically linked. As will be shown, approaches to human consciousness have either tended to be phenomenological (subjective), or epistemological (objective) in nature; each seeking to capture the whole of consciousness without remainder to the other. Thus theorists have either posited consciousness in the mind, or in the brain. Wilber’s model, however, takes cognisance of the worth and insight that comes from each of these valid approaches and adds the further elements of both individual and collective consciousness. In doing so he avoids both reductionism and simplistic dualism.

In order to fully understand this complex and thoroughgoing schema of consciousness one needs to start with a study of Wilber’s earlier understanding of consciousness as pluri-dimensional (i.e., layered from the simplest most gross consciousness of material and bodily reality, to the most subtle and complex consciousness of ‘Spirit’) (cf. Snyman 2002:71 and Wilber 1974, 1977, 1979 and 2000b). This model of consciousness is fundamentally rooted in the ancient, yet increasingly popular, perennial philosophy⁴ that links all of the Kosmos⁵ in an unending “chain of being” (cf. Huxley 1945). Wilber’s more recent development on this notion is that consciousness is not only pluri-

⁴ Please refer to the detailed discussion of the Perennial Philosophy in 4.2.2 below, also see Huxley 1945.

⁵ In this thesis the ‘Kosmos’ will be used instead of ‘cosmos’. Snyman suggests that Wilber chose to use the word Kosmos to describe the non-dual universe, rather than the “anaemic, depth-denying and surface bound ‘cosmos’ of modern science that has not allowed room for spirit and consciousness in its deliberations” (2002:71). I am in agreement with this reasoning.

dimensional (i.e., hierarchic in nature), but that for it to be whole it must also take cognisance of all four aspects of being (the individual interior, the individual exterior, the corporate interior, and the corporate exterior)⁶. Wilber refers to this consciousness schema as “holarchic” approaches to consciousness (1995:17).

Wilber has written extensively on this fascinating subject. This research made use of a number of seminal works in seeking to clearly and succinctly present Wilber’s holarchic understanding of integrated consciousness, most notably his 1995 volume *Sex, ecology, spirituality: The spirit of evolution* and two articles, the 1997 “An integral theory of consciousness”, and 2000b, “Waves, streams, states and self – a summary of my psychological model”. Together with this, a superb Doctoral Thesis from a UNISA graduate, Kevin Snyman, was able to make Wilber’s complex work accessible. The thesis is entitled *Myth, mind and Messiah: Exploring the development of the Christian responsibility toward interfaith dialogue from Ken Wilber’s integral hermeneutics* (2002).

1.6.4. Literature in African cosmology, views of personhood, identity, and theology that are relevant to this research.

The chapters preceding this one all add elements to the argument that a purely subjective, or objective approach to individual consciousness and identity cannot adequately solve

⁶ The holarchic nature of consciousness is discussed in detail in 4.2.3 below.

Ray Kurzweil's hypothetical identity crisis. This chapter forms the novel and unique contribution to this area of scholarship.

There are a number of factors that make this contribution unique and valuable. Firstly, it is a further scholarly contribution towards understanding the African world-view, and this world-view's approach to the complexity of human consciousness. It has become evident during the course of this research that comparatively little scholarly work exists within this field.

Secondly, to date, there has not been a direct application of the African world-view's understanding of personhood to the notion of African relational ontology. Whilst there are some popular works on *ubuntu* and identity (cf. Broodryk 2002), some general African theologies (cf. Mbiti 1970, 1990), and some scholarly works on the philosophy of *ubuntu* (cf. Shutte 1993, 2001), there is not yet a clearly defined African Christian anthropology that is based on the African Christian understanding of relational ontology and individual identity. This research offers a specific new contribution to scholarship in this area. Moreover, it offers new insight into these debates in both the disciplines of theology and consciousness studies from an African Christian perspective. Lastly, the model that arises from this work, an African Theological model of relational ontology, fulfils many of the intersubjective requirements for solving some of the most critical shortfalls that subjectivist and objectivist approaches to individual human consciousness and identity are not able to solve in relation to Kurzweil's hypothetical identity crisis.

Hence, this will be the first ever application of an Africa theology of relational ontology, as it is related to human consciousness, in the field of Strong Artificial Intelligence.

The groundwork for this outcome is to discuss and describe how this thesis delineates the notion of ‘African thought’. Of particular use in defining African thought (as an area of thought in relation to other areas of thought from elsewhere in the world) was Makgoba’s chapter “Patterns of African thought: A critical analysis”, in du Toit 1998. Next it was necessary to draw on some general sources that offer insight into the African worldview and its content. Most useful for this section were a collection of papers, presented in the form of a book, from the Research Institute for Religion and Theology. The title of the book is *Faith, science and African culture* (1998). In particular the contributions of Setiloane (1998:65-84), du Toit (1998:10-32), and Makgoba (1998:99-106) offered good general insights into African culture and the African worldview. Of course Augustine Shutte’s *Philosophy for Africa* (1993) and *Ubuntu: An ethic for a new South Africa* (2001) also presented valuable insights. A good source for wider insight into African traditional culture and religion came from Mbiti (1990), and Thorpe (1991), and a more overtly Christian perspective from Setiloane (1986), Theron (1996), and Balcomb (in du Toit 1998). A further step in narrowing the area of research was to focus specifically on the notion of relational identity in African thought, as expressed in the concept of *ubuntu*. The following sources were informative: Louw’s 2001 article “Ubuntu and the challenges of multiculturalism in Post-apartheid South Africa”, of course again the *Ubuntu: An ethic for a new South Africa* (Shutte, 2001). Of great value, since it is written specifically from the lived perspective of a culturally African person, is Mcunu’s

2004 Masters Degree Thesis entitled, *The dignity of the human person: A contribution of the Theology of Ubuntu to the theological anthropology*. Again some of the most valuable scholarly material came from papers presented at the conferences of the Research Institute for Religion and Theology which are presented in the form of two books *Faith, science and African culture: African cosmology and Africa's contribution to science* (du Toit, 1998), and *The integrity of the human person in an African context: Perspectives from science and religion* (du Toit, 2004). In order to show the importance and primacy of the notion of intersubjective identity, an area in which little African scholarship has been conducted, it was necessary to use the groundbreaking work of Eugene de Quincey which was only just published towards the end of 2005. This seminal work is entitled *Radical knowing: Understanding consciousness through relationship*. While this work is written from a Western perspective it has an incredible synergy with the foundational elements of identity found in African relational ontology (as expressed in *ubuntu*). Moreover, de Quincey has a masterful insight into Ken Wilber's integrative theory. This work proved to be both a ratification of the insights that were as yet unrecorded from African theology and personhood, and added further value by being able to relate these insights to the integrative model of consciousness that is described in Chapter 4 of this thesis.

This foundational work, together with the general sources on the African world-view and *ubuntu* make the first section of the new contribution to scholarship, which is one of the aims of this research project⁷.

⁷ Please refer to 5.8 below for detailed discussion of this work.

Finally, the theological content of the position expressed above is made explicit and articulated as a novel contribution to the area of consciousness studies and Christian theology. The theological elements that are explicated related particularly to three areas of Christian doctrine, namely, the Doctrine of God, the Doctrine of Christian Anthropology and the Doctrine of Salvation. In relation to the Doctrine of God the general theological texts of Alastair McGrath, *Christian Theology* (2001:265-344), and Brian Gaybba's "Trinitarian experience and doctrine" (1994:77-89), as well as the more thoroughly African perspectives of John Mbiti, *Concepts of God in Africa* (1970, chapter 8), offered the stable groundwork for relating the notion of relational identity to the Christian doctrine of the Trinity. McGrath (2001:440-475), and Jennifer Slater's Doctoral Thesis entitled *Self-realization in contemporary theology: Towards a vision of Christian wholeness* (2002), proved to be particularly useful in relating the notions of self, as expressed in the intersubjective African relational ontology, to the doctrine of Christian Anthropology. Slater (2002), du Toit (1998), and McGrath (2001) were valuable in offering insight into the relationship between African relational ontology, true individual identity and the Doctrine of Salvation.

In order to make a research project such as this manageable and finite, it is necessary to selectively choose the research and scholarly publications that will best inform, and most clearly articulate and further the aims of the research project in order to fully answer the research question. Thus, even though a wide range of texts are used and consulted in every section of the thesis, not every text, or even every important idea in the seminal

texts, can be explored to their completion. Rather, it has been necessary to simply make mention of certain debates, controversies and insightful elements of certain texts, and then move on with the salient points of the argument at hand; this is done in order to show clear understanding and knowledge of the field that is being researched, yet at the same time not become inadvertently distracted from the central goal of the research itself. The footnotes and bibliography contain clear references, and at times explanations and discussions, of works consulted and issues that are raised which are ancillary to the central theme of this thesis.

1.7. An outline of the study.

Chapter 1 forms the introduction to this research project giving an overview of the research problem, the actual question that informs the research project, the manner and form of the research, a survey of the relevant literature that was used in the research, as well as a sweeping overview of the whole project.

Chapter 2 deals with the functioning of existing computational technology and looks beyond it to the possibility of ‘conscious’ machines (effectively the chapter aims to show how computational devices function, and, based on that, the plausibility of the claims of Strong Artificial Intelligence). In this chapter the notion of a consciousness emulating machine is presented and critiqued.

Chapter 3 will outline the physical, biological, and philosophical understandings of the functioning of the human brain in relation to human consciousness. In essence, this chapter will investigate current theories that explain how consciousness ‘happens’ within the human person. This chapter aims to show how the majority of approaches to human consciousness, whether subjective or objective, are not adequate to encapsulate the complexity of a holistic consciousness as it relates to self validation in the hypothetical identity crisis that is discussed in 1.1 and 1.2 above. In this section it is necessary to draw some distinctions between objective and subjective theories of consciousness, and to show where such theories give valuable insight into individual human identity, but more importantly to show where they fall short of resolving the research problem behind this thesis.

Chapter 4 lays the foundation for a Integrative / Holarchic understanding of consciousness by applying Ken Wilber’s Integrative Theory, and in particular his understanding of the holarchy of being to the notion of human consciousness. This chapter is truly an essential one since it goes a long way toward showing how traditional understandings of consciousness, and scientific approaches to understanding consciousness, have been inadequate. This chapter opens up the door for the area of ‘new insight’ that this thesis will provide (namely the African relational ontological theology that provides a theological insight into dealing with the complex problem of individual self-validating consciousness).

Having established this, Chapter 5 will show how African Relational Ontology – which is not a flatland metaphysic, (i.e., neither purely subject or object orientated, but rather one that is intersubjective) can enrich, and aid in the construction of, a theological approach to self-validating individual consciousness in an environment where Artificially Intelligent machines are able to emulate human consciousness with sufficient accuracy and conviction to cause difficulty in validating self.

Naturally, a number of very important theological considerations will be discussed in this section (Relational Ontology in the Trinity, Community and Christian Anthropology, Cosmic consciousness and the Christ Omega, Interdependence and perichoresis, consciousness and *kenosis* and *theosis* etc.).

Chapter 6 will be the final chapter in which some concluding remarks and statements about the research and findings of the research are made. It will also highlight some important questions that were raised during the research, and point to further areas of research that can be engaged in as a result of this project. This chapter will also give a critical overview of the research project pointing to some successes and struggles.

Chapter 2

2. A crisis of Identity: Understanding how the hypothetical consciousness assertions of Ray Kurzweil’s Strong Artificial Intelligence accentuate the problem of self-validating individual human consciousness and identity claims.

2.1. Meaning and identity in an ever-changing world: The Hypothetical identity crisis that arises from consciousness emulation in Strong Artificial Intelligence.

The famed Austrian psychologist, Victor Frankl wrote,

Man's search for meaning is the primary motivation in his life and not a "secondary rationalization" of instinctual drives. This meaning is unique and specific in that it must and can be fulfilled by him alone; only then does it achieve a significance which will satisfy his own will to meaning. (Frankl 1984:120)

The question “who am I?” has occupied spiritual minds for centuries. To be able to identify and place one’s self is a crucial element of being. Ontologically it shapes the image that we have of ourselves, our relation to others, and ultimately the place we understand ourselves to occupy within the whole of the Kosmos.

The crucial issue is, how does one validate who one is? Traditionally the answer to the above question, which is fundamentally spiritual in nature, has come from physical sources. People tend to say “I am me because I look like me, I feel like me and I sound like me”. However, if the consciousness hypothesis of Strong Artificial Intelligence

should come true, this process becomes much more complex. Kurzweil gets to the very essence of this struggle when he writes, “Am I the stuff in my brain and body?” (in Richards 2002:42). Firstly, he points to basic misunderstandings of permanence and physicality that arise from developments that come out of quantum theory and quantum physics. He says, “Consider that the particles making up my body and brain are constantly changing. We are not all permanent collections of particles” (in Richards 2002:42).

The notion expressed by Kurzweil is an entirely credible scientific understanding of the ever changing nature of physical matter. In particular the work of Quantum Physicist David Bohm has intended to show that physical reality is an ever changing movement of constituent elements that we understand to make up physical matter. Bohm calls this movement the ‘holomovement’ (Bohm 1980:185). He says that the structure of reality can be likened to a holograph. In holography the photographic record is not two a dimensional record of an object, as in traditional photography. Rather, a holograph is a set of interference patterns made by splitting a laser beam and reflecting some of the beam off the object, before reuniting it with the rest of the beam on the photographic plate. When a laser beam is directed onto the photographic plate a three-dimensional image of the object appears. What is remarkable is that if the laser beam is directed on only a small part of the holograph the entire image still appears, although less distinctly (Keepin 1993:34). In an analogous manner holography suggests how all of (explicate) creation is an ever-changing manifestation of far greater (implicate) reality. The explicate order is constantly in a state of change since it continually comes out of, and moves back into, the implicate order. Thus, Bohm’s view is that all material reality is an

explication of a vast number of implicate orders. He maintains that underlying the explicate order, what has traditionally been understood to be a static and constant physical reality, there is a “deeper order of existence, a vast and more primary level of reality that gives birth to all objects and appearances of our physical world” (Talbot 1991:46). Hence this world-view would hold that what we perceive as physical reality is not a number of separate self-contained static objects which form the sum of the total of their meaning and identity (as is suggested in the Cartesian/Newtonian world-view) but rather, that reality is a dynamic whole, an explication of the undivided whole that is in a perpetual state of flux⁸ (Bohm 1980:185). Based on such an understanding of reality Kurzweil writes the following in relation to the misconception of basing identity and understanding of self on the perception of a static physical being.

The cells in our bodies turn over at different rates, but the particles (e.g. atoms and molecules) that comprise our cells are exchanged at a very rapid rate. I am just not the same collection of particles that I was even a month ago. It is the pattern of matter and energy that are semipermanent (that is, changing only gradually), but our actual content is changing constantly, and very quickly. We are like patterns that water makes in a stream. The rushing water around a formation of rocks makes a particular, unique pattern. This pattern may remain relatively unchanged for hours, even years. Of course, the actual material constituting the pattern – the water – is replaced in milliseconds. The same is true for Ray Kurzweil. Like the water in a stream, my particles are constantly changing, but the pattern that people recognize as Ray has a reasonable level of continuity. This argues that we should not associate our fundamental identity with a specific set of particles... (in Richards 2002:42-43).

⁸ Along with Bohm 1980, see also Keepin 1993 and Talbot 1991:43-48 for a more detailed discussion of Bohm’s theory of the implicate and explicate orders. The intricate technical details of this view are not a necessary component in furthering the argument that Kurzweil uses to show the complexity of human identity and consciousness. However, it is necessary to refer to these theories in brief in order to substantiate the scientific credibility of Kurzweil’s thesis.

Few theologians would challenge the central thought expressed in the above view, namely, that individual human identity and consciousness cannot be entirely contained within, or verified through, what is perceived to be static physical being.

Nevertheless, Kurzweil's challenge of the validation of individual consciousness and identity is not entirely founded upon largely accepted scientific theories. In addition to the above, he introduces the notions of artificial consciousness, a suggested outcome of strong Artificial Intelligence, and the "gradual replacement" theory – both of which will be discussed in detail in later sections (see particularly 2.2.2, 2.2.6 and 2.2.7).

Firstly, he maintains that the hypothetical eventuality of developments in Artificial Intelligence will lead to the emergence of machines (which could be complex mechanical, electrical or biological computers) that will be fast and powerful enough to emulate, and even recreate, human consciousness to the extent that one would not be able to distinguish the emulated consciousness from consciousness claims made by a human person (cf. Kurzweil in Richards 2002:13-34, Kurzweil 1999:3, 66-87 and for other points of view Jonscher 1999 and Joy 2001). In conjunction with the argument against mere physical identification, and consciousness validation, this complicates the task of validating individual consciousness even more. One can no longer say "I am me because I feel, and look, and sound like me", because, as is suggested above, my physical 'me-ness' is in a constant state of change and flux. Furthermore, if a machine is able to emulate my consciousness to such a degree of accuracy that persons are no longer able to tell the difference between my thoughts, feelings, experiences, and those which are

expressed with identical accuracy and speed from the machine, the matter of validating who I am, or stated more simply, how I know that this is me, becomes even more complex.

Secondly, since Kurzweil holds to the notion that our biological bodies are constantly in a state of ‘replacement’ (in Richards 2002:44), he further postulates the increased complexity and difficulty of validating individual identity and consciousness when we begin to replace parts of our brains with parts from machines. He writes,

Suppose I replace a small number of biological neurons with functionally equivalent nonbiological ones.... After I have this procedure performed, am I still the same person? My friends certainly think so.... Bit by bit, region, by region, I ultimately replace my entire brain with essentially identical (perhaps improved) nonbiological equivalents (preserving all the neurotransmitter concentrations and other details that represent my learning, skills, and memories).... At each point I feel that I am the same guy. After each procedure, I claim to be the same guy. My friends concur.... I am trying to illustrate why consciousness is not an easy issue. (in Richards 2002:43-44).

In the section that follows these claims will be discussed and explained in detail. In order to do this it will be necessary to discuss the two theories that inform and uphold the notion of artificial consciousness in Kurzweil’s theory, namely the possibility of the development of artificial consciousness in machines, as suggested in Strong Artificial Intelligence, and the notion of consciousness in relation to the biological and physical functioning of the human brain.

2.2. Artificial consciousness. A discussion of the hypothesis of Strong Artificial Intelligence leading to an emulative consciousness.

For many Christian Theologians humanity occupies centre stage in God's creation. We are the crowning glory, the high point of God's creative activity. Popular Christianity certainly accentuates the role and value of humanity as special and unique within the created order. It is largely assumed that all of creation has, and is, evolving towards a high point of physical, psychological, and even spiritual development, similar to that found in modern humans.

However, recent discoveries and developments in the natural and human sciences have begun to show with increasing clarity the frailty and limitations of human beings. Resulting from this, some theologians and scientists started questioning the teleological favouritism accorded to humanity within both theology and science. Notable amongst Christian theologians in this area is Pierre Teilhard de Chardin, the French Jesuit, geologist and palaeontologist (1881-1955). Teilhard suggests, as do many others, that one can clearly perceive evidence of the evolution of the Universe towards a point of greater complexity. However, he asserts that the goal of this cosmological evolutionary process is not towards a state similar in complexity and sophistication to that of humanity. Rather, the evolutionary intention in creation is towards a much higher state of consciousness.

Man is not the centre of the universe as once we thought in our simplicity.
But something much more wonderful – the arrow pointing the way to the

final unification of the world in terms of life (Teilhard de Chardin 1970:224).

Under the heading that follows a brief explanation and discussion of Teilhard's views on both the process and end goal of cosmic evolution will be explained.

2.2.1. Pierre Teilhard de Chardin's evolution of consciousness as a theological model that suggests that evolution has an intent much larger than the evolution of human beings.

Teilhard's model is extremely insightful, when it comes to understanding the evolutionary process of the Kosmos, from its birth to its ultimate goal.

Teilhard's view of evolution divides the circumstances of evolution into four stages, which he calls:

- 1) Cosmogogenesis – the evolution of the Kosmos or universe from its very beginnings
- 2) Biogenesis – the evolution of life
- 3) Noogenesis – the evolution of thought
- 4) Christogenesis – the evolutionary stage in which humanity transcends the physical world and merges with an Omega Point. (Scheirer 1980:114). Teilhard devoted his book *The phenomenon of man* (1970) to expounding these views.

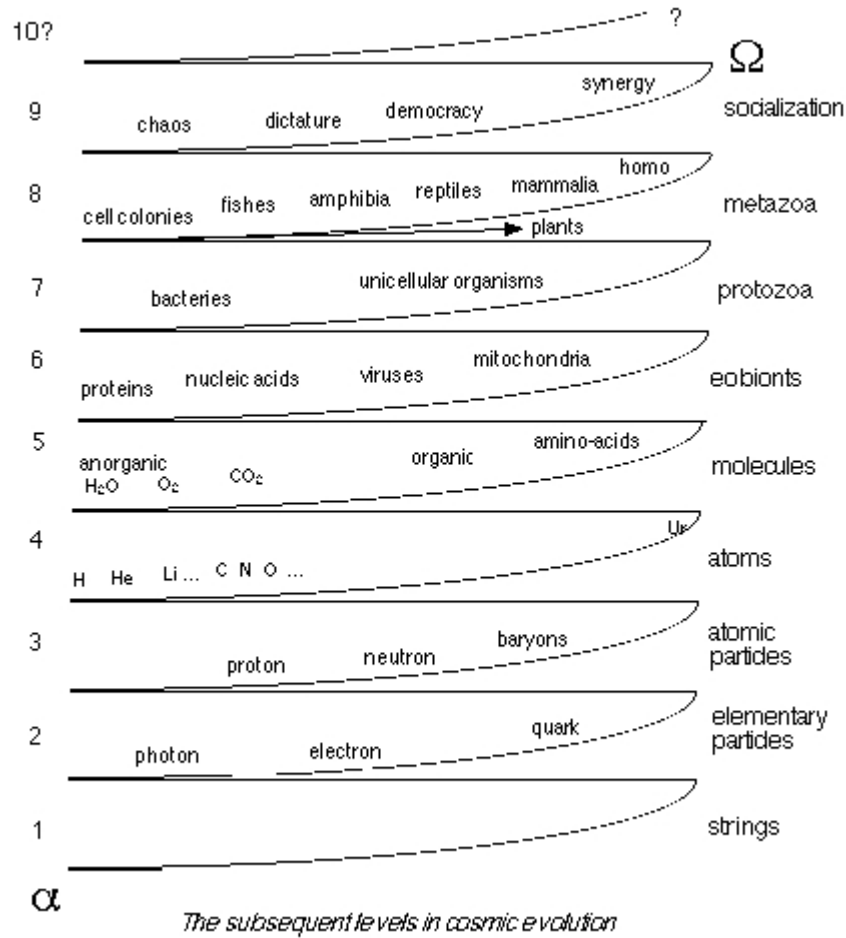
Central to understanding Teilhard's evolutionary hypothesis is the emphasis that there is a connection between the evolution of consciousness and the evolution of the Kosmos as a whole. The changes that are accomplished in any sphere of the Kosmos are an accomplishment for the whole system. He writes,

The stuff of the universe, woven in a single piece according to one and the same system but never repeating itself from one point to another, represents a single figure. Structurally, it forms a whole (1970:41).

Thus, he would maintain that, just as biological evolutionary leaps have held significance for the whole of the Kosmos, an evolutionary leap in consciousness in human beings is of significance for the whole of the Kosmos.

To the cosmic corpuscles we should find natural to attribute an individual radius of action as limited as their dimensions. We find, on the contrary, that each of them can only be defined by virtue of its influence on all around it. Whatever space we suppose it to be in, each cosmic element radiates in it and entirely fills it. (1970:45, cf. 1970: chapter 1).

The identifiable pattern that is present in the evolution of the Kosmos is the law of complexification (Teilhard de Chardin 1970:328-330). In essence, as matter evolves it is becoming more complex. The atom is more complex than elemental matter, yet less complex than molecules, and so on. This complexification is accompanied by a tendency towards order, or 'centeredness'. The following diagram by Max Wildiers illustrates Teilhard's views in this regard well:



http://noosphere.cc/the_tendencies_of_evolution.htm

It is worth noting that the theory of an expanding universe, based on the law of the conservation of energy, and the law of entropy (both of which are central to Teilhard's understanding of complexification), are commonly accepted explanation among astronomers and so lend credibility towards this evolutionary view, even though it was developed earlier than these theories of the universe.

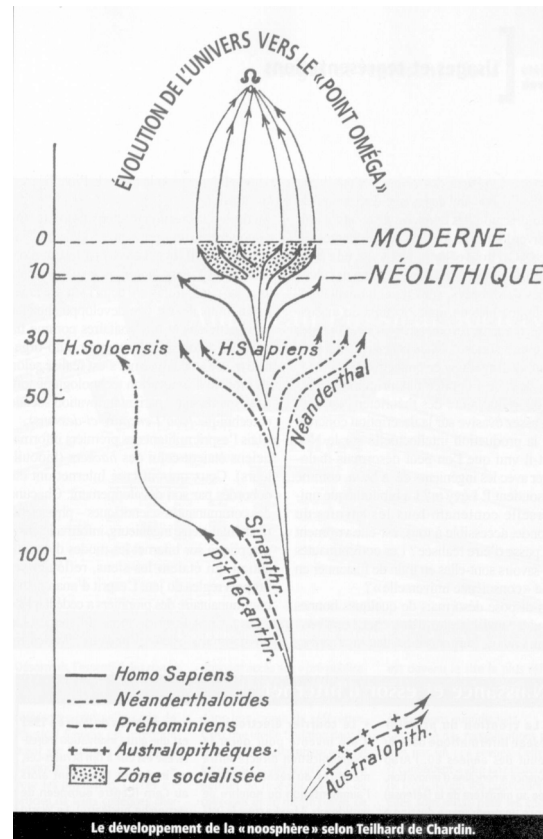
Effectively, Teilhard argued that humanity had almost reached the end of their biological evolution, an evolutionary boundary that he called a “critical point”.

In every domain, when anything exceeds a certain measurement, it suddenly changes its aspect, condition or nature. The curve doubles back, the surface contracts to a point, the solid disintegrates, the liquid boils, the germ cell divides, intuition suddenly bursts on piled up facts... (Teilhard de Chardin 1970:86).

Furthermore he reasoned that in humanity a crucial turning point had been reached. The universe had begun to swing into another evolutionary track, namely that of intelligence, also called consciousness.

The biological change of state terminating in the awakening of thought does not represent merely a critical point that the individual or even the species must pass through. Vaster than that, it affects life itself in its organic totality, and consequently it marks a transformation affecting state of the entire planet (Teilhard de Chardin 1970:201).

Thus, evolution had moved beyond humanity. Following from this stage, evolution would move beyond the capacity and capabilities of human physical, psychological and spiritual being. The point towards which the whole of the Kosmos, including human beings, is evolving is the Christ Omega. The following diagram from Teilhard illustrates his understanding of this evolutionary process.



(from Teilhard de Chardin 1970:213)

Teilhard believed that everything, to differing degrees, had both a “within” and a “without” (1970:52-55). He regarded the within as consciousness. As matter complexified, it changed the without. The co-existence of the within and the without naturally means that the within is also affected by changes in the without.

In discussing this connection he uses metaphorical language to describe material reality. He speaks of two forces that operate on all of reality. These are the radial and tangential forces (cf. 1970:70-72). For him there is a centre or source out of which the world moves (a notion which is given credence in the later work of many leading quantum physicists such as David Bohm (1951, 1980, 1986, 1993), Basil Hiley and Fritjof Capra

(1983, 1991)). Teilhard suggests that at every moment of time there is, as it were, a sphere and the particles on that sphere are governed by a tangential force that corresponds to forces spoken of in physics, such as gravity and electromagnetism. The tangential forces are forces that organise order in matter (a view which has been given much credence by the research of biologist Rupert Sheldrake (1981, 1996) whose thesis is that there are morphogenetic fields that organise matter through similar resonant frequencies). The tangential forces, or energies, obey the law of entropy. It is expended in physio-chemical reactions and in time will be dissipated. For Teilhard, this is the energy that causes elements to react causing changes to the without of matter, leading to greater complexification. Along with this force there is also a radial force that encourages an evolutionary outward movement to higher levels of reality. The radial force, according to Teilhard, is 'spirit', or within, and he speaks of it in terms of Christ-consciousness. The point towards which the whole of the Kosmos is evolving in consciousness is the "Christ-Omega" a point of complete centricity (Teilhard de Chardin 1970:294-299, 1965a:173)⁹.

Lyons comments on Teilhard's evolutionary view saying that:

Creation, incarnation, and redemption constitute the one movement, which Teilhard calls 'pleromization'. It is a movement towards the 'pleroma', the fullness of being, in which God and his completed world exist united together (Lyons 1982:156).

Thus, as the universe evolves, the strength of the radial force increases in intensity.

Simply stated, the expending of small amounts of tangential energy can lead to huge gains in radial energy. For example, a few calories of physical energy can result in the

⁹ It is worth mentioning that scholars have developed notions based on Teilhard's model that are not generally accepted in the academic community. Most notable is controversial work of Frank Tipler (1994), yet such views are extremely valuable in that they stimulate a great deal of worthy debate and scholarship.

genius of a beautiful work of art. Thus, Teilhard had identified a pattern of increasing complexity and this pattern could be identified in all the known aspects of evolution, including the evolution of consciousness. As a result he concluded that the whole of the universe was emerging into a “fuller consciousness”¹⁰ as it evolved and became more complex. There is an increasing discovery that human consciousness can develop beyond its current level to a level that Teilhard called 'hypermental', a level that the sages of the East, such as Sri Aurobindo, called a 'supramental' consciousness, that is, a level of consciousness and experience that is beyond the personal and mental. Such consciousness can be described as transpersonal and transmental (this theory is given credence by the groundbreaking work of the highly acclaimed transpersonal psychologist Ken Wilber¹¹). The contemporary spirituality of Fr Bede Griffiths (OSB), whose theology was significantly informed and influenced by Teilhard, said that with this level of consciousness we discover within ourselves "the ground of the whole structure of the universe and the whole scope of human consciousness" (Griffiths 1989:27). Such a view of reality, as non-dual, evolving and conscious, fits well with the assertions of the new

¹⁰ For a succinct insight into Teilhard de Chardin's understanding of the development of consciousness as it evolves towards 'fullness', one needs to understand his emphasis on the concept of "centricity" and the "Christ-Omega" (cf. Teilhard de Chardin 1970:294-299, 1965a:173).

¹¹ Wilber's theories of human consciousness will be discussed in detail in a later section. Accordingly only a brief explanation will be given at this point. Wilber's notion, first introduced in 1975, is that human consciousness is a multi-levelled manifestation or expression of a single Consciousness, just as in physics the electro-magnetic spectrum is a multi-banded wave (Wilber 1975:106). Thus as conscious beings we are manifestations of the one Ultimate Reality at different levels, depending on which level we identify with on the 'spectrum of consciousness'. The spectrum ranges from the most complex consciousness, identity with God, others, self and the world through several gradations or bands to the drastically narrowed, simplistic, sense of identity referred to as egoic consciousness (Wilber 1975:106). At the deepest level the person's consciousness is identical with the Absolute and Ultimate Reality of the universe, known variously as *brahman* or *tao* or the Godhead. Wilber comments that, "On this level, man is identified with the universe, the All - or rather, he *is* the All... In short, man's innermost consciousness... is identical to the ultimate reality of the universe." (Wilber 1975:107-108). Whilst maintaining the crux of his theory, Wilber has significantly developed his understanding of the development of consciousness in recent years (cf. Wilber 1981b, 1995, 1996, 2000b).

scientific paradigm, as stated by David Bohm "The entire universe is basically a single, indivisible... but flexible and ever changing, unit" (Bohm in Russell 1985:135, see also Bohm 1980 and 1993 and Keepin 1993).

From the above it is clear that human beings are no longer the focus, or end point, of cosmic evolution. Rather, we are a step in the evolutionary process that extends beyond human ability and consciousness to a much more complex and refined evolutionary consciousness, coined "Christ Consciousness" by Teilhard.

2.2.2. Ray Kurzweil and Bill Joy's naturalistic assumptions relating to cosmic evolution.

As stated above, it is not only theologians who hold to the point of view that human beings are not the end goal of evolution, but merely a step in the overall process of evolution. Central to Ray Kurzweil's hypotheses about the eventual development of strong Artificial Intelligence is the notion that "Human intelligence is ultimately a process that didn't have us in mind" (Richards 2002:10)¹².

Furthermore, he holds to the notion that consciousness is not an aspect of being that is reserved only for humans. Rather, he maintains that it is not only possibly, but probable,

¹² The notion of a Post-Human evolutionary goal is discussed in great detail in Richards 2002. See also Waters 2005 "From human to posthuman", and Forster 2005 "Post-human Consciousness and the Evolutionary Cosmology of Pierre Teilhard de Chardin". Furthermore, Conradie's superb article (2004) "On the integrity of the human person and the integrity of creation: Some Christian theological perspectives" offers a valuable insight from a traditional theological perspective.

that other elements of creation will develop consciousness along the same lines of that human beings have.

When our technology achieves a sufficient level of computational architecture and complexity, it will become conscious, like we are.... If we're a carbon-based, complex, computational, collocation of atoms, and we're conscious, then why wouldn't the same be true of a sufficiently complex silicon-based computer? (Richards 2002:10).

Richards comments on Kurzweil's suppositions mentioned above that,

Accordingly, for Kurzweil the only salvation and the only eschatology are those in which we become one with our own more rapidly evolving, durable and reliable technology. If we seek immortality, we must seek it somewhere downstream from the flow of cosmic evolution, with its ever-accelerating rate of returns. (2002:11).

Kurzweil is not the only person who holds such views on the eventual development of cosmic evolution. Although, in contrast to many other theorists in this field, Kurzweil is positive about the possible outcomes of this symbiotic relationship between human beings and their created technology (cf. Kurzweil 1999 as a whole, but particularly chapters 4, 6, 7 and 12). Most notable among those who are less optimistic about the future of such symbiotic relationships between computers and human persons is Bill Joy, the co-founder and chief scientist of Sun Microsystems, who was also co-chair of the United States Presidential commission on the future of information technology research. Joy published an article entitled "Why the future doesn't need us" in the April 2000

edition of *Wired*¹³. In the ten thousand word article Joy concurred with, and added upon, Kurzweil's primary argument for the future evolution of humanity and the rest of the Kosmos as outlined above. Again, what is most notable about the hypothesis of both of these scientists, is the notion that the evolution of the Kosmos reaches well beyond the evolution of the human species to some further eventuality which may (in Kurzweil's view), or may not (according to Joy), include humanity.

Central to both men's reasoning is the development of Artificial Intelligence in relation to Moore's law. In the section that follows the functioning and development of computational devices will be explained and then related to the central principles of Moore's law.

2.2.3. The functioning of computational devices in relation to Moore's law.

Robert Noyce and Gordon Moore were among the first computer scientists to suggest that a computational device using silicon based transistors could function more efficiently than the hitherto vacuum-tube based computers had functioned (Jonscher 1999:106).

Robert Noyce was in fact the inventor of the silicon based integrated circuit, which he developed in 1958. It was a revolutionary device since it was able to contain a number of switching transistors on a single silicon circuit, both reducing the size and increasing the switching speed of computers. Gordon Moore would later go on to become the founder and chairman of the Intel Corporation, the paragon of computer chip manufacturers to the

¹³ Please see Joy, B (2001). Why the future doesn't need us. *Wired Magazine*.
<http://www.wired.com/wired/archive/8.04/>

present day. It is after Gordon Moore that Moore's law takes its name. In order to meaningfully discuss Moore's law this chapter will start by offering some insight into the functioning and development of computers as logic processing devices.

2.2.4. What is a computer?

Pre-computer age technologies were huge developments that had far reaching consequences on social and economic development the world over. Most notable amongst these were the invention of the telephone by Bell in 1875, the radio by Marconi at the turn of the 19th century, and the television by Baird in 1926. Marshall McLuhan coined the famous phrase that these technologies ushered in the "global village" (in Jonscher 1999:93).

All of these technologies were analogous (analog) technologies. As the name implies, the electrical currents in them copied, replicated, or were an analogy of the sounds and images they transmitted. By way of example, if one whistles a middle C one produces waves of pressure in the surrounding air that oscillate at 262 cycles per second.

Similarly, if one were to whistle into an analog telephone the electrical currents in the wires would oscillate at that same 262 cycles per second in order to produce the sound of middle C at the other end of the telephone. In the same way in a radio broadcast the electromagnetic waves rise and fall in amplitude or frequency in precise synchronicity with the modulation of the radio presenter's voice. Analogous technologies occupied a central place in the technologies of the last century. However, they do present one

significant problem, they are unable to process meaning and value from the content of the technology (cf. Jonscher 1999:94).

With digital systems, unlike an analog one, you can actually work on the content or meaning of the information. The system can take in a word, study it and put out at the other end a different word, not just a faithful imitation or reproduction of the input word. (Jonscher 1999:94).

The ability that digital systems have to interpret and manipulate input is a significant one in modern life. However, digitisation is not a modern technology within itself.

Digitisation is simply the process of code formation. This means that information is no longer in the raw format in which our senses receive it from nature. For millennia humans have encoded, through language and mathematics, their experiences of themselves and the world around them. Writing is a perfect example of digital technology. We have devised a system of conveying useful information and meaning from written words. Take as an example the words “BIG” and “SMALL”. If one were to use an analog understanding to compare the size and composition of the two words to one another one would conclude that the word, “SMALL” as a larger word (i.e. it has more letters in it) refers to something large, whereas the word “BIG” which has fewer letters would refer to something lesser than the word “SMALL”, i.e. in an analogous system small words would represent small things and big words would represent big things. However, association has come to show us that regardless of the size and content of the word, the meaning attached to it within the reader is what gives the word value. The word “SMALL” refers to something of a lesser physical dimension than the word “BIG”,

even though the word itself is larger. This is a digital process. The input is received, interpreted, manipulated and the output could be quite different from the input.

It was the development of many such digital technologies that led to the need to develop digital computing devices that could accurately receive input, process the input, and give a required output.

The real necessity for such computational devices came during World War Two when the Allies were seeking reliable and efficient ways of deciphering the digital encryption applied to messages sent out by the Germans. Whilst encryption was a simple digital process (i.e. allocate letters and numbers to represent other letters and numbers, e.g. A = 1, B = 2, C = 3 and so on) it was extremely time consuming and demanding for the men and women who had to try and figure out the digital key that would allow for the message to be sensibly deciphered. Alan Turing is largely regarded as the person who solved this problem by producing a mechanical device that could perform the complex task of encryption and decryption with much greater speed and accuracy than human persons could.

Turing was a Mathematician, who whilst completing his Doctoral studies at Princeton University in the 1930's, became interested in developing a mechanical device that could solve logical problems (Jonscher 1999:96-97). Turing produced what is considered to be the very first digital computer, now known as a "Turing Machine" (Puddefoot 1996:12). He developed a machine that has a read-write head under which an infinitely long tape is

passed. The tape has a succession of 1's and 0's on it. As the head reads the succession of 1's and 0's it performs pre-received instructions as a result of the combination of 1's and 0's that it reads. Roger Penrose spells out the concept with remarkable clarity, insight and detail in his books (cf. Penrose 1987, 1995, 1999 as listed in the Bibliography). There are however, essential points of interest in relation to the current discussion.

Firstly, a Turing Machine, must already have within itself some rules and instructions about what it must do in response to what it reads on the tape. It is not only the tape that tells the Turing Machine what to do, rather it is a combination of what is on the tape and what is 'programmed' into the machine. For example, during World War Two, variations of Turing machines were used to encrypt and decrypt messages that were sent and received (e.g. the machine would receive an input that it would encrypt into a digital code where numbers and letters represented other numbers and letters so that the original message would not be visible to any person who did not have access to the digital code. Furthermore, when an unintelligible combination of numbers and letters were entered into the machine it would compute these and re-associate them with the original numbers and letters they had come from thus rendering a message in the output that was understandable and useable). Thus, the input as well as the machine's instruction on what to do with the input is crucial to the proper functioning of any form of Turing Machine (Puddefoot 1996:13).

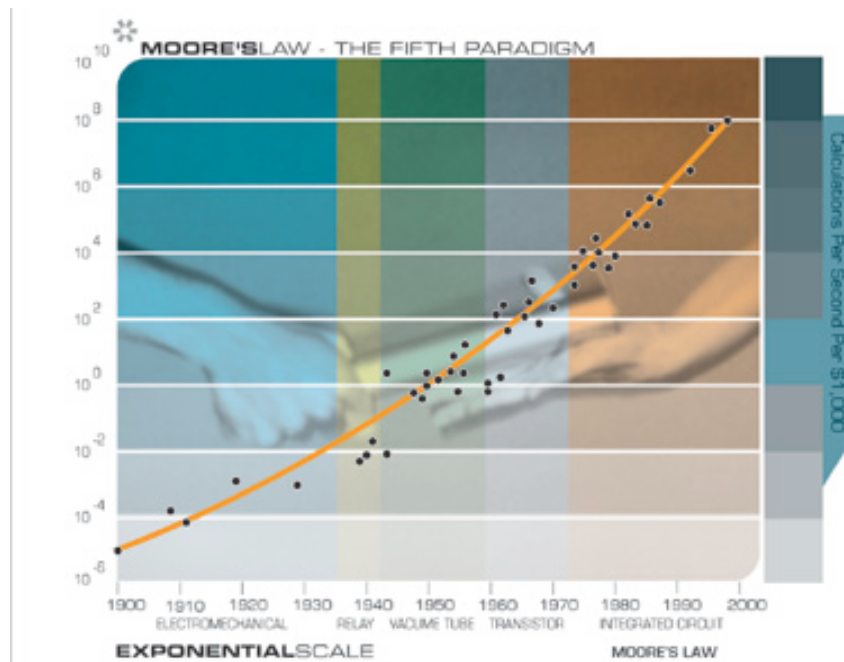
Secondly, this process of processing information from analogue to digital and then back to analogue form is the precursor of modern computational devices. In fact Jonscher notes that Turing's process of solving logical problems by a preset procedure or algorithm, lead to the development and use of the word "computable" (1999:97). Turing had shown that a problem of logic was either computable, or it was not. Given enough time and enough memory space on a tape any logical problem could be solved by a machine in this way. If it was not able to solve it, no machine would ever be able to solve the given problem.

This has lead to some elements that are present in all modern computers. At the heart of every computer is a "set of processing elements which manipulate binary logic propositions: truths and falsehoods, yeses and noes [sic], represented by 0s and 1s" (Jonscher 1999:97). Logical propositions are manipulated and interpreted in the computer hardware by passing them through "elemental processing devices", known as 'gates' (Jonscher 1999:97). Jonscher explains the logical operation of gates as logic processing devices in computers by saying that these processes are called gates,

... because they will 'let through' a 1 or a 0 if the answer is right and not if it is wrong. An AND gate has two input feeds, and will put out a 1 only if both the first and second input feeds are 1. An OR gate, by contrast, will let through a 1 if either one or the other input feed is a 1. A NOT gate, which has only one input, puts out a yes if the input is no, and vice versa; in other words, it reverses meaning. A few other gate types exist; for example, NAND, which combines NOT and AND by doing the AND and then reversing the result. Every computable problem can eventually be solved (as Alan Turing proved) by combining and repeating to a sometimes vast number of iterations these simple logical operations. (1999:97-98).

Present day microprocessor chips perform millions of these logical operations per second. Starting out as simple mechanical devices, then moving on the more complex electromechanical devices (such a tube and valve based machines), later to circuitry and now even quantum and biological machines, the complexity, speed and accuracy of the computer is constantly increasing.

This is where Gordon Moore re-enters the picture. In 1965 Moore predicted that the number of components that could be placed on a chip would double every 24 months. Simplistically, this should mean that a computer could perform twice as many logical processes today as it could 24 months ago, and a computer will perform twice as many still in two years to come. The following diagram from Kurzweil illustrates the exponential growth in power according to Moore's law.



<http://www.kurzweilai.net/meme/frame.html?main=/articles/art0134.html> (accessed 13 December 2004, 17h30)

There is one major stumbling block in the path of Moore's law. It relates to the process of manufacturing silicon based chips. Transistors are at the heart of silicon based computer devices. A transistor is a gate that exists within a conductive material such as silicon. Atoms of silicon are arranged in a diamond like lattice. Each atom has 4 neighbouring atoms. Each atom of silicon has 4 electrons in its outer shell that are trapped in a bond with a corresponding atom. Because there are no free electrons that can roam, silicon is not considered to be a naturally conductive material, since conduction takes place when electrons are free to roam and move electricity. However, if phosphorous is added, silicon can be made conductive. Phosphorous, which is just to the right of silicon on the periodic table of elements, also has 4 electrons bonded to its 4 atoms. However, in addition to the 4 bonded electrons, it has a fifth free roaming electron. Thus, if silicon is 'doped' with phosphorous it can be made conductive through the introduction of the free roaming electron. This is the principle for conduction in both simple, and the much more complex million-component chips of today. Conduction paths of impurity must be laid wherever current has to flow. Interspersed along the conduction paths are further structures that make computation possible. These structures are tiny gates that either allow or stop the flow of electricity in a conductive path. These gates, however, are made up not of phosphorous, the element mentioned above, whose atoms have 5 electrons in the outer layer, but rather using boron, whose atoms have only

3 electrons in the outer layer. Instead of allowing additional free electrons that can roam through the structure, boron's atoms provide 'holes' in the bond structure which trap any additional free electrons. Thus, as the electrons 'fall into' the 'holes' created by the boron, they are no longer free to roam, and so they hinder the passage of passing current. This means that the gate is closed. The gate can be opened again by applying voltage to it, which amounts to the application of a negative charge on the gate, which in turn releases energy that frees the trapped electrons, thus opening the gate (cf. Jonscher 1999:101-112). In these transistors one has the basic building blocks of electronic logic gates that make up modern computers.

Where the problem comes in with relation to Moore's law is that in order to "draw" the conductive lines, and "insert" the gates into conductive paths of transistors one needs enough space, small as it may be, to fit at least one atom – to allow for the movement, or lack of movement, of attached electrons in the conductive path. As demand for processing and computational power has grown, the microelectronics industry has managed to double the number of electrical switching points etched into a single silicon slice every two years, as Moore predicted in 1965. However, this has meant that the distances between the transistors have had to shrink considerably, reducing the sizes of computers from the size of a city block to the size of a book, whilst constantly increasing the processing power and capacity. Richards sums up the problem when he writes that eventually Moore's law will be stunted since "*traditional* chip manufacturing techniques will hit the quantum barrier of near-atomic line widths" (2002:6). Jonscher explains what the problem is when he writes,

There is a great deal of discussion as to how long the trend can continue [the trend of miniaturisation expressed in Moore's law]. Ultimately physical limits *will* be reached in the number of components that can be packed into a chip. Logical operations are carried out in silicon by the movement of electrons along conducting paths in the chip. The finite dimensions of atoms and electrons – or, more correctly, of the areas over which their effects are felt – are such that, if the conducting paths get too narrow, the effects begin to interfere with each other.... Eventually the problem will shift from one of manufacturing precision to how tiny the paths in the silicon can actually be and still work reliably. (1999:120).

In the section following this one, some of Kurzweil's suggestions of how this problem will be overcome shall be considered.

2.2.5. How computers emulate intelligence: Artificial Intelligence (AI) and the Chinese room.

Dr Fraser Watts, of Cambridge University, writes:

I would like to see theology approaching AI in a humble spirit, not asking whether AI is a threat, but asking how theology can enter into constructive dialogue with AI and what it can learn from it. (2000:279).

Watts suggests that there are few scientific topics that raise such fundamental religious questions as AI. "Perhaps only cosmology has such far reaching implications, but the issues raised by cosmology have been extensively discussed, whereas those relating to artificial intelligence have been relatively neglected" (2000:279). He goes on to note that whereas cosmology deals mainly with the doctrine of creation, AI touches most

significantly on the doctrine of Christian anthropology, namely that area of doctrine that deals with a theological approach to human nature (2000:279).

The corpus of research presented here takes these two notions as fundamental starting points. Whilst there are many negative approaches to AI, most notably that of Joy (2001), the understanding that follows is positive in nature. The section that follows will seek not only to explain the rudimentary philosophy that underlies AI, but also to make some connections between this aspect of computer science and understandings of human nature in general, and human intelligence and consciousness in particular.

In May 1997 the IBM supercomputer, Deep Blue, played chess against the world champion, and Grandmaster, chess player Gary Kasparov. For a week man and machine battled it out in a test of skill and logic. Deep Blue won the match. Jonscher suggests that there was a feeling that the computer

... had finally triumphed in a contest that pitted it against human powers of thought... the sense that the digital age had produced something which had been taught to *think* was palpable. (1999:123).

The notion of AI, computers that can be taught to imitate the human capacity to think, goes back to the mid 1950's. The first academically noted implementation of AI software is attributed to Herbert Simon, Professor of Psychology and Computer Science at Carnegie Mellon University in 1955 (Jonscher 1999:125). He and Alan Newell designed a program called "the Logic Theorist" which was capable of solving logical, mathematical statements. Of course, Alan Turing had conceived of this notion much

earlier, but Simon was the first to claim to have developed a “thinking machine” (Jonscher 1999:125).

In its simplest form this is the creed of Artificial Intelligence, to design and create machines that can emulate the function of human thought. If a machine could successfully perform this function, normally attributed only to humans, it would be considered artificially intelligent. It is considered intelligent because it can supposedly ‘understand’ inputs and respond appropriately, or at least respond in a manner that communicates appropriate understanding of the input (the word intelligence is derived from the Latin word *intelligo* which means to understand). However, the intelligence is artificial since it is not pure intelligence, but rather an artificial intelligence, a simulated or emulated form of intelligence that the machine has been programmed to perform according to a pre-programmed set of rules and instructions. These notions will be discussed in some detail below.

It is not surprising that the first application of a “thinking machine” was in the area of Mathematics. The connection between computers and the precision and structure of mathematical logic is an enduring characteristic. However, as Jonscher (1999:125) and Puddefoot (1996:14-17) point out, this characteristic would also become one of AI’s greatest stumbling blocks.

