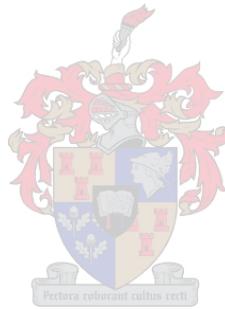


Exploring a Sustainability Imagination

A Perspective on the Integrating and Visioning Role of Stories and Symbolism in
Sustainability through an Alternative Education Case Study

by

Christelle Beyers



Thesis presented in partial fulfilment of the requirements for the degree of
M.Phil. (Sustainable Development Planning and Management)
at the University of Stellenbosch

Supervisor: Eve Annecke

March 2008

Declaration

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature:.....

Date:.....

Copyright ©2008 Stellenbosch University
All rights reserved

Abstract

In a modern world of fragmentation and embedded dualisms, access to the imagination and creativity seems minimal, especially in science. Human beings and nature, science and the imagination (art), and spirit and matter (body) – these dualisms permeate our sciences and other disciplines, as well as the way we envision the future and educate children about the environment. Sustainability positions a key debate for the future and mediates inter-generational equity (it thus in a way captures the future). Sustainability further proposes an ecological approach wherein systems thinking, holism and the exploration of new (extended) forms of knowledge are subtly starting to reshape the future outlook of the planet. A personal reflection on my own alternative learning process with the Sustainability Institute (SI) resulted in a deep concern and intrigue about the symbolic base of sustainability learning. Imagination, art (stories) and symbols played an intrinsic role in how I integrated many of the empirical and non-empirical, as well as scientific and meta-physical, aspects of the learning. These intrigues led me to explore the nurturing education opportunities that might exist for children to engage with the imagination, art and alternative aspects of education as integrative aspects in learning. Waldorf education claims to use stories in this regard.

Waldorf education – together with a review of the role of environmental education – is the case study of this research. This is an inherently transdisciplinary study and, although literature in the separate fields abounds, a comprehensive literature review conducted for this study revealed a gap in research related to the interface between areas of symbolism, sustainability and education (“symbolism-in-sustainability-in-education”).

The study is underpinned by the following fields:

- Sustainability (with a strong focus on environmental ethics)
- Literature (traditional stories)
- Psychology (psychoanalytical and environmental psychology)
- Education (environmental, Waldorf and finally sustainability or ecological education)

This study thus explores the role of the imagination and symbolism, both being ontologically recognised, as well as stories to integrate some of the dualisms prevalent in our modern world, dualisms that are contributing to the reigning ecological crisis. In addition, it focuses on the role of these functionalities to access and open up other forms of knowing in science (with particular application to the built environment/ and planning), which supports the claims of sustainability and sustainability science.

I conclude by briefly highlighting a pattern that proposes a way of connecting the ideas in this study in support of ecological education (the future) – and thus sustainability – in an enduring and deep-seated way that is intrinsically human[nature].

Opsomming

In ons moderne wêreld van fragmentasie en ingeburgerde dualisme is toegang