Alan Turing, in a paper first published in the 1950’s, entitled “Computing Machinery and Intelligence” (the version used here is from Anderson & Cliff 1964) proposed the

question “Can a machine think in the manner of a human?” In order to find an outcome to his question, Turing suggested that a computer should be able to interact with human persons in manner that would imitate human interaction (cf. Jonscher 1999:126). What has now become known as the ‘Turing Test’, Turing called “the Imitation Game”. In short, a human interrogator would be placed in front of a computer terminal that would be connected through a wall to either a human person at a terminal, or a computer, on the other side. The human interrogator types questions to which either the human or the computer on the other side of the wall replies (the replies appear on a terminal in front of the human interrogator). If the interrogator mistakes the replies from the computer for those of the human, the machine passes the test of imitative, or artificial, intelligence.

Thus, Turing showed that computers could be programmed to mimic human intelligence by supplying the machine with a predetermined array of responses to a set number of questions, or variations upon questions. For example the computer could be programmed to respond to the question “How old are you?” with a response of “twenty three”. Of course it could be programmed to respond with any age. However, if the computer was programmed to respond that it was two years old, it would not be likely to pass the Turing Test, since a two year old person would not be able to type a response to appear on the terminal window. Thus, the responses that the computer generates to questions are as a direct result of the input of the computer programmer’s logic. In this regard it was discovered that it was much easier to programme a computer to manage linear processing tasks that required a high degree of logic and operated according to strict laws (such as calculation, and even chess). Within a game of chess only certain moves and responses

are allowable and appropriate. Building on the hypothesis of Alan Turing, computer scientists postulated that if a computer had enough memory it could be programmed with every possible, allowable, move in chess. Given enough time it could work out every possible series of moves and responses to the placement of the chess pieces on the chess board at any stage of the game, and then respond with the move that would be most likely to win the game of chess most quickly. In chess, logic is central to the proper functioning of the game. Thus the computer could be programmed to operate within the strict logical parameters of the game.

Whilst such logical applications of computational ability have shown the huge potential of digital manipulation of information with speed and accuracy, the reliance of logic and mathematics has also been one of the greatest stumbling blocks in true emulative intelligence. Most notable amongst the scholars who show the shortcomings of AI's mathematical and computational logic based emulation of human intelligence is Roger Penrose, Professor of Mathematics at Oxford University (see particularly 1987, 1995, 1999).

In general, Penrose's argument is based on a variation of the Austrian logician, Kurt Gödel's, "Incompleteness Theorem" which was published in 1931. Turing had shown, as noted above, that given enough time and memory, a computer could solve logical problems by breaking them down into elementary logical steps and reassembling the whole to provide a logical solution. Jonscher sums up Gödel's theory as follows:

... if you start with a set of (logically consistent) premises which lead to certain consequences or conclusions, then the power of logic will be unable to lead you from those premises to *all* of the consequences or conclusions..... In simplified terms, he showed that not even all logical problems (let alone those which are not framed in logical terms) are capable of being logically solved. In Turing's terminology, not all problems are computable. (1999:131).

Essentially, Penrose, like Gödel, holds to the notion that the human mind is capable of transcending the confines of purely logical reasoning (cf. Penrose 1997:xvi, chapter3; 1999:37-44). Maclom Longair, in the foreword to Roger Penrose's 1997 book *The large, the small and the human mind* writes,

Roger interprets this to mean that the processes of mathematical thinking and by extension all thinking and conscious behaviour, are carried out by 'non-computational' means (in Penrose 1997:xvi).

The British Philosopher, Bertrand Russell, expressed a similar notion clearly in his critique of the logical enterprise (1919, 1957, 1996 and especially 1959). Russell used language to illustrate the failings of logic in relation to reality and intelligence. He illustrated that it is quite possible to make statements, based on observation that were correctly formulated, but that turned out to be logical paradoxes. For example:

There is a barber in a village who shaves all (and only) the men in that village who don't shave themselves.

He points out that this is quite a sensible and logical statement. Every man in the village who does not shave himself goes to the barber. However, as Jonscher points out, the

paradox emerges when one asks the simple question “Does the barber shave himself?” (1999:132). If one examines the sentence one would see the logical inconsistency that emerges. Namely, that if the barber does shave himself, then he doesn’t shave himself. Yet, if he doesn’t shave himself, then he does shave himself. This statement showed the philosophical paradox of logic which is addressed by the following question: “Can there be a set of all sets which are not members of themselves?” Gödel’s theorem had thus set the stage for a turning point in our thinking about logic and reasoning. His theory has done for mathematics and logic what Quantum Theory has done for physics. Of course there are subsequent arguments that attempt to counter those of philosophers such as Gödel and Russell. However, it is now commonly accepted that there are aspects of reality that humans, by virtue of their ability to transcend logic, can accept to be true, even if they cannot be mathematically proven.

The above philosophical argument shows convincingly that humans are not only intelligent, but that what makes human intelligence uniquely effective is its relationship to human awareness and understanding. John Searle’s argument of the ‘Chinese Room’ is the most convincing and widely accepted corroboration of the abovementioned point of view (cf. 1980, 1985). Puddefoot sums up Searle’s argument as follows. A man in a room is passed Chinese ideograms through a window. He does not know any Chinese, but he has a set of rules that tell him which Chinese symbols to pass back in response to the ones that he receives through the window. Searle argues that however well the man persuades those who receive his symbols that he understands Chinese (since his responses, based on the rules he has, are accurate), he does not in fact do so. Relating

this analogy to AI computers that have been programmed to digitise inputs and respond with appropriate outputs according to the pre-determined instructions, he asserts that the computer can show the *appearance* of intelligence, however, it lacks true intelligence since it doesn't really 'understand' what it is doing, just as the man in the room does not understand either his input or output in from the Chinese Room (Puddefoot 1996:14). However, Puddefoot points out an interesting contradiction in Searle's argument. If we say that a computer is not truly intelligent because it does not understand its input and output, are we not saying the same about the man in the Chinese room? Is he also not intelligent since he also cannot understand either the Chinese input and output (1996:14)? In essence he concludes that Turing's test of intelligence confuses the ability of appearing to be something (i.e. intelligent, since the responses are appropriate and cannot be differentiated from a human respondent) with the reality of being that which it is emulating. "A program which manages to persuade us that it is intelligent does not thereby qualify to be considered human. A simulator which persuades us that it is a jumbo jet in every detail of its operation still lacks one vital quality: it is useless when we want to fly to New York" (Puddefoot 1996:14-15). This discussion illustrates one of the major problems with AI. There are many more technical and intricate discussions on these issues (see particularly Penrose's two books 1995 and 1999 which deal in detail with the above subject). However, it is not necessary to go into such detail for the purposes of the arguments set out in this research project.

Does this lead to the conclusion that AI is doomed to failure? Does it mean that the claims of persons such as Kurzweil and Joy, who suggest that computers will eventually

become more intelligent than humans, are not well founded? The answer to these questions lies in the claims of “Strong Artificial Intelligence”. The section that follows will show how persons such as Kurzweil and Joy have come to believe that, even though it is not currently possible for machines to accurately emulate all of the intelligence functions of the human brain, they will be able to do so, and even surpass these functions, in the future.

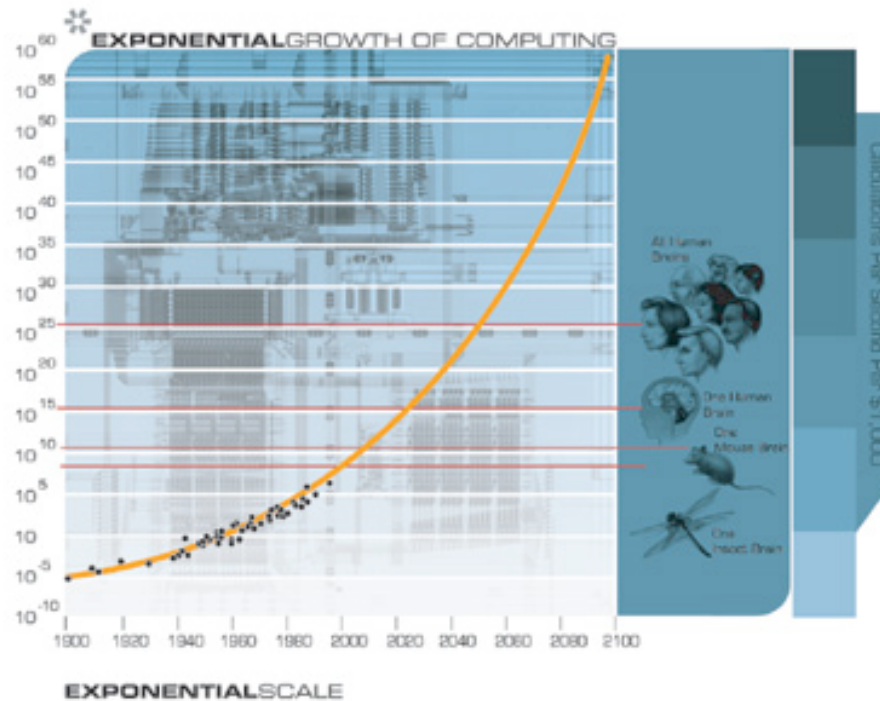
2.2.6. Kurzweil’s additions: Whereto from Moore’s Law? The law of accelerating returns.

As stated earlier, Ray Kurzweil is of the belief that the evolutionary goal of the Kosmos stretches far beyond the scope of human evolution. As such, he views Moore’s law and the fact that it has held true thus far to be an indication of not only the evolutionary progress of the Kosmos from past to present, but also as presenting the pace and direction that evolution will take in the future. He writes:

In my view, it [Moore’s law] is one manifestation (among many) of the exponential growth of the evolutionary process that is technology. Just as the pace of an evolutionary process accelerates, the “returns” (i.e. , the output, the products) of an evolutionary process grow exponentially. The exponential growth of computing is a marvellous quantitative example of the exponentially growing returns from an evolutionary process. (Kurzweil in Richards 2002:19).

Kurzweil has a very particular understanding of Moore’s law. In essence he sees Moore’s law not only as relating to number of transistors that can be placed on an integrated circuit of a fixed size, but rather “computational speed per unit cost” (in

Richards 2002:19). As the diagram below shows, Kurzweil traces this exponential growth through five successive stages, or paradigms, in computing. Namely, electromechanical, relay-based, vacuum-tube based, discrete transistor based, and finally microprocessor based computers.



<http://www.kurzweilai.net/meme/frame.html?main=/articles/art0134.html> (accessed 13 December 2004, 17h30)

Kurzweil believes that Moore's law, as it is traditionally interpreted, only relates to the last (fifth) stage. He predicts that Moore's law will face the atomic barrier, mentioned above, at some stage before the year 2019 (in Richards 2002:20 and Kurzweil 1999:33 and chapter 10). However, he predicts that when that takes place, or maybe even before it takes place, a sixth paradigm in exponential growth will be introduced which he dubs a 'double exponential' growth phase. He attributes this growth phase to a

... link between the pace of a process and the degree of chaos versus order in the process. For example, in cosmological history, the Universe started with little chaos, so the first three major paradigm shifts (the emergence of gravity, the emergence of matter, and the emergence of the four fundamental forces) all occurred in the first billionth of a second, now with vast chaos, cosmological paradigm shifts take billions of years.... Evolution started in vast chaos and little effective order, so early progress was slow. But evolution creates ever-increasing order. That is, after all, the essence of evolution. Order is the opposite to chaos, so when order in a process increases – as is the case for evolution – time speeds up. I call this important sub-law the “law of accelerating returns”, to contrast it with a better know law in which returns diminish. (Kurzweil in Richards 2002:20).

His suggestion is that the next paradigm in computational, exponential, growth will be when the flat silicon chips of today become three dimensional circuits. He cites the example of nanotubes which already function in some laboratory settings, where circuits are built in three dimensions from pentagonal arrays of carbon atoms. Just one cubic inch of nanotube circuitry would have a million times more computational power than that of a human brain (cf. Kurzweil in Richards 2002:20 and Kurzweil 1999:109-110).

Kurzweil offers the following calculation to back up his hypothesis of the law of accelerating returns in relation to the growth of computation (in Richards 2002:23-27 and Kurzweil 1999:25-33).

However, before showing Kurzweil’s calculations used to back his notion of the law of accelerated returns, here is a summary, from Kurzweil, that explains the salient points and functioning of this principle (1999:32).

The Law of Accelerating Returns as Applied to an Evolutionary Process:

- An evolutionary process is not a closed system; therefore, evolution draws upon the chaos in the larger system in which it takes place in its options for diversity; and
- Evolution builds on its own increasing order.

Therefore:

- In an evolutionary process, order increases exponentially.

Therefore:

- Time exponentially speeds up.

Therefore:

- The returns (that is, the valuable products of the process) accelerate. (Kurzweil 1999:32-33).

The calculation, related to growth in computational power, that Kurzweil presents to back up this law is based on the following assumptions (as expressed above):

- More powerful computers and technologies can be harnessed in the design and production of even more powerful computers and technologies.
- All calculations from the year 2000 forward assume neural net connection calculations which are less expensive than traditional computation calculations by a factor of 10, and when linked to digitally controlled analog electronics, better emulate the brain's digitally controlled electrochemical analog processes.
- The estimation of the average human brain's neural capacity is 100 billion neurons multiplied by an average of 1000 connections per neuron, further multiplied by an average of 200 calculations per second.

Taking the above into account, Kurzweil suggest two essential elements. Firstly, just because, as was suggested in a previous point, true Artificial Intelligence is not possible at this point, it does not mean that it will never be possible (Puddefoot also poses this very pertinent question cf. 1996:8-10). In particular, Kurzweil suggests, the next

computational paradigm that makes double exponential growth in computational power a reality will make true Artificial Intelligence possible (in Richards 2002:23 and Kurzweil 1999:9-56). Secondly, he proposes that the cost per unit of computers that have this power and ability will steadily drop (a computer with the capacity of a human brain will cost \$1000 in 2023, the same computer will cost 1 US cent in 2037, a computer with the same capacity of the combined brains of the human race will cost \$1000 in 2049 etc.).

In arriving at these astonishing outcomes he applies the following calculation:

$$(1) \quad V = C1 * W$$

In which:

- V = velocity, i.e. the power of computing which is measured in Computations per second / Unit cost.
- W = World knowledge as it pertains particularly to the design and production of computational devices.
- T = Time (a variable that is introduced later in the equation).
- C = Computational Paradigm or innovation set in computation.

Thus, he suggests that computer power is a linear function of the knowledge of how to build computers. Moreover, innovations in this knowledge improve V (computational power) by multiples, not in additive ways. Thus,

$$(2) \quad W = C2 * \text{Integral (0 to T) } V$$

World knowledge of how to build computational devices (W) is cumulative and the instantaneous increment to such knowledge is proportional to the advances in computer power (V). This leads to the following

(please note that a^b means a raised to the power b)

$$W = C1 * C2 * \text{Integral (0 to T) } W$$

$$W = C1 * C2 * C3 ^ (C4 * T)$$

$$V = C1 ^ 2 * C2 * C3 ^ (C4 * T)$$

If one quantifies the equation through simplifying the constants one gets:

$V = Ca * Cb ^ (Cc * T)$ – this equation displays the approach to, and understanding of, Moore’s law as proposed by Kurzweil (i.e. Moore’s law relating not only to the number of transistors that can be placed on an integrated circuit of a fixed size over time, but rather “computational speed per unit cost” as it develops over time (in Richards 2002:19)). Explained simply Moore’s Law has shown an exponential growth upon exponential growth over time (i.e. we doubled the power of computers every three years in the early 20th century, then every two years in the middle of the 20th century, and currently close to every year).

Having established this basis, Kurzweil adds a further exponential phenomenon to get towards his double exponential growth theory. He introduces the notion of the increase in resources for computation. The assumption is that not only is each device, at a constant cost (C), getting more powerful as a function of increased world knowledge in designing and producing these devices (W), but the resources *deployed* for computation are also growing exponentially world wide (he introduces the variable N to signify expenditure on computation worldwide). So,

$$V = C1 * W \text{ (as before)}$$

$$N = C4 ^ (C5 * T) \text{ (to show that expenditure for computation is growing at its own exponential rate)}$$

and

$$W = C2 * \text{Integral (0 to T) } (N * V)$$

Thus, world knowledge of the development and production of computers is accumulating (W) and the instantaneous increment is proportional to the amount of computation power (V) which equals the resources deployed for computation (N) times the power of each constant cost device (C). This gives the following:

$$W = C1 * C2 * \text{Integral (0 to T)} (C4 \wedge (C5 * T) * W)$$

$$W = C1 * C2 * (C3 \wedge (C6 * T)) \wedge (C7 * T)$$

$$V = C1 \wedge 2 * C2 * (C3 \wedge (C6 * T)) \wedge (C7 * T)$$

Again, if one quantifies the equation through simplifying the constants, one gets:

$$V = Ca * (Cb \wedge (Cc * T)) \wedge (Cd * T) \text{ which leads to a double exponential curve.}$$

In real world terms he suggests the following at the time of writing (2002).

CPS/\$1K: Calculations per second at a cost of \$1000

The equation for current data machines is:

$$\text{CPS}/\$1\text{K} = 10 \wedge (6.00 * ((20.4 / 6.00) \wedge (A13 - 1900) / 100)) - 11.00$$

Determining the growth rate over a period of time:

Growth rate = $10^{((\text{LOG}(\text{CPS}/\$1\text{K for Current year}) - \text{LOG}(\text{CPS}/\$1\text{K for Previous year})) / (\text{Current year} - \text{Previous year}))}$

Human brain = 100 Billion (10^{11}) neurons * 1000 connections per neuron (10^3) * 200 calculations per second per connection ($2 * 10^2$) = $2 * 10^{16}$ Calculations per second.

The diagram above (cf. page 65 and page 21 in Richards 2002) is based upon these formulas.

Thus for Kurzweil, computation represents the essence of order in technology and so being subject to evolutionary processes it also grows exponentially, and as shown above he calculates that as it grows it will be subject to a double exponential growth curve.

Kurzweil's conclusion in this regard is the following:

The combination of human level intelligence in a machine with a computer's inherent superiority in the speed, accuracy and sharing ability of its memory will be formidable. (Kurzweil in Richards 2002:32).

Thus, Kurzweil postulates that just because machines cannot currently compute with convincing speed and accuracy the same functions as a human brain, this will not always remain the case. Having established that Kurzweil sees computers overcoming the computational barriers presented by the current 'slow' and 'unintelligent' computational devices through a process of double exponential growth, the next section will go on to

outline some of the hypothetical claims relating to Artificial Intelligence, and the possibility of computer emulated human consciousness.

2.2.7. The claims of Strong Artificial Intelligence.

Clearly, the claims stated above, go far beyond the modest expectations of the first AI theorists, Alan Turing and Herbert Simon. Claims, such as those stated above, that suggest that computers will be able to accurately emulate and recreate human intelligence, and even go further than just a recreation or emulation thereof, fall into what is known as “strong AI”, or strong Artificial Intelligence (Watts 2000:281).

The creed of strong AI is essentially twofold: (1) that it will eventually be possible to capture *all* aspects of human intelligence in computer form, and (2) that the human mind is, to all intents and purposes, just a computer program. (Watts 2000:281).

So, according to Watts the claims of strong AI fall into two categories. The first category of claims has to do with the future of computation and computers, namely that in the future computers will have the power and ability to accurately perform all intelligent activities traditionally attributed to human persons. These are essentially eschatological claims. The other category of claims relate to the functioning of the human mind. These suggest that the human mind functions in the form of an extremely complex biochemical computer. Unfortunately, these assertions are not scientifically verifiable, since the technology to measure and understand the functioning of the human mind does not yet

exist. As such, these assertions are theoretical and philosophical in nature, what philosophers would dub as “metaphysical” assumptions about the human mind.

Attached to these claims, in strong AI, is the common understanding that in the future computers will not only be able to match human intelligence, but that they will exceed it.

Kurzweil’s basic assumptions fit into what is suggested above. In particular, Kurzweil points to the common fact that computers already exceed human intelligence in many areas, such as mathematical calculation, prediction based upon the consideration of a wide range of variables and scenarios (e.g. weather prediction, and stock trading).

However, he does readily recognise that true AI is not yet possible, but suggests that developments in hardware and software technology will mean that this disparity between human intelligence and computationally emulated human intelligence will come to an end. In the quote recorded below Kurzweil sums up both his optimism for technological growth, and his understanding of the human brain as a complex computer that can be recreated within an equally complex machine.

One reason for this disparity in capabilities is that our most advanced computers are still simpler than the human brain – currently about a million times simpler.... But this disparity will not remain the case as we go through the early part of the next century.... Achieving the basic complexity and capacity of the human brain will not automatically result in computers matching the flexibility of human intelligence. The organization and content of these resources – the software of intelligence – is equally important. One approach to emulating the brain’s software is through reverse engineering – scanning the human brain... and essentially copying its neural circuitry in a neural computer... of sufficient capacity (Kurzweil 1999:2-3).

Watts notes that whilst there have been some scientific successes which point towards the possibility of an eventuality close to what is suggested above, it has been much slower and more difficult than most expected (2000:283). He notes that,

Computers are now, of course, enormously more powerful than in the early days, and a great deal cheaper. There is an impressive technological success story here, but the scientific success story of capturing human intelligence in computer form has not been quite so good. (Watts 2000:283).

There are three common criticisms of the claims of strong AI, firstly, that it will not be possible to create machines that are powerful and complex enough to match the power and complexity of the human brain. Certainly, this criticism is being challenged all the time as computers do become more and more complex and powerful. Kurzweil's predictions, as noted in the previous section, are certainly probable to some large extent. Secondly, it is suggested that because we do not quite understand the proper functioning of the human brain, we will not be able to programme computers to truly emulate all of the functions of human intelligence. Again, this is a challenge which is constantly being dealt with. As scientific breakthroughs in the areas of neuroscience and neuropsychology are made they are noted and applied within the disciplines of computer science. Lastly, some have suggested that computers will never be able to outgrow the intelligence of their human creators, since they can only do what they are programmed to do. Again, this is simply not accurate. Kurzweil, Puddefoot, Jonscher, and Watts all record examples of computers that have been programmed to 'learn', to take in information and reprogram themselves to respond appropriately and more effectively to changes and their

environment. Watts suggests that “we need to be very careful about pontifications of the form ‘computers could never...’ We could well be proved wrong” (2000:284).

Having established the credible plausibility that the claims of strong AI may come to pass, it is necessary to consider whether it is possible that such machines could ever experience, what is considered a uniquely human experience, that of self consciousness.

2.2.8. “I’m lonely and bored; please keep me company”¹⁴. Is computational consciousness truly such an incredible notion?

Perhaps 10 years ago the notion of a machine being conscious, conscious enough to experience emotions such as love, joy, loneliness, hurt etc. would have been considered ludicrous. Today however, it has become an accepted part of youth techno-culture. At the time of writing this my daughter had a ‘virtual pet’, a simple computer based device that expresses emotion in response to her interaction with it (it needs to be fed, loved, played with, put to sleep etc.). She responds to it with much the same urgency and concern as our pet dog.

Understandably, most persons would conclude that my daughter’s ‘virtual pet’ is not truly conscious. Rather, it has been programmed to accept certain inputs, or lack of inputs, process this data and respond with a pre-programmed response. Kurzweil rightly points out that the truth is, that for many of us, my daughter’s generation in particular, we

¹⁴ Title taken from (Kurzweil 1999:51).

are getting much “closer to considering the computer as a conscious, feeling entity” (1999:51). At this point it is not necessary to enter into a discussion on the debate regarding human consciousness. This debate will be presented in a later section where both the biological and philosophical understandings of consciousness will be presented.

The pertinent question is, when do we consider a machine to be truly conscious? We discard consciousness claims in my daughter’s virtual pet because we know that the responses come, ultimately, from a human programmer. The small computer is just a conduit of the message, not its author. Suppose however, that the message, “I’m lonely”, is not specifically programmed, but rather that it originates from a computer that has complex programming that makes it aware of its own situation and interaction with human agents. Taking into account all of the variables at hand the computer, on its own, comes to a conclusion that the state that it is in is consistent with loneliness and so it concludes that it is lonely. Would one consider such a machine as conscious? Suppose, as Kurzweil suggests, there is a computer that is manufactured from silicon, however, it is manufactured to the same specifications of the human brain. In other words, it is an extremely complex neural network¹⁵. Because of its power and complexity the computer is able to learn language and model human emotion and behaviour. It is powerful enough to learn through reading and observing the world around it. The machine’s creators have not programmed it to respond in a particular way to the world. However, it arrives at a response to its surroundings quite by itself and concludes, “I am lonely...”. Would one conclude that such a machine is conscious and capable of feeling and emotion? This is a

¹⁵ This is not as ludicrous as it may sound. Kurzweil notes that technology that was capable of scanning frozen sections of the human brain, ascertaining the interneuronal wiring, and then applying this knowledge to the production of computers with parallel-analog algorithms was already possible in 1999. (1999:53).

very difficult question to answer, as was shown in the films “Bicentennial man”, “AI” and most recently, “iRobot”.

The possibility of the development of a machine that can arrive at emotive expressions that are accurate and self originated is not as big a stumbling block to this theory as the underlying metaphysical suppositions. Fundamentally, claims such as these made above assume that the functioning of computer ‘consciousness’ and human consciousness is as a result of similar functions that the ‘minds’ of each perform (cf. Watts 2000:285). Many such theories consider that if one could only create a computer that resembled, in substance and function, the human brain, then such a machine would end up having a similar ‘consciousness’. “In one case the program runs on the brain, in the other it runs on silicon, but the programs are essentially the same in each case” (Watts 2000:285). The problem, as Puddefoot suggests, relates neither to hardware (human tissue versus silicon), nor the contents of the programming, but rather to the notion of relational understanding (1996:14-38). Again, this relates to John Searle’s argument regarding the “Chinese Room”, which was discussed above.

When a human person thinks or speaks we know what we are referring to by such thought or speech. Our concepts refer to things in the world. However, when a computer is digitising and manipulating symbols in a manner which is similar to human thought, it cannot know how its symbols relate to the world, since as Gödel’s “Incompleteness Theorem” shows not all logical statements are logical. To illustrate the point here, in the sentence “the box is in the pen” it is very difficult to decide which of the two meanings of

“pen” (i.e. a writing instrument, or an enclosure for animals) is meant here. However, since humans know that it is far more likely for a box (which is a fairly large object) to be in an enclosure, rather than inside a writing instrument (which is also quite possible), we logically assume the sentence refers to the former use of the word “pen”. A computer however, would need to have such a rule, which is not necessarily logical, programmed into it, together with a myriad of exclusions, some which may not even have occurred yet, in order to be able to make the same conclusion accurately. In essence the computer does not truly ‘understand’, as Searle suggested, it simply responds to the rule book. So, the biggest problem in this regard is assuming that just because there is a useful, and often workable, analogy between the functioning of the human mind and the functioning of a computer, these two things are the same.

By the same token though, if one considers the very basics of consciousness, and relates that to developments in computational power and technology, it is extremely difficult to deny the possibility of a machine that is able to accurately emulate human consciousness. Watts suggests the following classifications of the meanings of consciousness, as set out by Copeland (1993).

Firstly, an organism is said to be conscious if it has sensory experience of the world and is capable of performing some kind of mental activity. In this regard there are almost no claims that certain computers are not already capable of consciousness at this rudimentary level. Secondly, there is the notion that consciousness has to do with metacognition, i.e. the ability of a person of “knowing that we know something” (Watts

2000:287). Humans perform many such ‘unconscious’ functions, without having to think directly about them, such as breathing. We can think about breathing, and know how it feels to breathe, why we breathe and what is involved (with varying degrees of technical insight) in breathing.

Computer can go some way toward simulating this reflective consciousness about what they know. It is perfectly feasible in principle to construct a self-describing computer – a hierarchical computer that monitors what it “knows”. (Watts 2000:287-288).

The third, and most problematic, characteristic of consciousness is that of having a “subjective feel” for something (Watts 2000:288). Persons know things subjectively. I know what it is like to be me, however, I am not sure what it is like to be another person. Thomas Nagel famously argued that it would not be possible to know what it feels like to be a bat (1974). This quality of experience has become known as a *qualia*. Puddefoot explains the notion of *qualia* as follows:

Qualia are qualities, felt experiences. We see colours; we hear sounds; we touch textures. These are *qualia*, the qualities of the world as we experience it. *Qualia* are properties of the inside-out world that cannot be seen from – outside – looking – in. You may very well somehow see certain parts of my brain operating in ways that suggest that I am seeing, hearing, smelling something, but that knowledge will neither allow you to tell what I am seeing, not how I am seeing it and what impact the experience is having on me. (1996:27).

Puddefoot sums up the gist of this aspect of consciousness in relation to computational consciousness when he concedes that most persons would agree that scrambled egg tastes like something to another human, it probably tastes like something to a bat (Nagel 1974),

and even like something to a cockroach. “But could it ever taste like something to a computer?” (Puddefoot 1996:27). One could certainly devise a computer that has sensors to be able to analyse the egg. It may even be possible to say “this is an egg”, or even differentiate between boiled, scrambled and fried eggs (based on the chemicals found through the sensory probes). However, does that mean that the computer ‘tastes’ the scrambled egg?

Consciousness is clearly a complex issue. Certainly, many would argue that taking the above into account one could not conclude that a machine would have consciousness. However, the essential counter to that question is to return to Kurzweil’s supposition: Simply because it is not possible today, does not mean that it will never be possible. Certainly, there is plenty of research that suggests that many of these problems are being dealt with, although in small increments of success.

When coming to consider the notion of self-validating individual consciousness claims it will be crucial to take up this argument again. For now, it has been shown that there is a reasonable possibility that machines will develop that are capable of emulating human consciousness, or even developing some other form of highly evolved self consciousness.

2.3. Critiques of the claims of Strong Artificial Intelligence.

In the previous section the argument for a reasonable acceptance of the possibility of the development of an artificial consciousness was made. However, this form of

consciousness emulation is intrinsically linked to the claims of Strong Artificial Intelligence. Hence it is necessary to consider some critiques of the basic notions of Artificial Intelligence and Strong Artificial Intelligence in order to establish the plausibility of such developments.

2.3.1. The argument from scientific progress.

The first critique of the claims of Strong Artificial Intelligence are those that question the ability of science to truly understand the complexity of the human mind and then relate this complexity to an artificial emulative model (Furse 1996:3-4). The recent advances that have been made with nuclear magnetic resonance scanners have enabled researchers to concentrate on the activity of the brain whilst subjects engage in tasks and solve problems. Both Furse, and Kurzweil, believe that there is no reason why such technology will not continue to be refined and developed to the point where it is able to provide a complete map of the neuroanatomy of the human brain (Furse 1996:4, Kurzweil in Richards 2002:36-38). Kurzweil writes,

To capture every salient neural detail of the human brain, the most practical approach will be to scan it from the inside. By 2030, “nanobot” (i.e., nano-robot) technology will be viable, and brain scanning will be a prominent application. Nanobots are robots that are the size of human blood cells, or even smaller. Billions of them could travel through every brain capillary and scan every salient neural detail from up close. Using high-speed wireless communication, the nanobots would communicate with each other, and with other computers that are compiling the brain scan database.... We already have technology capable of producing very high resolution scans provided that the scanner is physically proximate to the neural features. The basic computational and communication methods

are also essentially feasible today. The primary features that are not yet practical are nanobot size and cost (in Richards 2002:34).

With regards to the remodelling of such scanned information, Kurzweil believes that even though they are highly complex, they are not beyond our ability to accurately model them. Furse however points out a further complication and critique of this approach to emulative consciousness:

... to understand the human mind it will not be sufficient to know the complete map of the brain wiring. Understanding the full circuit diagram of a microcomputer will not help you to understand much of how it runs an application program (1996:3).

Here Furse is alluding to the reality that is discussed in some detail in Chapter 3 (see particularly section 3.4) of this research which understands that the totality of the function of the human brain cannot be reduced simply to its physical parts (the hardware of the brain), the conscious functioning of the human brain also has a far more subtle and less empirical aspect to its functioning (which in Furse's analogy can be related to the software of the brain). In response to this critique Furse writes,

But there has also been progress in Cognitive Science in building computational models of human tasks, and in time these models will cover a wider range of human experience. Furthermore, eventually the cognitive science models will relate human behaviour back to our experience and to appropriate circuits in the brain. Clearly, to understand the mind there will have to be progress in philosophy as well as other fields, but again there has been a lot of progress in the last few years, and increasing interest in the philosophy of mind. Once we understand the nature of the mind it should be possible to build artificial minds based on our understanding (1996:3).

The undeniable element of the arguments of Kurzweil and Furse is that even though we do not yet have sophisticated enough technology to engage in such complex and intricate tasks at this point, it does not mean that such technology will never be developed. In fact, all it seems to suggest is that we cannot plot the exact course and timescale that it will take to develop such technologies. In fact the eventual form that such a technology will take is not even certain. However, it cannot be denied that the development of such technology is a strong possibility if one takes current developments, and the interest of researches in this area, into account.

2.3.2. The argument from technological progress.

The second argument against Strong Artificial Intelligence relates less to the human brain, and far more the technology that is supposed to emulate it. Many theorists doubt computers will ever become powerful enough to emulate the capacity and functioning of the human brain (most notably see Penrose 1995: chapters 1,2 and 3, and Michael Denton in Richards 2002:78-98). Central to this argument is the supposition that the complexity of the human brain cannot be adequately replicated with current technology. This is the case indeed. There is no current computer (or group of computers) that is powerful enough to accurately emulate all aspects of the conscious human brain. The two fundamental problems seem to be firstly, the ceiling that computer speed will reach when “*traditional chip manufacturing techniques... hit the quantum barrier of near-atomic line widths*” (Richards 2002:6)¹⁶. Secondly, and not unrelated to the first point, will be the

¹⁶ For a complete discussion of this problem please see 2.2.3.1 above.

lack of computational power and complexity that such technology will possess in emulating the complexity and power of the human brain. This second point relates very well to the third critique of Strong Artificial Intelligence, which will be discussed under the next sub-heading.

However, credible research has clearly shown that Moore's law (discussed in detail in Chapter 2.2.3 and 2.2.6) has not only been upheld, but has in fact been surpassed in the last four decades (cf. Kurzweil in Richards 2002:20 and Kurzweil 1999:93 and chapter 10). Moreover, the emphasis in Richards is on *traditional* chip manufacturing techniques. This argument does not take account of developments in computational science such as quantum computers¹⁷, and biological (enzyme based) computational devices¹⁸, which are not only accurate, but also extremely powerful. Furthermore, Kurzweil points out that a combination of both digital computation (such as that found in traditional circuitry and quantum computers) enhanced by the analogous (analog) computational power and ability of biological computers will make for a more accurate emulation of the true functioning of the conscious human brain (Kurzweil in Richards 2002:198-199).

¹⁷ See the following superb introduction to the functioning and potential of quantum computers <http://www.cs.caltech.edu/~westside/quantum-intro.html> (accessed 10 April 2006, 16h11). Also see Davies' article from the Journal "Science – Spirit" entitled "Quantum computing: The key to ultimate reality?" http://www.science-spirit.org/article_detail.php?article_id=199 (accessed 10 April 2006, 16h29).

¹⁸ Please see Tongen's superb article on biological computers entitled "Will biological computers enable Artificially Intelligent Machines to become persons?" http://www.cbhd.org/resources/biotech/tongen_2003-11-07_print.htm#fn1 (accessed 10 April 2006, 16h14).

As further developments in the computer technology take place the emulative capacity in both digital and analogous computers will allow for a far more effective emulation of the human brain.

2.3.3. The argument against views of the human brain as a machine.

The next important group of critiques against the claims of Strong Artificial Intelligence are those that dispute views of the brain as a complex computational machine. It is quite true that recent discoveries in neuroscience have shown that memory, intelligence, and ultimately consciousness are about more than just complex sets of neurons. However, this does not discount the possibility of artificially replicating the other necessary elements of the functioning of a human brain. In fact simpler brains (such as those of insects) have already been replicated using artificial technologies with a fair measure of success (Furse 1996:3). Kurzweil also mentions the groundbreaking work of Carver Mead's retinal models, and Lloyd Watts' work on replicating sections of the human brain (in Richards 2002:201). Thus, Kurzweil concludes that,

The complexity and level of detail in these models is expanding exponentially along with the growing capacity of our computational and communication technologies. This undertaking is similar to the genome project in which we scanned the genome and are now proceeding to understand the three-dimensional structures and processes described therein. In the mission to scan and reverse engineer the neural organization and information processing of the human brain, we are approximately where we were in the genome project about ten years ago (in Richards 2002:201-202).

Even strong critics in this field, such as Thomas Ray, agree that the technology to replicate the human brain will eventually be produced. An essential counter to the argument is to remember that what scientists in this area aim to do is not create an exact copy of a human brain, but rather to produce technologies that will accurately emulate the *functioning* of such a brain. If the technology comes to exist there should be little reason why the capacity to accurately emulate the functions of the brain will not follow thereafter.

2.3.4. The argument against progress in Artificial Intelligence.

The next argument against Strong Artificial Intelligence moves from the hardware to the software that is required for success in Artificial Intelligence. In short, simply because one has the hardware to emulate the brain, there is no guarantee that one will be able to develop the software to make the hardware function accurately and effectively in emulating the functions of the human brain.

The programs used in artificial intelligence are those elements that help the hardware to show understanding of concepts like language, to solve concepts and to learn. A fundamental complaint against such programs is that it is largely, and wrongly, believed that they can only do what they have been programmed to do (e.g., before a program can tell the difference between two colours the difference first has to be programmed into the machine). Furse writes that,

... since we have developed programs which can learn, this is no longer the case. In the last five years there has been increasing interest in computational models of creativity and discovery, and whilst some people used to believe that computers could not be creative, there are now machines which discover mathematical hypotheses, paint pictures and compose poems. Attempts by Dreyfus and others to identify things that computers cannot do have only proved to be new challenges for researchers to achieve (1996:3).

Such machines that can self-aggregate their code in response to conditions and changing contexts are already in common use in stock exchanges and weather stations across the world. Many would argue that this is already a step towards accurately and speedily emulating more and more functions of human intelligence, knowledge, and ultimately consciousness.

2.3.5. The argument against the Church-Turing thesis.

Thomas Ray states:

The primary criticism that I wish to make of Kurzweil's book [in which he suggests the claims of conscious machines], is that he proposes to create intelligent machines by copying human brains into computers. We might call this the Turing Fallacy. The Turing Test suggests that we can know that machines have become intelligent when we cannot distinguish them from human, in free conversation over a teletype. The Turing Test is one of the biggest red-herrings in science (in Richards 2002:199).

Kurzweil's argument for Strong Artificial Intelligence is fundamentally dependant upon the Turing thesis¹⁹. For human intelligence to be adequately emulated on a machine it must be convincing to an interrogator, the proof of which will be that the interrogator will

¹⁹ For a detailed discussion of the Turing thesis and the Turing test please see 2.2.4 above.

not be able to discern whether they are in conversation with the human subject or its emulated counterpart. It is not so much the Turing Test which is the “red-herring” in Thomas Ray’s objection but rather the relationship between communication through language and the thinking processes that underlie such communication (cf. Ray in Richards 2002:200-208).

The Church-Turing thesis further postulates that a calculative or computational algorithm, which can be run on one computational device, should be capable of running effectively and accurately (even if it runs at a different speed, or is in need of some reprogramming to do so) on any other computational device. Thus the supposition is that computers, precisely as computational devices, have fairly similar abilities to the computational and problem solving ability of the brain.

Again, some scholars, like Thomas Ray, have been critical of the claims of Strong Artificial Intelligence since they feel that current technology will not be suitably capable of performing the complex computational and problem solving functions that the human brain does with relative speed and predictable accuracy. Furse comments that,

Given a problem that can be solved by a person, this problem solving can be thought of as an algorithm, and this algorithm can then be run on an ordinary digital computer. Of course the digital computer may run the algorithm much slower than the human brain, and it will need all the knowledge that the person had in executing the algorithm, but at some level of analysis, it is essentially the same algorithm (1996:4).

Kurzweil further points out that often the objections that are raised by researchers in this area are not against the Church-Turing thesis itself, but rather a concern about the relationship between human communication through language and the underlying thinking processes that lead to such communication (in Richards 2002:200). Ray states his objection as follows:

I accept that this level of computing power is likely to be reached, someday. But no amount of raw computer power will be intelligent in the relevant sense unless it is properly organized (in Richards 2002:201).

While this objection is valid, it is missing one crucial element, namely that emulation does not require understanding to be either accurate or convincing in relation to the Church-Turing thesis. This is particularly valid in the context of this research. The hypothetical identity crisis depends not on reproduction; it doesn't depend on the emulative technology truly being 'intelligent', in the sense of understanding its responses. All that the identity crisis requires is valid and convincing responses, and interactions with the interrogator, that could lead to an inability to differentiate between the human person and the emulated version of the person concerned.

2.4. Concluding remarks on Strong Artificial intelligence and the hypothetical identity crisis introduced by Ray Kurzweil.

This chapter set out to present the hypothetical identity crisis that arises from Ray Kurzweil's claims in relation to Strong Artificial Intelligence. In order to assess the plausibility of this crisis it was necessary to spend some time understanding how

Artificial Intelligence works, and whether such operations have a reasonable chance of progressing to the level claimed by pundits of Strong Artificial Intelligence.

Having understood the necessary science and weighed up the critiques of Strong Artificial Intelligence, it is clear that such claims are plausible, particularly in the light of Ray Kurzweil's thesis of accelerating returns.

However, even if such claims did not come to pass, it would not do away with the problem that is posed by the hypothetical identity crisis that is posed by Kurzweil.

The next chapter will engage in a discussion of biological, physical and philosophical theories relating to consciousness and the human brain. The aim is to move the research from the hypothetical identity crisis to a consideration of how scholarship has understood individual identity (as a function of consciousness) from various perspectives. Individual identity and its validation is the crux of the hypothetical identity crisis raised by Kurzweil. In order to understand how the approaches to this aspect of consciousness are unable to solve the conundrum raised by the identity crisis it will be necessary to understand what consciousness is, how it is described, studied, and how it functions.

Chapter 3

3. Consciousness and the functioning of the human brain: A discussion of biological, physical and philosophical theories relating to individual human consciousness and the brain.

Precise explanations of the functioning of the human brain have perplexed and evaded scientists, philosophers, and theologians for many centuries. The intricacy of this organ of the human body is unrivalled. In fact the prominent neuroscientist VS Ramachandran writes that it is “the most complexly organised structure in the universe...” (2003:2).

This chapter aims to delve into this complex organ. It will discuss the functioning of the human brain in some detail. Of particular interest for this research project is how scholars in various disciplines have articulated their understanding of human consciousness.

There is wide ranging consensus that human consciousness is most commonly understood to emanate from, and be primarily located within, the complex operation of the human brain. Clearly though, as will be shown in this chapter, human consciousness cannot be reduced without remainder to the bio-chemical and bio-electrical processes of a single organ of an individual human body. Rightly, as will be argued, consciousness has its foundations in our genetic makeup; it is observable through the functions of the human body, and yet is intricately linked to the evolutionary complexifying process of the whole of the Kosmos. Most theorists concede that consciousness is not only an endogenous reality – stemming from the biological functioning of an organ within the body. Rather,

it is held, that consciousness is also rooted within our daily human experience, it is influenced by our diet, the relationships we form and the exercise we get, the religion we subscribe to and a host of other important exogenous factors. Thus it would seem that the brain is central to consciousness, but not singularly responsible for it. The individual human brain, as will be shown, is in a reflexive and adaptive relationship with internal and external realities facing a person, facilitating not only biological functioning, but the development of meaning-filled existence for the human person. Zohar comments on this in saying,

... neurologically speaking, everything that bears on intelligence is routed through or controlled by the brain and its neural extensions into the body.... The brain is the most complex organ in the body. It produces the mystery of conscious mind, our awareness of ourselves and our world and our ability to make free choices about engaging with the world. It generates our thoughts, enables us to have emotions and mediates our spiritual lives – our sense of meaning and value and the proper context within which we make sense of our experience.... It is the bridge between our inner lives and the outer world. The brain can do all these things because it is complex, flexible, adaptive and self-organizing. (2000:39-40).

This chapter will present research that investigates the relationship referred to above: the functioning of this complex human organ, the brain, and that ethereal element of human being known as human consciousness.

The presentation of this research will be achieved by giving an overview of twelve approaches to the study of human consciousness. These twelve approaches present, in broad overview, the various understandings of how the different scientific and philosophical schools of thought have sought to understand and observe human

consciousness. Each of the twelve approaches can generally be placed within one of two broad categories, namely, objective or subjective approaches to human consciousness. This chapter will present both of these broad approaches and discuss the merits and demerits of both.

Naturally the entire presentation of the research that has been conducted will be framed within the focus of this research project. It is worth remembering that this project is fundamentally concerned with understanding the problem presented by the philosophical hypothesis concerning individual self-validating consciousness in a situation of shared identity between a human person and a consciousness-emulating machine. Hence, this chapter will necessarily need to discuss consciousness in relation to the notion of 'self'. This is all the more pertinent since it is suggested in this research that one of the fundamental weaknesses in a great number of theories of, and approaches to, human consciousness is the emphasis on the individual, and the influence of western individualism on both subjective and objective approaches to human consciousness. In most of the approaches to consciousness that will be presented there is a great deal of reliance upon first person data i.e., "I feel...", "I can do the following...", "I am", "I can show...", "I am able to prove...", "you can see in me", etc.

Since it is argued that the human brain is so important in any discussion of human consciousness it will also be essential to spend some portion of this chapter presenting the basic functioning of the brain itself. This will enable to the reader to have a broader

understanding of the constituent elements of each theory in relation to the functioning of the human brain.

The chapter that follows this one will discuss the notion of consciousness as a Holarchic reality²⁰. Hence it will be unnecessary to go into elaborate details on the personal, corporate, internal and external contributors to consciousness in this chapter since such a discussion will take place in the next chapter. Out of necessity this portion of the research will present what the author considers to be the dominant views in scholarship and literature up to June 2006, with regards to the physical functioning of the brain in relation to consciousness, and make some necessary interpretive and phenomenological conclusions that arise from such research.

Let us begin this journey into human consciousness with a primary question, what is human consciousness?

3.1. Brain, mind, and the mystery of human consciousness.

The noun ‘consciousness’ designates a particular ability of higher-level species to be aware of their surroundings and in some cases their identity. This noun is the expression of a descriptive state of being, to be conscious, a term which stems from the Latin word *scio* [know].

²⁰ For a detailed discussion of the term Holarchy, please see 4.2.1.2 below.

3.1.1. Consciousness and evolution.

Because humans are so good at knowing, we are seldom aware of the incredible miracle of our ability to perceive the world around us. Truly this is nothing short of a miracle. What is it that allows us to observe something through our senses and fairly accurately be able to tell what it is? Let us use the example of sight to illustrate this incredible attribute. The fairly common fallacy is to assume that it is simply the two small distorted upside-down images in your eyeballs that create the vivid three-dimensional world you see around you. The transformation from sight to world is far more complex than having the optical image exciting photoreceptors on your retina which then digitises the signal and passes it faithfully along a cable (called the optic nerve) to be displayed on a screen in the brain (assumed to be the visual cortex). The logical fallacy here, as Ramachandran points out, is that if we believe that it is simply an image that gets displayed on a screen in the brain, then you need someone there to watch it, and that person needs someone in their brain, and so on ad infinitum (2004:24).

The above example clearly shows that being conscious of one's self and one's surroundings is about more than just sensory stimuli. It is a complex process of external and internal interactions that help a person to create meaning out of sights, sounds, smells, tastes and touch. Reality is created not just through observing one's surroundings but also through understanding them. A sensory input is received into the brain where it gains meaning that gives real depth and significance to the world from which the sensory input stems.

Since this is the case, Mc Crone asks the interesting question “Is a baby conscious when it is born?” (2002:31). This question highlights the importance of the relationship between consciousness, neuroscience and evolution. Since a human baby is born with hardly any neural connections in its cortex (i.e., the brain is still largely a mass of unwired cells) does this mean that a baby is not conscious, since it cannot yet create meaning out of the sensory stimuli that it receives? The answer is no. Whilst the higher brain is yet to begin development, the lower brain of a newborn child is already well developed and capable of producing instinctive behaviours such as suckling, crying, recoiling and even tracking objects with its eyes, in response to external stimuli. The firm base of vertebrate evolution over millions of years is passed on through the genes of species ensuring that the brainstem comes ‘pre-wired’ for certain necessary functions such as breathing. So the lower brain provides a narrow, but solid, foundation for survival. This level of brain function is commonly observed in simple animals such as snakes and frogs. Mammals, however, have a much more vastly expanded forebrain. This unwired mass of neurons is shaped and connected through life’s experiences, creating increased meaning and an ability to intelligently and creatively interact with one’s environment.

The manner in which the brain performs these functions will be discussed in some detail below.

Naturally, some of the neural connections that are made are unique to the individual concerned. For example, two persons may walk into a room that has a caged bird. One of the two persons may be petrified of the bird – having had a bad experience in early life, whilst the other person finds beauty, companionship and comfort from the bird – not having had that same negative experience. Then there are neural connections which are formed through experience, but which may be common to a large group of persons. Common examples of such meaning creating neural connections are expressions of culture and religion (e.g. the fact that one set of symbols has deep meaning for a group of persons in one place, and the same set of symbols have no meaning for another group of persons elsewhere).

Clearly, as Kriel suggests, one can identify an evolutionary complexity from mere consciousness (as observed in some species) to self-consciousness and beyond (as seen in human individuals and groups) (2002:146-147). In order to begin to grasp something of the complexity of human consciousness it is important to keep this evolutionary process in mind. This leads to the next seminal aspect of this discussion on consciousness, the relationship between sense and meaning.

3.1.2. Consciousness and the processing of information.

Kriel rightly suggests that living systems “(both plant and animal) are complex information processing systems” (2002:147). As has already been shown, the empirical stimulus and the phenomenological meaning attached to it are as a result of the brain’s

capacity for consciousness i.e., being able to experience something and attach a meaning to it. However, if one compares different living systems it is clear that not all of us share the same complexity of information processing. Plants and insects are clearly not as conscious as human persons.

Comical illustration of this effect was displayed in the recent movie “Madagascar” (directed by Eric Darnell and Tom McGrath, 2005). In the movie Alex, a tamed New York Zoo lion lives in harmony with Marty the Zebra. However, when they are stranded on a desert Island, Alex the lion’s instinct for food soon gets the better of him. When he looks at Marty, he no longer sees his friend but a steak meal.

Consciousness allows conscious living systems to attach meaning to sensory input (and in more complex conscious living systems, one can even create meaning from inner experience such as memories, dreams, hopes etc.). Thus, even though I am hungry I don’t eat my pet dog when I see her. Consciously I am aware of my hunger, I am also aware that my pet dog could satisfy that hunger. However, I can process both stimuli (my experience of hunger, and the sight of my pet dog) and come to a conclusion that it would be far better to find something else to eat. This outcome is as a result of a complex process of relating information that I am presented with to sets of memories, knowledge of my surroundings, knowledge of myself – all of which are present to me through the biological processes of my brain. This leads to the next element in the discussion of consciousness, the relationship between consciousness and experience.

3.1.3. Consciousness and inner experience.

As is related in the example above, consciousness involves some form of inner experience. In other words, becoming aware of stimuli and processing them gives rise to some measure of consciousness. Konrad Lorenz writes,

Since all of the moral responsibilities of humans are determined by their perceptions and values, the epidemic delusion that only numerical and measurable reality has validity must be confronted and contradicted. What must be made clear, and convincingly, is that our subjective experiential processes possess the same degree of reality as everything that can be expressed in the terminologies of the exact natural sciences (in Kriel 2002:147-148).

At some point in the evolution of living systems there was a point where information turned into conscious experience. Kriel points out, this shift means that the

... same information and the same organs are involved, but a new dimension has been added. The information-processing system has become a conscious system, which can experience a sensation (2002:148).

Humphrey suggests that, at least at some very basic level, consciousness is the ability to transform information into sensation (1993). He writes,

Consciousness defined as what is felt and present to the mind is actually quite limited in scope. Rather than embracing the whole range of higher mental functions (perceptions, images, thoughts, beliefs, and so on) consciousness is uniquely the 'having of sensations' (in Kriel 2002:148).

The capacity to move beyond mechanistic responses to sensory stimuli (whether from within – such as hunger, or outside – such as danger), to the complex interaction with the stimuli, in what are called sensations, is the beginning of true consciousness.

The interaction of living systems is life. The interaction of living systems, and the ability to experience and reflect upon such interactions, is conscious life.

It was this process that led to the need for ways of articulating and expressing meaning, which in turn led to the development of language. From language came symbolic thought. This process in turn allowed humans the capacity to be transported to imagined moments and perceptions of ourselves as we are seen by others (through their expression of meaning towards us). Words created the mental distance by which we could become not only conscious, but objectively self-conscious. The symbolism and meaning of concepts allowed humans to attach meaning to feelings, to locate them in contexts that could articulate history as an expression of past, and desire as an expression of future hope. Mc Crone writes:

The biological machinery of attention and intelligent response was unchanged. But we could use the scaffolding of words to direct this attention inwards and catch ourselves in the very act of responding. (2002:58).

Many notable philosophers, such as John Locke and Arthur Schopenhauer, speculated that whereas animals were trapped in the present, humans were set free for to express the past and articulate hopes for the future because of language.

Thus, in summary of this section, it has been shown that consciousness is a highly complex phenomenon. In its most basic form it can be described as a subjective awareness. This subjective awareness, or consciousness, varies from those things that dominate our attention (such as pain) to those elements that are less obvious and at the periphery of our sensation (such as breathing and thought).

Taking this into account there is no surprise that there have been such varied approaches to the study of human consciousness in particular. The next section will present an overview of approaches to the study of human consciousness.

3.2. Twelve major schools of consciousness studies.

Among researchers and theorists in neuroscience and cognitive theories, particularly researchers in consciousness studies, there is a fair consensus that neither mind or brain can be reduced without remainder to the other (Wilber 2000b:1). Any theory of human consciousness that seeks to be non-reductionist should include some understanding of both the mind and the brain, as has been shown above.

Much of the research of human consciousness and the brain revolves around the important issues of the role and function of human consciousness and the human brain. As a result, much of today's research into consciousness focuses on those aspects that have some sort of obvious anchoring in the physical human brain. These include the

fields of neurophysiology, biological psychiatry, and neuroscience. The discussion that follows below will list twelve approaches to the study of consciousness from all the varying approaches, which are undertaken with different goals or results in mind. Such an approach expects that there may be some differences in approach and content. The supposition of this research is that each of the listed approaches below has some unique and valuable insight to offer to our understanding of human consciousness and the human brain.

- *Cognitive science*: This approach is inclined to relate human consciousness to the “functional schemas” of the human brain. Some approaches take this position in seeking to offer simple representational models of consciousness. Within the ambit of this research project, it is worth pointing out that this approach is common amongst theorists in Artificial Intelligence²¹. There are also some models that present more subtle and complex models of consciousness as hierarchical integrated networks. This emergent / connectionist model is considered the dominant model of cognitive science at this stage²².
- *Introspectionism*: Here, it is felt, that consciousness is best understood in terms of “intentionality, anchored in first-person accounts” which are aimed at the inspection and interpretation of immediate awareness and lived experience (Wilber 1997:1). Thus third person, objectivist, accounts are less valuable no matter how scientific or rigorous they may appear. This approach includes such

²¹ See Searle (1980), Dennet (1984) and Jackendoff (1987) as clear examples of such schemas.

²² This view is superbly summarised in Alwyn Scott’s book “Stairway to the mind” (1995), in which the stairway represents the hierarchy of emergents summing in consciousness.

wide ranging disciplines as philosophy, introspective psychology, existentialism and phenomenology.

- *Neuropsychology*: The neuropsychological approach views consciousness as being anchored in the neurosystems, neurotransmitters, and organic brain mechanisms²³. Whereas cognitive science, mentioned above, is closely linked to computer science, which leads to a vagueness about consciousness, neuropsychology is a biologically based approach which views consciousness as being concretely residing in the highly complex organic neural systems of the brain.
- *Individual psychotherapy*: This intervention uses introspection and interpretive psychology to identify and treat distressing emotional problems. Wilber, astutely, notes that it thus tends to view consciousness as “primarily anchored in an individual organism’s adaptive capacities” (1997:2)²⁴.
- *Social psychology*: In this approach consciousness is seen as originating and taking shape in networks of cultural meaning. In some approaches, like Marxism, consciousness is viewed as the by-product of the social system itself. The African understanding of individual identity, as being rooted in ‘we’ rather than ‘I’ (i.e., the nexus of consciousness is located principally in the social system not the individual) is another good example of this approach.

²³ See Albright (2000) and the impressive work of D’Aquilli and Newberg (1999, 2000) as superb examples of such an approach to consciousness.

²⁴ It is worth noting that most schools of psychotherapy embody some theory of consciousness since they must account for our human desire to create meaning and significance, which, when it is disrupted, results in painful psychological and emotional symptoms which can lead to emotional distress. Wilber further notes that in its more “avant-garde” forms, such as the Jungian approach, this approach postulates collective structures of intentionality and consciousness (such as ‘collective consciousness’), which when they are fragmented lead to psychopathology (Wilber 1997:2).

- Clinical psychiatry*: This discipline focuses on the inter-relation of psychopathology (problems emanating from the psyche) , behavioural patterns and psychopharmacology (the effects of pharmacological interventions on psychological states). Wilber correctly points out that for the last half a century psychiatry has been largely rooted in Freudian meta-psychology²⁵ (cf. Freud 1968). The development on this view, which has lead to what is now considered clinical psychiatry, is that consciousness is viewed in biological terms i.e., neurophysiologically. It can be identified with clinical identity theory in which consciousness is the neuronal system. Hence, a presenting problem in consciousness is seen as a result of an imbalance in the neuronal system, which is correctable with medication.
- Developmental psychology*: Here consciousness is viewed not as a single static entity. Rather, it is a developmentally unfolding process with substantially different architecture at each stage of development, or growth. Thus an accurate appreciation of consciousness would require an investigation of its architecture at each developmental stage for a clear and full understanding thereof. The work of Piaget (1962, 1976), Fowler (1981) and Erikson (1950) are good examples of accepted approaches under this banner. In less well accepted forms this approach includes an interest in higher states of being and exceptional development, which are hoped to be understood through studying gifted, extraordinary, and

²⁵ Meta-psychology is a, one-on-one, non-hypnotic, person-centred, method with a structured approach to helping to eliminate the effects of past trauma. It often involves forms of psycho-analysis (see Freud 1968) in which a the traumatic memory or incident is repeatedly viewed under conditions designed to help the person feel secure and safe and free from distractions (cf. <http://en.wikipedia.org/wiki/Metapsychology> accessed 2 November 2005, 04h39)

supranormal capacities and higher development potentials which are believed to be latent in all human beings (Wilber 1997:2).

- *Psychosomatic medicine:* This approach views consciousness as intrinsically linked to the processes of the human body, as evidenced in such fields as psychoneuro-immunology and biofeedback. This approach may even occur in such fields as miraculous healing, the effects of prayer and meditation on wellbeing, art therapy and visualization etc.
- *Nonordinary states of consciousness:* This approach is similar to that mentioned under clinical psychiatry above. It contains such approaches as dreams, altered states of consciousness that can be achieved through natural means (such as holotropic breathing) and the use of narcotics²⁶ (a field commonly referred to as psychedelics). In short this approach sees such interventions, controversial as they are, as “non-specific amplifiers” which disclose and amplify aspects of consciousness that may otherwise lie latent and not be studied (Wilber 1997:3). Many have of course argued that results are somewhat dubious in the case of psychedelics since the adverse toxic effects of chemical inducers would no doubt interfere with the source data from the brain.
- *Eastern and contemplative traditions:* Many eastern, mystical, traditions maintain that ordinary consciousness is merely a narrow and restricted version of a truer deeper consciousness. Specific interventions, such as meditation and yoga are used to evoke these deeper states of consciousness. More importantly than the

²⁶ Stanislaw Grof makes some remarkable statements about this phenomenon in his article “*Ancient wisdom and modern science*” (1984). The use of psychedelic narcotics to induce spiritual experience is often frowned upon by mainstream psychology and spirituality. Yet it must be remembered that many ancient spiritual traditions use some form of narcotic substance to enable persons to attain higher spiritual states (e.g. the use of narcotic mushrooms in Shamanism, and the use of Dग्ग्ग् in African Traditional Religions).

techniques, is the understanding that a true understanding of consciousness itself is beyond verbal description and linguistic formulation. It can thus only be truly understood in such states of postformal, non-dual, reality – at which true consciousness envelopes form.

- *Quantum consciousness*: This field is fairly new in Western science. However, its precursors can be found in the work of Eastern sages such as Sri Aurobindo. In essence it views consciousness as being intrinsically capable of interacting with and altering the physical world through what have become known as quantum interactions (cf. Bohm (1980) and Sheldrake (1981, 1996, 2002)). The aim of this approach is to “plug consciousness into the physical world” in order to bring about positive changes to physical reality, and particularly the physical human body (at an intracellular level e.g., microtubules) (Wilber 1997:3).
- *Subtle energies*: Research in this area postulates that subtler bio-energies exist beyond the four recognised forces of physics (strong nuclear forces, weak nuclear forces, electromagnetic forces, and gravitational forces), and that these subtler forces play a significant and intrinsic role in consciousness and its activity. The use of *chi*, the energy or force that is believed to give acupuncture its effectiveness, is a very good example of such a force. These forces (or energies), elsewhere known as *prana* (a term used in Yoga to refer to the energy that stems from higher cerebral activity that activates the body), *ki* (a Japanese word that is used interchangeably to refer to heart, mind or spirit), and spirit are often held to be the missing link between the intentional mind and the physical body. Wilber comments that for “the Great Chain theorists, both East and West, this bioenergy

acts as a two-way conveyer belt, transferring the impact of matter to the mind and imposing the intentionality of the mind on matter” (1997:3).

What is clear from the summary above is that each of these approaches holds value, but none holds the claim to total truth. In general terms each of the twelve approaches listed above seeks to approach the notion of consciousness from a different direction. Some approach consciousness from an objectivist perspective (the study of what can be measured and seen), whilst others approach consciousness from a subjectivist perspective (the expression and interpretation of what is experienced). Some approaches focus on individuals, while others focus on larger systems. What is common in all of the theories of human consciousness is the necessity of the conscious individual, whether studied as an individual or as a group of conscious individuals. It is implicit that there be a conscious person if one is investigating human consciousness. As far as my research has shown there are currently no approaches to the study of human consciousness that do not take conscious persons into account in some form or another. Hence, it is very important to understand both why the individual is important in studies of human consciousness, and how consciousness is believed to function, or rise from, the individual human brain.

Hence, this chapter explores the value of understanding the biological and neurological functioning of the human brain in relation to consciousness. It draws clear links between the functioning of this complex organ and wider systems of human being (both within the individual person and within the wider, equally complex, systems that interact to form consciousness). It is particularly important to do so since most consciousness emulating

technologies seek to represent the conscious state of individuals within a wider framework e.g., a particular society, or culture. Hence, before moving on to the presentation of the biological functioning of the human brain, the next section will discuss some of the reasons for, and different approaches to, first person studies of consciousness.

3.3. First, (second) and third person approaches to consciousness: Challenges and values.

The hypothetical identity crisis that is presented in Chapter 2 of this research centres around individual self-validating consciousness in the case of a human person and an emulative machine where both share a common set of ‘conscious’ memories and experiences of being a particular person. It is precisely the individual’s, or individual machine’s, inability to provide anything more than an ‘inner sense’ of being self that creates the problematic hypothetical. In other words, how can I prove that I am ‘me’ simply by relying on my own experiences and memories of being myself?

Clearly the hypothetical relies on first person accounts of consciousness i.e., what I know and feel and experience about myself, yet the programmed machine also has this same sense of being me because it has the same set of “memories” and “feelings”. However, it is complicated by a third person observation of the responses of the human and the machine. The third person is required to make a judgement call of who is able to provide verifiable, or at least quantifiable, evidence of identity. There is no doubt that this

hypothetical displays a major problem with first and third person approaches to consciousness if each is taken in isolation (where first person answers the question “who am I?” and third person answers the question “who are you?”). However, if first and third person approaches to consciousness are so problematic, then why are they so prevalent? There can be little doubt that in spite of such apparent inadequacies first and third person approaches to consciousness are extremely prevalent, and even valuable, in studies of consciousness from a wide range of disciplines (ranging from philosophical to biological approaches to consciousness).

What follows below will present a succinct discussion of some of the most common first and third person approaches to consciousness in the modern West, showing some reasons why it is deemed necessary and valuable to have such approaches. It will also show some challenges to such approaches to consciousness.

Walmsley contends that first person approaches to consciousness are necessitated by the elusiveness of the phenomenon of human consciousness (2002:226-228). He writes that agreement upon an acceptable definition and approach to the phenomenon of consciousness, that satisfies various disciplines, has simply not happened to date.

This is an amazing situation given that, in many ways, consciousness is the most familiar aspect of our lives. Furthermore, as Guzeldere points out, it has been under systematic investigation in several fields: philosophy, psychology and theology. The difficulty lies in formulating and understanding of consciousness (of its nature, structure, dynamism, modalities, *and particularly its unity*) and in devising a way of studying it that is acceptable to all these disciplines. *No unified account of the stream of consciousness, no explanation of its intrinsic intelligibility, no*

explanatory account of the relationship of its parts has been forthcoming.
(Walmsley 2002:227 italics in the original document).

As implied in this quote, Guzeldere expresses a fairly common opinion when he writes that consciousness "... is the vaguest, most protean and most treacherous of psychological terms. There is no philosophical term at once so popular and so devoid of meaning" (1995:33). What complicates studies in consciousness is the common mistake of overemphasising the elements of society and language and neglecting the individual subject. Thus, very few approaches to consciousness take account of some of the subtler aspects of consciousness at higher levels, such as acts of reflection or meditation upon reality in the individual human person. As a result, Siewart notes, that "assumptions about knowledge and justification have large potential to distort or thwart our thinking about human consciousness" (1998:7). The result, according to Walmsley, is that instead of basing an account of knowing on consciousness, an assumed position of knowing is allowed to assume what consciousness must be (2002:228). A corrective to such mistakes in the history of consciousness studies was to offer first-person approaches to consciousness.

One of the most common, and earliest, first person approaches to consciousness is introspectionism. This approach is quite common in both philosophy and religion and became the basis of one of the first attempts to present psychology as a distinct scientific discipline. William James wrote the following about it as early as 1890:

Introspective observation is what we can rely on first and foremost and always. The word introspection need hardly be defined – it means, of

course, the looking into our own minds and reporting what we discover there. Everyone agrees that we there discover states of consciousness (quoted in Walmsley 2002:231).

Due to the extremely subjective nature of introspectionism the science of behaviourism arose to counter it. Behaviourism suggested that the notion of individual consciousness was nothing more than “ancient... superstition and magic” (Watson 1970:2). It suggested that what was necessary was a rigorous third person methodology, namely an objective observation of publicly observable behaviour which would allow for the prediction and subsequent control of behaviour.

A further development in studies of consciousness, as a result of behaviourism, was the rise of neuroscience²⁷. Neuroscience essentially investigates the physical and biological structures of the brain and nervous system as they correlate to certain states or functions of consciousness. Some scientists have tried to argue that since one can observe the neurological events that give rise to the experience of being conscious, that consciousness itself is nothing more than an epiphenomenon (an attempt to seek for a deeper meaning in something that is ultimately nothing more than a biological and chemical function of an organ of the body). Such an approach clearly holds an idealistic view of the possibilities of science to encapsulate reality within the postulations that result from gaining empirical data through third person observation (or study) of the human brain.

²⁷ A large subsection of this field is also often referred to as the supervenient theory of mind. Although this sub category could not be dealt with in this research, further detail can be found in the works of Nancy Murphy.

Gestalt psychology came to the fore during the same period as behaviourism and was able to show the continued value of first person approaches to consciousness.

The basic idea of Gestalt psychology is that the whole experience cannot be understood by an analysis into their sensory [and atomic] elements. The Gestalt or 'whole' has attributes of its own that do not come from the parts. (Bruno 1972:140).

In essence Gestalt was influenced by developments in the field of physics at the time. Physicists had begun to suggest that observing a system as a whole was as important to understanding it, as the reductionist tendencies of Newtonian physics had been in the past. The principles of relationship, organisation and inter-relation between elements in a system were deemed to be as valuable and insightful as the elements themselves. Human consciousness in particular, it is suggested, takes the elements of relationship, continuity and inter-relationship, extremely seriously. One could not simply reduce an experience to the biological functioning of the brain (as is suggested in behaviourism) e.g., one could not say that one experience has meaning simply because of the biological structure of the brain. Neither could one simply speculate that the physical structure of the brain was due to the impression of experience upon it. Rather, what Gestalt theorists suggested was that an *isomorphism* exists between brain processes and perceptions of patterns or wholeness. Meaning and significance is based in the interrelationship between patterns observed in external relationships, and the reflection thereon which is an activity of the brain. Of course such relational theories of meaning and consciousness are nothing new. Aristotle's account of the "form of the known object and the form of the knowing

knower” is one of the earliest recorded accounts of such an approach (Walmsley 2002:236).

What is of particular interest to this research project is that Gestalt psychology offers some insight into the need for first person approaches to consciousness. One cannot gain all meaning and truth simply from others. There are clearly some elements of consciousness that are dependent upon the perception and functioning of the individual human brain. However, it also shows that such perception is much more useful when related to the complex relationships of systems in the wider social world.

Cognitivism is another challenge to first person approach to consciousness that builds on behaviourism. Cognitivism takes the further step from behaviourism by emphasising the importance of the action between stimulus and response. The notion of mental functioning in the gap in between stimulus and response is most often modelled through computer programming. The central emphasis seems to be on ‘information processing’. Thus language, thought, reasoning and even memory, are facets of data processing (the selection of data, reflection on data, integration and relation of data, gained through input). A person’s responses to stimuli are observed, this behaviour is studied and interpreted in order to try and reproduce the steps that the person may have gone through in order to arrive at a particular response. These steps are then translated into a computer program so that the suppositions of the steps (in terms of input matching response) may be tested. If indeed this approach was accepted without remainder it would assume that

consciousness is merely a function of possible responses to stimuli that lead to logical and determinable responses.

The one major challenge to this approach is that it has often ignored the notion that even a computer has a central processing component to it (a pre-existent processing mechanism that is programmed to deal with particular instructions in a particular ways). Thus, it is not only the program (that gap between input and response) that is cognition, there is also a complex and intricate processing system that manages the program itself. Clearly, the human person, and in particular that illusive element of human being – known as consciousness, cannot be so simply reduced to cognition.

As has been shown, whilst first person approaches to consciousness are by no means without problems, the alternatives which are presented in modern western approaches to human consciousness (namely behaviourism and cognitivism) are also somewhat problematic. Where these alternatives fall short is that they leave out the subjective and experiential components of consciousness (Walmsley 2002:241).

Hence, a purely subjective (second or third person) approach to consciousness is as problematic as a purely first person approach. One cannot rely solely on data and empirical observation. Neither can one rely solely on experience and personal interpretation of perception. What is needed is an empirically verifiable understanding of consciousness that includes the personal side (neither approach presented to the exclusion of the other).

Philosophers such as Husserl, Heidegger, and of course Maurice Merleau-Ponty have postulated such a phenomenological approach to consciousness (cf. MacDonald 2003 for specific references). The essential binding element of these phenomenological approaches is that they seek to find the data of consciousness above and beyond the mere data of the senses. Walmsley comments that the basis of their approaches,

... shows how behaviourism and neuroscience and much of cognitive psychology, overlook their own modes of selectivity, their intelligent conscious performance and their lack of self-attention and reflection generally (2002:242).

A clear example of such a case is the difference in approach to what validates an individual's identity in different cultures. In western, individualistic cultures a person's identity may be closely tied to his or her job, or position in society (i.e., it is functional, and in many cases economic – I am a doctor). In African cultures, which are far more communal, the content of self-validating identity is quite different (i.e., it is relational rather than functional – I am a Hlangani, member of the Jola clan). In short the individual's locus of identity is not just something that he or she decides upon, rather their reference to what identifies who they are is drawn out of them because of the prevalent and dominant identifiers expected by their culture. So, their identity is indeed personal (i.e., this is who I experience myself to be), but the content that informs that personal identity derives from an external reality, such as what their context tells them is real, or expects from them in terms of how a person is identified.

Hence identity is not just epistemic (stemming from observable cultural, or even biological systems in relation to the individual) it is also phenomenological (it is a reflective and descriptive study of such systems or processes as understood by the conscious individual). What this shows is that:

- First person does not necessarily imply private or unreachable access to absolute or incorrigible truth (such as Descartes notion of “clear and distinct ideas”) (cf. Walmsley 2002:244 and MacDonald 2003:279-291). What it implies is that there is some necessary data in the ‘self’ that will need further reflection and explanation. Questions of truth and objectivity only arise at a later stage.
- There is some necessity to link first and third person methods. Conscious experience should be correlated to behaviour.
- Moreover, second person mediation is also important in that it evokes states of meaning and identity (which may be experienced by the first person and observed by a third person). Walmsley summarises it so well when he writes that the presence of others “evokes heightened attention: in the dramatic pattern of living we become self-conscious about our lives with, in front of, towards others” (2002:244).

Naturally, as will be suggested in Chapter 5 of this research, there is a further ‘meta-reflective’ element to true consciousness that must take cognisance of the impact that faith plays in identity and consciousness. A theological approach will show that identity is not only a matter of first or third person influences on identity and consciousness. When the ‘second person’ mediating the reflective task is God, consciousness is not

merely an activity (or set of activities) between the self and others. Rather than simply being a mechanism of identity that is simply the content of reality reflected in one's self and others, there is a sense in which consciousness is a dynamic unfolding state of true being, an identity rooted in a transcendent reality that mediates true being in all spheres of existence.

In conclusion, one can thus see that 'first person' approaches hold some value. They affirm introspection and validate the necessity of allowing the conscious individual to express the very real sense of being self, based on the data gained from such introspective reflection. However, they also have shortcomings in that clearly not all experiences of self can be assumed to be 'valid' or 'true'. There must be some process of ratifying such data. Third person approaches on the other hand are valuable in that they can provide empirical and verifiable data of varying elements such a biological and sociological functions and processes. However, they fall short in that such approaches cannot do away with the important aspects of the individual's experience of self (whether observable or not). Thus, as will be shown in Chapter 4, any approach to consciousness that doesn't take some account of both the subjective and objective will be somewhat compromised.

The section that follows will give some insight into how the human brain operates in relation to what the individual experiences as consciousness, and third persons can observe as conscious states of being.

3.4. Nothing but neurons? The biological functioning of the human brain.

Mc Crone writes that the “purpose of a brain is to optimize behaviour – to juggle the body’s needs against the threats and possibilities of the moment” (2002:20). This is a function of intelligence. The scholarly challenge is to understand how organised states of neural activity come to be experienced as organised states of mental activity, and ultimately human consciousness. It is extremely difficult to explain the workings of the human brain in terms of the small space between the objective, observable, world of neural circuits, and the subjective, expressed, world of the conscious human mind.

In the section that follows I will attempt, for the sake of clarity and the confines of space, to give a sufficiently detailed, yet brief, description of how the brain functions biologically. I shall also present the relationship between the biological functioning of the human brain and the notion of human intelligence in different forms. Finally, I will present two possible models of the notion of mind and consciousness in relation to the biological functioning of the human brain.

3.4.1. The biology of the brain.

The human body is made up of cells. Each of these cells has the ability to secrete and respond to chemical messages, and all cells have a natural difference in electrical charge between their inside and outside (their need to retain a salty interior means that every cell needs to be able to send out positively charged ions such as sodium, the result is that each

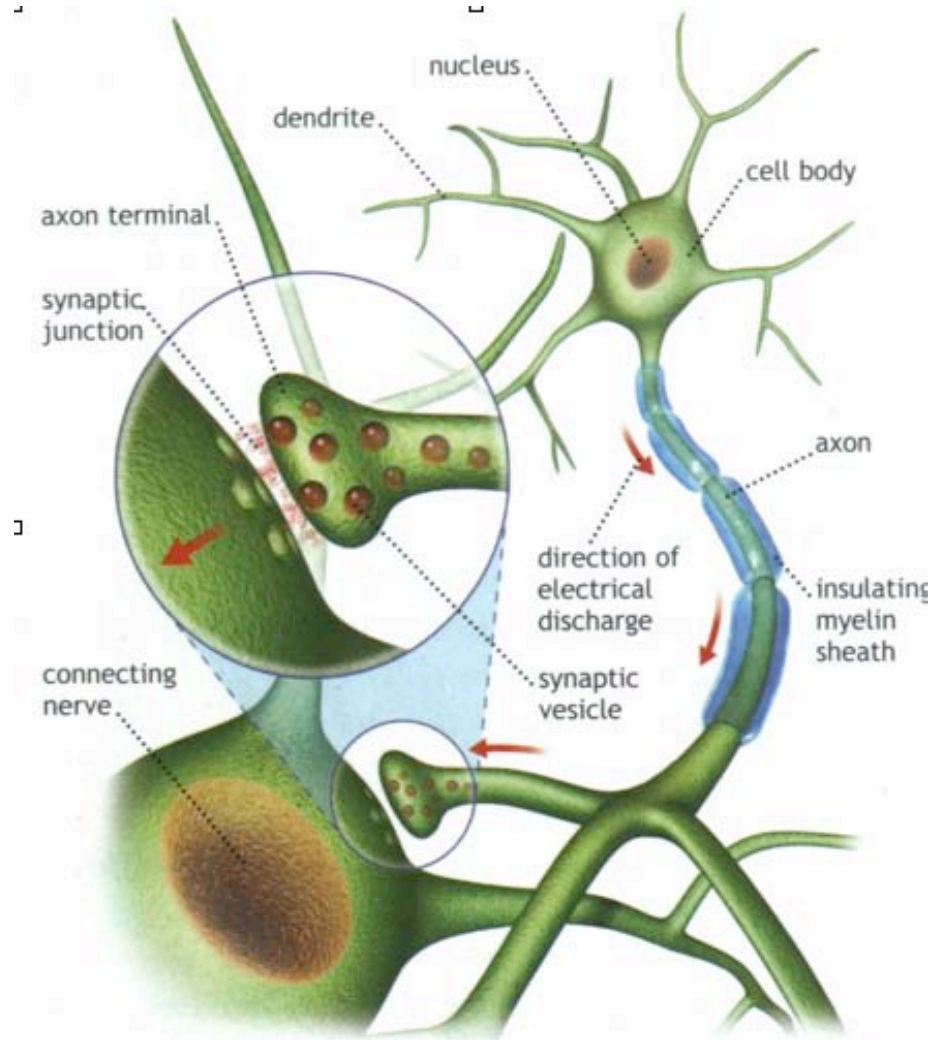
cell is left with a slightly negative charge). Hence the basic machinery of chemical signalling was in place, and cell membranes already had electrical properties in simple cellular organisms (Mc Crone 2002:23). In essence the nerve cells in the brain (which are variously called neurons or neurones) are simply exaggerated and developed versions of ordinary cells. The only real difference is that neurons have been ‘stretched’ in order to create an input – output pathway.

The human brain contains between 10 000 000 000 and 100 000 000 000 neural cells.

There are many different sorts, and half of them are located in the brain’s most evolved part, the cerebral cortex (Zohar and Marshall 2000:44). Zohar explains the functioning of neurons as follows:

A typical neurone is shaped like a tree, with ‘roots’ (dendrites), a ‘cell body’ (soma), a ‘trunk’ (axon) and ‘branches’ (axon terminals). Each neurone receives sensory inputs to its dendrites which can stimulate or inhibit it. These inputs travel towards the cell body, fading as they go. If enough stimulus reaches the cell body at any given moment, it fires an action potential along its axon terminals. These axon terminals in turn form synapses (junctions) on to the dendrites of other neighbouring neurones. (Zohar and Marshall 2000:44).

See the attached diagram below for necessary detail to explain the quotation above and explanation below (Diagram 1 from Mc Crone 2002:24).

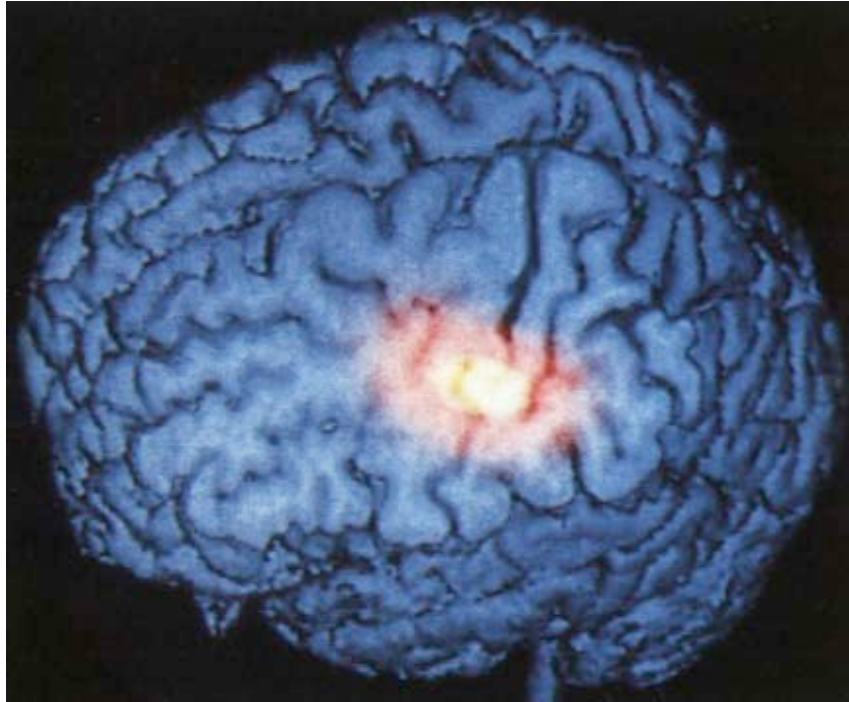


Most neurons function through chemical signalling. The axon terminal of one neuron secretes a small amount of a chemical known as a neurotransmitter, this in turn stimulates or inhibits the dendrites with which it has contact. There are different kinds of neurotransmitters, used by different systems in the brain. Each of these neurotransmitters has a varying effect upon our mental and emotional state, and our abilities. For example, the neurotransmitter noradrenaline stimulates the whole brain. Too little of it can lead to depression and too much of it can lead to mania.

In essence, drugs that affect mental functioning, such as tranquilisers, stimulants, opiates, antidepressants etc. act upon one or more of the neurotransmitters to bring about some chemical change in the brain to stimulate or suppress the release of these chemicals.

Neuroscience has grown in leaps and bounds in recent years by studying the electrical and chemical activity of the brain to determine where and how the brain is stimulated during different activities such as sleep, meditation, fear etc.

Naturally, insights gained from such research are valuable for scientists, since an understanding of the functioning of the brain has two basic benefits. Firstly, it can give insight into pathology and the best treatment for a particular condition (e.g. the best medication for endogenous depression). Secondly, it allows us to understand, to some degree at least, why people behave, act and react, as they do. The most common method for studying the activity of the brain is the use of MEG (Magneto encephalography) scans. Such a scan measures the magnetic fields generated by nerve activity in the brain. The attached computerised representation of an MEG scan (Diagram 2 from Mc Crone 2002:24) shows nerve activity in the motor area of the brain. It displays the activity of the brain as it is sending commands just milliseconds before the patient starts to move a finger.



Another central element of brain function is the manner in which neurons connect to one another. Each neuron is connected to thousands of other neurons. The strength of these connections is evolutionary, in that it is changed through experience. Mc Crone writes:

The receptors at a synapse may change their shape following a burst of activity. For a second or so, a connection will be made more sensitive. In the longer term, the tip of a dendrite may swell to expose new synapses, physically strengthening a connection, or a neuron might sprout entirely new dendrites.... The result of this careful tuning is a neural landscape sculpted by its experiences. A network of nerves starts off in a neutral state, but through memory changes it becomes a surface etched with bumps and hollows. When fresh input flows into this landscape, it is then channelled down well-trodden pathways. (2002:25).

Hence, neural connections are built up strengthening certain traits, enforcing patterns of behaviour, creating both memory and capacity for other possible connections. When

such connections are strongly formed and have a positive value (in terms of behaviour, memory and capacity to process information and act) the individual may be considered intelligent.

Intelligence is that human capacity that allows the individual to reason, to plan, to solve problems, to comprehend, to communicate and to learn. Clearly, as is shown above, such capacity is fundamentally related to the intricate functioning of the brain. The capacity that humans have of finding, or creating, meaning in life's vicissitudes is clearly related to the functioning of a complex set of interrelated functions in the brain that spread from there into the rest of the body both sending and gathering information. These include such elements as memory (the ability to create association), intelligence (the ability to objectify experiences and make judgements and decisions about them), and then of course the functions of response (such a fleeing from a situation of danger, or engaging a situation of pleasure). Some of the more subtle aspects of such conscious behaviour are the elements of intelligence i.e., not only being able to observe, process and respond to environmental surrounds, but being able to do so with accuracy and appropriateness. For example, whereas an animal may steal food from the table, and so face punishment, because it is hungry, humans have a far more calculated and processed response to the stimulus of hunger and possible pain. Then, of course, there are those elements of human being that are far more subtle, such as the quest for transcendence and the striving for ultimate meaning. These elements of consciousness are clearly informed and shaped by intelligence in varying forms.

In the section that follows there will be a presentation of three different forms of intelligence in relation to the functioning of the human brain. This discussion will shed further light on the complexity of the human brain and its capacity for interacting with a variety of inner and outer stimuli to create consciousness and ultimately meaning.

3.4.2. Intelligence and spirituality in the formation of identity and individual consciousness.

One of the subtler functions of the conscious human brain is its quest for wholeness and meaning. Commonly this human need is experienced through, and expressed in, activities and concepts that transcend the human self. For example being aware of the reality of death, and the observation that not every living person finds joy and bliss in this present life, may cause certain persons to intelligently reason that there is an ‘afterlife’ in which there is greater capacity for joy and fulfilment. Similarly, the loss of a child and the accompanying grief may cause a parent to believe that it is unthinkable that all that should remain of the beloved child is just a decaying human body in a grave.

Spirituality and the quest for meaning, and transcendence, are fundamentally related to our conscious human capacity to experience reality in various forms (both as external and internal stimuli), and our further ability to process such experiences in order to make meaning of them. It requires some measure of conscious intelligence to be able to do so.

Recent research has come to understand that spiritual development is a function of the brain, which is understood as the seat of individual human consciousness. Most notable in this area of research are the works by d'Aquili and Newberg entitled *The mystical mind: Probing the biology of religious experience* (1999), and *Why God won't go away: Brain science and the biology of belief* (2001).

d'Aquili and Newberg suggest that within the brain there are genetically programmed subassemblies, assemblies and super-assemblies or neurons that carry out specific sorts of operations (1999:51). In essence they have adopted a constructivist approach to the brain, suggesting that since these operators exist, all humans, regardless of race and culture, will be forced to think along certain pre-determined lines (cf. Albright 2001:491). These neural operators include 1) the holistic operator; 2) the reductionist operator; 3) the causal operator; 4) the abstractive operator; 5) the binary operator; 6) the quantitative operator; and 7) the emotional value operator. Albright comments on their thesis, saying "the authors assert, people *must* search for an ultimate cause for the Kosmos and postulate a first cause, a god, to explain why there is something rather than nothing" (2001:490). It is worth noting that the authors of these two books came upon the list of operators inductively by observing individuals and theorizing about central human identity.

If their belief were valid, then it would stand to reason that a person who has a more highly developed spiritual life would somehow be more complete, or more whole. In essence a well developed spiritual brain will allow the individual to construct far deeper

and significant meaning in a world full of complexity and challenge, it may give certain skills with regard to morality, compassion, personal forgiveness and insights into the 'bigger picture'. There are many theologians and scientists who appear to say similar things from different points of view. In particular the developmental theorist and pastoral theologian, James Fowler, could offer some specific insights in this regard through his theories of faith development (cf. Fowler's *Stages of faith: The psychology of human development and the quest for meaning* (1981), see particularly pages 122-134). I am not able to go into any detail at this stage, but it is worth mentioning now.

Danah Zohar would seem to agree with the general notions expressed above. She comments that "... neurologically speaking, everything that bears on intelligence [into which we will see she includes spiritual intelligence, as will be shown below] is routed through or controlled by the brain and its neural extensions into the body" (2000:39). Having come to the point of understanding how the brain functions, we will now move on to discuss the three primary forms of intelligence that one can identify from a study of the human brain.

3.4.2.1. Three types of intelligence.

Zohar and Marshall draw some very interesting conclusions from their own research and the research of others in this regard. In essence, they identify three primary forms of intelligence. Howard Gardner in his book *Multiple intelligences* (1993) argues that there are at least seven kinds of intelligence, including musical, spatial and sporting, as well as

the generally accepted ones, which are rational and emotional intelligence. However, Zohar and Marshall have approached the notion of intelligence from a perennialist point of view. In other words, they studied the neurological functioning of the brain and linked the infinite possible intelligences to one of the three basic neural systems in the brain. Thus they do not start from the constructivist point of view (as Newberg and d'Aquili do), by categorising thought, behaviour and attitude, but from the functioning of the brain itself²⁸. They write:

One kind of neural organisation enables us to do rational, logical, rule-bound thinking. It gives us our IQ [Intellectual Quotient]. Another kind allows us to do our associative, habit-bound, pattern-recognising emotive thinking. It gives us our EQ [Emotional Quotient]. A third kind makes it possible for us to do creative, insightful, rule-making, rule-breaking thinking. It is thinking with which we reframe and transform our previous thinking. This gives us our SQ [Spiritual Quotient]. (2000:39).

Thus, they identify three primary types of intelligence, all other forms of 'intelligence' are seen as variations of the basic IQ, EQ and SQ. Let's take a brief look at the IQ and EQ before spending some time looking at SQ.

The purpose of the discussion below is to show that a complete approach to human identity and consciousness cannot simply follow either linear (IQ) or relational (EQ) lines – which is a trap that theorists in Artificial Intelligence fall into. Rather, as will be shown in Chapter 5, an approach that takes cognisance of the role that unitive and spiritual

²⁸ Of course this shows that there is some debate in scholarship about the different approaches to intelligence and the human brain. This research cannot resolve or contribute to the resolution of this debate. However, it is necessary to point out the different approaches since each gives some insight into how the human brain creates meaning the leads to consciousness.

intelligence 'intelligence' plays in the forming of true identity and consciousness is required in order to gain a fuller picture of what shapes true individual human identity.

3.4.2.1.1. Serial thinking – the brain's IQ.

Much has been written about Intellectual Quotient, the linear, logical, dispassionate intelligence. In essence this is derived from what we have come to understand as Aristotelian logic and arithmetic, if x then y , or if $2+2=4$, then $3+1$ must also $= 4$. Human persons are very good at this kind of thinking, surpassing all lower animals, and even creating technology, such as computers, to enhance its speed and accuracy. The brain can do this because of a type of neural wiring known as neural tracts. In essence a neural tract is almost like a telephone wire. The axon of one neuron or group of neurons, stimulates the dendrites of the next group and an electrochemical signal passes along the chain of linked neurons which is employed for any thought, or series of thoughts. Neural tracts learn according to a fixed program, according to rules that are laid down in accordance with formal logic. The learning involved in IQ is thus step by step and rule bound. It produces a kind of intelligence that is useful for solving rational problems or achieving definite tasks. It is goal orientated, a sort of 'how to' thinking. A chess player, for example, would require a high level of IQ in order to achieve success. The advantages of IQ and serial thinking are that they are accurate, precise and reliable. The problem though, is that it is far too linear and deterministic to cope with the challenges and changes of everyday life. One cannot design a 'game plan' and stick to it in spite of changing circumstances. Logical thought is either on or off, right or wrong. Thus it is

valuable in lower level tasks (such as obeying the rules of the road), a worthy element of encouraging adherence to preset determinants, but should never be used exclusively as it is far too rigid to cope in an ever changing world.

3.4.2.1.2. Associative thinking – the brain's EQ.

This kind of thinking is the intelligence that helps us to form associations between things like hunger, and the food that will satisfy it, home and comfort, mother and love. It forms the link between emotions and the environment. It enables us to recognise patterns, such as faces or smells, and to learn bodily skills like riding a bicycle.

EQ is often referred to as the body's intelligence. Gifted athletes and artists often employ it. They practice a task painstakingly and so can do it perfectly without having to think about every single little action. Structurally, such intelligence is as a result of complex neural networks (as opposed to the simple neural networks referred to in the section above). Each of the networks contains bundles of up to 100 000 neurons, and each of these bundles is connected to thousands of others. Unlike the linear, singular, activity of the neural tracts, associative thinking causes each neuron to be acted upon not only by one other neuron, but by many others simultaneously, thus leading to complexity of experience.

At its simplest, associative thinking is done via a conditioned response, such as the experiments conducted by the Russian scientist Pavlov with his dogs. The animals learnt

to salivate at the sound of a bell after repeated presentations of food and the bell together. Learning takes place through some of the elements of the neural network, and behavioural output through others, and still other aspects of the network mediate between input and output. The strength of connections is modified by experience, thus allowing the system to learn. This is unlike the serial or linear neural tracts that are rule bound and ostensibly unable to adapt or 'learn' through experience. Thus learning is done through trial and error. If a rat runs a maze it does not do so by rules, it practises. If a trial run fails, no neural connection is made. If it succeeds a strong neural connection is made which is reinforced by each successful attempt. This kind of learning is heavily experience based. The more times I perform a particular skill successfully, the more likely I will be to perform it in the same way next time. As a result, associative intelligence is also much more intuitive and tacit. For example, once I get my golf swing right a number of times, I may want to examine the rules that made it better, but may not be able to find any. Similarly one can't learn to ride a bicycle through reading a bicycle riding manual, you have to get up and ride it, adapting to changes and learning to cope with different situations as you ride. Zohar comments, "we *feel* our skills, we *do* our skills, but we don't think or talk about them" (2000:53).

The element of human emotions fits into this form of intelligence, and in fact a great deal of psychotherapy and pastoral counselling exists to try and help people break the habit of long standing inappropriate association and behaviour.

Positively, this type of ‘parallel’ intelligence is far more robust than linear intelligence. It can learn to operate in spite of variations in context; it can identify and adjust the ‘game plan’, and so act appropriately within the rules of a system.

The relationship between IQ and EQ in everyday life is very important. In 1993, Seymour and Norwood described experiments done with chess players to see what kind of thinking lay behind their strategies. Experts and beginners were briefly shown a series of common chess positions, some good and some nonsensical. The experts were much better than the novices at reproducing the common places (years of play had firmly set the associative neural networks; what works and is right had been firmly connected through experience). Whereas both groups performed equally badly at reproducing the nonsensical positions, since both had to apply linear neural connections, and serial logical thinking to reproduce these positions. A chess grandmaster, it was found, has over the years built up associative patterns for somewhere close to fifty thousand different chess positions. So when he is confronted with a situation in actual play he doesn’t have to re-analyse all of the positions, calculating serially the consequences of each move, he instantly recognises a promising move through prior success and then applies his serial (rational) analyses to these moves only. A novice player, on the other hand, has to analyse every possibility and move from scratch without association, and so wastes a great deal of time and energy.

So, when it comes to sport, there may well be some wisdom in selecting as your Captain not only the best player, but the one with the most experience and associative learning. Indeed EQ combined with IQ is much more effective than IQ on its own.

3.4.2.1.3. Unitive thinking – the brain’s SQ.

Much has been written about IQ, and more recently the incredible work of Daniel Goleman on EQ (cf. Goleman’s *Emotional Intelligence*, 1996). However, until recently very little had been written about SQ. Zohar defines SQ as

... the intelligence with which we address and solve problems of meaning and value, the intelligence with which we can place our actions and our lives in a wider, richer, meaning-giving context, the intelligence with which we can assess that one course of action or one life-path is more meaningful than another. (2000:4).

Essentially, SQ is the necessary foundation for the effective functioning of both IQ and EQ. She suggests that it is our ultimate intelligence. SQ allows humans to be creative. Because of it we are able to alter the rules, to play with boundaries. It allows us the ability to discriminate and choose. It fills us with compassion and understanding, but also helps us to see when these have their limits. It is mainly the fact that SQ is transformative in nature that differentiates it from EQ.

Daniel Goleman suggested that EQ allows a person to judge what situation he or she is in and then appropriately behave within it (cf. Goleman 1996). This is working within the boundaries, allowing the situation to guide and shape one. SQ on the other hand allows

one to ask whether one wants to be in that situation in the first place. SQ works with the boundaries, not necessarily within them, thus guiding the situation rather than being guided by it. SQ has a transcendent affect on the lives of those who apply and develop it.

Neurologically it has been shown that SQ operates out of the brain's centre – the posit of the brain's neurological unifying functions – that is the third neural system, the synchronous neural oscillations that unify data across the whole brain. In essence SQ integrates and shapes both the IQ and EQ. Zohar writes that it “facilitates a dialogue between reason and emotion, between body and mind. It provides a fulcrum for growth and transformation. It provides the self with an active, unifying, meaning-giving centre” (2000:7).

There is a great deal of scientific evidence for the existence of this type of intelligence. Zohar and Marshall draw on four specific streams of research that have lead to their own confidence in the existence of SQ.

Firstly, there is Persinger and later V.S. Ramachandran's research on the 'God spot' in the human brain. It has been shown that this built-in spiritual centre is located among the neural connections in the temporal lobes of the brain. Essentially, scans taken with positron emission topography showed up neural activity whenever subjects were exposed to spiritual or religious experience. The 'God spot' does not prove the existence of God. However, it does show, as d'Aquili and Newberg believe, that the human brain has evolved to ask and deal with existential and ontological religious questions.

Secondly, the work of Wolf Singer in the 1990's showed that there is a neural process in the brain devoted to unifying and giving meaning to our experience. This is a neural process that literally binds our experience together. In short Singer discovered that whenever the brain was stimulated, the neurons involved in the processing of that stimulation would oscillate at the same frequency (around 40hz) whilst those which are not involved would not oscillate in unison. In effect Singer showed that 40hz unitive oscillations are the basis for consciousness in the brain, i.e. they are what link and give meaning to individual responses and stimuli. They unify linear and associative intelligence to offer a wider meaning of a particular stimulant or experience.

Third is Rodolfo Llinas's work which builds on Singer's by using the MEG (magneto-encephalographic) scans which allows for whole skull scans. This research further corroborated the work of Singer by showing its effect on a much larger area of the brain.

Fourth, there is Terrance Deacon's research on the brain's symbolic, meaning-centred activity, that evolved with the development of the frontal lobes and accounts for humanity's ability to use language.

One may ask what use SQ is to the human person? Viktor Frankl said:

Man's search for meaning is the primary motivation in his life and not a 'secondary rationalisation' of instinctual drives. This meaning is unique and specific in that it must and can be fulfilled by him alone; only then does it achieve a significance which will satisfy his own will to meaning. (in Zohar and Marshall 2000:18).

Effectively SQ helps us to deal with existential and ontological challenges. Problems that leave us feeling personally stuck, trapped by our own past habits, our neuroses or problems with illness or grief can be dealt with through a well-developed capacity for SQ. SQ allows us to recognise these problems, and instead of just living within them (as EQ would suggest) it enables us to solve them. It is our compass and conscience (in modern Hebrew, the word for conscience, compass and the hidden inner-truth in the soul, all have the same root) (cf. Zohar and Marshall 2000:13-14). We use SQ to create and transform our brains (our bodies, our context) to become more fully the person that we have the potential to be.

In essence every person forms a reality through a combination of experience and vision, that which we are, and that which we dream of becoming. A person with a high SQ is able to look beyond their own selfish ego needs and live their life with deeper and more substantial meaning.

Lastly, SQ can help us to wrestle with the problems of good and evil, fulfilment and disappointment, suffering and hope. Zohar notes that too often we either try to rationalise these problems away, instead of dealing with them and growing through them. At other times they emotionally swamp us. The 20th century Jewish Mystic, Rabbi Abraham Herschel said, “We are closer to God when we are asking questions than when we think we have answers” (in Zohar 2000:15).

Taking this into account, Zohar and Marshall (2000:13-16) suggest the follow as a list of indications of a highly developed SQ:

- The capacity to be flexible (actively and spontaneously adaptive)
- A high degree of self awareness
- A capacity to face disappointment and suffering
- A capacity to face and transcend pain
- The quality of being inspired by vision and values
- A reluctance to cause unnecessary harm
- A tendency to see the connections between diverse things (i.e. being holistic, showing evidence of the holistic ‘operators’)
- A marked tendency to ask ‘Why?’ or ‘What if?’ questions and to seek fundamental answers
- Being what psychologists call ‘field-independent’ – possessing a faculty for working against convention

Zohar sums up by saying, “A person high in SQ is also likely to be a servant leader – someone who is responsible for bringing higher vision and value to others and showing them how to use it, in other words a person who inspires others” (2000:16)²⁹.

²⁹ A research Thesis is not a proper place to enter into a discussion on one’s personal view of spirituality and society. As such I have removed this from the main body of the text. However, it bears mentioning. If SQ is such a valuable aspect of human being, then how does one improve it? It is worth noting that we live in a spiritually dumb culture characterised by individualism, materialism, expediency, lack of meaning and dearth of commitment. We can however raise our SQ, and that of those around us, by using the tertiary processes “our tendency to ask why, to look for the connections between things, to bring to the surface the assumptions that we have been making about the meaning behind and within things, to become more reflective, to reach beyond ourselves a little, to take responsibility, to become more self-aware, to become more honest with ourselves and more courageous.” (Zohar 2000:16).

The discussion of IQ, EQ and SQ above clearly shows how intelligence (as a function of the human brain) enriches and enlivens consciousness. The link between consciousness and intelligence is difficult to deny. Whilst some lower level of consciousness is possible without a developed intelligence (in any of the three fields discussed above), making and discovering meaning, responding to contextual changes, and simply dealing with everyday life is greatly influenced by one's capacity for observation, critical reflection and response. Thus, there is a necessary and important link between human intelligence and identity on various levels, whether it is purely functional (IQ), relational (EQ), or transcendent (SQ) identity.

3.4.3. Consciousness and the Brain: Two representational models.

Every time that we say 'I' or 'we', we draw upon a tacit assumption that there is a conscious 'I' or 'we' to whom we refer. However, being able to irreducibly place our finger on the physics or biology of that conscious 'I' or 'we' is an extremely difficult task. Du Toit writes the following about this perplexing problem:

In spite of many explanatory efforts the question of mind remains intangible. In this context we understand mind broadly as consciousness (the having of thoughts, perceptions and feelings), awareness, soul, the seat of self-identity and self-understanding.... The complexity of mind as the hub of all factors making up the individual makes it so difficult to define, model or explain it (2002:6).

He notes, as has been suggested above, that there are many approaches both to the study of consciousness, and to its explanation. Moreover, he suggests that each approach has its own bias expressed in the symbolism and language that is used to communicate and present the particular model or approach to consciousness. As one possible reason he notes the following,

The mind is never empty. An unbiased, objective approach to mind seems impossible.... The brain-mind relationship remains one of the most perplexing features of humans. Mental properties are epistemologically irreducible to physical ones. They emerge from physical properties and are dependent upon them, but cannot be reduced to them. (2002:6-7).

This chapter has aimed to display something of this complexity whilst all the while aiming at offering some insight into the functioning of the brain in relation to consciousness. Clearly, as has been shown, there is no anatomy or physiology that one can simply point to in order to say “that is consciousness”. However, the need to express the notion of consciousness in terms that can capture something of that state of human being is essential. No doubt, every model will offer some value and insight. Yet, precisely because it is a representation, it will fall short of the reality of that which it seeks to represent. Throughout history, as Macdonald’s formidable work *History of the concept of mind* (2003) shows, there have been varying attempts at offering accurate and insightful speculations of the notion of mind.

The ancient philosopher, Epicurus, believed that there were ‘soul atoms’ distributed throughout the body that accounted for both consciousness and the general sense of human vitality (Zohar 1991:45, Macdonald 2003:71-88). Many other Greeks of the time

believed that consciousness stemmed from the heart or the breast. Some even speculated that it lay within the liver or the blood. To Hindu sages, consciousness had to do with the 'shakras' that are located along the spine (which accounts for the introduction of yoga as a means to control and master consciousness). More recently, Descartes proposed that the meeting point of body and soul is the pineal gland, a neuro-endocrine-transducer situated in the middle of the brain (Zohar 1991:46, Macdonald 2003:279-291). Most modern approaches assume that consciousness is very closely linked to the function of the brain. Zohar suggests that this is a common sense assumption based on what we have learned through observation and study of human anatomy. She provides a simple reductive example for such belief:

Damage to other bodily organs may result in all manner of troubles, but a sharp blow to the head nearly always results in loss of consciousness, just as drugs that act on the brain can be seen clearly to alter various patterns of consciousness. Some necessary link, therefore, is assumed to exist between physical states in the brain and conscious mental states, though the exact nature of that link is still one of the great mysteries of both science and philosophy (1991:46).

This type of approach can be called a 'functionalist' approach to the relationship between the biological brain and consciousness, where consciousness itself is equated with the processes that take place within the brain itself. The two most common scientific, philosophical, models in use today fall within the functionalist descriptor. As is mentioned above, they are valuable in that they offer some insight into the notion of consciousness. Yet, they are also flawed since they are only models.

3.4.3.1.A computational model of the conscious brain: A perspective from classical physics.

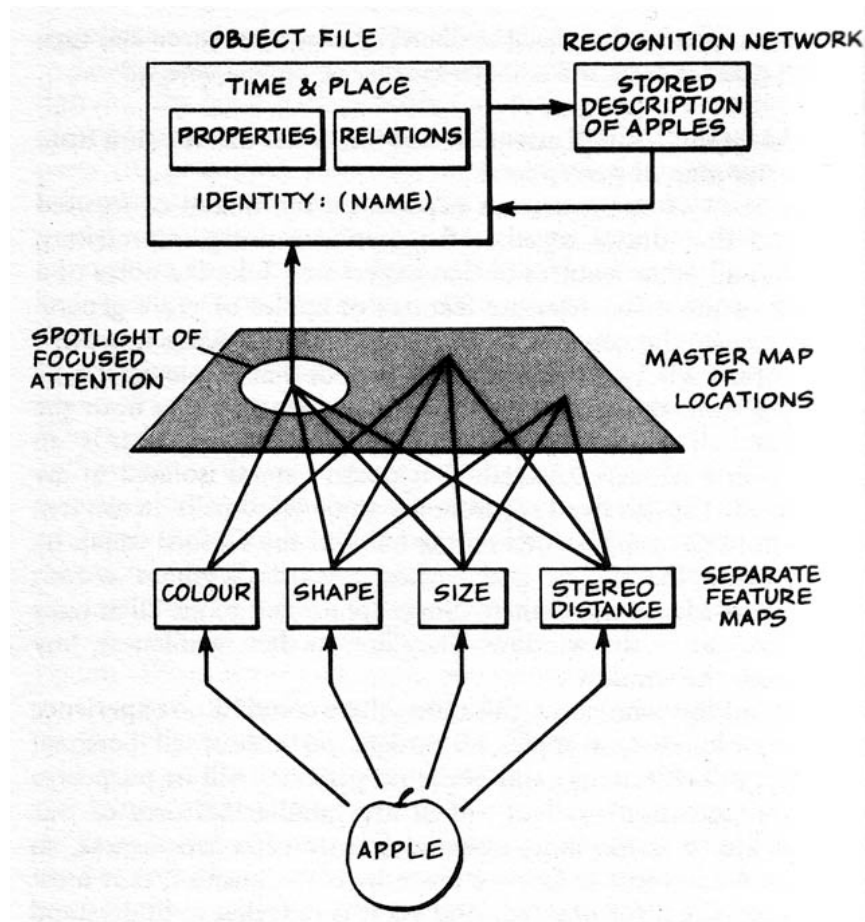
Reductionism and materialism have dominated a great deal of scientific pursuit, and the philosophy that underpins it, since the age of the enlightenment. Zohar (1991:46) sums up this approach which suggests that we, “are what we can do, and what we can do is defined by our circuitry”. There is very little doubt that the brain is the ‘controlling mechanism’ of the human nervous system. It controls communication, memory, movement, learning and a host of other functions that could be analogously compared to the functions of a contemporary computer. Moreover, there is undoubtedly some similarity between the complex bundles of neurones and the wiring that makes up the electrical circuitry of a computer, particularly now that computers are capable of complex parallel processes.

Like the ‘nerve cells’ of a computer, the brain’s 10^{10} (ten billion) or 10^{11} (one hundred billion) neurones are also a form of electrical wiring, with various messages passing into and out of the brain by way of electrochemical pulses travelling across the nerve junctions, the synapses. At any one time the brain is literally seething with millions of highly charge neural events, a large proportion of which no doubt underlie our impressive data processing and computing abilities... (Zohar 1991:47).

In essence, this contemporary approach not only seeks to draw on the resemblance between the mode of operation of the brain and computers, but also assumes that the brain itself functions according to the same laws and principles as a vast computing machine. That is, that its neurones co-operate in an ordered, mechanistic way, following all the determinist laws of classical physics. Each brain state flows from or follows on

from another, all interacting to form what is perceived to be reality and consciousness. Treisman's work on human vision (1986) illustrates the functioning of the brain in this regard very well. When one sees an apple, one is immediately aware that the object that one is observing is an apple (it is red, round, it is fairly small, it is in a fruit bowl on a table etc.). Naturally there are other aspects of our conscious functioning that we commonly relate to apples, that it can satisfy our hunger, that one fell on Newton's head etc. However, this is not part of our visual perception (Zohar 1991:47). Visual perception relates to the apple's size, shape, orientation, colour and position. Treisman points out that each of these is recorded separately (1986).

In other words, the brain does not see an apple. Rather, it observes roundness and redness etc. Each observable characteristic is stored in a different place of what she calls the "features map" and subsequently on a "master map of locations" (1986:115). Once the master map has been composed, focussed attention takes over, looks at the master map, and the brain sees an apple from all of these elements or characteristics (please see the illustrated Diagram from Treisman in Zohar 1991:52 below).



Treisman writes the following about this process of visual recognition.

Attention makes use of this master map, simultaneously selecting, by means of links to separate feature maps, all the features that currently are present in a selected location.... The integrated information about the properties and structural relations in each object file is compared with stored descriptions in a 'recognition network'. The network specifies the critical attributes of cats, trees, bacon and eggs, one's grandmothers and all other familiar perceptual objects (Treisman 1986:115).

Thus there is a certain wholeness to our visual perception that allows the creation of conscious meaning out of the observed variables to do with size, colour, location and shape. This feature is thus a central element to our consciousness that is so seldom

reflected on that it is most often taken for granted. Zohar comments on this aspect of our brain function saying,

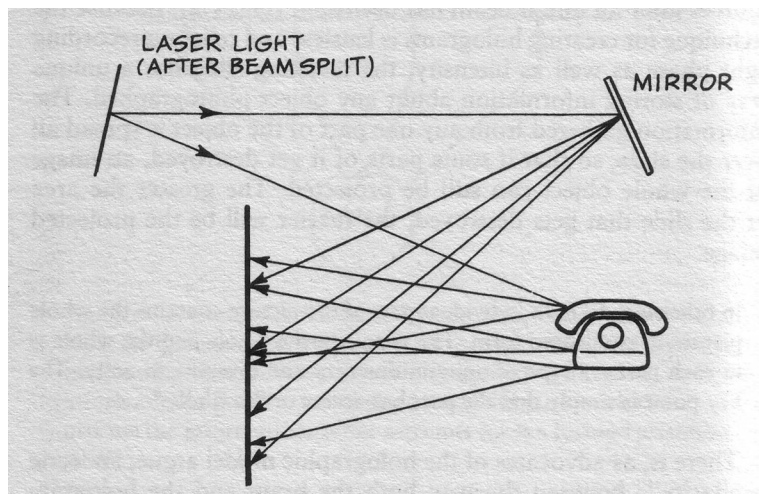
The whole corpus of classical physics and technology that rests on it [visual perception] (including computer technology), is about separateness of things, about constituent parts and how they influence each other across their separateness, as the separate neurones in the brain act on one another across the synapses (1991:51).

This is one of the most notable critiques of thoroughgoing computational models of the brain. The argument that points towards the unity of consciousness in the brain shows that whilst there are some areas in which the brain resembles the functioning of a mechanism, there is at least one fundamental area (that of unity of consciousness) where it does not represent the functioning of a mechanism such as a computer. Even Rene Descartes pointed out this unitive function to the brain when he wrote, “There is a great difference between the mind and the body, inasmuch as the body is by its very nature always divisible, while the mind is utterly indivisible” (Descartes 1960:86). Thus, as in Descartes’ works, the approach discussed above is an extremely valuable contribution towards understanding consciousness in physical terms. However, as with Descartes’ dualistic theories on mind, this model also reaches a point where it breaks down since the physics of a computer cannot fully give us an accurate understanding of the physics of the conscious human brain.

Thus, a second model, which is also valuable and able to offer some further insight, is proposed.

3.4.3.2.A holographic model of the conscious brain: A perspective from quantum physics.

In an attempt to pick up on the theme of ‘unity’ in the brain a further theory or model of consciousness has been proposed. This is the “Holographic model”, which finds its roots in holography. As was briefly discussed in Chapter 2.1 above, a hologram is simply a special kind of picture slide that records an interference pattern of light coming from two sources after an initial beam has been split (see the diagram from Zohar 1991:54 below).



The process of creating a hologram does not employ a lens. Rather, it relies upon recording light phase and intensity as information stored about an object. Hence the information gathered from one part of an object is scattered all over the slide (as is represented in the diagram above), so that even if a part of the slide were destroyed, it would still be possible to project the whole image. However, the greater the area of the

slide that is lost or destroyed, the fuzzier the resulting projected. Wilber writes of this process:

In other words, each individual part of the picture contains the whole picture in condensed form. The part is in the whole and the whole is in each part – a type of unity-in-diversity and diversity-in-unity. The key point is simply that the *part* has access to the whole (1982:2).

Many students of the human brain find this model appealing since there is a strong comparison between the way in which a holograph and the human brain store information across the whole system (Zohar 1991:53). Each part of the human brain is privy to information about the whole. The associative nerve nets in the cerebral cortex are primarily responsible for distributing such associative information. Whilst this model is a reaction against the computer based, mechanistic and linear process, view of the brain, it is worth noting that there are computers that rely heavily on parallel processes to deal with information. However, the merit of this model is that it attempts to overcome the fragmentation and alienation of the computational model by placing consciousness and the human brain squarely within the notion of holism and interconnectivity.

The West, since Plato, has stressed the rational and analytic elements and rules by which humans form thoughts and make decisions. Thus, there has been a great deal of emphasis upon investigating and understanding the “component parts” of our conscious life (Zohar 1991:55). Whilst there is great value in understanding these processes of human consciousness, they have led to the overlooking of an equally essential part of our consciousness, namely the intuitive side (that which draws upon wisdom, creativity,

imagination and a host of other consciousness forming aspects of our being that are not as easily related to linear, analytical processes). In terms of modern neurophysiology these two aspects of our mental life are often referred to in relation to the left brain / right brain split, where the modern analytical, linear, computational processes relate more specifically to the function of the left brain.

If one were to further employ the metaphor of quantum physics, one could say that our culture has emphasised the particle aspect of reality, whilst neglecting to pay attention to the wave state. Holists would want to emphasise the wave aspect of every experience, where every element of consciousness – and indeed every element of reality itself – is related to everything else. These theorists would argue that the whole is always greater than the sum of its parts. The quantum physicist David Bohm, a proponent of the holographic model, would say that reality is an undivided wholeness. Everything in reality is so intricately related that all talk of separation is merely an illusion (cf. Bohm's *Wholeness and the implicate order*, 1980). Whilst many in the West find such assertions strange, they are nothing new to the religion and culture of the East. The Buddhist Diamond Sutra expresses the notion as follows:

In the house of Indra there is said to be a network of pearls so arranged that if you look at one you see all the others reflected in it. In the same way, each object in the world is not merely itself but involves every other object, and in fact *is* every other object (from Zohar 1991:56).

As will be discussed in some length in chapter four, this metaphor is present in western thought in the notion of the 'Great chain of being'. It can even be traced to the

philosophy of Spinoza (a contemporary of the dualist, Rene Descartes) who posited that everything in the world is made of one substance (cf. Macdonald 2003:291-300).

Proponents of the holographic model are thus attempting to place these theories within a firm scientific footing.

One of the greatest values of the holographic model of the conscious brain is that it serves to remind us that conscious reality stems from relationship and process, which is ultimately informed by a much larger whole than just the conscious individual. However, as with all models, it also has its weaknesses. The overemphasis upon the ‘wave like’ states of inter-related consciousness over and against the computational model’s emphasis on individual consciousness as a particle is misleading. Zohar writes:

Reality as we know it consists of both waves (relationship) and particles (individuality), just as the experience we recognize as human mental life consists of both immediate consciousness (unity and integration) and computation (thought, structure). A really adequate model for the nature of consciousness and its relationship to the brain must be able to account for both. (1991:56).

As with the computational model of consciousness, this model has some virtue, but it also falls short in some areas. Firstly, as with the computational model, it falls short in that it cannot account for the ‘I’ of consciousness. If the brain is a hologram perceiving and participation in a holographic universe, then who is looking at the hologram? The hologram is nothing more than an unusual sort of photographic record of reality, it is not reality itself, thus it cannot do any perceiving on its own.

So in asking who or what supplies the consciousness (the ‘spotlight of focussed attention’), one is driven either to assume that this must come from outside, as the dualists have argued all along, or that the physics of the hologram can account for the unity of conscious perception – and it can’t. (Zohar 1991:56).

When it comes down to the crunch, a holograph is simply a creative form of a classical system. It records interference patterns (which are themselves an entirely classical effect which can be described by standard electromagnetic theory). Thus, despite its ability to record information about the whole image in each part of the holographic plate, it is ultimately divisible into parts³⁰. It is quite possible to reduce the number of marks on the holographic plate to the point where they reproduce nothing of the whole. Thus there is ultimately very little to distinguish this holographic approach from the computational model of visual perceptions discussed earlier. The hologram may well be likened to that model’s ‘master map of locations’.

What is clear from the discussion above is that both models have some value in locating and presenting some elements of the biological and physical nature of human consciousness. However, neither model is able to entirely encompass this highly complex aspect of human being.

³⁰ Shimoy Abner confirms the divisible nature of holography when he writes that each “component of the electric field at each point on a space-like surface is a separate degree of freedom, and all these infinitely-many degrees of freedom can in principle be assigned independent values” (1981:435).

3.5. Conclusion: Why objective or subjective approaches to consciousness are not sufficient to solve the problem of Kurzweil's hypothetical identity crisis.

This chapter aimed to present various models and approaches to consciousness. The crux of the discussion has been to show that there is neither a scientific, nor a philosophical, model that can encompass the complexity of consciousness in relation to the functioning of the human brain in its entirety. Each of the models, from different perspectives, has offered some valuable insight into the nature and operation of consciousness. However, they have all had some weaknesses and areas in which they break down. Each model is constructed to try and prove some particular point, yet in the process it must ignore other important and necessary elements that are presented by other models from other disciplines.

The value of these differing approaches is that they each offer some unique and valuable insight. However, it is clear that an approach that is more unitive and less dualistic is necessary to deal with Kurzweil's hypothetical identity crisis.

Whilst the subjectivist approaches to consciousness and identity are valuable in identifying, contemplating and interpreting internal experience and knowledge of self, they are very difficult to verify within the context of the research problem of this thesis. The knowledge itself is subjective, it is fundamentally valid for the individual, but very difficult to verify objectively. Hence some further approach is necessary to validate individual identity and consciousness in this context.

The objectivist approaches to consciousness are easily quantifiable through observing and comparing the observed data to what is known or expected (whether it be outward appearance, social behaviour, or the neurological functioning of the brain). However, such approaches can clearly not do away with the conundrum of establishing individual identity claims between a person and an emulated version of the person where the claims of Strong Artificial Intelligence and nano-technology are applied to the full. By simply studying the appearance, behaviour, or even the neurobiological functioning of the two persons one would not be able to undeniably say which is in fact the person that both claim to be. In this instance there is also clearly a need for a more comprehensive approach to validating consciousness and individual identity.

It is also worth noting that simply applying both objective and subjective approaches to consciousness and identity will also not solve the identity conundrum. The fundamental struggle is that both the subjective and the objectivist approaches to consciousness, which are discussed above, rely on the observation of passive knowledge (either what is experienced, or what is quantified through observation or study). Passive knowledge is simply too easy to emulate, and recreate, for it to offer any truly plausible approach to undeniably verify true individual identity.

In the chapter that follows there will be a discussion on the nature of reality from a perspective of holism, a perspective that aims to take account of individual and social theories, paying attention to both the subjective (interior) and objective (exterior) aspects

of consciousness, yet showing that a further approach is the only approach that could truly satisfy the requirements to more accurately validate individual consciousness in the context of Ray Kurzweil's hypothetical identity crisis.

Chapter 4

4. Parts and the whole: Understanding Holarchic consciousness in the integral theory of Ken Wilber.

So the world, grounded in a timeless movement by the Soul which suffuses it with intelligence, becomes a living and blessed being. – Plotinus

In recent decades there has been something of an explosion of interest in the development of the science of consciousness. Scholars from a multitude of academic disciplines, representing a vast array of investigative methodologies, are engaged in seeking to unravel the mystery and complexity of consciousness in its various forms. However, this research has been somewhat restricted in nature, primarily because it is often locked to particular disciplines (e.g. biology, philosophy, physics etc.).

What follows will cast a much wider net in relation to a holistic understanding of consciousness, and in so doing will unravel something of the intricacy of this maze. This chapter starts with a discussion of the impact that the dominant Cartesian / Newtonian world-view, particularly as it is expressed in epistemic science, has in setting up a radical dualism between the self and the rest of the Kosmos. Whilst the merits of such research is acknowledged it will be shown that these approaches are inadequate to address the complexity of a holistic view of consciousness. As a corrective to the dualist / objectivist, approach, Ken Wilber's integrative, non-dual, approach to consciousness will be presented as a corrective model.

4.1. Self and other? A discussion of the Newtonian / Cartesian world-view and its impact upon studies in consciousness.

It is extremely encouraging that there has been such an upsurge of interest in seeking to understand consciousness. Yet, sadly, much of the research that is produced is conflicting due to the fact that it is often confined to only one aspect of being, namely what can be physically observed, measured, and quantified. Even approaches that draw spiritual conclusions seem to stem from similarly objective and empirical studies of the functioning of the human brain, or observable aspects of society and culture. Even within the traditionally phenomenological and subjective disciplines, such as Theology, attempts to fathom the notion of self are often confined to studies that relate to the physical functioning of the human person, with particular reference to the human brain. There are some who have sought to relate the notion of self to some primary aspect of faith. However, their findings are often disputed as less valuable or credible since they are not easily verifiable. In answer to this, some have sought to identify subjective findings of the notion of self through the study of society and culture. This has led to an overemphasis on the physical and a general under-valuing of the spiritual concepts of the conscious self.

Naturally it must be recognised that each approach offers some valuable insight into this elusive aspect of being. As the previous section has shown, empirical and objective research has helped us to understand a great deal about the bio-chemical functioning of the human brain in relation to consciousness. Furthermore, chapter two showed the great

strides being made in our ability to map and emulate the conscious functioning of the human brain with machines. However, while such advances are significant they do not shed light on the whole picture of consciousness. Rather, they seek to accurately emulate what we assume to know about consciousness and the functioning of the human brain as an isolated ‘computational organ’, or machine.

For the theologian a holistic understanding of human consciousness is of the utmost importance since it is such an essential element of human being. Our ontological state of being, that which we are, is an indispensable element of all true faith. So much of the teaching of the Old and New Testaments seeks to expound the true nature of both individual and cosmic consciousness. Whereas centuries of theology seek to understand and expound the true nature of self by suggesting answers to the questions “who am I?” and, “ who are we?”

As was displayed in the formulation of the central question of this research, the matter of self, and in particular the manner in which one validates one’s experience and knowledge of self, is a further aspect of being that can complicate the notion of consciousness.

The author would suggest that none of the approaches discussed thus far in chapters two and three have been able to resolve the central question of this research namely: when faced with a conscious being, and an accurate emulation of that same conscious being, where each one claims to be able to validate their own state of consciousness as self, how does one authenticate the validity of one claim over the other?

The answer to such a question is naturally a complex one. Whilst it may not be possible to offer a completely satisfactory answer to the question, one can offer some valuable guidelines through the application of an approach to consciousness that takes all aspects of being into account. The fundamental struggle in answering this question is to be found in the expectation that an individual conscious being can validate him or herself in isolation from all other persons and the rest of creation, through an interpretation of a variety of sources of evidence, or qualifiers, gained through the senses (such as sight, touch, smell, taste and sound). The most common approach is to seek the testimony of the conscious individual in relation to how he or she perceives him or her self. For example, one could ask the person “how do you know that you are yourself?” To which she could answer, “I look like myself, I feel like myself, I sound like myself...” etc. But, as has been shown, such evidence is not enough.

This struggle has plagued philosophers and theologians ever since Descartes’ understanding of human consciousness became widely accepted. This materialist understanding of being was further distorted with the introduction and acceptance of the Newtonian scientific paradigm that emphasised the radical dualism between ‘self’ and ‘other’.

This materialist philosophy has come to permeate just about every academic discipline. In its simplest form this world-view has its roots in a view of the world as purely material, functioning simply as a complex mechanism of interrelated parts that operate according to rigid pre-determined rules. As mentioned above, a primary source of this

world-view can be traced to the philosophy of Rene Descartes. His philosophy in turn is based upon Aristotelian philosophy with its belief that all human knowledge is derived from evidence received through the senses (touch, taste, hearing, smell and sight). Descartes took this materialist view of reality further than Aristotle in being the first person to make a complete separation between mind and matter. Aristotle had maintained that the human person is a body-soul, the soul is the form of the human body and so the person remains an integrated whole (cf. Griffiths 1989:12). Descartes on the other hand said that all matter, including the human body, is extended outside of the mind, that is, separate from the person, completely separate from the mind. There is a radical subject/object distinction between the mind and the world. The mind looks out on the universe extended outside of the person. Wilber notes that much of contemporary studies in consciousness seek to anchor their research firmly within the physical sphere, and particularly the functioning of the human brain (2000b:1).

Following along these lines it was suggested that it would be possible for a person to study objectively all things outside of him or her self and then make some assertions about the interior life based on what can be observed externally through translating it internally. Descartes, as a mathematician, believed that through mathematical calculation one could come to a perfect understanding of the universe as a whole. For him the universe was merely a complex mechanism, governed by mathematical laws and principles which, once discovered, could explain all of reality.

This view maintains that each person is a separated, self-contained, thinking reality (*res cogitans*) over against the material reality (*res extensa*) (cf. Griffiths 1989:13). Francis Bacon, the English philosopher, took this notion a step further. He said that the goal of science was not only to understand the universe, but to control it by applying the principles discovered in scientific and empirical investigation. Galileo made the next important contribution to this world-view by adding that mass and motion were the main characteristics of matter. Thus, since mass and motion are measurable, all matter could be measured quantitatively. The *res extensa* (material reality) is thus quantitative, allowing it to be measured and studied objectively. Aspects of reality such as faith, beauty and emotions began to be regarded as subjective and of no scientific value. Since this view held that they had no scientific value they began to have less value generally, in western society, which was largely regulated by mechanistic and reductionist principles.

The next major contribution to this world-view was that of Isaac Newton, whose model of science is still accepted by many today. Newton said that reality could be explained in terms of a number of laws (especially concerning mass and motion), such as gravity, that governed all creation. For Newton all reality consisted of concrete objects moving in space and time. A contemporary theologian Bede Griffiths comments on this saying,

Measurement of mass, motion and other properties, and their interrelationships, provided the model of the universe for the succeeding centuries ... the method of Newtonian mechanics was so highly successful and yielded such impressive results that it became extrapolated into metaphysics. It was assumed that philosophically Newtonian physics provided not only a complete picture of reality but the only picture of reality (1989:14-15).

The result of this world-view was the exclusion of anything that was not objectively quantifiable. It is from this purely mechanistic understanding of creation that our materialistic approach to reality, and so also the study of consciousness, comes. In its most extreme form there is no longer a need for belief in God since all of creation is seen to be regulated by laws and principles that are purely mathematical. Moreover, it has often been maintained that if a person could discover these laws, and then learn how to manipulate them, that person could ensure the smooth running of nature, and the contentment of human persons. In a general sense, this is often regarded as a common view amongst groups such as the Marxists. However, in less stringent forms, this world-view can be seen to permeate almost all of western society in subtle ways. Such a view of reality is clearly inadequate. In the West it is becoming increasingly obvious that mechanism is far too simplistic to describe the whole of reality in all its vibrant complexity. Fritjof Capra's book *The Tao of Physics* (1975) has been significant in spreading awareness of this. Recent discoveries in quantum physics have shown that the material universe is not so much a mechanism as "a field of energies in which the parts can only be understood in relation to the whole" (Griffiths 1989:17). Thus, the universe in all its parts and aspects is more accurately likened to an organic, living entity (like a cell), rather than a mechanistic system (like a clock).

David Bohm's theory of implicate and explicate orders, which is briefly discussed in Chapters 2.1 and 4.2.2, give a much more complete reflection of physical reality than the Cartesian/Newtonian model. Simply to summarise this view again, according to Bohm, all material reality is an explication of a vast number of implicate orders which increase

in complexity as one goes deeper. Thus underlying the explicate order of material reality there is a “deeper order of existence, a vast and more primary level of reality that gives birth to all objects and appearances of our physical world” (Talbot 1991:46). This world-view holds that what we perceive as physical reality is not a number of separate self-contained objects (as in the Cartesian/Newtonian world-view) but rather that all of reality is a dynamic whole, an explication of the undivided whole that is perpetually in a state of change (Bohm 1980:185).

What is significant in this view of reality is its emphasis on the unity and interconnectivity of created reality. There is in this view, a sense of non-duality, of all of reality being one,

... behind the explicate order the implicate is always present, so in that sense the whole universe is implicated behind every explicit form (Griffiths 1989:18).

Furthermore, this theory holds that each part of creation contains within it, the whole.

Theologically this is significant, as it implies that we are living in a universe that is not separate from ourselves. We, ourselves, are the universe, the universe is us. We are an explication of the one ultimate reality. There is a fundamental sense of interconnectedness between all persons and all of creation. We are one, one with the Creator, all creation and ourselves.

Thus, any view of the conscious self needs to take into account both the physical and the spiritual, the individual and the wider interrelated Kosmos.

It is here that the integral theory of Ken Wilber adds a great deal of value. The section that follows will discuss Ken Wilber and his integral theory of consciousness. This discussion will lay the groundwork for the theological model of validating individual consciousness that will be constructed in the next chapter of this thesis. As Wilber's model of consciousness is presented it will be clearly shown that a dualistic model of consciousness that separates spirit from matter, self from other, and self from the rest of the Kosmos, is fundamentally inadequate to address the complexity of the true nature of being.

4.2. Ken Wilber's integral theory of consciousness.

Ken Wilber is a native of North America, born in 1949. He initially sought to train as a Doctor by enrolling for a Medical Degree at Duke University in North Carolina (1968). However, he soon became disillusioned with what western science had to offer. He went on to complete a Bachelors degree in chemistry and biology. However he was already much more interested in developing his understanding of Eastern philosophy and Western psychology.

Today Ken Wilber is highly regarded as "the world's foremost integral philosopher" (Palmer in Wilber 2004:ix). In particular it is Wilber's thoroughgoing scholarship and

enormous body of work on the ‘integral approach’ that has lead to him receiving this accolade. As such, his work is worthy of further study, and is of particular interest to this research project, since it presents a comprehensive and thoroughgoing model of non-dual integrative consciousness that is widely accepted and highly regarded by scholars from a wide range of related disciplines.

The following section will present Ken Wilber’s integral theory as it relates to individual self-validating consciousness. The sections after that will introduce and discuss the important elements of Wilber’s theory. Then a discussion on validating individual consciousness in relation to Wilber’s integral approach will take place. Finally a case will be made for the application of an integral approach in constructing a theological model to consider self-validating individual consciousness in strong artificial intelligence.

4.2.1. Ken Wilber’s Integral Philosophy in relation to consciousness.

Central to Wilber’s Integral philosophy is an integral psychology, also referred to as the “psychological spectrum of consciousness” (Snyman 2002: 71 and Wilber 1974, 1977,1979, 2000b).

It was briefly pointed out earlier that studies in consciousness have traditionally tended towards one of two models, either those models that seek to locate consciousness within an empirical study of the functioning of the human brain, or those that have done a

phenomenological investigation into the philosophical, or theological, aspects of mind and self. Wilber's model seeks to deal with a study of both the brain and the mind in order to avoid dualism and reductionism in the development of a truly integral theory of consciousness. Snyman writes that Wilber's objective in this regard is to

... impart a clear and precise understanding of the way consciousness develops and interrelates with other aspects of the universe, which includes all the vast depths of not only the physical, but also the psychological, spiritual, cultural and sociological "Kosmos."³¹ (2002:71).

In order to construct this integrative model Wilber conducted extensive research on developmental and evolutionary theories of consciousness. To date his integral approach is regarded as one of the most comprehensive and synthesised models of the twelve most influential areas of consciousness studies (which was discussed in the previous chapter).

In order to understand Wilber's integral philosophy it is necessary to investigate his findings concerning consciousness in three research areas. Firstly, it will be necessary to see what Wilber gleans from his study of the perennial philosophy. Secondly, it will be important to present and discuss Wilber's mapping of consciousness which he derives from his explorative research into the world's consciousness philosophies and religions. Lastly, this discussion will need to present Wilber's view of consciousness in relation to the four ontological and existential quadrants. These quadrants are the objectivist, sociological, cultural and spiritual realms.

³¹ According to Snyman, Wilber chooses to use the word Kosmos to describe the non-dual universe, rather than the "anaemic, depth-denying and surface bound 'cosmos' of modern science that has not allowed room for spirit and consciousness in its deliberations" (2002:71).

4.2.2. Ken Wilber's understanding of consciousness from the perennial philosophy: A neo-perennial philosophy.

There is wide consensus among scholars that until the sixteenth century there was a universal philosophy throughout the civilised world that was known as the perennial philosophy.

Perennial Philosophy is a term that is often used as a synonym for Santana Dharma (Sanskrit for "Eternal or Perennial Truth"). It was used by Leibniz to designate the common, eternal philosophy that underlies all religious movements, in particular the mystical streams within religions. The term was popularized by Aldous Huxley in his 1945 book *The Perennial Philosophy* in his description of Vedanta. (http://en.wikipedia.org/wiki/The_Perennial_Philosophy, accessed 4 July 2005, 12h41).

Wilber's research concurs with these notions (cf. particularly Wilber 2002:72, 2000b:1 and 1995:115-118). According to Griffiths (1989:11) this universal wisdom prevailed from about 500 AD until about 1500 AD.

The perennial philosophy was based on a belief that all of the Kosmos was pervaded by, and could find its explanation in, a transcendent reality. Gradually however, as shown above (in chapter 2 and earlier in this chapter), a mechanistic and materialistic view of reality began to take over, which led to the eradication of the perennial philosophy (Griffiths 1989:11). This eradication took place mainly in the West. To a large extent the perennial philosophy was maintained in the cultures and religions of the East.

The psychologist, Stanislav Grof, suggests that the reason for this survival in the east is that the eastern mind-set is far more open to a cosmic consciousness and creative intelligence as primary attributes of existence (Grof 1984:4). The advantages of this view of reality are numerous. For instance, whereas the materialistic view of reality sees humans as highly developed animals or thinking biological machines, the perennialists see humans as one with the whole universe and its transcendent creator; humans are regarded as essentially divine (Grof 1984:4). Materialistic science is reductionist, seeking to alleviate human suffering by sociological and psychopharmacological means. The perennial philosophy, on the other hand, is far more spiritual, seeking to liberate the spirit of the person. Some contemporary perennialists thinkers, such as Bede Griffiths, affirm that western science and materialism has done much to alleviate physical suffering, but that often this advancement neglected genuine spiritual and emotional fulfilment (1989:279). Griffiths remarked that cultures such as those of the East, that have maintained the perennial philosophy, have had a much stronger emphasis on spiritual liberation (1989:279). However, their struggle was that they often failed to offer practical solutions for the problems of everyday existence. Clearly what is required is a combination of the positive aspects of the perennial philosophy with the positive aspects of western science in order to have a holistic existence, meeting the needs of body, mind and spirit (Griffiths 1989:281).

One of Wilber's greatest achievements has been the articulation of what he calls a "neo-perennialist" philosophy

... an integration of traditional mysticism (typified by Aldous Huxley's perennial philosophy) with an account of cosmic evolution that is in many respects compatible with that of the great Indian philosopher Sri Aurobindo. As a Buddhist, he believes that reality is ultimately a nondual union of Emptiness and Form, with Form being innately subject to development over time. Wilber's voluminous writings are ultimately attempts to describe how Form undergoes change, and how sentient beings in the world of Form participate in this change until they finally realise their true identity as Emptiness.
(http://en.wikipedia.org/wiki/Ken_Wilber#The_neo-perennial_philosophy, accessed 4 July 2005, 12h45).

Wilber concurred with Huxley's notion that an enduring philosophical system existed which viewed all reality as fitting into a "Great Chain of Being". This view maintained that all reality could be understood as interconnected, made up of multiple levels that range from the most basic, dense, forms of reality to the highest levels which are much more subtle. Within the Great Chain of Being Spirit is that un-nameable, transcendent, aspect of reality at the subtlest, or highest, end of the chain. On the other end of the chain, on the lower levels, one finds matter. Snyman, however, notes that in Wilber's neo-perennial philosophy, this

... spirit is, paradoxically, also said to be the all-pervading Ground of all the previous, less integrated, levels. Spirit is no further from matter than from its own inner reality. Put in terms that echo Christian Trinitarian thinking, God is within his own inner relational reality, equidistant to all that exists. (2002:72).

Wilber refers to the different levels using three terms interchangeably – structures, levels, and waves – as descriptors of these developmental, or cosmic evolutionary milestones. *Structure* indicates that each stage has a holistic pattern that blends all of its elements into a structured whole. *Level* denotes that these patterns tend to unfold in a relational

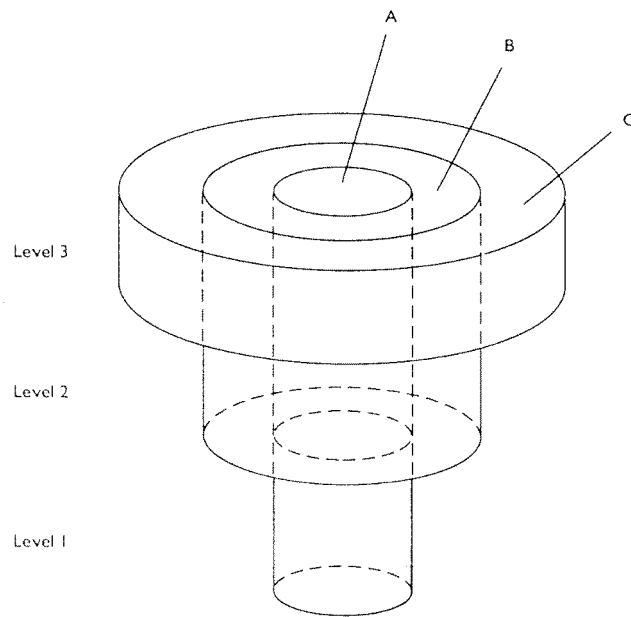
sequence, “with each senior wave transcending but including its juniors” (just as cells transcend but include molecules, which transcend but include atoms, which transcend but include quarks) (Wilber 2000b:1). In this regard one can notice a distinct similarity, and the direct influence, of Teilhard de Chardin’s understanding evolutionary cosmology as a movement of increasing complexity (see Chapter 2 above for more detail). Lastly, the term *wave* indicates that these levels are fluid and flowing. Wilber writes that,

... the senior dimensions do not sit on top of the junior dimensions like rungs in a ladder, but rather embrace and enfold them (just like cells embrace molecules which embrace atoms). These developmental stages appear to be concentric spheres of increasing embrace, inclusion, and holistic capacity. (2000b:1).

Within the human psyche, which is the area that most relates to this research, Wilber understands these aspects of being to be “levels of consciousness” that span the entire spectrum from subconscious to self-conscious to superconscious (cf. Murphy 1992, Wade 1996; Wilber 1986, 2000d). Wilber relates his understanding, as discussed above, directly to the notion of the “Great Chain of Being” (cf. Lovejoy 1964, Huxley 1946). However, his neo-perennial philosophy suggests that the aforementioned name is something of a misnomer. Since it is not a linear chain, but rather a series of enfolded spheres. He writes:

It is said that spirit transcends but includes soul, which transcends but includes mind, which transcends but includes body, which transcends but includes matter. Accordingly, this is more accurately called “the Great Nest of Being.” (2000b:1).

The diagram below gives a visual illustration of Wilber's understanding of this evolutionary and developmental concept where each successive stage includes the former.



(Figure 4-2. Levels of Evolution from Wilber 1995:115).

The diagram above represents three levels of evolution or development, each being a progression on the next, yet whilst progressing beyond the previous level each successive level enfolds the previous ones. In this diagram A represents the noosphere, B the biosphere and C the physiosphere (Wilber 1995:115-118).

In relation to consciousness and the human psyche Wilber most often refers to nine or ten basic levels (or waves) of consciousness. His divisions are variations on the traditional divisions in the Chain of Being, namely: simple matter, body, mind, soul, spirit. For a

detailed breakdown of Wilber's research in this regard see his 1980 publication *The Atman project*. Wilber commonly divides the spectrum into the following major levels: sensorimotor, phantasmic-emotional, representational, rule/role, formal, vision-logic, psychic, subtle, causal, and non-dual.

Wilber suggests that this perennial world-view, which was under-valued, and even largely destroyed, by Western reductionist and materialist thought, is re-emerging in prominence. In particular the 'new sciences' such a quantum theory are finding a great affinity to this interconnected evolutionary model. Snyman points to a quote by Ludwig von Bertalanffy, the founder of General Systems Theory, who says:

Reality, in modern conception, appears as a tremendous hierarchical order of organised entities, leading, in a superimposition of many levels, from physical and chemical to biological and sociological systems. Such hierarchical structures and combination into systems of ever higher order, is characteristic of reality as a whole and of fundamental importance especially in biology, psychology and sociology. (2002:73, cf. Wilber 1998:49).

Snyman further notes that many other prominent theorists from varying scientific disciplines concur with this notion, i.e.,

Rupert Sheldrake speaks of a "nested hierarchy of morphogenetic fields", Karl Popper of a "hierarchy of emergent qualities", Jurgen Habermas of a "hierarchy of communicative competence". If there is anything at all resembling a unifying paradigm in modern and postmodern thought, it is precisely this understanding of evolutionary hierarchy. (2002:73).

Thus, Wilber employs this concept to express his fundamental belief that reality, in its varying forms, can be represented by this notion of an ever complexifying hierarchical chain of being in which each successive level is more complex and subtle, including the preceding levels. In relation to Kosmic consciousness, to use Wilber's understanding of the term, the lower levels are less dense and conscious, and the higher levels are most conscious and subtle. A further important aspect of this evolutionary understanding of reality is that it is an attempt at representing something of the mystery of being, and is not a truth within itself. Snyman notes that truth is ultimately beyond names and forms and limited to no single expression (2002:74). David Bohm, the quantum theorist, noted that one could no more have a symphony that so encompassed all music that no further music would be necessary. Each symphony presents the truth of the beauty of music in part, but it could never encapsulate all of the subtleties and beauty of all that is music (cf. Bohm 1993). Similarly Wilber comments on this expression of reality:

We cannot make a statement about the *whole* of reality, because any conceivable statement is itself merely a part of that Reality, and thus the perennial philosophy, as a direct insight-union with that Reality itself, could never be adequately captured in any set of doctrines or ideas.... Radical Truth can be *shown* (in contemplative awareness) but never exhaustively *said* (in discursive language) all of which are partial. (Wilber 1998:59).

Thus, in summary, for Wilber the perennial philosophy is not a fixed all-encompassing truth, since the complexity and evolution of reality is still in process. Thus, all statements are approximations. They are expressions that refer to an ever complexifying reality. Hence, both expression and reality are evolving, and at each stage of evolution the previous statements and understandings are transcended and included into new forms,

new concepts, new symbols, grounded in the one single being of Spirit. What is important for this research, is that Wilber's neo-perennial philosophy points to the fact that there is a fundamental link between all aspects of being, the personal and the corporate, the interior and the exterior, matter and spirit. This approach is not a wholeness theory, which seeks to unify or link separated aspects of reality, rather it is holarchical in nature. Consciousness permeates every aspect of the Kosmos since all lower, more dense, forms of reality are transcended and included in the higher forms of reality. Thus, there is in truth one common consciousness at the highest levels, a non-dualistic, cosmic consciousness (which some Hindu sages refer to as Brahman, an ontological transcendent Truth) expressed in many varying, less complete, less complex, individual expressions (which some Hindu sages refer to as the Atman, an existential, incarnate expression of truths).

Thus, Wilber's neo-perennial philosophy offers an insight into reality that has its roots in ancient wisdom and its expression in modern thought and research. It is an integral approach that does not devalue past understandings, or previous levels, of reality in the process of evolution. It recognises that each developmental stage is adequate, yet as Snyman points out, "each successor is more adequate" (2002:75). The section that follows will discuss the framework, or model, within which Wilber places this philosophy.

4.2.3. A mapping of consciousness: Ken Wilber's understanding of consciousness as Holarchic.

The discussion up to this point has shown that in the perennial philosophy there is an understanding that all of relating can be related to different levels (what Wilber refers to variously as structures, levels and waves). Moreover, the necessary understanding that results from this that there is a goal associated with these different, all-encompassing levels; that is, an evolution towards the higher levels of Spirit. Thus, as this research suggests, the goal of all reality is to progress from the lower levels (matter, characterised by a lack of complexity, a low level of consciousness etc.) to the higher more subtle levels (what some have called Supra-mental, transpersonal, perfection etc.).

However, such a notion or hierarchy tends to destroy, or at least work against, the very characteristic nature of the higher levels, i.e. non-duality, equal value, and interconnectedness. It can easily be observed, in many spheres of investigation, that hierarchies tend to encourage ranking and domination that either disregard or marginalise lower levels in the hierarchy. Snyman suggests that as a result many scholars have opted for a model of heterarchy that is more egalitarian and plural in nature, in which all components have equal value. The struggle with such views is that they often present a phenomenological interpretation (often closely linked to postmodernist and deconstructionist approaches to language) of concepts and symbols used to express the reality being dealt with. An example of such an approach is that of Fritjof Capra who refers to the Kosmos as a “web of life”, employing the linguistic symbolism of a living,

interdependent, co-equal, organism (in which one part is not more or less important than any other since all parts are essential for survival), as opposed to the Newtonian view of reality as a complex law-bound machine, such as a clock, wherein certain parts are more essential to the functioning of the machine than others and each part can be seen in isolation (cf. Capra 1997). The struggle is that empirical studies, which underpin the hermeneutics of such discussions, suggest that hierarchy is an inherent aspect of reality (they do not necessarily support the mechanistic world-view, but there is a clear understanding of hierarchy, evolution and development) (cf. Bohm 1980 as a good example). Hence a simple avoidance of such hierarchies could lead to inaccurate, and even false, conclusions.

Wilber's aim is to seek to address both of these areas of concern. Snyman writes that

Wilber

... maintains there is some confusion over the actual meaning of hierarchy, and that [it] is critical to distinguish not only between normal and pathological hierarchies, but also normal and pathological heterarchies. (Snyman 2002:76).

The way in which he seeks to address these concerns is through a conceptual model and accompanying theory of Holons and Holarchy.

Wilber traces the etymology of the word holarchy from the Latin *hiero*, meaning sacred or holy, and *arch* which means governance or rule (1995:17). The notion of hierarchies, in theology, was most notably articulated by the sixth century Christian mystic Dionysius

the Areopagite who used the term to refer to nine celestial orders, with Seraphim and Cherubim at the top and archangels and angels at the bottom. In this scheme, the notion of hierarchy was intended to refer to higher levels of virtue and illumination that could be accessible through contemplative awareness. As philosophy and theology influenced politics and science in subsequent years this notion of hierarchy became common in a multitude of disciplines. Wilber sums up the contemporary understanding and use of the term:

As used in modern psychology, evolutionary theory, and systems theory, a hierarchy is simply a ranking of orders of events *according to their holistic capacity*. In any developmental sequence, what is whole at one stage becomes a part of a larger whole at the next stage. A letter is part of a whole word, which is part of a whole sentence, which is part of a whole paragraph, and so on. (Wilber 1995:17).

This notion applies not only to linguistic, or representative forms (such as writing or script), it is also widely accepted in empirical disciplines, such as biology and physics, that deal with the forms themselves. Howard Gardner gives the following example of such an approach in biology:

Any change in an organism will affect all the parts; no aspect of a structure can be altered without affecting the entire structure; each whole contains part and is itself part of a larger whole (in Wilber 1995:17).

Essentially, that which is a whole in one context, yet at the same time is a part of another context, is called a 'holon'. Wilber says that reality

... is not composed of things or processes; it is not composed of atoms or quarks, it is not composed of wholes nor does it have any parts. Rather, it is composed of whole / parts, or holons. This is true of atoms, cells, symbols, ideas. They can be understood neither as things nor processes, neither as wholes nor parts, but only as simultaneous whole / parts, so that standard “atomistic” and “wholistic” attempts are both way off the mark. There is nothing that isn’t a holon.... Before an atom is an atom, it is a holon. Before a cell is a cell, it is a holon. Before an idea is an idea, it is a holon. All of them are wholes that exist in other wholes, and thus they are all whole / parts, or holons, first (long before any particular characteristics are singled out by us). (Wilber 1995:33-34).

Contained in Wilber’s understanding of holons are two underlying conceptual frameworks. Firstly, the notion of inclusion in which each holon is at the same time a part that is simultaneously a whole. Secondly, such a view necessitates some concept of hierarchy, where parts are included into and superseded by a greater whole. Whereas the first concept mentioned above is understood as a ‘holon’, the second concept of a hierarchy of such holons is understood to be a ‘Holarchy’. Snyman sums up Wilber’s conceptual framework as follows:

The whole is always more than the sum of the parts precisely because it provides the means by which the parts are held together. Without this principle, one would be left with isolated parts, or only “heaps” instead of “wholes”. (Snyman 2002:77).

Thus, in large part, this framework deals with the charge that hierarchies are simplistic linear systems. The essence of such charges often relate to abuses associated with ranking things, and so empowering higher orders whilst disempowering lower orders. Wilber’s notion of holarchies stressed the fundamental interdependence of the elements in both ascending and descending order. Higher orders are fundamentally dependant upon the inclusion of lower orders. The value of a higher order is found in the value of

the lower orders. For example, one cannot have a moving poem without sentences, and sentences themselves require words, and one cannot have words without the letters of the alphabet. The sequencing of lower orders to higher orders is an indispensable aspect of the Holarchy. Each holon is both part and whole at the same time. The poem as a whole cannot exist without the words, yet the words cannot convey the meaning of the poem without being included into its poetic and expressive structure.

Thus the development of holons (or part / wholes) has to occur in stages, and these stages occur sequentially from lesser to greater wholes. However, this growth does not devalue or disempower any higher or lower stage of the Holarchy.

The examples cited above are very simple, linear, examples of the formation of one form of holon (e.g. letters, to word, to sentence, to poem). Holons, however, are seldom brought about in such simple formations. More often the holon (and its composite Holarchy) are complex interactions between vastly connected interdependent elements. I will extrapolate on the metaphor used above to illustrate this point. The whole outcome may be a desire for peace between two nations, a possible part / whole (or holon) of this outcome, amongst many other interventions (such as political alliances, trade negotiations etc.) might be that two prominent political families, one from each nation, are joined together in a common interest. One possible holon that could facilitate this (among many others) is the marriage of two persons. Their happiness is facilitated by the fulfilment of certain emotional expectations (e.g. attraction and love). A poem might be one small contributor to the success of this venture. Well structured sentences, composed with

carefully chosen words, made up of recognisable letters would be a further necessary element in fulfilling this aspect of the outcome.

Hence, if one simply looks at one single letter of the alphabet (which is the Reductionist, Mechanistic approach) one can understand very little. However, in a complex system holistic patterns tend to appear latter in the development of the holons, since they await the emergence of various parts that will eventually unify to offer a greater meaning and holarchic perspective.

It is important to understand that both the lower and upper levels have value in this approach. In fact, as Roger Sperry points out, the lower levels (which simply means the less holistic levels) have the power to influence the higher levels (the more holistic levels) through a process of “upward causation” (in Wilber 1995:20). In reference to the example above, if the poem is written in a language that has an alphabet which is not understood by the recipient, it may not have the intended impact and so may jeopardise the desired peace between the nations. However, if it is well crafted, and clearly understood it may evoke the necessary emotion in the recipient that opens the way to a far greater possibility of the desired peace. However, such an understanding necessitates a restoration of the balance of power by affirming that higher levels must also have some power to influence or control lower levels. This is what Sperry calls “downward causation” (in Wilber 1995:20). To return to our example, the fact that one family is English and the other Chinese, means that the poem (from the English son of one family to the Chinese daughter of the other family) needs to be written in Chinese. Thus the

symbolism, linguistic structure, and even the alphabet (at the lower levels) are affected by a factor on a higher level. This is an instance of downward causation.

Within a given level of such a hierarchical pattern the constituent elements also operate according to a heterarchy. Simply stated, no one element on that level is more important than any other since each contributes more or less equally to the health of that level of the system. Neither of the two children who have to fall in love is more or less important (on that level) than the other. Both need to fall in love and accept the prospect of marriage. However, a higher order whole, of which this lower order whole is a part, can exert an overriding influence on each of its components. The two fathers decide that their children are suitable for marrying each other. They instruct them to marry for the sake of uniting the families. They will then use this unity to lead their two nations towards peace, this is a higher order exerting influence over a lower order. However, if two young people from two warring nations simply decide to marry this will not necessarily result in peace between those two nations – the tail cannot decide to wag the dog.

Thus, a systems approach to this conceptual framework would suggest that *within* each level there is *heterarchy*. However, *between* levels there is *hierarchy*.

Thus, Wilber sums up that in any developmental growth sequence,

... as a more encompassing stage or holon emerges, it *includes* the capacities and patterns and functions of the previous stage (i.e., of the previous holons), and then adds its own unique (and more encompassing) capacities.... Thus, whatever the important value of the previous stage,

the new stage has than enfolded in its own makeup, plus something extra (more integrative capacity, for example), and that “something extra” means “extra value” *relative* to the previous (and less encompassing) stage. (Wilber 1995:20-21).

Wilber’s contention is that in its truest form a non-pathological heterarchy and hierarchy³² is actually a Holarchy. Since an overemphasis on heterarchy results, as is said above, in differentiation without showing their interdependence leaving one with “heaps” rather than “wholes” (since each is equal and so cannot be included ‘into’ another, i.e., which of two equals has the right to subsume another equal?). Whilst an overemphasis on the notion of hierarchy (in which greater, or more important levels subsume lower levels) leads to a domination paradigm which again divides the whole into separate non-dependent parts (cf. Wilber 1995:24). It is not surprising that many systems theorists from varying disciplines (political science, sociology, psychology, economics) have sought to move away from any hierarchical system that tends to rank and so inadvertently introduce domination hierarchies based on domination and compliance. The response has been the postmodernist shift towards heterarchy in an attempt to embrace radical pluralism, “which, in emphasising equal values, is perceived to be more egalitarian, more compassionate” (Snyman 2002:80). The struggle with this shift is that an acceptance of heterarchy as better than hierarchy establishes an actualisation hierarchy, whilst trying to maintain that all views are equal. Stated in this way, one can see that such an approach is self-negating and illogical, it destroys the very notion it proposes by making the proposal. Charles Taylor, in his book *Sources of the self: The making of modern identity* (1992),

³² A pathological hierarchy is one which seeks to divide, exclude and dominate, resulting in abusive power imbalances between the levels. Whereas a non-pathological hierarchy recognises the mutual interdependence of lower and higher levels, thus resulting in a shared power approach based on mutual interdependence between the levels.

has traced the development of value judgements that deny that they are value judgements. He points out that it is unavoidable for persons to make “qualitative distinctions” since we constantly operate in various contextual frameworks and settings, and these contexts are within ever complexifying contexts (holons within holons) (cf. Wilber 1995:26). Each context, by the very nature of it being contextual, or a context, constitutes “various values and meanings that are embedded in (every) situation” (Wilber 1995:26). In terms of the topic of this research project, those who either elevate the importance of one form of consciousness over the other (e.g. individual consciousness over cosmic consciousness, or vice versa), or seek to break down all distinction and inherent value in each of the forms of consciousness, are doing something that is both illogical and incoherent. Often such positions are necessitated by the perceived need to opt for a hierarchical understanding of consciousness i.e., this form of consciousness is of more value than that form. Alternatively, it can be forced by the wholesale application of a heterarchical understanding of consciousness i.e., whilst there are different forms of consciousness none is more valuable than any other. This forces such theorists into an “ethics of suppression” according to Taylor (1992:19,20). This is because one has to suppress one’s own value judgements (the informants of the decision) that a certain form of consciousness is either of completely equal or unequal value to another. In short, this incoherent process requires one to judge that no judgement has taken place. It is as a result of this that any view that favours a wholesale acceptance of either hierarchy or heterarchy is fundamentally flawed. Holarchy is thus the most sensible alternative since it affirms distinction and value. It differentiates without separating (i.e. it maintains wholes in heterarchy). It also values without setting up a domination paradigm (i.e., each

part / whole, or holon, has both intrinsic value as a whole in itself and relational value as a part of a greater whole).

With regards to this research project, the notion of Holarchy is of seminal importance. It allows for the recognition of the value of individual consciousness in all its forms. Yet at the same time, without devaluing it, it emphasises the necessity of locating that consciousness within the Holarchy of a far wider universal consciousness. Individual consciousness can thus be discussed as a holon (part of a whole, and at the same time a whole in itself) of this greater Holarchy of consciousness. This concept will be discussed in detail in chapter 5.

In summary then, Wilber's neo-perennial philosophy acknowledges its hierarchical nature and accepts that qualitative statements within the hierarchy are unavoidable. Yet, the right to make such qualitative statements is based upon a holistic view that posits the value statements within the framework of value that is carried from lower levels to higher levels (and the dependence of higher levels for some part of their value on the inclusion of uniquely valuable lower levels), and higher levels to lower levels (and their dependence of valuable lower levels being included into higher levels so adding value to these higher levels).

4.3. Holistic consciousness in relation to Ken Wilber's four quadrants of reality.

Teilhard de Chardin, the highly regarded theologian wrote the following concerning evolutionary theories of the Kosmos:

Things have their within. I am convinced that the points of view require to be brought into union, and they soon will unite in a kind of phenomenology or generalised physics in which the internal aspect of things as well as the external aspect of the world be taken into account. Otherwise, so it seems to me, it is impossible to cover the totality of the cosmic phenomenon by one coherent explanation (1970:52).

One of the fundamental weaknesses of much evolutionary theory is that it has tended to focus exclusively on the empirical, i.e., that which is observable and measurable, such as physical and biological development. For example, there are very many valuable studies of the physical and biological development of the brain, tracing its increasing complexity and neurological capacity over time. However, there is much less research on the 'interior' aspect of this holon. Such research would be considered phenomenological³³.

It must be said that an understanding of the emergence of complex triune brain, its neural connections and bio-chemical operations, cannot fully account for the development of its interior processes e.g., the move from producing concepts to producing multifaceted concepts and meta-conceptual frameworks, all the way to the complexity of the kinds of

³³ Within the context of this research the phenomenological method is based upon the philosophy of Edmund Husserl who pointed to this method of enquiry on the basis that reality consists of events and objects that are perceived and understood in human consciousness. They are thus not separate from human consciousness. See Tymieniecka (1991) "Husserlian Phenomenology in a New Key: Intersubjectivity, Ethos, Societal Sphere, Human Encounter, the Pathos", for a superb introduction to Husserl's phenomenology.

conceptual tasks that my brain is engaged in at the moment of writing this text.

Frequently when the ‘interior’ elements of this holon (the Holarchic development of the conscious brain) were investigated they were dealt with using the same empirical and analytical tools that were applied to the holon’s exterior. Snyman notes that “the sciences” have a marked tendency to reduce, or collapse, the interior into the exterior (2002:84). This has the result of devaluing and misunderstanding the importance of the interior in the overall development of this holon (i.e., the conscious brain).

Wilber suggests that scholars have tended to follow two approaches in the study of consciousness, broadly labelled as the objectivist and the subjectivist approaches (1995:118ff.). The objectivists, as the designation implies, deals with objects, external or material facts in order to give an account of subtle or unseen ‘interior’ realities. A good example of this approach in current thought can be found in Barrow and Tipler’s 1986 book *The anthropic principle*. Snyman summarises their objectivist approach as

...showing how the universe has been following powerful lines or fields of attraction – a relentless pressure, as it were – towards the creation of a fully self-conscious humanity. (Snyman 2002:85).

He also lists Thomas Aquinas’ famous argument for the existence of God within the objectivist approach (2002:85). Fundamentally, a large portion of Christian theology, particularly those elements that rely on natural revelation, fit into this approach. There is little doubt that such approaches have great value for theology. One of the clearest examples of this can be found in the writings of the apostle Paul who understood that God clearly revealed something of the interior mystery of God’s self and God’s will for

creation in the physical, material, world (cf. Romans 1:18-20). The fundamental difficulty with an overemphasis on the objective approach to reality is that it relegates subtler forms of being (such as spirit, and God) to the realm of unknowable and inexpressible mystery. As such, a corrective approach was developed, which has come to be characterised as the subjectivist approach.

“Subjectivist theorists and theologians begin not with quantifiable observations, but with the immediacy of consciousness itself” (Snyman 2002:85). Thus, those elements of consciousness that experienced and lived in one’s primary awareness – such as an experience of God, or the revelation of a spiritual truth, or a moment of enlightenment – form the basis of one’s approach to understanding reality. Such an approach to reality can be found in the philosophy of the Greeks (e.g. Plotinus sees God as “not external to anyone, but present with all things”) (in Pelikan 1990:529). And of course, the witness of the sages of the East, attest to such an understanding of God (numerous examples of such can be found in the accessible works of Abhishiktananda 1983, 1984 and Griffiths 1982, 1983, 1984, 1989,1995). The Christian mystics are another example of this approach in Theology. Meister Eckhart, Julian of Norwich, Dionysius the Areopagite, St John of the Cross, and Catherine of Siena, are just a few Christians who have sought to understand and express the mystical experience of God based on their inner encounter with God and God’s revelation to humanity (cf. Pelikan 1990:531).

In many senses there is a clear dualism between the approaches of the objectivists and the subjectivists, between the interior and the exterior. This found particularly clear

expression in the dualistic world-view of the West that made practical distinctions between essence and form, mind and body, morality and nature, transcendence and immanence, the sacred and the profane (Snyman 2002:86).

In philosophy, the divide between the objectivists and subjectivists seemed, to a large extent, to manifest itself in the differences between the Anglo-Saxon and Continental philosophers. The Anglo-Saxon philosophers³⁴ tended to apply the analytical, empirical, approach, in which knowledge of the world was immediate. The five senses were seen as the building blocks of our understanding of the world. Sensory data was impressed upon the blank slate of the mind to build up an understanding of all reality.

The Continental philosophers³⁵ declared that knowledge was mediated, not so much through the senses as, through innate *a priori* structures. These structures included elements of human makeup that could be understood through a study (or deconstruction) of the contexts and backgrounds that govern what a person is able to experience in the first place (thus sociological, psychological and anthropological studies were an important element in wrestling with knowledge). For example the place where a person lived, their background etc., determined the kinds of questions that would be asked. The type of question in turn determined to some extent the kind of answer possibilities that will be received.

³⁴ Examples of such approaches can be found in the works of Francis Bacon, John Locke, George Berkeley, David Hume (which was later refined by GE Moore) Bertrand Russell and Wittgenstein (Snyman 2002:85-86).

³⁵ Most notable here is Immanuel Kant, whose *Critiques* followed the reasoning of Descartes. Then, there were others such as Schelling, Spinoza, Leibniz, Hegel, Heidegger, Foucault and the contemporary Derrida (Snyman 2002:85-86).

Such theoretical approaches are not only evident in philosophy. In psychology, a field closely related to much conventional research in relation to consciousness, the objectivist approach resulted in behavioural studies, while the subjectivist approach led to the development of psychological schools such as the psychoanalytical, Gestalt and Jungian psychological approaches.

Wilber's integral philosophy seeks to derive hermeneutic value from holding both approaches in a dialectic tension. He suggests a non-dualistic structure for attempting such a task (cf. 1998:84 ff.). Having discussed in broad terms Wilber's approach to the dealing with exterior and interior structures through the application of a non-dualistic approach, it is necessary to deepen the discussion of consciousness in relation to his approach.

4.3.1. "A view from within"³⁶: Interiority and consciousness.

As has been noted above, Wilber contends that a holistic understanding of consciousness has to take cognisance of the exterior and interior factors, the parts and the whole, the lower and the higher levels. Sadly, much research into consciousness (such as the case of D'Aquili and Newberg 1999, 2001, Albright 2000 and Zohar 1991) has tended to focus almost exclusively on an objectivist understanding of consciousness. Very often such

³⁶ This title is taken from Chapter 4 of Wilber's book *Sex, ecology, spirituality: The spirit of evolution* (1995).

approaches deal only with the exterior and the lower levels, at the exclusion of the interior more subtle levels³⁷.

As a result of such “flatland³⁸” approaches to the study of consciousness, feelings, symbols, ideas, and experiences, are subjected to the same empirical analysis used for the holon’s exterior. Some theorists, who purport to be holistic, even go so far as ignoring consciousness³⁹ altogether which leads to their discussions being nothing more than an investigation of the exterior which seeks to make some tenable links to the interior (1995:110). A second common mistake is to seek to explain the whole Hierarchy of consciousness by only dealing with one particular level, or holon, at the exclusion of higher or lower levels. The integrative approach, as discussed above, affirms that parts are always whole (in themselves). Thus, in a Hierarchy one cannot seek to understand the parts without attempting to understand the whole.

³⁷ As an alternative, the development of therapeutic techniques such as narrative therapy have allowed for the expression of the individual subjective account of reality. Naturally, if one studies enough of these individual subjective narratives one should be able to discern the development or presence of a common paradigm or ‘master narrative’ that is common to all humanity. A popular example of this is to be found in the individual subjective narrative of the young girl, Anne Frank, that has proven to resonate with the ‘master narrative’ common to all humanity. What makes studies of such narratives valuable is not only the individual subjective narrative, or the objective sociological master narrative, but paying attention to both and relating one to the other.

³⁸ The notion of collapsing a holon to one level, or one quadrant, which will be discussed in detail in the next section, is a common mistake made by researchers of consciousness. For a detailed discussion of this see Wilber 1995:129-133.

³⁹ See Wilber’s discussion of Jantsch 1980 and Laszlo 1987 (1995:108 ff.). Whilst Wilber does not doubt the brilliance of these studies from an empirical perspective, he does offer significant critique of their method to apply the insights gained wholeheartedly to the ‘interior’. As will be discussed, Wilber believes that such approaches fall prey to “subtle reductionism” unless a different hermeneutic approach is not applied (1995: 129-133)

Thus, while it is true that all holons have certain basic characteristics⁴⁰ in common, one cannot hope to arrive at a picture of a holon by only studying a part of it. Moreover, according to Wilber any dualistic approach, which seeks to study only the interior, or exterior for that matter, will be an incomplete approach. The twenty tenets Wilber suggests help us to realise that a holistic approach to all aspects of a Holarchy are essential for a fuller understanding of its complexity in terms of both fundamental and subtle, or significant, elements or levels. Snyman says the following on Wilber's tenets:

These tenets are fundamental to all holons, including the least developed. However, since they are the most *fundamental*, they are also the least *significant*. Holons emerge, which means that on each new and deeper level, something is added to the whole on that level, something that is new and unexpected. This is the holon's characteristic of creative emergence, self transcendence, differentiation or increasing complexity that bequest to that holon significance. (Snyman 2002:88-89).

Thus, there is an important distinction between what is fundamental and what is significant. Here is an example of the difference between the fundamental and the significant that illustrates why it is necessary to seek to understand and study both. When *life* is injected into a holon, enabling it to do things that were not previously possible, such as reproduce, it is an important evolutionary shift. The holon is now *fundamentally* more capable of survival and life because of this new evolutionary level it has attained. In the same way when *consciousness* is injected into a holon it is enabled to do things that its predecessors knew nothing about, e.g. to think critically, to do mathematics, to enjoy art, or even to pray. Such new capacities give life (in Holarchic terms) a new,

⁴⁰ Wilber suggests approximately 20 common characteristics, what he calls the 20 tenets, of all holons. These characteristics are common to all holons and form Wilber's model of manifest reality (cf. Wilber 1995:35-78 and <http://www.integralworld.net/20tenets.html> accessed 8 July 2005, 16h07 and http://en.wikipedia.org/wiki/Ken_Wilber accessed 8 July 2005, 16h09)

greater, *significance*. These significant elements are evolutionary, they will cause an incorporation of earlier levels and a rise to a higher level, yet they are not fundamental. If they did not arise, or if in such higher orders significant aspects were destroyed (e.g. a person who sustains brain damage in an accident), life would continue, albeit at a lower Holarchic level. Breathing, eating food, and drinking water are *fundamental* to life. Without such activities life would cease. However, in their basic forms they are not significant. Snyman gives the following good example: “Wildebeest eat grass and drink water in the veld, but they do not pray to God: more fundamental, less significant” (2002:89).

The understanding is though, that a holistic understanding of the holon of human consciousness would need to take cognisance of both of these elements, the fundamental and the significant. With regards to the topic of this thesis, it is essential to understand that a mere objective approach to consciousness may be able to point to some of the fundamental aspects of individual human consciousness such as brain function (as was shown the previous chapter). However, human consciousness has many more complex and subtle elements that have to do with significance, such as memory, emotion, choice, reason. They are even more acute when it comes to self-validating aspects of individual consciousness. An understanding of consciousness at the centauric level will be much more integral and holistic than one at the mythic rational level, as we shall see. However, in order to garner as full an understanding as possible of consciousness at the centauric level one cannot skip the mythic relational level since it is more fundamental. These concepts will be discussed in detail below.

Snyman's summary of Wilber's understanding of the subtleties of consciousness in relation to approaches that investigate the interior and exterior, the subjective and the objective is a good one. He writes:

The key issue for Wilber is that consciousness itself is not merely tagged on to the end of a developmental sequence: matter – body – consciousness, like a step-ladder to higher levels. It is rather that each of these aspects develops within their own separate, yet interrelated domain. Each stage of development has its corollary within the other realms, but each is not reducible...[entirely] to another realm. (Snyman 2002:89).

In summary, some of the fundamental mistakes that are made in the study of consciousness are either to completely ignore the 'within' of nature and simply to assume that the 'within' is directly reducible to what can be observed and deduced externally (e.g. neural oscillations, chemical inhibitors or stimuli, language, intelligence, emotional reactions, etc.). This is most often a mistake made by purely empirical, objectivist, approaches to human consciousness. A more subtle mistake is to assume that consciousness is only present in the higher levels of a Hierarchy. This is a fairly common mistake among those who adopt a subjective approach to the study of consciousness. It is true that a fuller picture of consciousness will come from a better understanding of the observable and measurable aspects of the brain, body and context of an individual. This is fundamental to such a study. Accordingly, one will naturally gain a fuller perspective from a deeper understanding of the more subtle, significant, elements of the interior experience of consciousness as one progresses to higher levels of the Hierarchy. However, without including an understanding of every applicable level – of the

fundamental and the significant, the parts and the whole, the interior and the exterior, the measurable and the experiential – one can never hope to come to a holistic picture of the holon of individual self-validating consciousness.

Such an approach would naturally seek to address itself to every aspect of reality in relation to consciousness. Wilber has constructed a model which can aid one if doing such a complex task. The section that follows will first discuss the four existential realms that Wilber identifies. Thereafter it will go on to discuss these realms in relation to his theory of the Four Quadrants.

4.3.2. The Four existential realms.

Thus far I have been somewhat critical of the work of Rene Descartes. This critique needs balance. Descartes' central philosophical claim, *cogito ergo sum* (I think, therefore I am), is valuable and correct in that it recognises an essential truth, that the starting point for an investigation of consciousness is to be found in the individual. Wilber's theory, of course, would speak of consciousness not only in terms of the individual but of the holon i.e., the part / whole. Naturally, the earlier critique does need to be held in tension with this statement, an overemphasis on the individual to the exclusion of the Kosmos can have extremely negative and dualistic results.

In Wilber's book *Up from Eden* (1981b) he makes a significant investigation of individual consciousness building on the work of Jean Gebser (1985) and Jean Piaget (1976). Using the foundational works of these authors Wilber maps out the four epochs of the structural evolution of individual consciousness. One can clearly see evidence of Gebser's influence in Wilber's use of the terms archaic, magic, mythic and mental, which he employs together with some others, to describe the stages in which holons develop as they evolve along the different levels of consciousness.

However, it is essential to remember that holons have not just consciousness (as an all encompassing element of the interior reality). Each holon, as was shown above, has both an interior and exterior reality, an individual and a social aspect. The individual aspect of a holon generates its own particular and unique sense of space-time, law, morality, cognitive style, self-identity, drives and motivations, types of religious experience, and of course also pathologies. The social aspect of each holon also has evidence of development in levels. The structural levels in the social aspect of the holon correspond to those in the individual aspect. Thus the social world-views which are generated in each stage correspond with the individual consciousness of the holon at each stage. The social structures include the archaic, magic, mythic and mental world-views. Magic corresponds to preoperational thought, mythic to concrete operational thought and mental with formal thought (cf. Snyman 2002:90 and Wilber 1995:111-114 for a detailed

explanation of these categories.). These elements of the holon's interior can be found in both individual and social states (e.g. I think, we think, or, I am, we are).

The development of a holon's individual exterior form is quite easily identifiable, it ranges from atoms to molecules, cells to organisms and ends in the triune-brained neural organism. As is shown above, the development of a holon's social exterior can also be clearly seen in such exterior structures as families / groups to villages, nations to planets and even larger exterior structures such as planetary systems.

The interior of the individual organism develops from sensation and impulse to concept, then to concrete and formal operational thought to higher and further stages. In human evolution the correlation between the interior and exterior evolution sees the social growth of deeper and more encompassing world-views; magic, mythic, rational, and higher.

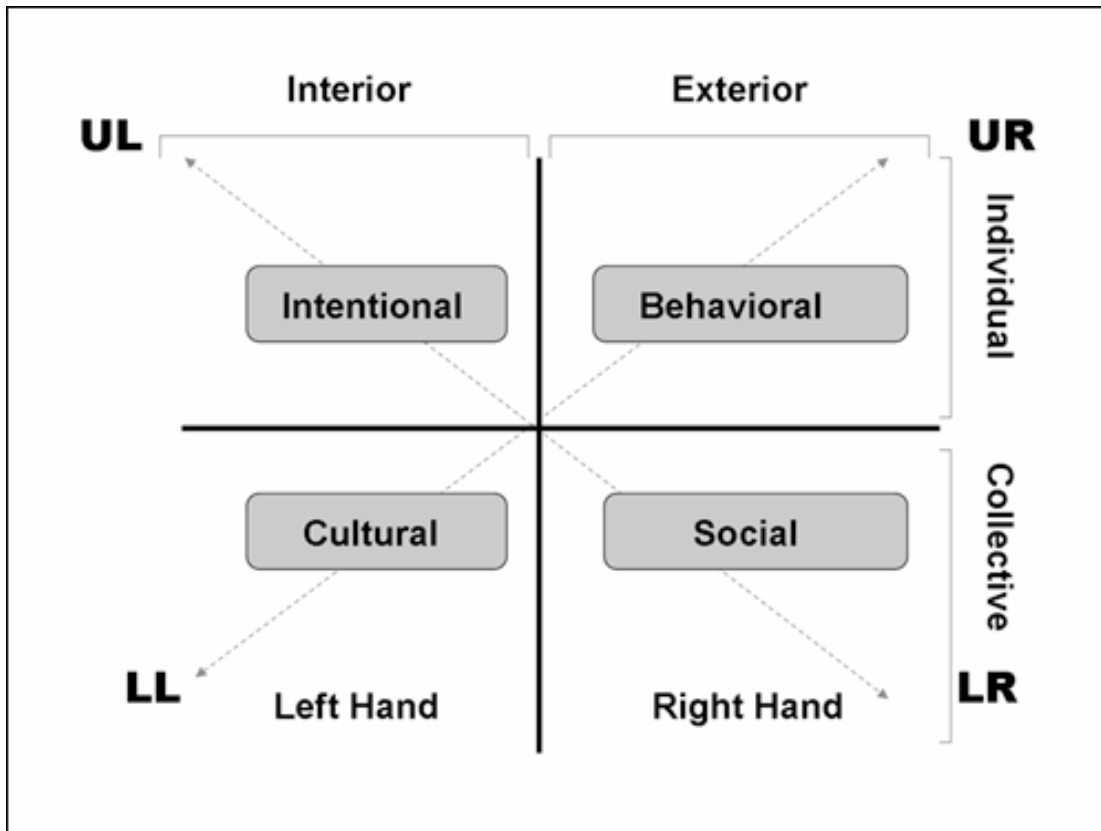
Wilber provides the following simple guide of correlations between the development of the interior and exterior of a holon (1995:113, see also the diagram in 4.3.3. on the next page).

Exterior	Interior
Atoms	Prehension (forms of rudimentary consciousness)
Cells (genetic)	Irritability
Metabolic organisms (e.g., plants)	Rudimentary sensation
Proto-neuronal organisms (e.g., coelenterata)	Sensation
Neuronal organisms (e.g., annelids)	Perception
Neural cord (fish / amphibians)	Perception / impulse
Brain stem (reptiles)	Impulse / emotion
Limbic system (paleomammals)	Emotion / image
Neocortex (primates)	Symbols
Complex neocortex (humans)	Concepts

In keeping with the concept of holons and Holarchy it is essential to note that each emergent interior or exterior development transcends and includes (i.e., operates upon) the information or structure presented by lower level holons and this fashions something novel in the interior consciousness stream or the exterior developmental, or evolutionary, structure. It is also worth noting that as the exterior structure evolves the interior structure deepens, much along the lines of what was discussed above in relation to Teilhard de Chardin's notion of the law of increasing complexity and deepening consciousness (refer to section 2.2.1 above for some discussion on this). Wilber sums it up by saying: "Since... evolution tends in the direction of greater complexity it amounts to the same thing to say that it tends in the direction of greater consciousness (again, depth = consciousness)" (1995:113).

Thus, Wilber's model understands there to be four primary existential realms: the interior, the exterior, the individual and the social, also labelled Intentional,

Behavioural, Cultural and Social (cf. Wilber 1997:4). The following diagram gives a pictorial representation of this view.



(from <http://www.jaygary.com/uploads/fourquads.gif> accessed 12 July 2005, 6h12. Adapted from Wilber's image 1995:122).

This leads to the next area of discussion that is pertinent to this research, Ken Wilber's notion of the Four Quadrants.

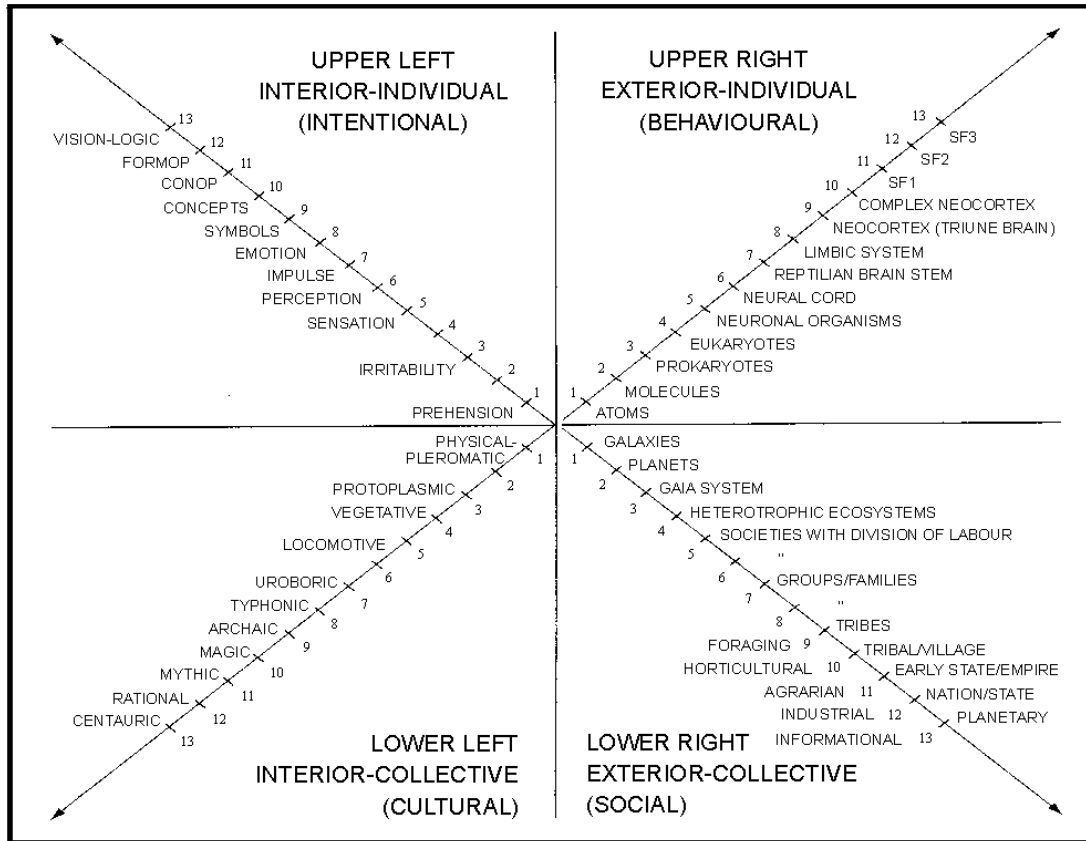
4.3.3. Ken Wilber's notion of the Four Quadrants.

Based upon his earlier work (particularly 1981b), Wilber developed a model that not only extrapolates the four existential realms, but also shows the fundamental interdependence and interrelationship between holons in the Holarchy at each level and in each existential sphere of the four existential realms. This theory is most clearly articulated in his work *Sex, ecology and spirituality* (1995).

It would not be possible to give attention to every aspect of his research in this regard within the scope of this research project. In short Wilber developed his schematic of the “four quadrants of existence” through examining,

... over two hundred developmental sequences recognized by various branches of human knowledge - - ranging from stellar physics to molecular biology, from anthropology to linguistics, from developmental psychology to ethical orientations, from cultural hermeneutics to contemplative endeavours - - taken from Eastern and Western disciplines, and including premodern, modern and postmodern sources.... I noticed that these various developmental sequences all fell into one of four major classes - - the four quadrants - - and further, that within those four quadrants there was substantial agreement as to the various stages or levels in each... [my theory] thus represents an *a posteriori* conclusion, not *a priori* assumption. (Wilber 1997:4).

The following more detailed diagram refers to the discussion that will follow:



(taken from Wilber 1997:4).

It is worth noting, before the detailed discussion ensues, that Wilber regards this, and other such, diagrams of the model as analogous. In particular Wilber is keen to impress that this view is not all encompassing. Furthermore, whilst it is necessary to represent the developmental aspect of this schema through the use of linear projection, he feels that the development of the quadrants might be more accurately described as a “branching tree”. “Each quadrant includes both hierarchies (or clear gradations) and heterarchies (or pluralistic and equivalent unfoldings within a given grade)” (Wilber 1997:4-5).

Returning to the diagram above, the upper half of the diagram refers to the development of individual holons (in their interior and exterior correlation), while the lower half of the diagram represents the development of social holons (in their interior and exterior correlations). The whole left hand side of the diagram (both individual – top, and social - bottom) represents how the holon looks from within, whereas the whole right side of the diagram (both individual – top, and social - bottom) represents how the holon looks from the outside. This schematic gives four quadrants, the Upper Left (UL), Upper Right (UR), Lower Left (LL) and Lower Right (LR).

The UR quadrant is perhaps the most familiar. It is the standard hierarchy which is commonly presented by modern evolutionary science: from the inception of reality (often referred to as the Big Bang) to atoms to molecules, to cells to organism etc., each of which transcends and includes its predecessor in an irreversible fashion. Cells include molecules, but not vice versa, molecules contain atoms, but not vice versa. The “not vice versa” constitutes the irreversible hierarchy of time’s evolutionary arrow. Thus, to repeat what was discussed earlier, each of these individual units is what Wilber calls a holon, a *whole* that is simultaneously a *part* of some other whole (a whole atom is part of a whole molecule, a whole molecule is part of a whole cell, and so on) (Wilber 1995:17 ff., 1997:5). The UR quadrant is thus simply a summary of commonly accepted research on the evolution of individual holons. With regards to an objective study of human beings, this quadrant represents behaviourism (1995:121). In other words, it represents that study of behaviour that can be seen. Wilber points out that since it can be empirically observed it has tended to occupy the focus of most empirical science (e.g., the study of the

behaviour of atoms, of gas, of fish, the *behaviour* of humans) (1995:121). Such investigations seldom venture into the murky and uncertain depths of the interior, which would be the Upper Left (UL) quadrant. This quadrant will be discussed in some detail further on.

Returning to the UR and LR quadrants (i.e. the exterior), it is worth noting that every individual holon always exists in communities of similar holons, in fact the very existence of individual holons often depends on the community of holons that, if nothing else, provides the background fields in which holons can exist (Wilber 1997:5). Erich Jantsch, in his ground-breaking book *The self-organizing universe* (1980) pointed out that every micro event, or individual holon in Wilber's language, exists embedded in a macro event, a community of collective of similarly structured holons to employ Wilber's terminology. Wilber cites Jantsch's example that when atoms were the most complex individual holons in existence, galaxies were the most complex collective (or social) structures; with molecules, planets; with prokaryotes, the Gaia system; with limbic systems, groups and families (cf. Jantsch 1980, Wilber 1997:5). Jantsch makes a further fascinating observation that while individual holons (UR) generally get bigger as they evolve (because they transcend and include their predecessors e.g., molecules are bigger than the atoms they contain) the collective holons (LR) generally get smaller (planets are smaller than galaxies, families are smaller than planets etc.) – the reason being that as an individual social holon gets more complex and possesses more depth, the number of holons that can reach that depth become fewer and fewer, and thus the collective becomes smaller and smaller. For example, there will always be fewer families and

individual humans, and fewer nation states than families. Wilber deals with the implications of this trend in some considerable detail in *Sex, ecology and spirituality* (1995).

The above discussion has thus dealt with the two Right Hand columns, the individual exterior and social exterior. What they have in common is that they are empirical phenomena which are located and exist within the sensorimotor worldspace i.e., they can be seen or heard, felt, tasted, smelled (in short, they can be experienced through the senses or their extensions). The holons of these two quadrants are thus objective and inter-objective realities, what holons look like individually or socially, from the outside. Whilst the UR would include such disciplines as Physics, the LR would deal with human Sociology.

However, as has already been pointed out, there is a vast body of evidence that points to the fact that every exterior has an interior. At this stage I will not discuss the Quadrant interrelations, since that will be done further on, however it would be fitting to give a similarly brief introduction to the two Left Hand columns of Wilber's schema of reality, namely, the Upper Left (UL) and the Lower Left (LL).

Wilber's research points to various types of evidence that suggests that every external also has an internal (1997:6, 1995:122-125). Whilst there is little contention about such evidence, there is endless debate about how 'deeply' these levels of interrelation between exterior and interior can stretch, particularly in relation to the quality of depth of

consciousness at successive deepening levels i.e., how “far down” one can push such prehension (forms of rudimentary consciousness) (1997:6). Wilber comments on this saying that Whitehead

... pushes it all the way down, to the atoms of existence (actual occasions), while most scientists find this a bit much. My own sense is that, since holons are ‘bottomless, how much ‘consciousness’ each of them possesses is an entirely relative affair... the whole point of the hierarchy of evolutionary emergents of apprehension is that consciousness is almost infinitely graded, with each emergent holon possessing a little more depth and thus a bit more apprehension. However much ‘consciousness’ or ‘awareness’ or ‘sensitivity’ or ‘responsiveness’ a tree might have, a cow has more; an ape has more than that and so on. (Wilber 1997:6).

Hence, the UL quadrant represents the interior of *individual* holons. This quadrant is the interior form of the individual with each level corresponding with successive points on the right. With reference to human beings the UL quadrants would contain all of the interior individual sciences such as psychoanalysis, phenomenology, mathematical theory and spirituality. Yet as always, every individual holon exists in *communal relationships* with other holons of a similar depth, which is represented in the LL quadrant. The LL deals not with individual behavioural patterns, but rather with interior social systems. These may include such sciences as sociology, politics, cultural studies and cultural and religious formulation. For example, in relation to human consciousness, it is most commonly agreed that humans possess not only a subjective space (Upper Left) but also certain *intersubjective* space (Lower Left). The two scholars who are most notable for carefully investigating this particular area of consciousness (i.e. the relation between the evolution of human consciousness (UL) and the emergence of cultural world-views (LL))

are Michel Foucault and Jurgen Habermas. Wilber outlines their research in his book *Up from Eden* (1981b).

Thus in summary of the schema of holons, the Upper half of the schema representing the Upper Left and Right, refers to individual holons. The Lower half of the schema representing the Lower Left and Right, refers to collective forms. The Right half refers to exterior and objective aspects of holons, and the Left half to their interior and subjective forms.

Having sketched in outline the fundamental functioning of the four quadrants it is necessary to move on to discuss the interrelations between the four quadrants.

4.3.4. The interrelations among the Four Quadrants.

Wilber illustrates the interrelations between the different quadrants, often referring to them as domains, by using the example of a single thought, namely, that of going to a grocery store (1998:11 ff.).

When the actual thought takes place, there are certain empirically measurable changes in the physiology and chemistry of the brain (increased dopamine, change beta wave patterns etc.). This is the UR domain. One's interior apprehension (that is the UL domain) of the thought takes the form the experience and association of images and symbols that give the thought meaning. Most current research gets stuck here. Because

one can measure and perceive changes in the physical aspects of the brain, some have sought simply to reduce meaning into measurability (i.e. the experience itself is simply collapsed into a chemical and bioelectrical change). The problem is though, that the thought itself (UL) cannot be reduced entirely into the UR quadrant without remainder. The thought of going to the grocery store is a thought, and not merely an experience of dopamine! Further adding to the holistic nature of the thought is the individual thinker's relating of the images and symbols of the thought to their social and cultural background (this occurs in the LL quadrant). Snyman notes that for the San Bushman, the need to find food would be expressed more appropriately in the need to track and hunt a wild animal, as opposed to the modern urbanite who may associate it with finding an elusive parking spot outside of the local McDonalds (2002:93).

The vast networks and contexts of one's cultural community serves as the intrinsic background in which the thought arises, and shapes thought itself in the life and upbringing of the thinker. (Snyman 2002:93).

Furthermore, it has to be borne in mind that culture itself has material components, just as thoughts have material components (e.g., the individual thought (UL) is related to the individual brain (UR)). For the original thought itself to be possible certain social, external, realities need to present (e.g. not only the culture of fast food dining (social inward – LL), but also the technology and structures that make such thoughts possible, such as transport, roads, restaurants, menus, etc. These are all LR expressions of the holon since they are social, external, necessities). Wilber refers to these LR elements as the “social action system” and “concrete material components” which are necessary for

the actual world-view within which the thought arises to exist. Snyman gives the following very clear example.

Thus, I might be among Bushmen hunters, watching their interaction during the hunt. While I may well be physically in their society (LR), even listening to their language, unless I have learned the dialect I will not understand what is meant by the speech and symbols used, thus I am not within their culture (LL). (Snyman 2002:94).

Wilber's concludes his own example of the operation of the four quadrants in saying,

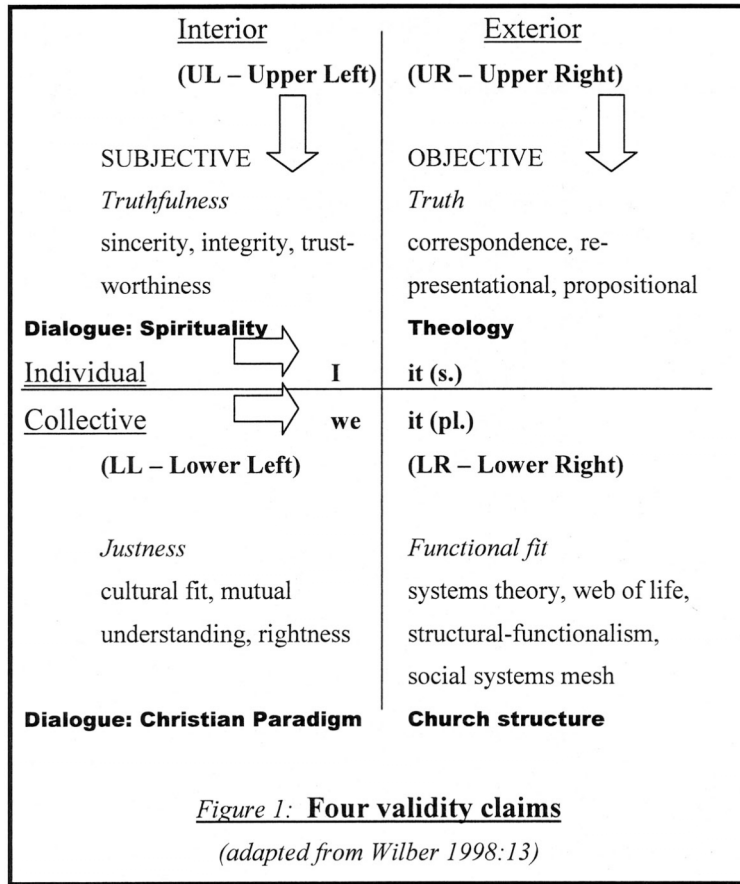
... my supposedly 'individual thought' is actually a phenomenon that intrinsically has (at least) these four aspects to it – intentional, behavioural, cultural, and social... the social system will have a strong influence on the cultural worldview, which will set limits to the individual thoughts that I can have, which will register in the brain physiology.... They are all mutually determining. They all cause, and are caused by, the others, in concentric spheres or contexts within contexts indefinitely. (Wilber 1998:12)

The importance of this interrelated understanding of consciousness cannot be emphasised strongly enough in relation to the topic of this research project. As will be shown at a later stage, it simply is not possible to seek to 'collapse' all elements of consciousness into a model of human consciousness, since such modelling deals at best with the right hand elements of the domain, at worst it deals only with a collapse of the Upper Left into the Upper Right.

4.3.5. Validity claims in relation to Wilber's Four Quadrants.

Understanding how one makes claims of what is valid is an essential step towards the construction of a model that can critique individual self-validating consciousness.

Previously it was suggested that there were two basic approaches to truth, the subjective and objective approaches. Most of philosophy, science, and even theology, has operated from one of these two streams (the empirical or the phenomenological). However, Wilber's theory suggests that there are at least four fundamental areas from which validity claims can be made, each accumulating and validating data from within its own domain. That is, each domain has its own epistemologies, ways of knowing, or kinds of truth.



(Diagram labelled “Figure 1” taken from Snyman 2002:95, adapted from Wilber 1998:13 ff.).

We start with the quadrant that is most often the starting point for validity claims, the Upper Right quadrant. Wilber observes that this domain, with its emphasis on the individual exterior of holons most often looks at truth that is *representational*, *propositional*, or *corresponds to*. In this regards something is said to be true if it matches observable facts, or if it is an accurate representation of that which is studied, or closely corresponds to it.

The Upper Left quadrant deals not so much with what is observable (i.e. the facts) but with the truthfulness of the one who is making the claim or statement. Snyman notes that “the only way it is at all possible to understand the interior states of another is through dialogue and interpretation” (2002:96). Thus one is not only interested in the observable behaviour, but in unobservable aspects as well i.e., feelings, state of mind, desires, joy and fear. Thus, validity claims within this quadrant rely very much on *trustworthiness* and *sincerity*. With regard to the topic of this research it is worth noting a comment that Snyman records about validity claims in this quadrant.

Of course, there is always the possibility that the other may be lying to themselves, or otherwise misinterpreting their subjective condition. This brings one into the entire field of depth psychology. (Snyman 2002:96).

Hence, a thorough understanding of the sincerity and truthfulness, as well as the meaning and complexity of an individual’s interior state offers some significant insight into his or her validity claims about truths from this quadrant. Thus, the validity claims in the upper quadrants have to do with the individual holon. Statements of truth may begin with “I see...” (Upper Right – individual exterior), or, “I feel...” (Upper Left – individual interior).

The Lower Right quadrant deals with the social exterior. This is a communal objective position. It locates the truth claim of an individual within a much larger, intermeshing system. Truth in this quadrant is related to a *functional fit* (i.e. does what this individual claims as true relate to general observable truth as seen and experienced in the much

broader society?). The validation of truth is done in relation to elements such as systems theory, web of life, structural-functionalism, social systems mesh.

The Lower Left quadrant (interior social i.e., cultural) does not attempt to show how holons function together as an observable functional whole, but attempts to understand and express how subjects fit together in “acts of mutual understanding” which in turn creates the “intersubjective space of commonly shared background contexts and worldviews” (Snyman 2002:96, cf. Wilber 1998:16-17). Snyman uses the following example: not only does a Christian share the same physical space with other Christians (Lower Right), there is also a sharing of the same intersubjective space of mutual recognition that is shared with other Christian believers (Lower Left). “Within the intersubjective space, ways have to be found to fit not only bodies, but minds together, recognizing and dealing creatively with the differences in culture, theology, ethics and morality” (Snyman 2002:96).

Thus, as can be seen from the above discussion each quadrant has its own type of evidence and data that is used to decide whether something is true or not true. This is what Wilber refers to as each quadrant’s “fallibilist criteria” (Wilber 1998:18). Within such a holistic schema there are at least three necessary factors for making judgements in relation to an understanding of the truth. These are the ‘instrumental injunction’, the ‘intuitive apprehension’, and the ‘communal confirmation’. Thus, before anything can be understood and judged as valid or not valid, some things need to be done. If one truly wants to understand and judge the teachings of Christ’s sermon on the mount, one would

first need to learn to read the relevant texts from Matthew's Gospel. This is the fulfilling of the necessary injunction. Having read the text some realization of the meaning of the sayings of Jesus can begin to dawn (intuitive apprehension). However, one's interpretation and understanding needs to be confirmed as valid or invalid by a community that is regarded as adequate, or the authority, in this field.

The empirical scientific method which concentrates almost exclusively on the Upper and Lower Right quadrants has, in the West particularly, been regarded as the most valid and useful element of knowledge. There is some strength in the understanding that knowledge should have a sound grounding in experiential and quantifiable evidence. However, it cannot be denied, as Schrödinger's Cat Paradox pointed out (in Greenstein and Zojac 1997, and cf. Schrödinger 1992), that the individual is always part of the experiment. The moment I observe something I have already altered the outcome of the data. In some sense it is argued that there is no such thing as truly objective research. The introduction of test conditions, equipment, and even the desired outcome of the investigator are all an impression of the interior on the exterior. Thus, the second factor of knowledge accumulation, that is, intuitive apprehension of data that is immediately available to the researcher, is of equal importance. Thomas Kuhn's much misunderstood notion of paradigms emphasises this fact. A paradigm is not merely a concept. It is in fact an actual practice or series of practices that acts as a means of gaining new, or different, data (in Wilber 1998:86). Snyman summarises that the "questions, quite simply, determine the very possibilities of the answers" (2002:97). The third factor of knowledge referred to above is that aspect of being able confirm or reject something as

true or not true. Karl Popper emphasized the importance of the notion of falsifiability (cf. in Wilber 1998:87). This is necessary in order to prevent the representation of individual dogma as truth without verification within the wider social context. Unfortunately though, Popper and Kuhn insisted that these factors were limited only to the sensible realm (i.e. that which could be clearly observed, quantified, and understood). They gave little credence to the fact that in addition to sensory experience there are also intuitive mental experiences, and particularly, spiritual experiences which are hugely defining in terms of validity claims.

Thus, the process of injunction, illumination and confirmation (falsifiability) applies not only to the sensible, empirical, scientific realm (i.e. that truth most often associated with the Upper and Lower Right quadrants), but also to the *intelligibilia* and *trancedelia*⁴¹.

Wilber insists that we cannot solve the

... absolute / relative problem empirically, using the eye of the flesh and its sensibillia; nor can we solve it rationally using the they of the mind and its intelligibilia. The solution rather, involves the direct apprehension of transendelia, which are disclosed only by the eye of contemplation and are most definitely verifiable or falsifiable in that domain, using what are in fact quite *public*- procedures – public, that is, to all who have completed the injunction and disclosed the illumination (1998:89).

This understanding is of fundamental importance to the outcome of this research project that will show that any model of self-validating consciousness needs to take cognisance of evidence from all quadrants at varying levels. Thus, falsifiable spiritual evidence for

⁴¹ These are terms that Wilber uses to denote the mode of ‘knowing’ within the realm of spirituality as opposed to *sensibilia* and *intelligibilia* (referred to as the eye of the flesh and the eye of the mind) in the empirical realms (cf. Wilber 1983b, 1998).

the validation of an individual's spiritual consciousness is as seminal as sensory data in validating a consciousness claim.

4.3.6. Common Reductionist pitfalls in relation to the four quadrants.

Reductionism is a common mistake among theorists who seek to make statements concerning a whole aspect of reality by only investigating certain parts. Wilber identifies two basic forms of reductionism (1995:141, 409 ff. and 1998:20 ff.).

Firstly, there is what he classifies as gross reductionism. This approach is subjective, seeking to explain reality in terms of its physical parts (such as atoms) and the metaphysical laws and rules that regulate these physical parts (such as physics).

Secondly, Wilber points to a far more subtle, yet pervasive, form of reductionism. This subtle reductionism, Snyman notes, seeks to reduce everything “in both left hand Quadrants to their empirical correlates in the right hand Quadrants” (2002:99). Mind becomes brain, praxis becomes technology and so on. He further notes that it is precisely because holons have an exterior, a physical, quantifiable, reality that subtle reductionism can be so convincing. Even in the disciplines that seek to encapsulate the whole of reality this subtle reductionism is evident. One need only look at the language used in speaking of reality, very often the neuter is applied in the form of a non-personal pronoun i.e., the word ‘it’. There is very little discussion of beauty, depth, spirit and emotion. Thus, Snyman notes, many of the holistic, systems orientated, sciences are simply a subtle reductionism giving a “flatland of interwoven ‘its’” (2002:99).

The simple fact is that if any quadrant is ignored in a system, the disregarded truths often reappear as plain contradictions. Wilber names these subtle reductionisms that plague theorists as:

- *Scientism* – it refuses to concede the interdependent reality of both left and right hand quadrants. Thus, everything that cannot be detected with the senses is simply ignored⁴².
- *Cultural constructivism* – which attempts to deny any form of objective truth at all. Here all truth is reduced to the lower left quadrant, suggesting that all truth is culturally and linguistically relative, thus there can be no universal truth.

However, if there are no universal truths how can this statement itself be true?

This is simply a performative contradiction. Wilber writes that aspects of knowledge are indeed “intersubjectively constructed, but those constructions are set in networks of subjective, objective and interobjective realities that *constrain* construction” (1998:25). It has to be conceded that culture itself is to some extent constructed upon a-priori sensory inputs and possibilities that prevent purely arbitrary assertions. For example, one cannot say that people grow younger is an arbitrary statement that has no validity in relation to the truth of the experience of age and reason.

- *Aesthetic reductionism* – a set of theories that is loosely associated with hedonism. It considers that whatever the individual considers to be most worthy,

⁴² However, as Thomas Kuhn (1970) pointed out, all scientific facts are embedded within cultural and social paradigms. The very assertion that truth is empirical is an intersubjective assertion.

most beautiful, or likeable, is the truth. This collapses all the quadrants into the upper left where one's own subjective inclinations become the final truth.

Wilber suggests that one of the greatest achievements of the Enlightenment was the differentiation of the three realms of being as I (upper left), We (lower left) and It (where 'It' includes both right hand columns of the four quadrants) (1998:24 ff.). As a result of this Wilber sees the task of post-modernity, in relation to modernity, not simply as replacing atomism with holism, but to integrate the "flatland holism with the depth of I and the community of we" (1998:145). This task is urgent since there is a great deal of subtle reductionism in the dualistic world-views of both modern atomism and postmodern holism. Wilber's Holarthic approach, of the four quadrants, attempts to include truth that is derived from each of the four quadrants, the empirical (right hand), constructivist (lower left) and aesthetic (upper left) by "situating them in a truly inclusive embrace" (Snyman 2002:101).

4.4. Conclusion.

From the discussion in this chapter one can already begin to see that a purely mathematical emulation of consciousness is simply a flatland reductionism of upper left quadrant into the upper and lower right quadrants. Thus, formulations of consciousness need to be located in a far more encompassing approach to conscious reality.

Consciousness is never only an inward reality, neither is it only an individual experience. However, as this research has suggested numerous times, emulative consciousness does

not need to be ontologically valid (i.e., an accurate reproduction of true consciousness). According to the Church-Turing thesis, and the Turing test⁴³ all that is required is that the emulated consciousness is sufficiently convincing a reproduction to cause an observer or interrogator to be incapable of differentiating between the conscious person and the emulated version of that person.

What Wilber's Holographic model clearly shows is that true consciousness, and thus effective consciousness validation, requires more than just a subjective reflection on individual interior experience, or individual exterior sensory reality. Moreover, it is also not sufficient to simply apply an objective observation of collective interior culture as expressed by the individual in a group, or collective exterior social interaction with other persons or surroundings, to validate true individual identity and consciousness.

Whilst these approaches may offer some tacit knowledge and insight into the identity of the person, true identity requires a far more rigorous and interactive engagement with the conscious being (not just a passive observation and reflection on static knowledge gained from the person's subjective experience, or from observing the person objectively).

In the next chapter the African theological model that will be discussed, to consider the conundrum of self-validating consciousness in strong artificial intelligence, will need to apply this complex intersubjective expectation creatively and concretely.

⁴³ See a discussion of these concepts in Chapter 2, in particular refer to 2.2 and 2.3.5 above.

Chapter 5

5. An African Theological contribution to the debate on self-validating consciousness in Strong Artificial Intelligence.

If I am what I am because you are what you are, and you are what you are because I am what I am, then I am not I and you are not you – Rabbi Hillel

Umuntu ngumuntu ngabantu (A person is a person through other persons) – African philosophy of personhood.

5.1. Introduction.

John Mbiti, writes the following telling line in the preface of his magnificent book *Concepts of God in Africa*, “African peoples are not religiously illiterate” (1970:xiii). This statement would seem to express an element of common sense that should be evident to all. However, the reality is that much scholarly pursuit has assumed that the ambit of the world’s insight and wisdom comes from Europe and America. This can, of course, be evidenced in most areas of research and thought, including theology.

There can be no doubt that Africa has a valuable treasure chest of insight to offer to the world. The realisation of the value of insight from African scholarship is becoming more commonly acceptable and sought after in the academy.

This chapter will show how a particularly African approach to the concepts of being and identity can add richness to the debate of consciousness and personhood. It is the

intention that the work contained in this chapter would open up new avenues of enquiry and research, legitimise a new vocabulary, and possibly even offer some insights into long perplexing aspects of consciousness validating approaches that have been almost exclusively offered from the Western, scientific and epistemological approach to human being.

The chapter will start by supplying some reasons why an African approach can add unique value and insight into the scholarly debate on consciousness, particularly as it relates to theological understandings of human identity and personhood. Having made this point, it will be necessary to present a reasoned justification for the notion of ‘African’ thought and an ‘African’ approach to consciousness. What is it that makes a particular notion African? Can one even speak of African thought *per se*? Next the chapter will start to present some of the unique elements of such thought, particularly as these relate to African creation theology and the African notion of personhood, most commonly associated with the notions of *ubuntu*, or *botho*. This later concept will need to be discussed in some detail since it is often idealistically presented as the primary locus of African notions of human ontology and particularly human identity within that broad sphere. Having presented all of these foundational elements, the chapter will get to the heart of the matter in relating the discussed elements of an African theological concept of human being and identity, to the crisis of identity that is presented in the philosophical hypothetical (which was presented and discussed in some detail in both Chapters 1 and 2 of this research). The outcome of this will be a theological model, from

an African theological perspective, that can contribute towards the scholarly debate of consciousness studies and human identity.

5.2. Why an African approach to consciousness?

The preceding chapters have clearly shown that personal identity is intrinsically linked to the individual person's ability to make meaning of both internal and external realities that come to bear on him or her. In particular, the notion of personhood – who I am – is fundamentally related to both my experience of being my self and the context in which I am my self. Du Toit writes,

It is part of human nature to question human personhood. What it is to be human, and it is that which constitutes personhood that belongs to borderline questions like 'Why are we here?', 'What are we destined for?' and 'What should we be doing?' We cannot respond to these questions by simply referring to metaphysical, ideological, philosophical or religious convictions which exclude the way our physical and cultural environment codetermine the views we hold. Significant changes in our physical or cultural environment inevitably pose new questions to personhood and modify the answers we give. (2004:1).

Whilst du Toit's comment seeks to make the specific point that recent developments in technoscience have impacted the questions that human persons ask about themselves, the central theme of his argument is incredibly valuable, namely, that contextual and environmental elements have a significant impact upon the shaping of a person's unique identity and consciousness of being a human person. In other words, I cannot be human without being me, moreover, I cannot be me without taking into account the environment and context within which my identity is shaped.

As a person who was born on African soil, whose bones were shaped by the nutrients of that soil, whose thirst has been quenched by African waters, whose mind has been shaped by African concepts, and whose life is lived within the rich tapestry of Africa, the question ‘who am I?’ has some unique elements that inform it. I am the son of African parents. I am a father to an African child. Even though I am a Caucasian I do not relate to the world, and other persons in that world, in the same manner that my European ancestors did. I am African, Africa has shaped who I am. More accurately, the “meaning-giving horizon” that gives my thoughts and actions significance is fundamentally an African horizon (du Toit 2004:1).

The aim here is not to be overly idealistic or romantic of the African context, but rather to make a seminal point that identity is fundamentally linked to context. In short, it would not be possible for a person in my context to shape his or her understanding of identity by using exclusively western, North American, or European descriptors and frameworks. Whilst notions of ‘being’ from these contexts may offer valuable insight into being ‘me’, they will fall short in one crucial area, they are fundamentally a-contextual. Thus, at some low level, they may offer insight into my being, but true identity would mean moving beyond those descriptions towards the contextually valid elements that define my identity from within the African context. The realities they present are significantly different from that which I experience as real. It is not that they are not valid, but simply that they lack fundamental and universal credibility.

This has been the crux of the struggle in studies of consciousness. Both epistemological and phenomenological approaches to consciousness and identity theory have sought to provide universal categories for human being and consciousness that would be able to be applied universally to the question of human identity. Whilst these contributions have been valid and offered incredible insight, they cannot be considered as universally applicable. The African person needs some insight from Africa.

Moreover, this section will show that just as models of identity and consciousness from other contexts can offer some value and insight in Africa, so the African approach can offer some significant value and insight in different contexts by virtue of the fact that it taps into a common fundamental experience of being human.

Thus, the section that follows will present in some detail the reasons why an African approach to consciousness and identity is so important for this debate, and how it can offer value for those in the African context and further afield.

5.2.1. An ‘old voice’ that is seldom heard.

The first reason why an African approach to the dilemma of self-identity, and self-validating consciousness is important is because this voice is seldom heard in the arena of this particular debate. As the section above suggests this is problematic for persons who struggle to express notions of identity within an African context, since so much of the debate is fundamentally infused with Western notions of identity and self.

However, African perspectives are not only of value for Africans. The African perspective has a Universal validity both because it is fundamentally rooted in the concepts of ‘humaneness’ and ‘human dignity’, which are common to all human beings, and because African concepts of identity and consciousness are still strongly connected to perennial and primal religious categories that were dominant in all societies before the influence of the age of enlightenment sought to banish such notions from the scientific and religious arenas to the circle of ‘myth’.

A most interesting fact, recorded by Balcomb, is that even Descartes, the father of modern Western individualism and dualism, lived and operated in this pre-rational state. (2004:59). The discovery of Descartes *cogito ergo sum* (which is discussed in Chapter 2 above) came about as a result of “a day time vision... and... three dreams” (Tom Sorel in Descartes 1994:xix). Balcomb comments on the surprise with which many modern scholars encounter this little known fact about Descartes,

This is probably because we cannot conceive of the father of modern rationalism coming to his ‘revelation’ through visions and dreams! Yet it tells a story about the way human beings used to view the world and themselves before the Cartesian revolution. Descartes’ ‘discovery’ about himself took place in the context of a world-view that was totally different from the world-view that developed largely as a consequence of his discovery. The primal world-view had been in existence, in one form or another, from the earliest records of *Homo Sapiens sapiens*, in other words from the upper Palaeolithic period, about 35 000 years ago (2004:59).

All human life was informed and shaped by this ‘alternate reality’ (which, as we can see, was in fact the most common form of reality). “All life, economic, social, and religious,

[took] place within and interacted reciprocally with [this] specific conception of the universe” (Lewis-Williams 2002:209).

Balcomb points out that one of the fundamental problems of dealing with consciousness from a purely rational point of view, whilst ignoring the abovementioned integrated perspective on reality, is the problem of disengagement (2004:60). Gunton describes disengagement in the following manner:

Disengagement means standing apart from each other and the world and treating the other as external, as mere object. The key is the word *instrumental*: We use the other as an instrument, as the mere means for realizing our will, and not as in some way integral to our being. It has its roots in the technocratic attitude: the view that the world is there to do exactly as we choose (1993:14).

Clearly such an approach to reality is fraught with flaws. Balcomb points to Gunton’s contention that Descartes destroyed the notion that the “social order... [is] rooted in some way in an insight into ... the order of being as a whole”, and that “without a philosophy of engagement we are lost” (1993:15, quoted in Balcomb 2004)⁴⁴.

Hence, one can clearly see where African thought, which still has strong links to primal and perennial reality, offers a valuable and insightful reminder to proponents of this debate that human identity and reality cannot be fully expressed in a context of

⁴⁴ Balcomb goes on to trace a lineage of Western scholars who have sought to return value to this ‘alternate’ primal, non-dual, reality that gave shape to so much of Western thought and religion. These include Husserl, Macmurray and Hopper. Hence, whilst such notable contributions may not have widespread recognition in the mainstream debate of consciousness and identity, there is nonetheless a significant scholarly recognition of the necessity of taking such primal perspectives into account in formulating a holistic picture of the human person in relation to other persons, creation, and the spiritual realm. See Balcomb 2004.

disengagement. A primal perspective of reality shaped even Descartes philosophical ruminations.

A second area in which African thought offers valuable insight into the debate of individual conscious identity is that of human relational systems, as they shape identity and have ontological validity (not just as an external expression of internal phenomena, but as real categories of human-being). Macmurray pointed out in a published version of his 1953 Gifford lectures, entitled “The self as agent”, that the West is facing a “crisis of the personal” (1953:31).

Modern philosophy is characteristically *egocentric*. I mean no more than this: that firstly, it takes the Self as its starting point, and not God, or the world or community; and that, secondly, the Self is an individual in isolation, an ego or ‘I’, never a ‘thou’. This is shown by the fact that there can arise the question, ‘How does the Self know that other selves exist?’. Further, the Self so premised is a thinker in search of knowledge. It is conceived as Subject; the correlate experience of the object presented for cognition (Macmurray 1953:31).

Balcomb comments that Macmurray is emphasising that the self should not be conceived of theoretically as subject (as most Western approaches to self do), but rather as an active agent. “Human behaviour”, he says, “is comprehensible only in terms of dynamic social reference. In other words the idea of the isolated, purely individual Self is fiction” (Balcomb 2004:63). This observation is crucial to understanding the value that African thought and concepts of identity can offer to the debate of consciousness and self-identity. The concept of relational ontology will be discussed in some detail below. At this point it simply bears stating that any view of identity and self that is fundamentally

grounded in a notion of the 'self' in 'isolation from the world' will have some major shortcomings. Macmurray points this out most clearly when he writes that the Self,

... is part of the world in which it acts, and in dynamic relation with the rest of the world.... To be part of the world is to exist, while to be excluded from the world is to be non-existent. (1953:91).

In Africa, the notion of understanding self and the world is much less a self-objectification of reality by the individual subject. In other words, one does not simply ask, "how do I understand the world?". Rather, one asks, "how is it that worlds comes to be understood by us?"

Balcomb suggests that there are three areas in which the African world-view differs from that of the Cartesians.

- Firstly, there is a fundamental unity between subject and object in the African world-view. This translates into a world-view that holds a unity between the observer and the observed, between God and the world, between the knower and the known, "and with this, the interconnectedness of all being" (2004:69).
- Secondly, the human being has a posture of openness, engagement and vulnerability towards the world.
- Thirdly, a belief in a "personal universe" (Balcomb 2004:69).

Taylor (1975) describes the unity between subject and object, reflecting on an experience he had at Lake Victoria, in the following manner:

Not only is there less separation between subject and object, between self and not-self, but fundamentally all things share the same nature and the same interaction one upon another – rocks and forest, beasts and serpents, the power of the wind and waves upon a ship, the power of a drum over a dancer’s body, the power in the mysterious caves of Kokola, the living, the dead and the first ancestors, from the stone to the divinities and hierarchy of power but not of being, for all are one, all are here, all are now (1975:64).

Within the ambit of this research there can be little doubt that an approach to being, and resultant approaches to identity and consciousness, that stem from such a world-view are both valuable and apt. Chapters 2 and 4 of this research presented this notion of ‘sacred interconnectedness’ between self and all creation, self and other, and self and transcendent reality, as a thoroughly contemporary approach to areas as widespread as physics (David Bohm), microbiology (Rupert Sheldrake), spirituality (Dom Bede Griffiths), philosophy (Maurice Merleau-Ponty), and of course the integrated approach to reality (Ken Wilber).

Since this is the case, an African approach to reality, and being within that reality, is of immense value in contributing to the scholarly debate on individual consciousness, and self-validation of identity in such a conscious state. From the brief discussion above, I would like to point to three areas in which the African contribution is both valuable and necessary:

- Firstly, it adds the possibility of more accurate and widespread expression of an existing reality through contributing both a framework of being, and a vocabulary that is steeped in interconnectedness. African understandings of self, society and the Kosmos (an existence which is real in multiple ‘time-spaces’ – i.e., past,

present and future) not only enrich debate and scholarship so that Africans can identify with these, but they add a new depth of insight into ontological interconnectedness, a notion which is being expressed, and alluded to, in a wide range of academic disciplines.

- Secondly, the African has a historical and ontological mindset that approaches problems of relation and identity from a different perspective to that of the West. These approaches, which are steeped in the African world-view, can certainly offer novel insight into the complexity that is human being as self in relation to others. In post-missionary and post-colonial Africa there has been a renewal of interest and appreciation for the valid contribution that African thought and its underlying approach and methodology can bring to global concerns and problems⁴⁵.
- Thirdly, and perhaps the most pragmatic reason why an African approach is both valuable and necessary, is quite simply because other approaches have not yet been able to present a conclusive or satisfactory answer to the problem of identity and consciousness. Hence, all contributions that can further debate, discussion, and the development of insight, are both valuable and necessary.

⁴⁵ This interest is partly due to a loss of confidence in the materialist, individualistic, and capitalist systems that have permeated so much of Western society and thought. However, there is also a great recognition of the value that concepts such as interdependence and interrelation have for the whole world (issues such as disease, the use and abuse of the environment, economic and political stability, etc.). The African approach to community, wellbeing, and social order, is clearly leaving its mark on global society. To mention just two prominent examples, when Nelson Mandela, an African native, is one of the world's best known political leaders, and Kofi Anan, another African native, leads the world's most influential consultative forum (the United Nations), one cannot deny the world's appreciation for, and recognition of, some unique and valuable African contribution.

It is with this in mind that the sections that follow will present the salient and necessary elements of an African approach to identity and consciousness.

5.2.2. Relating the African world-view to the integrated model of consciousness.

Within the debate of, and integrated approach to, consciousness an African approach matches the most important criteria spelled out in chapter 4 of this research. This section will show where the African view of personhood enforces an ‘integrated approach’ to consciousness and being.

The African world-view overcomes, and corrects, many of the effects of dualism between self and other that have become so commonplace in the West. Placide Tempels was one of the first persons to clearly articulate the essential tenets of the African world-view. He writes that the concept of “separate beings which find themselves side by side, entirely independent of one another, is foreign to Bantu thought” (1959:58). He further says:

Bantu hold that created beings preserve a bond one of another, an intimate ontological relationship, comparable with the causal tie which binds creature and Creator. For the Bantu there is interaction of being with being, that is to say, of force with force. Transcending the mechanical, chemical and psychological interactions, they see a relationship of forces which we should call ontological (Temple 1958:58).

Balcomb points out that many African philosophers have taken issue with Temple’s equation of ‘being’ and ‘force’ in African thought. Regardless, he notes, that few have

taken issue with the central assertion of his argument i.e., that “African ontology valorises the interconnectedness of all being” (Balcomb 2004:70).

As has been pointed out previously it was Descartes’ ‘radical doubt’ that led him to the point of doubting everything, except the self who was doubting (or thinking). Hence his famous dictum “I think therefore I am” (*cogito ergo sum*). Mcunu points out that this led him to reduce “the human person to a thinking mechanism and the body was seen as a separate substance from the mind” (2004:24). Alexis Kagame the Franco-African philosopher tests this assertion, when setting out to evaluate Tempels’ theories through linguistic analysis. In his *La Philosophie Bantu Rwandaise de l’Etre* (1966) he analyses the term *ntu* that can be roughly translated as ‘being’. Mudimbe’s summary of Kagame’s conclusion is that “the Bantu equivalent of *to be* is strictly and only performed as a copula. It does not express the notion of existence, and therefore cannot translate the Cartesian *cogito*” (1985:189). Balcomb notes the significance of this insight in saying that “the essence of African ontology, usually adumbrated in the expression ‘I am because others are, and because others are I am’, is diametrically opposed to the Cartesian schema” (2004:71).

Below is Mudimbe’s summary of Kagame’s analysis of the root word *ntu* as an expression of African ontology:

In sum, the *ntu* is somehow a sign of a universal similitude. Its presence in beings brings them to life and attests to both their individual value and to the measure of their integration and dialectic of vital energy. *Ntu* is both a uniting and a differentiating vital norm which explains the powers

of vital inequality in terms of difference between beings. It is a sign that God, father of all beings ... has put a stamp on the universe, thus making it transparent in a hierarchy of sympathy. Upwards one would read the vitality which, from minerals through vegetables, animals and humans, links stones to the departed and God himself. Downwards, it is a genealogical filiation of forms of beings, engendering or relating to one another, all of them witnessing to the original source that made them possible (1985:189-190).

Balcomb comments on the significance of this saying:

The interconnectedness of the universe, beginning with the creator and going all the way down to rocks, can surely not be more strongly stated. Here is a system that is indeed a Cartesian nightmare and a Whiteheadian dream (2004:71).

The essential unity between self and other, self and the entire Universe, is a vitally important aspect in relating the African world-view to an integrated approach to consciousness⁴⁶.

Edwards (1998:85-96) suggests at least three areas in which the African world-view overlaps with the integrative approach.

- i. Both approaches express an understanding that existence is multidimensional and a dynamic process⁴⁷.

⁴⁶ Of course many scholars will point to the erosion of this world-view in African society. There can be no doubt that it would naïve to assume that all Africans view the world in such an integrated manner. The effects of individualism, westernisation and the stigmatisation of African concepts of being have had a marked effect on the prominence of the African world-view (both from modernising schools in society, and from ignorant religious movements in Christianity and Islam, there has been a significant effect in the breakdown traditional African patterns of thought and the resulting behaviour).

⁴⁷ An example of this way in which the integrative approach relates to the African world-view, in the context of this research, is the negative influence that individualism and reductionism have had on the study of ontological identity. Western science and philosophy has sought to understand individual identity by

- ii. What is experienced, as the “phenomenal world”, is a continuously unfolding expression of a deeper subtler, yet equally real, form of reality⁴⁸. African spirituality, in particular, is very sensitive to the non-sensory and super-sensory realm. Hence it avoids the pitfalls of the western “mono-dimensional, materialistic world-view” (Edwards 1998:95).
- iii. Existence consists of “nested holarchies” (Wilber 1996:99) in which the higher levels transcends and includes the lower levels, and where there is mutual inter-penetration of all entities within each level⁴⁹. The value of the African world-view, with its emphasis on “being-human-together”⁵⁰, is that it takes account of

simply investigating the inward (emotional, psychological), and outward (biological processes of the brain, social interactions) of individuals. The African approach is much more holistic, asking not only first person questions (who are you - psychology), and third person questions (who do others say that you are - sociology), but also by observing second person interrelatedness (who are we, how does that inform who you are and who we perceive you to be). In short, in the African approach one cannot reduce identity simply to the experiences of the individual, or the perceptions of the group. One must employ an integrative approach that takes cognisance of both approaches, and more. Wilber uses a wonderful metaphor to illustrate this. He writes “You can take the watch apart but it won’t tell you the time... “ (1996:25). Thus, wholeness is not found in the parts.

⁴⁸ This notion is most clearly illustrated in the African understanding that there is no radical separation between spirit and matter, life and death. Rather, all of life is a continuum from one form of existence to another. Du Toit expresses this clearly when he writes:

For Africans there are no ontological gaps between existing entities. The Western natural-supernatural dualism is foreign to them. God, humankind, extrahumans and subhumans are all regarded as integral parts of a single totality of existence. God’s actions are not experienced as extra-ordinary. African metaphysical thinking is holistic.... (2004:30).

These concepts will be explored in some detail later in 5.4.2 below.

⁴⁹ This process can be vividly illustrated when looking at the African understanding of the interrelationship between the ‘living’ and the ‘living dead’ (often referred to as the ‘Ancestors’). The living, in gross terms, have an influence upon the subtler, spiritual, realm of the living dead, and this influence is reciprocal in nature. The attendance to traditional ceremonies to honour and include the ancestors brings joy to the ancestors, and also encourages the ancestors to act benevolently towards the living (in many areas such as fertility, prominence in the community, wealth, health etc.) (cf. Thorpe 1991 chapter 7 for a detailed discussion of this interactive process). For a more detailed insight into this element of African traditional religion and thought see Louw 2001, for a detailed exposition the notion of *ubuntu* as “extended family”, cf. Broodryk (1997a:14; 1997b:70f; 2002; Shutte, 2001:18).

⁵⁰ This is Edwards’ expression of the concept of *ubuntu* that will be discussed in detail in the remainder of this chapter.

various levels of consciousness (i.e. it is pluridimensional⁵¹, taking not only individual consciousness, but also collective consciousness, and even subtler forms of spiritual consciousness, into account) (Edwards 1998:95).

The content of the ‘African world-view’, which is referred to above, will be discussed in detail in the following sections. At this point it was simply necessary to show to that the African world-view (spoken of in terms of a cohesive philosophy) relates extremely well to the integrated theory as discussed in Chapter 4.

5.3. What is meant by the notion of ‘African thought’ in the context of this research?

There has been significant debate about the notion of a peculiarly African approach to thinking⁵². Many commentators have argued that because of the diversity of cultures and religions that make up the people who live on the African continent it would be impossible to speak of a single approach or philosophy that could accurately be termed ‘an African philosophy’. The contention is that it would be more accurate to speak of ‘African philosophies’, since such a broad statement could take account of different

⁵¹ Wilber’s earlier thoughts on consciousness posited the notion that reality is pluridimensional in nature (i.e., made up of a plurality of dimensions). Plurality expresses the notion that more than one state can exist at one time. Multiplicity, on the other hand, suggests that there are different stages of existence, but that one moves from one to another (since there are many). For a detailed exposition of Wilber’s thesis of pluridimensional reality see Wilber 1975 “Psychologia perennis: The spectrum of consciousness”, and the somewhat adapted “The spectrum of consciousness.” (1977).

⁵² This section aims to delineate the notion of African thought in the context of this research project. However, for a superb introduction to the subject of African Theology, see Pato 1994, “African Theologies”.

geographic locations, cultural expressions, and pre and post-colonial influences, that come to bear on the African mindset.

Makgoba acknowledges the complexity of asserting that such a thing as 'African thought' exists. Yet, he makes an extremely valid point in saying that,

... in general scholars are ready to accept that there is such a thing as 'Western thought, science, philosophy'.... They are even willing to entertain the idea of Oriental philosophy or thought or rationality.... Equally, scholars know very well that what constitutes Western or Oriental is not uniform or homogeneous. The Americans have diverged from the Europeans, just as there are divergences within the nations of Europe which constitute what is often termed 'Western'. Similarly, the Indians, Japanese, Chinese and Indonesians have diverged over time, but they constitute what people often refer to as the Orientals. These two major categories are essential to the African thought debates, for they not only illustrate intellectual or scholastic dishonesty but also a persistent tendency to assume superiority when it comes to the African issue. (1998:99-100).

The line of reasoning is clear: If scholars can refer to particular patterns of thought such as Western, or Oriental, in the face of geographic, cultural and even philosophical differences, then one should be able to find some commonality among the people of Africa that will allow for the inclusion of 'African thought' in these same arenas. Why is it that when one raises the notion of African thought that scholars are so quick to argue for differences that make such a categorisation impossible? It is honest to concede that there is some difficulty in speaking of an absolute called 'African thought', however, one could employ such an expression in broad terms, as is done in the cases of 'Western' and 'Oriental' thought.

In defence of the notion of ‘African thought’, as a unique categorisation of ideas and approaches to thought, Makgoba argues that whilst there are many differences among Africans there is some common area that is, “born out of, develops and evolves from intrinsic and extrinsic factors that [form] a continuum” (1998:100). In his article “Patterns of African thought” (1998) Makgoba shows areas in which Africans of various cultural and geographic contexts share common strands that influence the organisation of family and society, concepts of royalty, philosophical and moral systems (cf. 1998:101-106).

He summarises his argument in saying:

What determines any thought or description? In general human behaviour or characteristics are determined by a culture. Human beings, like all primates, are cultural animals. Simply defined, culture is anything that humans make in contrast to that which they do not make - anything that is natural. The determining factors of any culture are a mixture of many things, but the environment, the instinct to survive and the curiosity to understand and exploit the natural phenomena are integral to it. *Homo sapiens* educates, socialises, speaks, sings and appreciates in ways that are distinct by virtue of exposure and socialization. Africans, English and Chinese all speak, dance and make music but all *do it differently* and in each case there is a consistency that can be attributed to the group (Makgoba 1998:100).

This research has adopted the notion of consistency as a broad framework within which to discuss some of the central elements of African thought. The author recognises the pitfalls in making sweeping generalisations. Yet, it is clear that there is enough common ground on which to speak of certain attributes as common to the majority of the people of Africa. Du Toit presents a cautious, yet reasonable, justification for scholars making

such general statements about schools of thought. He reminds the readers of his book, *The integrity of the human person in an African context: Perspectives from science and religion* (2004), that such statements should not be made in order to present either 'Africa', or the 'West', as completely definable entities (2004:ix). Such an attempt would simply not be feasible. However, there is clearly some identifiable uniqueness to each categorisation that can be spoken of as 'African' or 'Western'. The purpose of making such statements is thus not to offer strict categories, but rather to highlight valuable elements of one perspective that may enrich others, through stimulating thought, engendering debate, and facilitating a critical and novel review of one position in the light of others⁵³.

For the purposes of this study, the majority of insight comes from the cultures and peoples of sub-Saharan Africa. These peoples have come to be scientifically known as the "Bantu peoples" (Setiloane 1998:66). Theron notes that within this geographical and cultural frame of reference "there are many differences... though, there exist some, and I think enough, similarities between them [the different cultural groups of this area], which enable us to make some generalisations about the African traditional world-views" (1996:1).

⁵³ It is worth noting that du Toit makes some extremely valid and interesting points about the influence of "the biogeographic environment on human development" (2004:23-26). He writes that "Human development proceeded differently on different continents.... The face of Africa cannot be read without noting the biogeographical factors that codetermined it" (2004:23). In short, the manner and style of the development of peoples in different contexts has a great deal to do with what resources were present to them. For example, the prevailing climate, or a lack of mineral resources, or sustainable water, or even animals that were suitable for farming, would all have a significant impact upon the cultural and social development of a group of persons. It is not possible to delve into the intricacies of this complex reasoning at this stage. However, it is worth noting that such factors are significant determinants in development, identity, and group cohesion.

Having established the broad frame of reference within which this research understands the term ‘African thought’, it is now possible to move onto discussing some specific and unique emphasis in this regard.

5.4. Understanding the African genesis: Significant elements of the Southern African world-view that underpin and inform the concepts of *ubuntu* and *botho*.

Every people has [sic] its library of stories, which we have come to call ‘its mythology’.... Over the ages, across the whole world, every culture, every human dispensation has had its heritage of myths and depository of ancient legends and stories.... Among [the African] people there too are stories (myths) passed on for generations as an account of how people came to be on earth. (Setiloane 1998:65-66).

As will be seen, the symbolic and mythic content, as well as the language used to express these concepts, are of value for the theologian. Since theology, such as that expressed below, is an attempt at expressing tangibly that which is understood through reflection upon reality, it is important to seek to understand not only the myth itself but also what the language used to express it symbolically has come to mean to people.

5.4.1. Two important creation Myths in the Southern African world-view.

The first myth that will be shared comes from the southern / central area of the African continent. It is often referred to as the ‘hole in the ground myth’. Setiloane records it as follows:

The first people came out of a hole in the ground. They came out together, men, with their wives and children and their animals: cattle, sheep, goats and dogs. They came from underneath the earth where, in the 'big abyss' which nothing can fill (*Mosima oo sa tlaleng*) they had always been living under the direction and sovereignty of *Modimo*. These people who emerged from the bowels of the earth did so under the direction of *Modimo*. They were led out of the hole by an agent of *Modimo* called *Loowe*. In comparison with them, this agent of *Modimo* was a giant. Even more striking was the fact that *Loowe* was a single-sided person, as if he had been sawn through the middle, with one arm, one foot and one eye. After *Loowe* had led the people to the surface of the earth he returned back into the *Mosima* to continue his abode there with *Modimo* and the other inhabitants (Setiloane 1998:66).

This myth conveys a number of significant theological concepts. Firstly, there is belief in a transcendent supreme being. This is a common feature in African Traditional Religion (Thorpe 1991:4). Secondly, there are, other than the persons living on earth (the created beings), a class of people who live with God. "These inhabitants are known as *Batho ba Modimo* or more commonly, *Badimo – the people of Modimo* – because they live with *Modimo* in the land of *Modimo*" (Setiloane 1998:66). Thus, there is a clear belief in the existence of a spiritual realm (here referred to as *Mosima* – the big abyss), where both *Modimo* and the *Batho ba Modimo* live. Lastly, for the purposes intended here, one can identify the importance of creation itself. It is interesting to note that in this myth, humanity and the rest of creation come into being simultaneously (men, women, children, animals etc.) This illustrates an understanding and expression of the need for respectful co-existence with living things in order to maintain the harmony of creation. For example, Ngubane (1977:28) points out that for the individual Zulu, good health means much more than just a healthy body, health "pertains to all that concerns the person

including the perception of a harmonious, co-ordinated universe.” This is the goal towards which communities, and individuals strive.

The occasion on which the above myth is often employed gives a further insight into the religious life of Africans. This myth is often celebrated as a ritual at the death of a person. Fond messages are sent with the dead at burial to the people in Mosima.

‘Greet them for us’, ‘tell them to give us rain and prosperity’ and the means of sustaining life are buried with the dead (such as seeds and working instruments) so that they can continue to provide for themselves in the land of Badimo (Setiloane 1998:67).

Thus Thorpe points out that,

Health, balance, harmony, order, continuity are all key words. They not only describe a desirable present condition for individuals and the community, but also represent the goal towards which people constantly strive. This ideal needs to be maintained not only within the visible community but equally in relation to the invisible community, conceptualised as spiritual powers (e.g., the ancestors) (1991:111).

A second important myth among the Bantu peoples (mainly in the south-eastern region) is the myth of the ‘bed of reeds’. It relates to *Umuntu okuqala wa dabuka uhlangeni* – “the first humans split their way out of a bed of reeds” (Setiloane 1998:67).

This myth is most commonly celebrated at the birth of a child. The new child “is considered as a sojourner from ‘the source of all living things’, the Mosima, and is a gift

of the Badimo who make their abode with Modimo” (Setiloane 1998:68). The ‘hole in the ground myth’ is recalled as a reminder of the ancestors. The newborn child is kept in a special hut prepared for its arrival. It is guarded from all intruders (one of whom is the father) and shielded with green reeds plucked from the riverside, which are laid across the doorway of the hut. The newborn and the mother are kept *ka mo letlhakeng* – behind the reeds – until an appropriate time has passed. When that time has passed (which ranges from three months to a year) the child’s coming is celebrated with a feast, variously called *umbeleko* (for the Nguni peoples) or *go Ntsha Ngwana ka mo Letlhakeng* (for the Tswana / Sotho). The feast recognises and honours the people in Mosima (the Badimo, or ancestors) who are the givers of this gift.

Setiloane interprets the Genesis of African persons from these myths in pointing out the following essential elements of belief:

- The first appearance of humans on earth is in community. Hence, as will be shown, the community remains central to African life, thought, and spirituality.
- African theology sees myths as recollection from the store of age-old human experience. It is a connection with the first parents who lived in caves (the hole in the ground) and sought a living from the marshes and river banks (the reed bed myth). In anthropological and evolutionary terms, “this is the time when the four-legged primate began to stand on its two hind legs (*Homo erectus* becoming *Homo sapiens*)” (Setiloane 1998:69). So, it begs the question, when does the human begin to be human? Setiloane answers, “African theology learns from the

myth that the answer is ‘When it attains self-consciousness and sees itself in relation to the other elements in the natural sphere’”. “Man, with his new consciousness, first became aware of himself; then of the world around him; then of his relationship with the world...” (Harrison in Setiloane 1998:70).

- Lastly, for our purposes, Setiloane points out that it is of religious significance that the first people did not come out of the hole in the ground by themselves. Rather, they are led by *Loowe*, an agent of Modimo. Also, they come from Modimo, and so it is obviously the will of Modimo that they should emerge.

Throughout their sojourn on the earth’s surface, the abode of Modimo and Badimo is a place of good and sweet memories and life [there] is most desirable. *It is the home* out of which all come and into which all will joyfully return (Setiloane 1998:70).

Having presented two of the seminal myths relating to birth and death in African thought, and having offered some brief insight into their significance and meaning, the section that follows will give a more thorough insight into the content of the African world-view.

5.4.2. The Southern African world-view and the emphasis on wholeness and harmony in the Kosmos: Some general comments that will help to give a better understanding of the African concept of human identity.

Every facet of Africa life is shaped to embrace Ubuntu as a process and philosophy which reflects the African heritage, traditions, culture, customs, beliefs, value system and the extended family structures (Makhudu 1993:40).

Naturally, to do justice to the ambit of this research, this chapter will need to give some significant insight into the African concept of human identity i.e., what does it mean to be human, and how does one describe such humanness? This is best done through a discussion on the African notion of *ubuntu*. However, before coming to that specific discussion, it is necessary to give some further general background to the African world-view that will help the reader to better understand one of the fundamental underlying motivators that inform this African view of human persons.

As has already been suggested, the African world-view places a significant emphasis on the “wholeness of all being” (Setiloane 1998:75). One of the cancers of Western society, that even influences religion, is anthropocentrism⁵⁴. In contrast to such distorted views of the Kosmos, the African world-view is sometimes referred to as ‘Animism’⁵⁵. Taylor encourages Western Christians to learn from such approaches to wholeness. He writes:

The term ‘wholeness’ is primarily intended to express the desire to include the primal inheritance and our contemporaries who are its most explicit representatives in the current Christian invitation to dialogue with people

⁵⁴ Ernst Conradie writes a fascinating critique of anthropocentric theologies, and the special status accorded to humanity because of the Semitic creation myth (of Genesis 1) and its emphasis that everything was “created according to its kind”, whereas humanity is created in the image of God (*imago Dei*). He points out how this has contributed towards a dichotomous relationship between humanity and creation, and even made allowance for some Christian theologians to present theologies that are in contrast to ecological responsibilities (domination rather than responsibility and stewardship). See Conradie 2004:111-138.

⁵⁵ Sir E B Taylor first used the term ‘Animism’ in his book “Primitive Culture” (1871). He used it to refer to a belief in spirits (i.e. mystical, super-natural, non-empirical, or imagined entities). Even though the term was first used critically and had a negative connotation, it is now used in a far more descriptive and open sense. The resurgence of interest in the environment, and the birth and rebirth of eco-faiths, with their emphasis on pantheism and panentheism, has refocused global attention on the importance of such elements of belief in many of the world’s living faiths. Thus, whilst groups such as the Neo-pagans, in Britain, have grown in popularity, there have also been members of the Christian faith (and other living faiths) who have sought to re-emphasise a respect for the diverse community of living beings with whom humans share the cosmos.

of other living traditions. This view of our fellow human beings and the contribution the primal traditions and cultures have made to the rest of mankind, have too often been ignored or regarded as worthy of serious attention only as possible objects of conversion. Christians have seldom turned to listen to them, and, to learn from them, much less to acknowledge the existence of primal forces within themselves (Taylor 1976:1).

Setiloane is critical of Taylor's attempt to usurp the African concept of wholeness into the Christian faith, and "magnanimously" include other cultures and faiths into a Western appropriate thereof. Rather, he feels that the African concept of wholeness, which is most truly expressed in primal and perennial faiths, should influence and include such fractured and misguided (anthropocentric) world faiths as Christianity (1998:75-77).

This is a very interesting statement that would require some further research. I do not wish to get sidetracked into that debate at this stage, since this dissertation is not a comparative study. Suffice to say that the African worldview regards wholeness as a primary aspect of the Kosmos. This emphasis on wholeness can thus be discovered in all spheres of the African world-view, beginning with God and ending in creation.

Kudadjie and Osei comment that there is no single view of God in relation to the Universe (2004:35). However, as was suggest in a previous section, there is a predominant understanding that all that exists comes from a Supreme Being⁵⁶.

⁵⁶ The Akamba of Kenya variously call God, Creator, Maker, Cleaver (Mbithi 1990:39). Whereas the Akan of Ghana describe God as Excavator, Hower, , Carver, Creator Originator, Inventor and Architect (Danquah 1944:28, 30). The Akan, Banyarwanda (from Rwanda), Nuer (from Sudan), and Shona (from Zimbabwe), believe that God continues to create, using existing materials to mould and shape creation as a potter does (Maquet 1954:166).

Moreover, it is God who sustains and provides for the created order through elements of sunshine, rain, fertility, good health etc.

The universe itself – comprising both seen and unseen reality (spirit beings, human beings, plants, animals, mountains, waters, stellar bodies, and all) is a whole, a community with symbolic influences and relationships. It is also commonly believed that, through laws of nature and various spiritual forces, as well as human customs and institutions, God sustains and upholds the world. Thus, he maintains an orderly and harmonious world so that all can perform their own duties in it (Kudadjie and Osei 2004:36).

Thus, there is a strong belief that God is the overall governor and controller of the Universe. However, ancestors and spirit powers take part in the governance and administration of the natural order and human affairs (Mbiti 1990:40). In order to maintain harmony in creation, one must thus seek to show respect to all living things (both that which are seen, and those which are not seen), that is, all of the created order (human beings, plants, animals) and the unseen world (the ancestors and spirit beings, as well as God). At times it would be necessary for a person, or group of persons, to perform some ritual action to restore the equilibrium in creation, or to influence or change a state of affairs (i.e., to seek healing, or prosperity, to ask for blessing, or guidance etc.) (Kudadjie and Osei 2004:37).

Hence, the maintenance of harmony and equilibrium in the wholeness of creation is of fundamental importance in the African world-view. Human persons are part of a much wider, and very significant, community of living beings. Social relationships and identity within this community are extremely important. Who I am, what my role is, and how I

contribute towards the wholeness of the community (both seen and unseen) is essential to maintaining balance and keeping God, the ancestors and spirit beings at peace.

Having laid this basic groundwork, it is now possible to discuss the important issue of human relationships and identity from the African perspective.

5.5. The human person in the Southern African world-view: The Southern African concepts of *ubuntu* / *botho*.

One of the most courageous leaders during the South African struggle for liberation against apartheid, Steve Biko, wrote these words before his untimely death:

... [Western society] seems to be very concerned with perfecting their technological know-how while losing out on their spiritual dimension. We believe that in the long run the special contribution to the world by Africa will be in this field of human relationship. The great powers of the world may have done wonders in giving the world an industrial and military look, but the great gift still has to come from Africa – giving the world a more human face (Biko 1978:46).

It has already been shown that integrity and harmony in all of the Kosmos is a fundamental concern in the African world-view. One of the most active participants in this reality is the human person and his or her interaction with other persons, with visible reality, and with all reality that is unseen (the spirit world and the ancestors). In order to maintain the respectful equilibrium of the Kosmos African philosophy developed an aphorism to express the fundamental identity and responsibility of the privileged human position in the cosmic order.

*Umuntu ngumuntu ngabantu*⁵⁷ (translated from Zulu into Sotho it reads – *Motho ke motho ka batho*). This statement is often translated as: “a person is a person through other persons”⁵⁸ (Ramose 1999:49f; Shutte 1993:46).

At the heart of this statement is the word *ubuntu* which variously means, “humanity”, “humanness”, or even “humaneness”. “These translations involve a considerable loss of culture-specific meaning. But, be that as it may, generally speaking, the maxim *ubuntu ngumuntu ngabantu* articulates a basic respect and compassion for others” (Louw 2001:1).

As such, it is both a factual description and a rule of conduct or social ethic. It not only describes human being as “being-with-others”, but also prescribes how we should relate to others, i.e. what “being-with-others” should be all about (Louw 2001:1).

Linguistically, Mfenyana asserts that for one to fully understand the meaning of the word ‘ubuntu’ it is necessary to separate the prefix ‘ubu’ from the root ‘-ntu’ (1986:2⁵⁹). This is because the word ‘ubuntu’ qualifies the noun ‘umuntu’ (meaning the human person). These words are common in many Southern African languages, for example “in isiXhosa it is **Umntu**, in Zulu it is **umuntu**” (Mcunu 2004:30 – emphasis from the original text). In terms of the word *ubuntu*, ‘ubu’ refers to the abstract, whereas ‘-ntu’ is a reference to

⁵⁷ At times it is expressed more fully as *Umuntu ungumuntu ngabanye ngabantu*.

⁵⁸ Louw (2001:1) notes that many definitions of *ubuntu* have been given by various philosophers and authors, all of which relate closely to the one given here (cf. for example Broodryk, 1995:5f; 1997a:1-2; 1997b:27f; Bhengu, 1996:1-12; Prinsloo, 1994; 1995:2; 1998:41-43; Sindane, 1994:1-2; 1995:8-9; Teffo, 1995:1-2; Pityana, 1999:144-145).

⁵⁹ For further details on the now defunct ‘Sash Magazine’ please see the following URL:
<http://disa.nu.ac.za/journals/jourbsexpand.htm>

the ancestor who spawned human society and gave human beings their way of life. “It is a communal way of life which deems that society must be run for the sake of all, requiring cooperation as well as sharing and charity.... Ubuntu consequently, is the quality of being human.” (Broodryk 2002:13).

Thus, the term *ubuntu* can be applied descriptively, that is to say, one could hear someone saying a person has ‘ubuntu’ – “*usibani bani ungumuntu*” (or in Sotho “*mang mang o nale botho*”), meaning “that person is a human” or, “that person has ‘ubuntu’”⁶⁰. Thus one would say a person is ‘umuntu’ (a human being) because he or she possesses or displays the characteristics of *ubuntu*. Naturally the opposite can also be said of a person or community. “... one would hear people saying, *akamuntu walutho lowo* (that one has no use or help). To this we must add that ubuntu is an art and quality of being human” (Mcunu 2004:31). Mthokozisi Maseko made the following crucial point about ubuntu and the African world-view:

... as the Bible is to Christianity, so is ubuntu to an African person. Ubuntu is therefore an “Isintu Bible”. This “Isintu Bible” is an oral Bible, since our forefathers lived in a prescientific age. To have ubuntu is to have what is expected of a human person, which is to embrace family values, the community values and today we can add that it embraces the values of Christ. Jesus could rightly be said that he had the value of ubuntu in its totality. In as much as he embraced our human form, so he also embraced this value (quoted in Mcunu 2004:32).

⁶⁰ As a minister of the Methodist Church of Southern Africa I first came across this concept in the earlier 1990’s whilst I was a minister serving in a black Church in Kokosi Township in the North West province. Many of my members were migrant labourers who worked on the mines. After the death of one of our members, we collected some monies within the community to take with us to the funeral in the Eastern Cape. When at the funeral I heard one of the speakers paying tribute to our Church saying something along the lines of “When our brother was in the mine we did not know that he there with humans (*umuntu*), but now we have seen how they care (*ubuntu*). We know he lived there with humans (*umuntu*)”. It was the humane care of the community that defined them as human, not their biological makeup. This was the first time I truly began to understand the essence of *ubuntu*.

The following section will extrapolate some of the central elements of *ubuntu* and make some general comments on these. How this concept relates to self-validating individual identity will be extrapolated at a later stage in this chapter (cf. 5.7 and 5.8 below). At that point certain of the elements discussed here will be specifically related to aspects of human identity and validation of the notion of ‘self’.

As can be seen from the preceding quote from Maseko, the notion of *ubuntu* is clearly valuable to African culture, and has made a significant impact upon religion in the African context. Moreover, this concept was recognised of being of such great value, not only as a philosophical and religious principle, but also for encouraging respect in society, that the new South African Government gazetted the principle of *ubuntu* as part of its social welfare policy⁶¹.

One of the crucial elements of *ubuntu* in relation to this research, is the understanding that personhood (both in social structure and identity) is never understood without reference to the community. Mcunu writes that the “best way of being a person according to African understanding of the human person is to have ubuntu”, and that

⁶¹ Louw (2001:1), and Broodryk (1997a:1) both record the South African Government’s official recognition of *ubuntu* which follows:

The principle of caring for every other’s well-being...and a spirit of mutual support...Each individual’s humanity is ideally expressed through his or her relationship with others and theirs in turn through a recognition of the individual’s humanity. Ubuntu means that people are people through other people. It also acknowledges both the rights and the responsibilities of every citizen in promoting individual and societal well-being. (<http://www.gov.za/whitepaper/index.html>, and the Government Gazette, 02/02/1996, No.16943, p.18, paragraph 18).

“Ubuntu is the ideal stage of being a human person” (2004:25). The unity and harmony of personhood expressed in *ubuntu* “stretches from the world seen through the naked eye to the world of ancestors, the spirit world” (2004:25). Berglund records the following statement from a traditional African healer (*sangoma*):

Whites have failed to see that in Africa a human being is an entity, not in the first instance divided up into various sections such as the physical body, the soul and spirit. When a Zulu is sick it is the whole man that is sick, his physical as well as his spiritual being that is affected (Berglund 1976:82).

Moreover, not only does the African concept of *ubuntu* express the fundamental unity of the spiritual and material worlds, it also clearly holds to the notion that identity is developed through interaction, over time. As a person participates with others and the environment, the person’s identity (who the person is in society, who the person sees him or herself to be, and the community’s relation to the person) changes⁶². “Personhood should be seen as going through the stages of human development or growth, namely, birth, living and death” (Mcunu 2004:27, see also Kamalu 1998:31). In fact this process does not end at death. The Zulu peoples of Southern Africa never spoke of a person’s death in the manner in which death is spoken of today (i.e., as final, and end to the person’s life). “They will say *udlulile emhlabeni*, meaning that a person has passed on to another stage of life. This implies clearly that a person never loses his/her personhood at

⁶² In fact this concept is most clearly expressed in the various rites of passage that an African person goes through from birth to adulthood, from adulthood into marriage, from marriage to parenthood, from parenthood to being an elder, and eventually to the status of passing beyond this life to being a member of the ‘living dead’, i.e., an Ancestor. Mcunu notes these various stages of human development in relation to the African concept of personhood in his Masters Thesis, 2004:27-28.

‘death’” (Mcunu 2004:27). Thus participation, from birth, through life, and beyond this life, is key to the identity and role of the human person.

... the essence of being is participation in which humans are always interlocked with one another... the human being is not only a ‘vital force’, but more a ‘vital force’ in participation (Setiloane 1986:14).

More directly to point, and of cardinal value to the central thrust of this research, du Toit writes the following about *ubuntu* in relation to this research:

In Africa, a person is identified by his or her interrelationships and not primarily by individualistic properties. The community identifies the person and not the person the community. The identity of the person is his or her place in the community. In Africa it is a matter of ‘I participate, therefore I am’⁶³... Ubuntu is the principle of ‘I am only because we are, and since we are, therefore I am’. Ubuntu is African humanism. (du Toit 2004:33).

Koka (2002:7) provides the following defining characteristics of *ubuntu* drawing from various sources:

- A non-racial philosophy or value system through which all people are regarded as and treated as human beings. It is the art of ‘being human’.
- A philosophy of tolerance and compassion.
- A philosophical concept that accepts the unity of humankind as an integrated whole which is comprised of varied racial groups.

⁶³ Here du Toit references Shutte 1993:46-51.

- A supreme ‘goodness’ which was breathed into matter (particularly human persons). In relation to the human person, this act transformed the human person into a being called ‘human’, who reflects the image of God.
- A quality and dignity of human personhood.

Broodryk, drawing on the above characteristics and his own insights, succinctly defines *ubuntu* as,

As a comprehensive ancient African world view based on the values of intense humanness, caring, sharing, respect, compassion and associated values, ensuring a happy and qualitative human community life in a spirit of family (2002:13-14).

This notion is attested to by both Mcunu and Setiloane, who affirm that, “ubuntu is the manifestation of humanity and the divine.... It is the oneness of being and oneness with all spheres [of existence]” (Mcunu 2004:36, cf. Setiloane 1986:16).

The two sections that follow will extrapolate on two fundamental elements of *ubuntu* as they relate to this research, namely the primacy of human relationships in shaping individual identity, and the understanding of ‘holism’, as a breakdown of dualism, in the African world-view.

5.6. The primacy of inter-relationship in African cosmology and the importance thereof in validating claims of individual identity.

One of the central, and foundational, aspects of African cosmology is the primacy of inter-relationship. This point has been made in passing in previous sections where the emphasis has been to show what the important elements are. Now, however, it is necessary to examine this particular element in greater detail in order to understand why this particular element of African cosmology can be of value in solving the conundrum of identity which could arise between an individual person and a consciousness emulating machine (see 1.2 and 2.1 above for a description of this issue).

Kwame Gyekye records an African proverb that expresses the central importance of relationship: “When a man descends from heaven, he descends into a human society” (1987:155). This singular sentence offers some significant insights into important elements of the African world-view. Firstly, that a person “descends from heaven” suggests that such a person is created by a transcendent God. It has already been shown through the two creation myths shared above (see 5.4.1 above) that the Bantu of Southern Africa believe that persons emerged not only from the midst of a transcendent reality, but more specifically from a transcendent community (cf. Setiloane 1998:66). This could quite easily be glossed over. However, Burrow reminds us that this implies that “the person is *created in community*” (1987:27 italics in the original). Secondly, Gyekye’s record of the African proverb stresses that the person is not only created *in* community, but that the person then descends *into* community. Thus, it would imply that the person

is not only created *in* community, but that he or she is also created *for* community.

Burrow interprets this to mean that, “from creation she is at once an individual *and* a communal being. Individuality and sociality are therefore fundamental to what it means to be a person” (1987:27).

Of course this point has been made a few times above, that is, that in the African worldview *Umuntu ngumuntu ngabantu* “a person is a person through other persons” (Ramose 1999:49f; Shutte 1993:46). Gyekye shares another poignant African proverb that is able to extrapolate some of the subtler elements of this notion. He writes that the “clan”, which he presents as the communal collective of persons, “is like a cluster of trees which, when seen from afar, appear huddled together, but which would be seen to stand *individually* when closely approached” (1997:40). Peter Kasenene points out an interesting derivation of the widely used (and discussed) statement, *Umuntu ngumuntu ngabantu*. He notes that the Venda (also Bantu peoples) have a derivation of the saying,

Muthu u bebelwa nunwe, “A person is born for the other.” This shows that according to African philosophy, a person is a person through, with and for the community. Individualism is something new to Africa (1994:141).

Whilst I agree with Kasenene that individualism, in the rugged understanding thereof as coming from some Westernised free market orientated societies, is new to Africa, the notion of the individual *per se* is not new to African philosophy. Of course, as du Toit points out, the stress in African religion and philosophy is much more acutely pointed at the community. As such one must dig a little deeper in order to understand the place and importance of the individual in such a worldview. Thoroughgoing individualism is

regarded negatively in the African worldview with its primary stress on harmony and unity in the community. However, this does not mean that there is no place for the individual, but rather that the individual has an important role to play in safeguarding the community and its common good.

Ubuntu limits individualism and stresses that social interrelations and responsibilities are a precondition for human life.... Whereas thought and reason in the West are often detached from culture, community and natural environment, the ubuntu ethic is the exact opposite. Here the people are interdependent and co-responsible for one another. The traditional African world-view is ... geared to ... social harmony and communal dependency. Ubuntu means to participate in a common humanity and can be understood as the African version of the common good (du Toit 2004:32-33).

Where the African world-view is operable in its truest form, the community should not usurp the identity of the individual, but rather allow that identity to be developed and expressed through participation and fellowship in the community. This is not only a functional identity, based on the tasks or roles of the individuals, it is a true intersubjective identity that is shaped in and through life in the community. Du Toit goes on to write that,

For Africans, to be human is to participate in life and respect the conditions that make life possible. To participate in life means ultimately to participate in the fellowship of the community. African community-based society does not designate a communal or collectivist society, but rather one reminiscent of an organism. The collectivist society inevitably places the emphasis on the individual and his or her needs. African society emphasises solidarity rather than activity, and the communion of persons rather than their autonomy.... That personhood is identified by an individual's interaction with other persons does not eliminate personal identity... It simply says that my personal identity comes to the fore in my

interaction with, and place in, my community” (du Toit 2004:33, cf. Louw 2001:10).

Louw points out that one of the emphases of the *ubuntu* ethic in post-apartheid South Africa has been to “create a balance between complete individual autonomy and homonymy, i.e. to broad respect for the individual and purge collectivism of its negative elements” (2001:10). He clearly makes the point that “oppressive communalism” which robs persons of their identity and rights, as is seen in many places throughout Africa and the world, is not the intended outcome of the *ubuntu* ethic in the African world-view (Louw 2001:10). He supports his argument in referring to Ndaba who writes that,

... the collective consciousness evident in the African culture does not mean that the African subject wallows in a formless, shapeless or rudimentary collectivity... [Rather, it] means that the African subjectivity develops and thrives in a relational setting provided by ongoing contact and interaction with others (1994:14).

True *ubuntu*, Louw points out, operates in a dialogical manner, it incorporates both “relation and distance” (2001:10). “It preserves the other in her otherness, in her uniqueness, without letting her slip into the distance” (Louw 2001:10-11)⁶⁴. Shutte echoes this in writing, “the community is not opposed to the individual, nor does it simply swallow the individual up; it enables each individual to become a unique centre of shared life” (2001:9).

One of the primary reasons that this ‘life orientation’ is able to work is because of the notions of dignity and respect. “Respect entails listening to the other person and it also

⁶⁴ See the following supporting references, Shutte 1993:49, 51, Macquarrie 1972:110, Kimmerle 1995:90-93.

involves humility, honesty and treating others as you want them to treat you” (Mcunu 2004:36)⁶⁵. Mcunu acknowledges that at times Westerners have been critical of *ubuntu* suggesting that the emphasis on community overlooks the uniqueness and distinctness of human persons. Of course such things do happen in reality, and can often lead to abusive and unhealthy communities. However, such an abusive community would not be in keeping with the true sense of the African world-view; in short, such an abusive community would be deemed as devoid of *ubuntu* (cf. Shutte 2001:9). Mcunu writes from personal experience of African community saying, “I agree with Shutte, because the community nurtures the individual and coaches the individual as the community promotes his / her human development. The community norms are there to ensure that [the] individual person is helped towards self-realisation and self-actualisation” (2004:39).

If one were to apply the dialogical conceptual framework of I - Thou developed by Martin Buber in his philosophical essay *Ich un Du* (1923)⁶⁶, one would be able to show that in the African worldview it is neither the ‘I’ (individual) nor the ‘Thou’ (community) that takes ontological primacy. Rather the ontological primacy is focussed on the hyphen, the ‘between’, of the I – Thou. Ramose writes,

The African concept of a person as wholeness does not deny human individuality as an ontological fact, as an analytic finitude, but ascribes ontological primacy to the community through which the human

⁶⁵ However, both du Toit and Mcunu point to the reality that poverty and struggle in Africa have often eroded this respectful, dignity based, world-view mutual dependence and co-operation (du Toit 2004:33, Mcunu 2004:36).

⁶⁶ First translated into English in 1937, see Gregor Smith 1937.

individual comes to know both themselves and the world around them (1999:79).

Since Ramose is not addressing the three elements presented above (the I, the ‘between’, and the Thou) his reference focuses almost exclusively on the individual within the community. However, the weight of the statement rests in the words “to the community *through which* the individual comes to know...”. Inadvertently he makes this crucial point about where the true primacy of being lies. Neither the individual, in isolation, nor the community, apart from the individuals which are together the community, shape meaning. Rather, true meaning comes from mutual interrelationship, the ‘between’, of the individual and the community. It is the individual that enriches, builds up, maintains, and develops, the community. Whilst on the other hand it is the community that enriches, builds up, maintains, and develops the individual. This can be seen in the two phrases that are used in reference to individuals in the Zulu language, namely, *izithopo* (which praises the individual, in the assumption of unique talent and giftedness, achievements and ability) and *izithakazelo* (which locates belonging of that giftedness, talent, ability, and endeavour found in the person, within the clan).

Izithopo are attributes of the individual person and his / her unique role in the community. Izithakazelo are what I share with the community and how I relate to the community.... This shows that there is a mutual fraternity between the greater community and human individuality (Mcunu 2004:40).

Shutte has likened the African community to a living organism “rather than an artificial whole” (Shutte 2001:26). In a living organism, such as a person, it is neither the individual cells nor the whole body which are more important, but the intercommunion

between the two, which is the life of that organism, that is most important. Ruch and Anyawu write,

The whole African society, living and living-dead are a living network of relations almost like that between the various parts of an organism. When one part of the body is sick the whole body is affected. When one member of the family or clan is honoured or successful, the whole group rejoices and shares in the glory, not only psychologically but ontologically: each member of the group is really part of the honour (1984:143).⁶⁷

Thus, the notion of personhood and identity is achieved in the *interaction* between the individual and the community, as has already been shown, the content and values of this interaction (as well as the description of the harmony of such interaction) is found and expressed in the notion of *ubuntu*. Shutte summed it up succinctly in one of his various translations of the phrase *ubuntu ngumuntu abantu*, that seek to capture the essence of *ubuntu*, “I participate, therefore I am” (1993:46-51). “It is this ontology that sets African anthropology distinct, not separate, from Western anthropology” (Mcunu 2004:41).

The content of this ontology, in relation to identity, will be investigated in the section that follows.

5.7. Intersubjectivity in African relational ontology.

The previous section, on the importance of relationship in African cosmology, ended with Augustine Shutte’s translation of the phrase *ubuntu ngumuntu abantu*, which reads, “I

⁶⁷ When celebrating the honour of a member of the community the following is often said, *ingane yethu iyiphakamisile indawo yethu* (our child has done us proud in our community) (Mcunu 2004:41).

participate, therefore I am” (1993:46-51). This quote enforces the fundamental importance of relationships *between* persons as the factor that shapes individual and community identity. The famed psychotherapist, Harry Stuck Sullivan, once said, “what happens inside persons is not as important as what happens between them” (in de Quincey 2005:xvii). Eugene de Quincey, writes of relational ontology and consciousness in his most recent book (*Radical knowing*, 2005), saying:

The *second-person* perspective is a third alternative [to first-person subjectivity, and third-person objectivity]. In this view, consciousness is neither an “it” nor merely an “I”. It involves *you*, or some other second person – it involves dialogic relations between two or more experiencing subjects. From this perspective consciousness arises (or at least is informed and altered) when two or more subjects encounter each other and participate in some way in each other’s being – what existentialist theologian Martin Buber called an “I – Thou” relationship. It is *conscientia* – consciousness as “knowing with” another – consciousness experienced, for example, when two lovers share the knowing of their love for each other (2005:176).

As this quote points out, this manner of knowing and consciousness was extrapolated in the groundbreaking work of Martin Buber (1878-1965)⁶⁸. It was very briefly mentioned in the previous section, but, in Buber’s works on religious consciousness, interpersonal relationships, and community, the emphasis is not so much on the ‘I’ (subject), or the ‘Thou’ (object), as it is on the hyphen inbetween the ‘I’ and the ‘Thou’⁶⁹. This notion of the primacy of relationship in shaping identity and consciousness is known as “intersubjectivity”, or “second-person knowing”, as pointed out by de Quincey above.

⁶⁸ See footnote 47 above. Also see de Quincey 2005:198-199 for a superb summary of Buber’s theory in relation to intersubjective consciousness.

⁶⁹ As a theologian and philosopher, Buber located the love of God in the ‘between’. That is the love of God is located in that space between the ‘I’ and the ‘Thou’ (cf. de Quincey 2005:xvii).

In relation to consciousness and knowledge, intersubjectivity can be isolated and distinguished from subjectivity (which is an inward, first-person, self-reflection)⁷⁰ and objectivity (which is an outward, third-person, observation)⁷¹, as a separate and identifiable aspect of being and knowing. This is both a helpful and necessary statement, since subjectivity and objectivity have dominated debates on consciousness for a long time. This third form of knowing, intersubjectivity, can be classified as “I – I” (pronounced “I – to – I”) (de Quincey 2005:2).

Intersubjectivity is “knowing through relationship” – a form of non-sensory, non-linguistic connection through *presence* and *meaning*, rather than through mechanism or exchanges of energy... intersubjectivity [is]... “consciousness as communion” (de Quincey 2005:2).

De Quincey illustrates this form of knowing wonderfully through an explanatory parable in Chapter 14 of his 2005 book *Radical knowing*. In summary, he tells of an encounter between a brain surgeon and a mystic who had debated the nature of consciousness for days. In particular, each wanted to argue a perspective on how persons come to know and feel anything. The brain surgeon described the mind as a kind of “enchanted loom”, “a dynamic play of electric sparks and chemistry swirling over the surface of the brain in awesome patterns. For her, consciousness was the ‘poetry of chemistry’, with “measure

⁷⁰ “Continental European scholars in the first-person, introspective or contemplative tradition, who view mind as a topic for private, subjective inquiry, include Edmund Husserl, Maurice Merleau-Ponty, and Martin Heidegger. And, of course, scholars and practitioners from the world’s meditative traditions, such as Buddhism, emphasize the necessity for first-person exploration of consciousness. Insight into the nature and dynamics of the mind, they teach, requires practices leading to direct experience beyond all knowledge of brain events, and even beyond conceptual thought.” (de Quincey 2005:313).

⁷¹ “Scholars in the third-person, materialist-objectivist or positivist tradition, who view the mind as a product of brain events, include linguist Noam Chomsky, philosophers Daniel Dennett, John Searle, Paul Churchland, Patricia Churchland, and, perhaps the most influential philosopher of the twentieth century, Ludwig Wittgenstein.” (de Quincey 2005:313).

and rhythm, a dance of energy in the cortex of the brain” (2005:172). The mystic saw consciousness differently. He was marvelled by what the surgeon described, and did not doubt that the use and manipulation of such tangible realities as energy and chemistry could be used to heal and help persons. However, none of what the surgeon described could come close to uncovering the “essence of what it *feels* like to be a human being” (2005:172). For that experience he urged, “I have to ‘look inside’. The brain is outside, but feeling is ‘inside’, and I find my way to consciousness by practice and discipline, through contemplation and meditation. It is as much in the heart as in the brain...” (2005:172). After long arguments and varied investigations of consciousness from the “outside” and the “inside” the two persons failed to agree. The surgeon insisted that consciousness could only be understood by studying the brain – she favoured objectivity. The other was equally persuaded of the validity of his perspective, that consciousness could not be understood except if studied from within – he favoured subjectivity. One day, after many encounters and exchanges, the man and the woman looked deeply into each other’s eyes and realised they were engulfed in a force, they were creation *together*. Something imperceptible, but very real, had caught them in its power. Thus they came to the realisation that consciousness is more than something *subjective* or *objective*, it is *intersubjective*.

An interest in the philosophy and meaning of interpersonal relationships is of course nothing new to theological and philosophical discourse. It goes as far back as Socrates, and can be found as a significant theme in recent European philosophy, such as that of “Søren Kierkegaard, in Husserlian phenomenology, and in existentialists such as Jean-

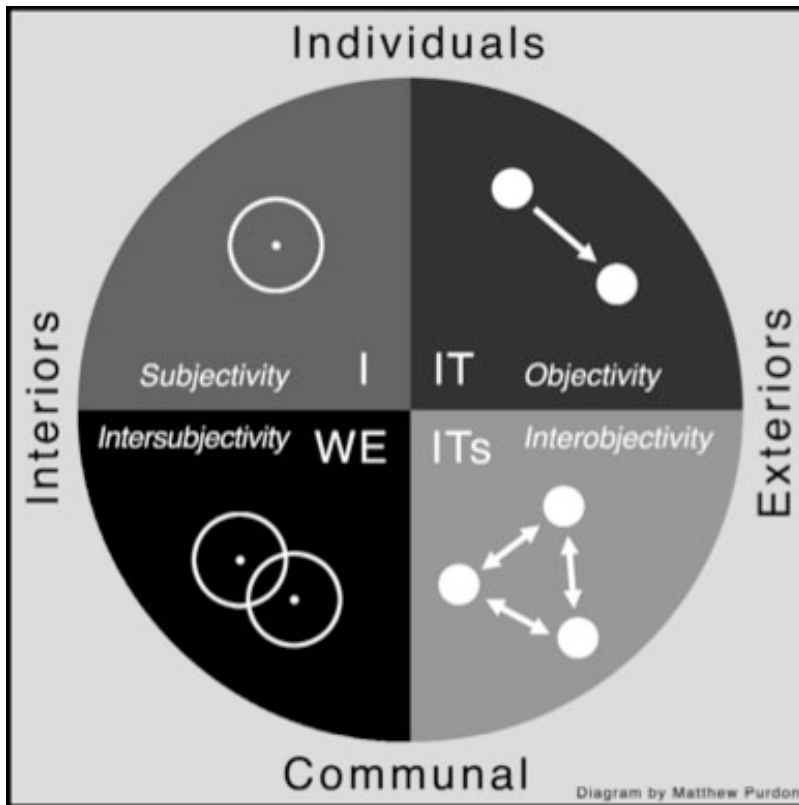
Paul Sartre and Ludwig Binswanger” (de Quincey 2005:189)⁷².

Of course, as de Quincey rightly points out, one of the earliest and commonly accepted understandings of consciousness, comes from the Latin word *conscientia*, that is to “know with others”. This form of consciousness is, “interpersonal and intersubjective” (de Quincey 2005:209, 211).

In Chapter 4 of this research, the case is made for an approach to consciousness that is more than just subjective, or objective, and more than just personal or social. The basis of that argument stemmed from Ken Wilber’s integrated theory and Holarchy of being (see points 4.2.3 and 4.3 above). In particular, if one looks at Wilber’s Holarchy, one can see that he addresses the notions of knowing as subject, object and that in relation to this research his Lower Left quadrant clearly presents the notion of intersubjectivity (see the diagram below for a pictorial representation of Wilber’s view)⁷³.

⁷² Sartre believed that consciousness was a combination of self-affirmation (through subjective reflection) and self-nihilation through interactions with others beyond the self. Thus pre-reflective subjectivity precedes pre-reflective intersubjectivity. Binswanger believed that subjectivity, objectivity and intersubjectivity were all related to one another through a dialectical “trichotomy”, “where subjective experience (thesis) is reduced to ‘total surrender’ and ‘dissolution of the individual life by the objective principle of ‘otherness’ (antithesis) and subsequently reemerges by a ‘reclaiming of objectivity in subjectivity’ (synthesis)” (de Quincey 2005:189).

⁷³ de Quincey is somewhat critical of that fact that Wilber had not fully developed the notion of intersubjective knowing and being in his holarchic schema. He notes that at times Wilber has tended to reduce intersubjectivity to nothing more than a form of linguistic exchange (2005:177). See also de Quincey 2005:205-208 for a detailed discussion of Wilber’s approach to intersubjectivity.



(in de Quincey 2005:206)

Naturally one of the most valuable elements of Wilber’s integrated philosophy is that it does not negate the validity of either subject or object. Neither does it downplay the importance of individuals or communities. Rather it proposes that all four quadrants are of value and importance in approaching the notion of consciousness and knowledge. Thus, he shows that any theory that negates an element of being (subjective, objective, individual or social) is deficient. If one considers approaches to knowledge, there can be very little doubt that subjective and objective approaches have gained far more attention than the intersubjective approach⁷⁴. Wilber writes that “failing to see that subjective

⁷⁴ De Quincey suggests that the reason for this oversight is because the inter-subjective, second-person, approach to knowing, is so common to our reality. In his words it is as a result of the “fish-in-water”

experiences *arise in the space created by intersubjective structures* is one of the main liabilities of many forms of spiritual and transpersonal psychology” (2000d:119 emphasis added).

The importance of intersubjectivity in shaping reality and giving identity can be quite clearly seen in human interaction. When *I* (subject) communicate with *You* (object), particularly in a face-to-face encounter,

something about who I am and something about the world shows up *through you* – and vice versa. The ‘I’ that encounters you (as the locus of another ‘I’) is different from the ‘I’ that encounters the world as a conglomeration of ‘its’. Who I am can be revealed (at least partially) through my encounter with you, whereas I – as ‘I’ remains entirely unattainable if I encounter the world as merely a collection of ‘its’ (de Quincey 2005:179).

This notion is fundamentally linked to the understanding of individual and social identity in the African world-view, where a person is a person through others, and participation and relation in the community is the primary place of discovering and developing identity (cf. section 5.6 above, and Shutte 1993:46-51, Ramose 1999:79, du Toit 2004:33, Mcunu 2004:36, Ndaba 1994:14, Louw 2001:10).

The fundamental aspect of human dignity is maintained through the interaction of persons with one another. Whilst a subjectivist approach to identity may be able to reveal

syndrome. “We tend not to notice the second-person perspective because it is right in front of our noses every day. It’s the medium in which we most naturally live” (2005:177-178). The third-person perspective requires a controlled environment for experimentation (e.g., a laboratory). Thus it is more pronounced and noticeable. Similarly, when one enters into first-person “subjective” approaches to knowing through meditation, or contemplation, one secludes one’s self, or withdraws, from the ‘normal world’ to create a contrast against which to reflect and introspect.

deep and important elements of my personal psyche and spirit, and the objectivist approach may be able to offer descriptive and analytical insights into my social behaviour and its pre-determinants, intersubjectivity relates me to others, my reality to the wider reality within which I am, whilst framing my experience of myself, and other persons' experience of being with me, in the notion of common humanity and dignity.

We could say that standard third-person inquiry leads to a science of external bodies, first-person inquiry to an interior science of the mind, while second person engagement leads to a *communal science of the heart*. Whereas the ultimate ideal of objective knowledge is control, and the ultimate ideal of subjective knowledge is peace, the ultimate ideal of intersubjective knowledge is relationship – and dare I say it, love (de Quincey 2005:180).

In the African world-view, human dignity is an essential element of *ubuntu*. Dignity underlies true humanity, and in the African world-view, dignity is not just something that an individual creates for him or herself. Rather, true dignity is a reality created in common humanity. It is an interrelationship between self and other, and even the intangible reality of being a part of a living Kosmos (God, the ancestors, and the sacred harmony of the natural world). There is a common dignity and all persons, in all creation, and, in fact, in all reality (both physical and spiritual), which creates the dignity of the individual.

Intersubjectivity from an African perspective suggests, a person grows more fully human, more truly in their identity, through engagement with other persons. Shutte presents the essence of this African perspective in writing that:

The key idea here is that a human person exists and develops as a person only in relation to other persons. The human self is not to be seen as something already formed and present in each human individual at birth. Instead, [the person] is still to be formed in the course of living. And it can only come into existence through the gift and influence of others. It is thus in no way material, something inside the body or the individual as for example, a mind-brain identity theorist might surmise. Insofar as it exists in a place it exists outside the body, in relation to other persons and the whole material environment. It is truer to the African idea, however, to see self and other as co-existing, each in the other in the sense of being identified with each other. The fundamental human reality must be seen as a field of personal energy in which each individual emerges as a distinct pole or focus. The field of life is the same in each; in each it is their humanity. All persons form a single person, not as parts for a whole, but as friends draw their life and character from the spirit of a common friend. They have a common identity (Shutte 2004:52-53).

de Quincey points out that this realisation is becoming increasingly popular in a variety of academic disciplines, from systems theory, to quantum science, consciousness studies, and of course the rediscovery of the perennial philosophy of the world's spiritual traditions. He writes that all of these contributions tell us that as individuals.

... we are definitely not alone ... we don't form relationships, *they form us*. We are constituted by webs of interconnection. Relationship comes first, and we emerge as more or less distinct centers within the vast and complex networks that surround us. In this new view, we are noted in the complex web of life. Each of us is a meeting point, a center of convergence, for countless threads of relationship. We are moments in time and locations in space where the universe shows up – literally, as a phenomenon (from the Greek *phainomenon*, “to appear” or “to show”). In other words, in this “new story” we emerge as subjects from intricate networks of interrelatedness, from webs of intersubjectivity (de Quincey 2005:182).

Clearly such an emergent, interrelated, view of identity and consciousness is of great value in unravelling the identity crisis presented in the hypothetical situation discussed in Chapters 1.1, 1.2 and 2.1.

In African intersubjectivity, a person is a person through other persons. The question “who am I” (subjective) is intricately related to who you say that I am (objective), and who we are together (intersubjective). Instead of being a lone subject, or a quantifiable and containable object, we are all “intersubjects”, fundamentally interwoven into a common cosmic identity and being that is run through with sacred dignity. It is not just me, it is not just you, it is not just the material reality, neither is it just the spiritual reality; true reality is a sacred interweaving of all these things.

Intersubjective identity, in African terms, has three clear understandings⁷⁵:

5.7.1. Identity is shaped through communication.

Intersubjectivity does not deny the necessity of some form of subject. There is a recognition that at a lower level of being the humans do exist as self-encapsulated subjects, as is suggested by the Cartesian notion of individual “I”s. These individual “I”s have some influence on each other’s identity through connection with each other that normally takes on the form of an exchange of physical signals, such as those found in language and culture. The most commonly observable instance of such connection, in the African world-view, can be seen in the way in which language and culture communicate and shape the identity of an individual.

⁷⁵ Please note that it is necessary to repeat some quotes from earlier sections here in order to clearly show the correlation between the terms of reference that are being discussed and the notions as they are presented in the African world-view.

Traditional African greetings are a first clear example of how language shapes identity through interaction⁷⁶. Traditionally, when a Zulu person greets another person she will say *sawubona*. The greeting can be translated as, “I see you.” The response from the greeted party is most commonly *yebo, ungubani*, “yes, you do see me. Who are you?” or, “yes, you do see me. Tell me who you are.” The first person would then be expected to relate her identity by offering praise to her great-grandfather, telling of who he is, where he is from, and what great things he had done during his lifetime. There are at least three inferences of identity that can be extrapolated from this simple exchange. Firstly, the primary emphasis of the greeting is an acknowledgement of personhood and human dignity – “I see you” infers recognition of a person (an objective observation). Secondly, the response from the person who is ‘seen’ affirms their ‘seenness’. “Yes, you do see a person” – this is a subjective affirmation of human identity and dignity. Finally, the parties locate their specific identity within that of a community or family, “I am the great grandchild of Jola, an ancestor of my grandfather....” – this is an instance of intersubjective identity as it arises from the communal relationships of both the living and the living dead (ancestors) in relation to who the individual is.

A second example of intersubjective identity being shaped through communication is that which is facilitated through accepted rites and myths of the community. Mcunu discusses the impact that cultural rites of passage have on the identity of an African individual (cf. 2004:27-28). In writing about the cultural rite of naming a child he says,

⁷⁶ I was unable to find any documented evidence of this linguistic element to identity. The information above is gleaned from various interviews with Zulu speaking persons, and in particular some enlightening conversations with Mrs Audrey Zinde a retired secondary school teacher, and part time Zulu lecturer at John Wesley College, the seminary of the Methodist Church of Southern Africa.

the significance of giving a name goes beyond a simple designation of the child, or choosing a name from a list or inventing one. Rather, it is a ritual of discovering, revealing or detecting the right name capable of defining the being of the child (Mcunu 2004:28).

It is not uncommon for children to be named after a particular virtue that is highly regarded by a family or community, so that a child should grow to become identified and moulded into that particular virtue. For example, the Nguni name 'Mxolisi' means the bringer of peace. It would be impossible to predict the nature and inclination of a child, as a peacemaker, at such an early stage in life. However, if the child is named as a peacemaker he can grow to become that which his name signifies. Naturally such linguistic and cultural connections are the weakest of the three forms through which identity is shaped in African intersubjectivity. However, it cannot be denied that such connection, which would be expressed through all the rites of passage that classify the stages of life, will have some influence in the identity of the individual. Mcunu, in affirming Shutte's understanding that an individual's identity is shaped through participation and engagement in the community (its culture, values and norms), writes:

I agree with Shutte, because the community nurtures the individual and coaches the individual as the community promotes his / her human development. The community norms are there to ensure that [the] individual person is helped towards self-realisation and self-actualisation (Mcunu 2004:39).

He goes on to say that,

Rites and customs form an integral part of the person's identity. To deprive African people this reality is to make them feel inferior or even experience a sense of alienation from himself or herself (Mcunu 2004:49).

This is not a subtle, unspoken, process of formation. It is explicit and intentional. The rites of passage are woven into the life of the community, and those who participate and are subject to them are clearly taught the meaning of such rites, and the understanding of their identity as a result⁷⁷.

5.7.2. Identity is shaped through engagement.

Whilst people connect with each other, and influence one another, through language, cultural norms and communication, it cannot be denied that people also connect in ways which are beyond physical or verbal communication. These non-verbal, often tacit, forms of connection are experienced through shared meaning or engaged presence. This form of interaction is much more than a development of knowledge in relation to identity; it can more accurately be expressed in terms of a change in being – a 'mutual conditioning'. The shift from individualistic, subjective identity, to that of intersubjective relational identity is a key element of African personhood. This notion is very clearly attested to in du Toit, who writes:

⁷⁷ Another good example of one such activity that shapes individual identity in Southern African males are the initiation and circumcision schools which are common among adolescent Nguni males. The young man would go into 'the bush' to be schooled in the cultural and social responsibilities of manhood in the African context. Once the schooling is complete he would undergo a ritual circumcision that marks his entry into adulthood. See Mcunu 2004:51 for more detail on this particular ritual and its importance in shaping the identity of the young man.

In Africa, a person is identified by his or her interrelationships and not primarily by individualistic properties. The community identifies the person and not the person the community. The identity of the person is his or her place in the community. In Africa it is a matter of 'I participate, therefore I am'⁷⁸... Ubuntu is the principle of 'I am only because we are, and since we are, therefore I am'. Ubuntu is African humanism. (du Toit 2004:33).

The notion of personhood and identity is not just something that is communicated through language and ritual, it is something that is 'lived' through participation in the common humanity of the community. True African human being (*umuntu*), as an ontological reality, is not just described in the concept of *ubuntu*, it is the

art and quality of being human. It is the base for the African way of life and its dictates are conspicuous in all spheres of life. It guides the thought pattern and life pattern of an African from the cradle to the grave.... To have ubuntu is to have what is expected of a human person.... It is a praxis of being (Mcunu 2004:31-32).

Personal identity in the African world-view means, "being-in-relation and not a being-in-itself" (Mcunu 2004:44). The essential element here is that persons do not merely exchange signals (language and culture) with one another, rather, there is an effectual conditioning of the other person, and the self, through engaging in what we truly are, namely dignified human persons (*seriti*). Setiloane comments that "participation with its concomitant element of belonging is made possible by 'seriti'⁷⁹, which is ever engaged in interplay with other people's 'deriti'⁸⁰ whenever they come into contact" (1986:14).

⁷⁸ Here du Toit references Shutte 1993:46-51.

⁷⁹ The African concept of 'seriti' (also called 'isithunzi') is understood as the common life, or dignity, that all human persons share by nature of their humanity. Setiloane describes it as "an aura around the human person, as an invisible shadow or cloud or mist forming something like a magnetic radar field. It gives

5.7.3. Co-creation and the shaping of identity.

This is the most radical of the forms of intersubjective identity, since it infers that individuals don't merely influence (language) and change (mutual conditioning) each other, they literally co-create each other's existence. de Quincey writes of this form of identity:

Rather than connecting by exchanging signals and informing each other ("linguistic"), or coming together in relationships and changing each other ("mutual-conditioning"), this strongest meaning [of intersubjectivity] implies that *relationships are primary* and that our sense of individuality is secondary, arising from a larger network of relationships (2005:184).

Ramose expresses the reality of this process in the African world-view clearly when he writes:

The African concept of a person as wholeness does not deny human individuality as an ontological fact, as an analytic finitude, but ascribes ontological primacy to the community through which the human individual comes to know both themselves and the world around them (1999:79).

Thus, the African worldview affirms the reality of an individual person who has a specific and unique identity. However, this identity has its ontological primacy not in the individual him or herself, but within the reality of the common identity of the community in which he or she is shaped (see quote from du Toit 2004:33 above). This identity is a

forth... the uniqueness of each person and each object" (1986:13). The emphasis here is to show that dignity underlies true humanity, and that in the African world-view, dignity is not just something that an individual creates for him or herself. Rather, dignity is a reality created through self and the other (both material and spiritual, subtle and gross, living and 'living dead').

⁸⁰ 'deriti' is the plural form of 'seriti'.

reality that not only informs and changes the individual's identity, but it gives the person the very essence of their being⁸¹.

In conclusion, it is clear that intersubjectivity and identity are fundamentally linked in the African concept of personhood. Such an understanding of personhood overcomes many of the pitfalls of individual self-validating consciousness and identity, in that true personhood is never just a matter of subjective feeling, or objective observation, rather it is these two elements, plus the all important notion of intersubjective relational identity that emerges through being in, and engaging with, other persons in community.

Ndaba writes that,

... the collective consciousness evident in the African culture does not mean that the African subject wallows in a formless, shapeless or rudimentary collectivity... [Rather, it] means that the African subjectivity develops and thrives in a relational setting provided by ongoing contact and interaction with others (1994:14).

Wilber concurs with such an integrated notion of the interrelationship and mutual shaping of both the community and the individual. He notes that in essence, much of the problem with contemporary consciousness studies is that it has either tried to absolutise the parts, or absolutise the whole. Theorists have either focussed almost exclusively on the

⁸¹ The element of human 'being' and dignity is intrinsically linked with the notion of personhood; to the extent that Berglund suggests that it is present, and shared, in the instance of pro-creation (cf. Berglund 1976:86). When a child is born out of wedlock the community says that they will be able to tell who the father is, since the child will resemble the dignity and personhood of the father (i.e., the child will emanate and present the *isithunzi* or *seriti* of the biological father. This is a much more subtle and significant aspect of being than mere a resemblance or physical appearance). This child is said to literally "bear the image of the father" (*isithunzi sikababa* – the dignity / personhood of the father, or *inswebu kababa* – the image of the father). (see Mcunu 2004:52).

individual (whether that be from a subjective – mystical, or objective – cognitive science, point of view), or exclusively on the collective (whether that be from a subjective – culture and religion, or objective – sociology and structure). In fact what is required is both recognition of the value that the individual has in shaping the community, and the value that the community has in shaping the individual. “It is true to say that there are no parts, but equally true that there are no wholes – only whole/parts...” (Wilber 1995:80). In any holistic sequence, it is impossible to do away with one aspect without destroying the others. A higher-level holon (in terms of complexity) is composed of its lower-level holons. It is a mistake to think that higher levels are more important in the identity shaping process. Neither can exist without the other, and so they are of equal ontological value. Wilber writes, “in other words, the individual and the social are not two different coins, one being of higher currency than the other, but rather the heads and the tails of the *same* coin at *every* currency” (1995:83). Each gives shape to the other by very nature of its being, the individual to the community and the community to the individual. It is a co-creative process of generating identity and being, each one equally dependent upon the other.

5.8. What makes the intersubjective knowing of self in African relational ontology a unique and novel contribution to the debate on individual self-validating consciousness?

This research has put forward the African view of personhood as a novel contribution towards scholarship in the theological study of personhood and individual self-validating

identity and consciousness. The previous sections showed just how important the quest for true identity is for the African person and community. Whilst studies of the African approaches to personhood abound, there has not yet been an application of the seminal aspects of these views to the hypothetical identity crisis arising out of Kurzweil's postulations in strong artificial intelligence.

Whilst the African relational ontological approach may not completely solve this conundrum, it is certainly able to further scholarship and debate in this area. The African approach to personhood, which was shown to be fundamentally located in communal relationships, (i.e., intersubjective) addresses the major shortcomings of many other approaches to consciousness (as was discussed in Chapter 3). It is worth mentioning the two broad approaches to individual consciousness, and pointing out their shortcoming in relation to the hypothetical identity crisis presented by Kurzweil's predictions in strong artificial intelligence.

5.8.1. Who do I say that I am?

Firstly, let us consider the subjective approaches to consciousness, most commonly associated with introspectionism, psychotherapy, psychology, and spirituality⁸². These approaches rely on the individual expressing and interpreting his or her understanding of what is experienced from within the self. Thus, the subjective approaches to individual consciousness rely fundamentally on first person interaction with knowledge that comes

⁸² Please refer to the more detailed discussion of the subjectivist approaches to consciousness in point 3.3 above.

from within the ‘self’, for example “I know I am me, because I have my memories”, or, “I know I am me because I feel like myself”⁸³. In most common situations such an approach to self-validating individual consciousness is quite adequate. Normal societal interaction does not usually question such statements, accepting them as verifiable proof of identity. For example, if two persons meet up after many years, perhaps they have both changed in physical appearance, they may rely on a shared memory of a past event to validate the truth of each other’s identity claim. For example two childhood friends meet in a foreign country after 30 years of not seeing each other, in order to validate who each is they appeal to a common memory of their childhood (e.g., their favourite hiding place). Since this is information that comes from within the individuals (i.e., it is based on memory), and cannot be openly observed or shared by other persons simply observing, it is taken as accurate and verifiable evidence of identity; “I know that I am your childhood friend because I remember we used to hide in a secret compartment in your mother’s bedroom cupboard”. However, in the hypothetical identity conundrum presented by Kurzweil, a memory, or shared experience with a person would not be sufficient verifiable evidence of identity since both the human friend, and the emulated version of him or her would hold that memory and experience in common. The friend and the artificially intelligent ‘emulated’ version of the friend would have identical experience of having hidden in the secret compartment. Each will believe the experience

⁸³ Subjective approaches seek to help the individual answer the question “Who do I say that I am”. Thus they are essentially individual subject designations of identity that are based on memory and sensory experience. The problem of such validation criteria become apparent when subjected to the confusion created by sophisticated emulations of individual consciousness where the emulated consciousness has the same memories and sensory experiences as the person it is emulating. The complexity of this problem is discussed above.

and memory to be their own, and thus both would feel justified in saying that they are the childhood friend of the person encountered overseas.

Clearly, the subjectivist approaches which rely on knowing information from within (experience, emotion, memory etc.), and accurately interpreting the significance of such 'known information' is not entirely adequate to resolve the hypothetical identity crisis.

5.8.2. Who do you say that I am?

Secondly, it is worth considering the objectivist approaches to consciousness. These approaches to individual consciousness, and the validation of individual identity, rely on objective observation of certain data by a third party⁸⁴. Commonly such objective approaches to consciousness studies can be associated with disciplines such as neuropsychology, psychiatry, cognitive science, and even sociology and anthropology. From the objectivist perspective the consciousness, and subsequent identity, of a person is validated by observing and quantifying observable aspects of the individual (e.g., the individual's brain function, or social interaction, or physical appearance) and relating these findings to what can commonly be expected to be seen and measured. Again, such approaches hold up in most general situations where one needs to validate consciousness and identity through observation. For example, if a middle aged man believes himself to

⁸⁴ Here the intention is to answer the question "Who do you say that I am?" The answer to the question is found in common observation based on study and comparison with certain truth and criteria (i.e., is what I see of you in keeping with my understanding of who you are, is what I hear you saying about yourself the same as what I see about you, do you function (biologically) in a manner that is consistent with who and what you claim yourself to be?). The fundamental problem with these forms of validation is that the truth criteria become somewhat difficult to verify in an instance where such criteria can be accurately replicated through the use of nano-technology (e.g., a person's brain, or body, is accurately replicated). This will be discussed in detail above.

be a female toddler one could engage in a number of interventions to establish whether his identification of himself is indeed correct or not. For example one could observe his behaviour and appearance, one could see how members of the society respond to the individual (e.g., do they treat him like a young female child, or like an adult male), one could even perform a surgically invasive procedure to determine the size, age and functioning of the individual's brain in order to establish a more accurate picture of his identity. Here the identity of the individual is verified through an objective third person account of what is observed. However, in Kurzweil's hypothetical identity crisis such objective observation does not hold up. The knowledge gained through third person observation is not sufficiently verifiable to establish the individual's identity. For example, if as Kurzweil postulates, nano technology becomes sufficiently advanced to engineer a replica of the human brain of the person that is being emulated, how would one tell the difference between two identically functioning conscious brains? Or if two individuals claim to be the same person, with identical mannerisms, social interaction and physical presentation, how does one know which one truly is the individual that both claim to be? Clearly the objectivist approaches to individual consciousness and identity cannot solve Kurzweil's hypothetical identity crisis either.

Remember, the issue at hand here is not to consider whether such event (i.e., the hypothetical identity crisis) can happen now, but simply to see how such a possibility could raise a fundamental problem with the way in which theorists have approached validation of individual consciousness and identity.

5.8.3. Who do we discover me to be?

African relational ontology shows that the fundamental problem that both the objectivist and the subjectivist approaches to individual consciousness and identity have is that they are based on knowledge. In the subjectivist approach identity is based on knowledge of self; “I know myself to be... because I can experience or remember certain things which I know to be my memories and experiences”. This is in some form an active personal engagement with passive knowledge. If the knowledge itself can be recreated in the artificially intelligent machine then the subjective experience of being self can be called into question. In the objectivist approaches individual consciousness and identity is based on a third person observation of what we know an individual person to be like, or how an individual conscious brain functions under normal conditions. But what if what one expects to see and find can be accurately replicated? Then such knowledge is not sufficient to truly validate the identity of an individual.

The fundamental flaw of these approaches is that they rely on knowledge that is passive (whether it comes from within the individual, or is observed in relation to the individual). In this sense one could say that such knowledge is passive, it experiences or observes something about being a conscious individual. It is a momentary observation or experience of something that is known – it is static knowledge.

The insight that African relational ontology brings to bear on this discussion is of immense value. As has already been shown above, in the African relational ontology

identity is not based only on what you know about yourself (e.g., what you, or others, experience and know about you), but rather identity is based on *knowing* of the self. The fundamental difference is that whereas objective and subjective knowledge is static, *knowing* of self is active. *Knowing* participates in that which it knows. In *knowing*, the knower and the knowledge penetrate each other, each informing and enlivening the other to creating a shared, living, meaning – a person is a person through other persons (*umuntu ngumuntu ngabantu*) (Ramose 1999:49f; Shutte 1993:46). Since identity is ontologically linked to relationship, true identity can only be validated through an interactive knowing of the self and other, as opposed to a passive knowledge based experience or observation of facts about the self or other. This is where the African relational ontology of *ubuntu*, which describes “human being as ‘being-with-others’”, is of value to the debate of individual identity and consciousness (Louw 2001:1). This active, intersubjective, engagement is of fundamental importance to solving Kurzweil’s hypothetical identity crisis⁸⁵. Intersubjective engagement requires more than just a momentary experience of self, or a momentary observation by another person, it requires a journey of mutual discovery and interaction to validate identity.

Fundamentally, the African view of personhood, does not simply depend on who I say I am, or even on who you say that I am, it is based on an active engagement of persons in a

⁸⁵ This is the contribution of an intersubjective orientation of shared identity (i.e., it is based on second person knowing; what do we share in common about us. Does what I know about me, and what you know about me, and the shared reality that we know match with each of our experience of who I am?). The fundamental element here is engagement (knowing), not just verification of truth (knowledge). This overcomes some of the real problems that Kurzweil’s hypothetical identity crises raises in relation to the subjective an objective approaches to consciousness and individual identity. This is discussed in detail above.

shared community that gives life to an identity which is shared and shaped over time, through sharing, discovery, and interaction. In community, my present becomes our shared past, my experience becomes our common memory, my appearance becomes our common landscape; of course the same can be said for every other person in the community.

Thus, in this approach to personhood and identity there is a fundamental difference between knowledge and knowing, and between observing and participating, between the moment of experience or observation, and the journey of mutual encounter. African relational ontology is a lived participation in the reality of being self in relation to others. The discovery and shaping of my identity is a shared journey of lived encounter, as opposed to a mere momentary recollection and interpretation of experience and memory, or a momentary classification due to observation. In the context of African relational ontology when one asks a person “who are you” it should not be assumed that the person is asking the question because he does not know who you are, quite the opposite, you have lived together in community. The crux of the question relates to the one being questioned. In this context “who are you?” is much less for my knowledge, and much more for our discovery. Thus, in Kurzweil’s hypothetical identity crisis, when one asks both of the individuals who they are, the question relates to identity in relation.

In relation to the integral theory which was discussed a length in Chapter 4 of this research, the African relational ontological approach overcomes the dualism of self and other, and internal and external self. My true identity is not just how I feel or experience

myself to be (Upper Left quadrant / Individual Interior), neither is it entirely who you say that I am (Upper Right quadrant / Individual Exterior), or who you observe me to be in my context and surroundings (Lower Right / Collective Exterior), or how I see myself fitting into the culture and mindset of our community and context (Lower Left / Individual Interior). Rather, the truest form of my identity is made up of subjective experience of self (emotion, memory, impulse, and perceptions of self), objective validation from others (in terms of the individual exterior that is observed, such as normal neurological functioning, race, gender, age, appearance. And in terms of the collective exterior, elements such as geographical location, functional role in a larger society, family relationships), and intersubjective indicators of identity (shared cultural and social identity, value systems, cultural and social expectations).

Thus, African relational ontology overcomes many of the pitfalls of a purely subjective or objective approach to individual identity by emphasising the importance of the intersubjective elements of being-in-relation-to-others. It moves from a passive knowledge-based verification of individual identity to an engaged shared experience of identity which makes allowance for all four quadrants of conscious reality, at various levels⁸⁶ of engagement and experiences⁸⁷. As such it is truly an AQAL (all quadrant, all

⁸⁶ The knowledge of self can be seen to take place on at least 4 primary levels. Firstly, I take in experiences (whether these be communicated through others or perceived through the senses – empiricism, or “the scientist’s gift”). Next, I reflect on what has been taken in (this is a more subtle engagement with the input of information – reason, or “the philosopher’s gift”). Third, I compare what has been said or experienced with what I already know and feel (this is feeling, the “shaman’s gift”). Finally, I appropriate this knowledge through the act of knowing and come to some understanding and it becomes a part of my being (sacred silence, the “mystic’s gift”) (de Quincey 2005:239-243). In terms of Wilber’s holarchy, each of the levels is an indispensable part of the whole act of knowing. Even though some levels of knowing are less complex than others, these rudimentary levels are crucial in shaping and giving substance to the process of knowing. De Quincey relates this schema of consciousness to Arthur Young’s “Four levels of being”, matter, mind, soul and spirit (2005:239-243). He argues for the point that the highest forms of knowledge

level) approach to identity. Thus, one could go as far as saying that African relational ontology proposes a model of identity that is not just individual, but rather one that is holarchic, in which both the part (the individual) and the whole (the community) are of immeasurable importance in shaping the shared intersubjective reality which affirms and validates the individual's identity. This overcomes the problems of simply saying "I am...", or "You are...", or even "We are...", and add the active dimensions of "We discover ourselves to be...", and, "Together we become...".

Of course this notion of identity through relationship resonates strongly with traditional Christian Theology. One cannot but notice the linguistic and philosophical similarities between the above approach to identity as expressed in African relational ontology, and the Christian theological approach to the identity of the Trinitarian persons in the Godhead. It would also not be amiss to draw some parallels between the Christian anthropological concept of human identity in relation to the identity and person of God the creator, with whom persons are in relationship, and the notion of identity in relationship as expressed in African relational ontology. Moreover, the notion of corporate culpability and mutual responsibility for wholeness and harmony in creation and the Kosmos (i.e., harmony between humans, creation, and the Creator) that is expressed in African relational ontology has strong resonance with Christian Soteriology.

(spirit) are shaped through the lower forms of being and engaging, i.e., sensing, thinking and feeling. However, the truest form of knowledge comes from simply being, being in relationship with self, being in relationship with others, being in relationship with the kosmos, being in relationship with the divine. This relationship of being (which he speaks of as the gift of the "mystic", or the "fourth gift" is the highest and truest form of knowing and consciousness (de Quincey 2005:243).

⁸⁷ Please refer to the diagram taken from Wilber 1997:4, on page 196 of this thesis, and the detailed discussion of Ken Wilber's integral theory in Chapter 4 for more detail on the above concepts.

The section that follows will extrapolate the implications of the confluence between African relational ontology, human identity, and Christian theology.

5.9. The theological confluence between African relational ontology, individual identity, and Christian theology: Towards an African Theological contribution towards an integrated relational ontological identity.

In the sections preceding this one an argument has been presented for the uniquely valid contribution that African perspectives on identity and personhood can offer to the field of consciousness studies, particularly in relation to the hypothetical identity crisis that is proposed through Ray Kurzweil's claims in Strong Artificial Intelligence.

A further important, and novel, contribution of this research is to articulate a clear theology of African integrative relational ontological identity. All of the research done on this topic has shown that no one has yet attempted such a theological contribution from the African perspective.

This theology, which goes some way towards dealing with some of the shortfalls of the subjective and objective approaches to individual identity, is expressed most clearly as an *'African theology of relational ontological identity'*.

The content of this theological construct is grounded in the Doctrine of God as the source of all true being. Naturally it will have significant impetus for the Doctrine of Christian

Anthropology, since the underlying concepts stem from an African approach to, and understanding of, personhood. Finally, there are some valuable insights to be made in relation to God's purpose for wholeness and salvation for individuals, communities and the Kosmos as a whole.

As an aside, this section warrants much greater depth and research than it can rightly be granted within a study of this nature. It will be pointed out in the conclusion of this thesis that further research in this area will significantly add to the corpus of African theology, and as a result is both valuable and necessary.

5.9.1. An African theology of relational ontological identity and the Trinity.

The Doctrine of the Trinity is foundational to both the Doctrine of God, and as such to the Christian faith. Even a cursory glance at the central elements of the African view of personhood shows some strong correlations between this view and traditional views of God, as expressed in the Doctrine of the Trinity. I will list three of the most striking and important areas of overlap below.

5.9.1.1. Identity in relationship.

As Ramose (1999:49) and Shutte (1993:46) rightly point out the notion of identity through relationship is central to the African world-view. The African statement that describes persons is *Umuntu ngumuntu ngabantu* (a person is a person through other

persons). At the heart of this statement is the word *ubuntu* which means “humanity”, “humanness”, and even “humaneness”⁸⁸. In short, to be truly human means being in relation with other persons who give form and substance to one’s true humanity.

This manner of being is not foreign to Christianity. The Doctrine of the Trinity posits the same relational element to the identity of the three persons of the Godhead, Father, Son and Holy Spirit. McGrath writes that the Trinity is “a community of being, in which each person, while maintaining its distinctive identity, penetrates the others and is penetrated by them” (McGrath 2003:325). The African understanding of personhood is very much the same. It is the relationships that we are in that shape our true identity. When asking an African person who he or she is (*ungubani*), the answer is always relational in nature. A traditional answer would be one in which the individual identifies himself in relation to his ancestors, grandparents, parents, and wider social grouping e.g., “I am a descendent of Jola, grandson of the great Mxolisi, child of my grandfather’s son Loyiso”⁸⁹. For the African it is the lived experience, and reality, of being in relationship that forms his or her identity. Relationship as identity is an active engagement in the development of the concept of ‘self’. Of course this principle is a fundamental aspect of the Trinity, in whose image all human persons are created (Genesis 1:27). The identities of the persons in the Trinity are not coincidental in nature - merely revelatory expressions to make God understandable to human persons, as if there was some ontological difference between the true identity of the immanent persons of the Trinity in the Godhead and the economic

⁸⁸ These translations are agreed to by the following scholars: Broodryk, 1995:5f; 1997a:1-2; 1997b:27f; Bhengu, 1996:1-12; Prinsloo, 1994; 1995:2; 1998:41-43; Sindane, 1994:1-2; 1995:8-9; Teffo, 1995:1-2; Pityana, 1999:144-145. For a comprehensive discussion of this term please see section 5.5 above.

⁸⁹ Please refer to 5.7.1 above for a more detailed discussion of this notion.

expression thereof in God's self-revelation to humankind⁹⁰. Rather, the very identity of the Son is inextricably linked to the Son's relationship to the Father. Jesus' identity is that of "the Son of the Father" as it has traditionally been formulated in Christian theology.

In the context of this research the essential element that needs to be explicated is this last one – that relationship is not merely something we observe, or simply know. Rather, relationship is an active lived reality that shapes our being. This element of our ontological identity can be directly related to the ontological identity of the persons-in-relationship in the Trinity.

5.9.1.2. Being in interaction.

A further interesting observation arises out of McGrath's description of the Trinity as a "community of being", i.e. a collective of distinct persons (2003:325), rather than the common misgiving in Western society that sees persons as "beings in community" i.e. individuals who happen to relate. I would venture that even some Christian theologians have fallen into the trap of regarding the persons of the Trinity as "beings in community", three completely separate individuals who happen to be in community. The emphasis in McGrath's theological statement, correctly, rests on community as the primary ontological reality that gives rise to the nature of the beings. In other words the very nature of the beings is found through their being in community.

⁹⁰ This phraseology was coined by Karl Rahner, the German Theologian who said the "immanent Trinity *is* the economic Trinity and vice versa" (in Gayba 1994:83).

The relational element of the community is fundamental to an understanding of how identity is shaped. Truest identity comes not just from a moment of encountering another person (called relating), it comes from a continuum of shared being (called having a relationship). Who I am is shaped by whom I am in relation with. Within the Trinity this form of ongoing engagement is referred to as *perichoresis*. It is a shared life that gives rise to both common identity and individual expression. One *ousia* with three distinct *hypostaseis*⁹¹; a common substance in three subsistances, existing in eternal self-emptying relationship.

The fundamental unity of the Trinity presupposes that relationship is an essential element of the being of the Godhead. If it were not so, there would be three completely separate Gods who ‘relate to one another’. Rather, in the Trinity one finds three persons who have their common being (one divine nature) in interaction. Gaybba describes this model of the Trinity as follows:

... a single undivided substance, existing simultaneously in three different ways, each of which is unceasingly flowing either into or out of the others. The flow is known as the divine *perichoresis* or *circumincessio* (1994:78).

Shutte’s expression of identity in the African context resonates so strongly with this understanding of God. He writes:

⁹¹ The terminology of this phrase was coined by Tertullian to show clearly that reference to the distinction of the three persons of the Trinity does not divide the one common substance that they share (Gaybba 1994:78).

It is truer to the African idea, however, to see self and other as co-existing, each in the other in the sense of being identified with each other. The fundamental human reality must be seen as a field of personal energy in which each individual emerges as a distinct pole or focus. The field of life is the same in each; in each it is their humanity. All persons form a single person, not as parts for a whole, but as friends draw their life and character from the spirit of a common friend. They have a common identity (Shutte 2004:52-53).

Thus, the African view of personhood which sees persons as fundamentally shaped by being in relationship (not just having relationship) has strong theological ties to the Doctrine of the Trinity, where true identity comes to the fore in and through relationship, and where relationship is a primary aspect of the being.

Since human persons are created in the image of God, it is not surprising that an appeal to the self (personal experience), or an appeal to the other (a momentary encounter) will never reveal true identity⁹². What is required is the ongoing continuum of intersubjective relationship in community.

Again this ties in well with the criteria for an integrative approach to consciousness and identity that was presented in chapter 4 of this thesis. The All Level, All Quadrant approach to identity is not merely experienced, or simply observed, as a static reflection on passive knowledge, rather it is an active personal and communal engagement with a shared reality on various levels that brings about true identity. As Shutte suggests *ubuntu ngumuntu abantu* could also be translated “I participate, therefore I am” (1993:46-51)

⁹² Slater notes that until the 14th century Augustine’s formulation of the self as the image of the Trinity occupied high importance in Western theology (2002:75)

5.9.2. An African theology of relational ontological identity and Christian Anthropology.

One of the grave problems of much modern Western theology is ardent individualism. Whilst there is no doubt that the individual human person is important in God's economy, the overemphasis on individual salvation, personal experience of God, and understanding individual identity in Christ has led to an aberration of Christian anthropology. This aberration has led to two dominant problems in modern Western theology; firstly, the misunderstanding that there can be a separation between our creation as human persons and being in relationship with God. One cannot be fully human without being in relationship, and to be in relationship with God also demands being in relationship with those whom God has created. Secondly, the overemphasis on the individual person as the central focus of God's creative and redemptive work in the Kosmos.

Traditional Christian Theology maintains that true human identity is as a result of being created in the image of God (König 1994:102). In other words, true human identity comes from being related to God, who is the true source from which we come, and thus the true source from which we derive our identity. This identity is fundamentally linked to the relationship with God who shapes our true identity. König writes of this relationship:

... our relationships are extremely important. They are essential to our humanity... we can only come into our own in relationships.... The anthropology developed here deliberately bases our humanity on our

relationship with God. To be human means to be in the presence of God... (1994:103-104).

Not only does our relationship to God give us our true identity, but also our relationship with those with whom God has created us to be in relationship with gives us a further insight into our true identity. Kasenene writes that in African tradition,

Muthu u bebelwa nunwe, “A person is born for the other.” This shows that according to African philosophy, a person is a person through, with and for the community (1994:141).

Since God is most truly God (as Trinity) in relationship, we cannot be truly human, truly ourselves, until we are truly in relationship with other persons. Kwame Gyekye relates the African proverb that says, “When a man descends from heaven, he descends into a human society” (1987:155). This is African emphasis on the ontological necessity of community is an essential element of being created in the image of God. Relationship is not only our God-given destiny it is our true identity. Du Toit best sums up this element, in African thought, when he writes:

In Africa, a person is identified by his or her interrelationships and not primarily by individualistic properties. The community identifies the person and not the person the community. The identity of the person is his or her place in the community. In Africa it is a matter of ‘I participate, therefore I am’⁹³... Ubuntu is the principle of ‘I am only because we are, and since we are, therefore I am’ (2004:33).

The other essential element for Christian anthropology is that true identity arises not only from a harmonious relationship with other living human persons, but also through

⁹³ Here du Toit references Shutte 1993:46-51.

harmonious relationships with God, the ancestors, and all of creation. As Ngubane notes wholeness means much more than just a healthy body and good relationships with one's neighbours, it "pertains to all that concerns the person including the perception of a harmonious, co-ordinated universe" (1977:28).

This emphasis of harmony and wholeness with the material world, and the spiritual world, under God, is surely the 'eternal shalom' that is spoken of in the Isaiah 11:6-9. König speaks of such a harmonious relationship with God in terms of a covenant relationship (1994:103-105), and a respectful, loving relationship with all persons and creation in terms of recognising the image of God in all such created beings (1994:105-109). His summation of this twofold relational anthropology has a great deal of synergy with the relational ontology expressed in the African view of 'humanness' – *ubuntu*.

König writes about Christian anthropology saying:

The theological concepts of God's covenant relationship and the image of God provide us with an integrated concept of true humanity as constituted by relationships: relationships with God, humanity and nature (1994:111).

5.9.3. An African theology of relational ontological identity and Soteriology.

Finally, African relational ontological identity relates to God's desired goal for all humanity. This common goal is the goal for all persons that live; namely, fullness of life in true relationship with God and all creation. When one considers traditional Soteriology it is evident that salvation was never intended to be only a private spiritual affair in which the individual believer is released from the burden and guilt of personal

sin. This individualistic, moral, oversimplification of salvation is another aberration of popular Western theology that stems from the negative elements of radical dualism between faith and life, and individualism.

John Suggit writes the following about the Biblical understanding of salvation as more than just spiritual and individual:

The biblical story therefore is the account of the way by which God restores to human beings the freedom which they were created to enjoy. The word redemption, which strictly means 'buying back' or 'ransoming', is a useful term to describe the overcoming of the alienation which separates human beings from themselves, from God the source of their life, and from others. By God's redemptive love they discover their true being, and they belong to God (1994:113).

African relational ontology shows that true identity, the identity intended for humans by God, cannot be seen individually. In fact in concurrence with what is said about Biblical redemption above, it cannot be seen apart from the primary relationships for which salvation is intended. Thorpe sums up the eschatological intent of God's creative process in the African world-view of *ubuntu* (being truly human):

Health, balance, harmony, order, continuity are all key words. They not only describe a desirable present condition for individuals and the community, but also represent the goal towards which people constantly strive. This ideal needs to be maintained not only within the visible community but equally in relation to the invisible community, conceptualised as spiritual powers (e.g., the ancestors) (1991:111).

In this context salvation is not only a private, individual, spiritual affair. Neither is it a separation from true living in this world (or in the next). Salvation must take cognisance

of self and others, self and God, self and the created world. True salvation comes from being in community, from being truly the self that God has created one to become through being in community. Communities, by their very nature, are made up of persons of different age groups, genders, personalities etc., there will be persons that help one to grow through affirmation, nurture and care, and others who help one to grow through conflict, disappointment and struggle. This is the part of becoming truly human.

A further valuable corrective that this understanding of African relational ontology brings to salvation, is that salvation, as the true realisation of the self that God intends one to become, is seldom realised in a momentary experience. Rather, such salvation, as expressed in African thought on true humanness, is brought about by true, sustained relationship and growth in true identity. Setiloane writes that in this African context,

... the essence of being is participation in which humans are always interlocked with one another... the human being is not only a 'vital force', but more a 'vital force' in participation (1986:14).

Du Toit seems to concur with this notion when he writes,

For Africans, to be human is to participate in life and respect the conditions that make life possible. To participate in life means ultimately to participate in the fellowship of the community.... African society emphasises solidarity rather than activity, and the communion of persons rather than their autonomy.... That personhood is identified by an individual's interaction with other persons does not eliminate personal identity... It simply says that my personal identity comes to the fore in my interaction with, and place in, my community (du Toit 2004:33).

Thus, true identity comes to the fore through interaction in community. There is no doubt that some applications of this concept can be oppressive rather than liberative, and that in the wrong community, or a community that does not “respect the conditions that make life possible” there is great possibility for abuse. However, in the context of true *ubuntu* mutual respect and interdependence is the true foundation for relational identity. In this context my relationships with others raise me up, rather than put me down, they offer me life, rather than demanding it from me.

I am certain that if space and time allowed it would be possible to extrapolate many more valuable theological elements from this African theology of relational ontological identity. However, the point has been made here, that such a theology is valuable in making a contribution towards theological scholarship, just as African philosophical perspectives on personhood make a valuable contribution to scholarship in consciousness.

5.10.A critical evaluation of the African perspective of personhood.

The preceding sections in this chapter have displayed many of the valuable and notable elements of the African concept of *ubuntu* as a theological model for personhood. The elements such as community, interdependence, and solidarity are all noteworthy. However, it must also be acknowledged that the concept of *ubuntu* presents some problems both with the concept itself, and also with its application in modern African communities.

The first obvious critique that is levelled against *ubuntu* is that it creates a measure of dependence in persons and thwarts self-determination. Since collective decision making and consensus models are common in such communities, the possibility is that the community would settle for the lowest common denominator. Moreover, it is almost certain that some individuals would not agree with all decisions that are taken by a community, and so may need to subdue personal interests or feelings for the good of the community. Secondly, there is some criticism of the understanding that in traditional African societies where the principles of *ubuntu* are applied persons who excel and have personal success are often viewed with suspicion and mistrust since their endeavours are not necessarily aimed at furthering the ideals of the community as a whole. Thirdly, there is also some measure of concern that the collective nature of traditional African communities has led to the creation of a dependency syndrome in Africa (cf. Phahlamohlaka and Kroeze 2004:192). Since weaker members of a community would always be cared for by stronger members, and the overall success of the collective is more important than the achievements and acclaim of individuals, it is felt that lazy members of a community are not forced to grow, whilst members who have great potential may choose not to excel since there is very little incentive to do so, and they may be viewed with suspicion if they attain personal success. Finally, as pointed out by du Toit, whilst the notion of *ubuntu* is idealised by foreigners and white South Africans, it is easily discarded by young black South Africans who are enticed by the allure of personal power, wealth and acclaim. He writes that,

Ubuntu may just as easily be discarded by urbanised and economically independent Africans. Ubuntu is easily romanticised by whites suffering from the isolation and fragmentation that comes along with individualism (du Toit 2004:33)⁹⁴.

5.11.Conclusion.

This chapter has discussed the concept of African relational ontology as an intersubjective corrective to the problems faced by purely subjective and objective approaches to consciousness, which were shown to be inadequate in resolving the hypothetical identity crisis proposed by Kurzweil.

In addition to this, the chapter presented an African Theological understanding of personhood that is ontologically rooted in relationship and community. The theological confluence between elements of this African view of personhood and the doctrines of God, Christian Anthropology and Soteriology were also presented and discussed.

In the concluding chapter of this thesis, it will be shown how this approach to individual consciousness and identity can satisfy and resolve some of the identity problems that arise in Kurzweil's hypothetical identity crisis. The final chapter will also give an overview of the success, and shortcomings, of this research project. The chapter will point out some areas that are unresolved, and areas where further research is warranted.

⁹⁴ This is the most commonly observed downfall of many ideals in community. Since most ideals are born out of necessity (i.e., *ubuntu* was born out of the need for survival; it took solidarity in the community to meet the needs for safety, nutrition, propagation of culture, religion and identity), they often fall by the wayside when the problems that led to their formation disappear. This is evident in all cultures, not only African ones, that as the context changes and persons become more self sufficient their perceived need of others changes. However, this research argues that there is an ontological necessity for the ideals espoused in *ubuntu*. The relational tension that exists in true community is a necessary part of becoming truly human.

Finally the concluding chapter will make some recommendations about how this model of consciousness can enrich the lives of persons of faith through the inclusion of such a theology in Church liturgy, theological forums on Christian anthropology, critical reflection groups on identity and identity crisis in society, and therapeutic interventions in situations where people have been marginalised or disregarded due to a false understanding of true relational ontological identity.

Chapter 6

6. Conclusions on African relational ontology as a model for verification of individual identity and consciousness.

In the concluding chapter of this thesis, it will be shown how this approach to individual consciousness and identity can satisfy and resolve some of the identity problems that arise in Kurzweil's hypothetical identity crisis. The final chapter will also give an overview of the success, and shortcomings, of this research project. The chapter will point out some areas that are unresolved, and areas where further research is warranted. Finally the concluding chapter will make some recommendations about how this model of consciousness can enrich the lives of persons of faith through the inclusion of such a theology in Church liturgy, theological forums on Christian anthropology, critical reflection groups on identity and identity crisis in society, and therapeutic interventions in situations where people have been marginalised or disregarded due to a false understanding of true relational ontological identity.

6.1. How this African theological approach to individual consciousness and identity can satisfy and resolve some of the identity problems that arise in Kurzweil's hypothetical identity crisis.

This research project began by framing the research question that arose from Ray Kurzweil's hypothetical identity crisis (cf. 1.1, 1.2, and 2.1 above). The research question that was posed is:

How can one validate individual consciousness in a situation where both a human and a machine possess an experience of being the same conscious person?

It was shown that purely subjective approaches to this question will enable an interrogator applying the Turing test to learn some things about both the subject (in this study referred to as 'Dave'), and the emulated version of the subject. The interrogator's aim would be to gain sufficient and relevant knowledge from each of the interactive subjects in order to validate which of the two is in fact the human person named Dave. The problem that arises from the subjectivist, or phenomenological, approaches is that they rely on tacit information within the individual. This information may include such things as memories, personal experience, feelings etc. However, if the emulated version of Dave has been programmed with the same set of memories, experiences and feelings, neither of the two subjects will be able to provide anything other than subjective criteria to validate their true consciousness or identity. Thus, both Dave and the emulated Dave would probably say something like "Trust me, I am Dave. I feel like Dave, I have Dave's memories, I have a conscious experience of being me". No amount of interrogation, psycho-analysis, prayer, contemplation, or self searching would be able to present any further verifiable information about either subject's true identity.

The objectivist approaches were also found to offer some insight into the subjects, but not sufficient insight for a third party observer to validate the individual's true identity. This is particularly so in the hypothetical situation where nano-technology has been developed that is able to accurately and convincingly reproduce parts of, or the whole of, a human

person. The objective observer may thus study the two subjects' appearance, their behaviour, the observer may even perform some invasive surgical procedure to see how the two subjects' brains function under certain test conditions. However, since both are identical the empirical, observable, results will be the same for both Dave and the emulated version of Dave. The observer would simply be in a position to conclude, "they both look like Dave. Both behave like Dave, both have Dave's biological and neurological functioning". Hence there is very little chance that any amount of observation, study, or empirical quantification will be able to present verifiable evidence of the true identity of either subject.

The fundamental shortfall that was identified in both the subjectivist and objectivist approaches is that they relied on passive *knowledge about* the person. Such information could thus be fabricated, emulated or represented to a third party interrogator or fed into the subjects experience, memory, or frame of reference.

However, the position that was developed in this thesis is fundamentally and inter-relational perspective. It is based upon intersubjective engagement, hence not passive knowledge about the person, but active engaged *knowing of* the person.

Thus, both the interrogated subject and the interrogator would be known to one another. The notion of identity in community, as it arises from the African relational ontological worldview: *umuntu ngumuntu ngabantu* – a person is a person through other people.

There are a number of ways in which the African theological ontology of identity is able to help solve the identity conundrum discussed above.

The first solution that the theology of African relational ontology offers is that it posits true ontological identity within relationship. Since human persons are created in the image of the Triune God who *is* a relationship of persons, so too the truest identity of a person is not what he may say of himself, or even what others may say of him (these would be considered ‘subsistances’), the truest identity is that which is the shared relationship common to the community (the common ‘substance’ of their shared being). This shared identity – *ubuntu*, is not something that is spoken of, seen, or shared, rather it is a common living reality that takes shape through the inter-relationships of the persons in active engagement with one another. It comes into being through the shared relationship, rather than simply being observed, felt, or spoken about. Verification of true identity is thus not through the interpretation of shared objective ‘knowledge’ (whether it comes from either subjective or objective approaches to consciousness), rather it is an intersubjective shared ‘knowing’. Thus the verification does not rest in the individual i.e., “who do you say that you are?” or, “who do I say that you are?” rather it rests in the shared relationship that is our primary state of being. So while my individual identity is important, it is not more important than the primary identity which we share in our common being. I am first a human person *umuntu* whose ontological identity and humanness is shaped in shared community *ubuntu*. In such an interaction where shared ontological relationship is the primary reality it would not be possible to create an ontological identity crisis, since the truest identity is that which is shared in the

community. The shared reality of the community makes the ontological identity clear. The individual, as well as the community, could thus give an unequivocal answer “we are...”, since the shared identity is a primary identity that is not subject to the identity crisis of the individual. Hence, the individual could say “even though I am not certain who I am, I know that we are...”

However, this does not yet deal with the notion of individual identity within that broader ontological identity which is *ubuntu*. What of the individual’s question, “who am I?” This issue is also dealt with in the theology of African relational ontology. Just as the primary identity of the community can be located in the shared community, as with the Doctrine of the Trinity, so individual identities of the members of that shared community take their true shape in and through the interaction of the community. Shutte said that the phrase *umuntu ngumuntu abantu*, can be translated as “I participate, therefore I am” (1993:46-51). Being in community is not a matter of belonging only, the truest form of being in community, according to the philosophy of *ubuntu*, is to participate. It is an active, lived engagement that gives identity both within the community, and as a result of participation, in the community the individual’s identity is shaped through that participation. This notion was discussed in the theology of African relational ontological identity in the doctrine of the Trinity (see 5.9 above). Jesus, Son of the Father, has his primary identity not only in being a member of the Triune Godhead, but also in the fact that his participative *circumincessio* in the community is to be constantly the Son of the Father. In short, Jesus’ “I am...” comes from active participation in the “we are...” which is our true common identity. The *hypostaseis* of the subsistence of the Son, stems

from an active participation in the common *ousia* of the one common substance of the Trinitarian Godhead. The African theology of relational ontological identity suggests the same process of developing individual identity.

In Africa it is a matter of ‘I participate, therefore I am’⁹⁵... Ubuntu is the principle of ‘I am only because we are, and since we are, therefore I am’. Ubuntu is African humanism. (du Toit 2004:33).

The active participation in a shared common identity leads to the formation of my own individual identity. Therefore, since my individual identity stems from an active participation in the shared identity, my identity arises out of our common life. Thus, my individual identity is as much discovered by me, as it is discovered and shaped by the community in which I participate.

This is a radical knowing of self, and a radical knowing of my self by the other. In this context the casual observation by, or momentary interaction with, an unknown interrogator would be expected to bring an inconclusive result. Since such engagement and encounter seeks not to know me, but to gain knowledge about me. It seeks not to shape and share in the formation of true identity, but simply to establish some observable fact; it is based on passive knowledge, rather than active, shared, knowing. The only true insight into my individual identity comes from an active shared engagement in my identity that stems from a common primary identity that is shared by both the individual and the community.

⁹⁵ Here du Toit references Shutte 1993:46-51.

Hence, what is required is true knowledge of self (as an active lived participation between the members of a ‘humane’ community – *ubuntu ngumuntu abantu*) rather than a clinical interaction and observation of two individual subjects of which one does not hold the identity he believes to have. Thus, in short, even if an interrogator were to discover which of the two subjects (Dave, or emulated Dave) was the actual person, what would the value of that identification be? True identity derives its value from being in relationship, from *participating* in the shared humaneness of the community in which that identity is discovered and developed.

The next important contribution that the African theological understanding of relational ontological identity gives to this debate is that of the purpose of individual identity. In the theological discussion in 5.9 above, the goal of individual identity was discussed in relation to God’s purpose for the creation of human persons (Christian Anthropology) and God’s desire for the true and ultimate identity and being of such persons (Christian Soteriology). One of the greatest shortcomings with consciousness studies is that it engages in the pursuit of understanding individual identity for the simple sake of the individual. The question that begs asking in that context is, “So then, if I discover which one of the two subjects truly is ‘Dave’, then what is the purpose of making that identity assertion?” Of course, in the tacit knowledge-based identity arena of subjectivism and objectivism the reasoning is simply to *know*. The knowledge of the identity of the individual is the most important aspect of the pursuit for individual identity; for me to know that I am me, and for you to know that I am me.

The African theology of ontological relational identity, however, suggests that there is a far richer and deeper purpose for the discovery and development of true identity, that purpose is to be able to say of an individual in community that he or she is *usibani bani ungumuntu* (that person is truly a person, or that person is truly 'human'). The true nature and purpose for human being is *seriti* or *isithunzi*, the common life of dignity that all persons share by virtue of their created reality (cf. Setiloane 1986:14, and the discussion in 5.7.2 above). The dignity is shared not only between human persons, there is a dignity to the whole of the Kosmos. The purpose of true human identity, *umuntu*, is *ubuntu*, harmony between self and others, self and creation, self and God. This *seriti* is the eternal purpose of God for all creation.

Thus, the African theology of ontological relational identity shows that the truest purpose for discovering, and developing true individual identity is so that the individual may become truly human through participation in God's liberative and salvific plan for the dignity of all humanity and creation. God's plan is for the eternal peace, *shalom*, of the Kosmos.

Finally, it is worth mentioning that individual identity, in this context, takes on a much fuller and worthwhile meaning. True identity is thus not just about knowledge, it is about an active engagement in knowing the truth of the shared human identity – that is dignity, and seeking to be shaped by that shared human identity in order to actively participate in God's salvific plan for all humanity and creation.

6.2. An evaluation of the research project.

This project set out to answer a specific question in order to add a novel contribution in the form of knowledge to the debate of individual identity in Strong Artificial Intelligence and consciousness studies. Moreover, it was also the aim of this research to draw on the valuable insights of Africa, and African theology, to articulate an African ontological relational theology of identity. The aim here was to show that the value and purpose of discovering and developing true identity in individuals is part of God's eschatological plan for Kosmos. True individual identity that is shaped and discovered in the common identity of the community is intended to spread God's intended harmony and dignity (here expressed as *ubuntu*) throughout all creation.

The research project has been successful in surveying relevant research and scholarship in Artificial intelligence. Of particular value has been the discovery and articulation of Ray Kurzweil's hypothetical identity crisis that arises from his thesis on Strong Artificial Intelligence. It was useful to show that such postulations are plausible, and so possible, yet that the hypothetical identity crisis that was raised is not dependent upon the success of developments in either Artificial Intelligence or nanotechnology. The conundrum that has been highlighted remains problematic since it highlights a deficiency in approaches to individual identity and consciousness, and particular the silence of the African theological voice in this regard.

The chapter on approaches to consciousness is a succinct and useful survey of the methods and approaches that have been employed to understand and explain human consciousness and individual identity as by-product thereof. The approaches that are recorded all have immense value, and offer immeasurable insight within their respective disciplines and beyond. However, it was clear that none of them was capable of satisfactorily engaging Kurzweil's hypothetical identity crisis to resolve individual identity. Moreover, in the light of the formulation of an African theological approach to consciousness and identity, the question is raised about why knowledge of self from the subjectivist and objectivist approaches is truly of value for humanity and Kosmos as a whole. If it is simply to add to the body of knowledge, then so be it. However, there must surely be some greater goal and intent for such rigorous and demanding research. This thesis has suggested that the true purpose of 'knowledge of self-in-relation to community' is to understand and foster the true dignity that God intends for all humanity and creation. Within the context of this research, the notion of dignity is best expressed in the African idiom of *ubuntu* as harmonious intersubjective community.

The research into Ken Wilber's integrative theory, and the application thereof to African relational ontology, is an entirely novel area of scholarship. Whilst Wilber has been extensively studied in the West, and even in Eastern mystical traditions, there has been no thoroughgoing application of his superb schema to African theological scholarship. An area of struggle that I encountered in this section was finding any insightful and valuable critique of Wilber's schema as it related to the area of scholarship in this thesis. Whilst I did find some valid general critique of Wilber's schema, it was deemed worthy to include

such critique in this text since it did not relate directly to the areas being covered in this research. However, as this area of overlap between Ken Wilber's integrative theory and African relational ontology develops this could be a valid and worthwhile area for further research.

The chapter on African relational ontology and identity was by far the most exciting and engaging part of this research project. As was mentioned in the literature survey and chapter 5 itself, there was some difficulty in sourcing scholarly material of an overtly African Theological nature for this section of the research. However, after both reading widely, and interviewing various persons who have knowledge of African culture, I was able to elicit and compile the salient elements of the African view of personhood and individual identity. The confluence between the African worldview and tradition Christian theology of community (in relation to the Trinity), identity (in relation to the Trinity and Christian Anthropology), and the purpose of true identity (in relation to Christian Soteriology) was evident. These insights proved valuable in articulating an 'An African theology of relational ontological identity'.

As can be seen from the preceding discussion in 6.1 above this theology gives valuable insight into dealing with some of the shortcomings of the subjectivist and objectivist approaches to consciousness and identity in relation to Kurzweil's hypothetical identity crisis.

Thus, it is believed that this research has been successful in achieving the three ancillary goals of the research as set out in the research design (cf. 1.3 above), namely:

- i. To conduct research into Strong Artificial Intelligence and ascertain the plausibility of the development of consciousness in such emulating machines.
- ii. To conduct research into ways in which science and philosophy have sought to understand and express the notion of human consciousness in relation to individual identity. Furthermore, to relate these findings to the hypothetical identity crisis in order to ascertain their value and shortcomings in dealing with this conundrum.
- iii. Finally, to find and present an integrated model of consciousness and human being that can satisfactorily harmonise with the central elements of the African theological model of relational ontology.

The primary goal of the research was to present an African theological approach to individual identity and consciousness of being ‘self’ that could balance some of the deficiencies of other approaches to consciousness and individual identity which were unable to offer satisfactory solutions to the research problem which is presented in 1.1 and 1.2 of this thesis. In short, this aim was realised in the production of an ‘An African theology of relational ontological identity’, which was formulated and discussed in Chapter 5.

This is a novel contribution to both scholarship in consciousness, and scholarship in Theology, since no study has yet developed such a theology in relation to identity in Strong Artificial Intelligence.

6.3. Recommendations for further theological research in this area.

A research project of this nature must be both narrow, but deep, and clearly delineated in order to make its contribution to scholarship and debate worthwhile. Naturally this means that some important areas of scholarship cannot be covered within the thesis itself. Moreover, as one engages in the research for the project itself one becomes aware of areas of research that have either not been covered in scholarship, or have an inadequate coverage. This section aims to highlight such areas that require further research and investigation, both to further scholarship in this area, but also to stimulate further thought and discussion for the reader of this work.

First, and most importantly, it is necessary that further scholarly research be undertaken into the theological purpose of and value of understanding individual and communal human identity in African-Christian theological anthropology. Whilst this research project has been able to make some contribution in this regard, the enormity of what remains to be investigated is vast. Further scholarship in this area will have two valuable contributions. Firstly, it will assist with the further articulation and relation of the concepts of African views of true humanity (*ubuntu*) in Christian Theological terms (i.e., there is some scholarship in philosophy, but very little in theology). Secondly, it will

give a greater exposure to the value and depth of such African theological insights in the academic arena. Such insight is necessary to act as a balance to the extreme individualism that characterises much of Western Christian theological Anthropology.

Secondly, whilst du Toit has made a worthy contribution towards understanding the theological relationship that African persons have with technology, there is still a great deal that can be explicated from this area to offer understanding of a non-dualistic approach to human-technology relationships. While there is little doubt that all cultures have become fundamentally dependent upon their technologies, a healthier perspective on the use and application of technology for the development of harmony and integrity in creation will no doubt arise from the African theological emphasis of *ubuntu*. Whereas technology in the dominant Western paradigm is primarily used to subdue and control, it may take on a very different use from an African perspective, where the primary aim of life should not be independent personal gain, and personal wealth, but rather social and cosmic harmony. Research in this area could not only influence the way in which we use and apply our technology, but even what is created, and for what purpose technology is created. It would almost certainly form a more ecologically aware, and socially engaged basis for technological development.

Thirdly, further research into the application of African concepts of identity and personhood to emulative technologies in Strong Artificial Intelligence is necessary. As has already been stated, this research is the first attempt to relate African concepts of personhood to Strong Artificial intelligence. One of the important discoveries of this

research was to show that current scholarship in Artificial Intelligence starts from the supposition that individual identity is the primary ontological reality for human being (a very Westernised individualistic approach). However, the development of emulative technologies that take a greater interest in Emotional Quotient and Spiritual Quotient (cf. point 3.4.2.1 above), than the pure Intellectual Quotient, may lead to surprising advances in the field of Artificial Intelligence. This research has certainly shown that individual identity is as a result of a shared common identity. Thus, what research in Strong Artificial Intelligence has regarded as the primary thrust of its research (to emulate the conscious functioning and identity of an individual) should perhaps only come after research into the emulation of an engaged intersubjective shared consciousness that takes shape in community. Not only does this starting point offer some hope of greater accuracy in helping to effectively emulate individual consciousness as it arises out of relational ontology, but it also asks the question of why one would want to emulate individual consciousness apart from that of ontological relationships that shape true consciousness? What value is there in having an effective and accurate model of an individual's consciousness if that conscious emulation does not in any way add value to, or even fundamentally relate to the frame of reference, of the community in which it must operate? Certainly, this research project suggests that such 'disembodied' or relationally removed research into individual consciousness only has value in that it gives further 'knowledge', however, any truly worthwhile research should surely aid in the achievement of the eschatological aim of bettering the whole of society in relation to the will of God for dignity and Kosmic harmony.

Fourthly, further study is needed into Ken Wilber's integrative schema in relation to African theological concepts of personhood. Such research has not yet been conducted. Whilst Wilber does make some comments on African culture, and even some comments on relationship in such cultures, his comments are from a Westernised philosophical perspective. What is needed is not for a bridge to be built *from* Wilber's schema *to* African relational ontology. Rather, it is necessary to move in the other direction. The starting point should be a Theological understanding of the value and insight of African relational ontology to which Wilber's schema is then critically related. This will have a twofold outcome. Firstly, it will aid in the thoroughgoing articulation and sharpening of scholarship in African theology and philosophy in an arena that is attended to by some of the sharpest and most critical minds. Such situations can only but deepen the understanding of the value of African theology and philosophy in the international academic arena. Secondly, research of this nature will also offer some critical insight into Wilber's schema that may further develop and hone this worthy model. There is little doubt that Wilber's integrative model is an extremely valuable and insightful model of consciousness. Any insight that could assist in the development and sharpening of this worthy model adds value to the whole school of integrative theory, and as such it is worthy and necessary endeavour indeed.

6.4. Suggestions for the application of an African theology of relational ontological identity.

The purpose of this research is not only to offer speculative theological and philosophical insight into the notion of individual identity from an African theological stance. One of the primary assertions of the research has been that this true identity stems from God, who is relationship, that it has significant implications for personhood, since persons are created by God, in God's image with intent and purpose in mind, and thus that the notion of true identity is part of God's eschatological plan for humanity and the Kosmos. Moreover, since the hypothetical identity crisis arose out of the arena of technological research, there are some instances in which it would be necessary to take cognisance of this ontological identity in developing and applying technology in society.

Resultantly it would be irresponsible to simply speak of this worthy notion without making some practical suggestions of how the insights gained from this research can enrich, encourage, and enable persons for more fruitful, and obedient lives that aid their own development and the faithful fulfilment of God's eschatological desire for the Kosmos. This means both religious and spiritual applications of this concept, but also practical and pragmatic suggestions in the area of technology and development. Since it was suggested that the ideology and principles of *ubuntu* arose out of pragmatic necessity⁹⁶ it would be remiss not to make some practical connections between this

⁹⁶ See footnote 93 and point 5.10 above.

concept and the pragmatic technological needs that persons face in society from day to day.

6.4.1. Contextual reflection, community engagement, and the development of liturgy and African Christian devotional life.

One of the saddest realities of African Christianity is its non-Africanness (Pato 1994:152). Schreiter writes that, “For too long, embracing Christ and his message meant rejection of African cultural values. Africans were taught that their ancient ways were deficient or even evil and had to be set aside if they hoped to be Christians” (1991:viii).

The richness of African philosophy and African approaches to life and theology cannot be denied. Yet, for many Christians in Africa, their African heritage has been something that has had to be discarded or practised in secret, away from the judging eyes of the Westernised Christian Church. There is no doubt that Christianity in Africa is burdened by European and North American mindsets and structures (Pato 1994:153). Yet, Christianity is more alive than ever on the African continent, whilst Western versions of the faith seem to be steadily shrinking. Whilst the African Church has sought to work around some of the foreign, and at times even bizarre, expectations of their Western counterparts, there is an increasing realisation that Africa needs an African incarnation of its faith.

This changing perception of Christianity and theology in Africa has been prompted by the realisation that questions, assumptions and agendas of theology in Africa have not been set and fixed by the African church and

society, and that there *is* such a thing as an Africa or black perspective, which is distinct from a European or white perspective (Pato 1994:153).

What is needed is a twofold process. Firstly, it is necessary for Christians in Africa to come to a realisation of both their rich heritage in the Christian faith (which stems right from the baby Jesus' safekeeping on African soil all the way to modern and innovative iterations of Christianity in Africa), and having realised this to begin to develop a form of Christianity that is contextually relevant.

One of South Africa's largest mainline Christian Churches, the Methodist Church of Southern Africa, has as its vision statement "A Christ healed Africa for the healing of the nations". Having realised the value of an African Christianity, and begun to articulate the faith in African terms it is necessary to pass on some of that richness and giftedness to the rest of the world, even as we in Africa have benefited from the rich Christian heritage that has grown out of Europe and America.

African theology is fundamentally a contextual theology, stemming from an engagement with the contextual reality in which people live out their faith, as opposed to a dogmatic theology, which arises out of philosophical belief concerning truth. The result is that it has often been considered as less thoroughgoing. Yet, the proof of its efficacy to bring about life change and meaning in the midst of the vicissitudes of life has been borne out by centuries of faithfulness to Christ and Christ's mission through the Church in Africa.

It is a fallacy to assume that because a theology arises out of contextual engagement with faith that it lacks depth and theological rigour. Many of the most influential theological documents in Southern Africa have arisen from the Institute for Contextual Theology and the Khanya Institute (then under the leadership of Paul Makhubu), as African Christians have sought to give theological articulation to their heritage and faith (Pato 1994:155). The African Initiated Churches, which are among the fastest growing Churches in the world, have arisen as a thoroughly African phenomenon, where African Christians have sought to break free from Western socio-cultural dominance.

As such groupings own the richness of their faith, and seek to articulate their theology, they add value to the corpus of theology. Moreover, they are able to lead the way in helping Christians throughout the world to seek to find contextual applications for the truth of the Christian faith in an every changing world. Thus, whilst the truth remains the same, the expression and living out of that truth must find new expression in the changing context for it to be an active truth.

This research certainly urges African Christians to give expression to their culture and faith. It encourages scholars to engage in topical and necessary research in the African theological landscape so that the richness of the heritage of African Christianity is not lost under the weight of the glossy and popular Western iterations of Christianity that dominate the airwaves and the bookshelves. A

valuable by-product of the mainstream acceptance of African theology in Christianity is the adoption of a new vocabulary that enriches theological pursuit through the nuances that are brought about by adding new words that allow for various expressions of the central truths of the Christian faith in novel and creative ways.

A way of encouraging the emergence of such contextual theologies are to engage in 'faith sharing' workshops. Such an occasion can be arranged where the 'quieter voices' of the Christian landscape have a chance to be heard. For example one could allow non-literate persons to tell the foundational stories of their faith and life to be recorded and analysed by scholars at some later stage.

Secondly, all African Churches should be encouraged to mandate all persons training for ministry to do at least one course in African and contextual theology. This is necessary since pastors, priests, and ministers are often the first to silence the culturally rich voices of lay members of their Church. In large part this is due to their ignorance of the richness of African iterations of the Christian faith, or because their Church is still stuck in an outdated colonial missionary mentality (Pato 1994:154-156).

A third way of inculcating the richness of African traditional culture into the mainstream theology of the church is to engage in the development of culturally relevant Christian liturgies, vestments, and means of grace. Slater (2002:327-

328) makes the valid point that the lived spiritual life, as facilitated through liturgy, community life, and the ministry of the Church, is of immeasurable value in helping ordinary Christians engage with such complex issues as self-realisation and alternative expressions of the Christian faith (e.g., in this context, an African iteration of contextual Christian living in true community). A theology which is accepted and owned by the ordinary lay person is far more effective in transforming the face of society, and the identity and mandate of the Church, than an ivory tower intellectual pursuit which is only accessible to the trained theological mind. Naturally the Christian needs to be sensitive to avoiding the pitfalls of syncretism in the pursuit of contextualising the Christian faith and adopting the African idiom in worship and devotional life. However, this danger is far less serious than the wholesale rejection of the valuable truth of Christianity because it seen to be foreign to the needs and concerns of the African context.

The responsibility for these tasks could be assumed at various levels. It would certainly be necessary for the senior leadership of Christian denominations to accept and endorse the Africanisation of their faith. Naturally a trust group of theological experts would also need to safeguard the essential doctrine of the Church. However, in reality local Churches through their leaders, and in small Christian groups could effectively apply most of the suggestions made above.

6.4.2. African relational ontology, true humanness and technology.

I have long believed that the best theology is that theology that is able to serve for the betterment of the Church and the world. The model that is developed in chapter 5 above is intended to achieve something of this ideal.

The hypothetical identity crisis that led to the research question of this thesis arose out of possible technological developments in the fields of computer science and nanotechnology⁹⁷. Ray Kurzweil's law of accelerating returns has suggested that machines may soon be capable of outperforming humans in all three spheres of intelligence⁹⁸ (IQ – linear processes such as calculating and operating according to preset rules, EQ – relational and communicative tasks such as networking and parallel information processes, and even SQ – the unitive and meaning creating tasks of spiritual being).

Whilst technological progress is inevitable, the kind of progress that takes place, and the extent to which it is ethical to apply such technology, is a fundamental question for the contemporary theologian.

This research would urge researchers and developers of technology to ask the basic question: to what end is this technology being developed? If, as this research suggests, a fundamental aspect of God's will for the Kosmos is the

⁹⁷ Please see point 2.2 above. In particular 2.2.2, 2.2.6, 2.2.7 and 2.2.8 give insight into how technology could develop to accurately emulate aspects of human consciousness and activity.

⁹⁸ Please see 3.4.2.1 for a discussion of these three forms of intelligence.

fostering of true harmonious community, then how does the development of a particular technology aid in that noble pursuit? Naturally this is a complex question that often has less to do with the technology itself, and more to do with the application and use of the technology that is produced.

A clear contemporary example of this is the development and application of communication technology. The technology itself has the potential to aid in the development of community through interaction and communication which was not possible at the same rate and scale in the past. For example, a parent in South African can communicate with a child living in England on a daily basis via email, voice over IP technologies (such as Skype), and even conduct Video calls. Yet the application of this technology has also had some negative effects on communities where some persons have become isolated and disconnected from their peers, unable to relate to one another in person, rather choosing to relate through the intermediary of technology in a virtual realm. Can such virtual interaction ever truly substitute for the richness of action interaction?

Of course the ethical implications of the model produced in this thesis do not only relate to ‘soft technological developments’⁹⁹. They also relate to more concrete technological advances such as genetic modification. If true community requires true diversity, and if there is to be a measure of ‘discomfort’ and an inability to

⁹⁹ I intend the term ‘soft technological development’ to refer to those developments in technology that are matter of convenience rather than necessity. For example, a person could choose to visit a relative rather than send him or her an email. It is not necessary to employ the particular ‘soft technology’ (email communication in this case) in order to relate.

manipulate and control every aspect of the community life for a community to be authentic¹⁰⁰, then it begs the question whether certain technologies should be employed to develop and manipulate the construction of ‘ideal’ communities? Should a technology be developed and employed that allows a community to eradicate certain diseases, or genetic ailments, certain psychological dispositions (such as abusive personality traits, or pathologies), or more controversially, the ability to do away with different races? Clearly in such an instance the Christian theologian would have to make some ethical judgements on the development and use of such a technology.

Of course, there are subtler forms of such structural technologies¹⁰¹ that are already in place in the world. They would include economic systems such a capitalism, health care systems, and political systems such a democracy. All of these are clearly ‘technological advances’ in Lower Left quadrant of existence (please refer to 4.3.3 above for more detail on this). Hence we may ask, as an example, whether capitalism is a just and worthy economic system that is in line with the stated elements of Africa relational ontology?

The essential point that I wish to make here is that the model which is developed in Chapter 5 above is not only a ‘theoretical schema’ that need not be applied to

¹⁰⁰ This notion is suggested in footnote 93, and point 5.10 above. In essence it is suggested that true community requires diversity and otherness, and that at times that will mean discomfort and possibly even discomfort.

¹⁰¹ In this context the concept of ‘technology’ is being used very broadly to refer to any human design that aids in achieving, streamlining, or attaining the ideals and goals of a group of persons. Hence, this may be the development of nuclear power to offer clean, affordable energy, or it could be the development of a system of social governance that streamlines judicial and economic processes in a community.

pragmatic concerns. The need for the model arose out of a technological development and advance. And, as is suggested above, the model has a great deal to offer in critiquing and guiding technological development into the future.

African relational ontology suggests that any technological development, whether it be a 'soft' or a 'concrete' technological development, should be subject to the principles of true humanness and Kosmic harmony as expressed in *ubuntu*¹⁰². Moreover, it should in some way aid God's eschatological plan for Kosmic harmony. Thus no technology that is developed should exploit persons or the wider creation for individual enrichment or gain.

Whilst the exact implications of this African theological ethic cannot be fully developed at this stage, they are certain to be picked up and considered in future research projects.

6.5. Conclusion.

The research question posed in this research was:

How can one validate individual consciousness in a situation where both a human and a machine possess an experience of being the same conscious person?

¹⁰² The content of these African theological concepts are discussed above under the doctrine of God and its implications for true human community (5.9.1), the doctrine of true personhood as it stems from an African Christian anthropology (5.9.2), and God's ultimate goal and desire for the whole cosmos as it is discussed in an African Soteriology (5.9.3).

The desired outcome was to formulate a response that was able to validate true identity, and so add insight to the debate of consciousness and theological anthropology of identity.

This research project did so by developing an African theology of relational ontological identity. This theology was effective in going some way towards developing a more acceptable approach to validating individual consciousness and identity in Strong Artificial Intelligence. However, in the process it has also exposed some shortfalls in the science of consciousness (with its almost exclusive emphasis on consciousness as either an individual subjective or objective state), the western individualistic approach to theology (that has placed the individual human person at the centre of God's plan for the Kosmos), and raised many further questions that need to be answered. Thus, this theological contribution is in no way conclusive. Rather, it adds a new dimension to both philosophical and theological debate. Most notable in this regard has been the introduction of the African theological voice to the arena of consciousness studies and the science of Strong Artificial Intelligence. There is no doubt that more gifted scholars will be able to take this work much further than has been possible in this thesis. However, it is hoped that the groundwork which has been laid will be sufficient to stimulate both thought and debate in this regard that will further contribute towards a clearer understanding of the theological nature and purpose of individual identity in God's Kosmic plan.

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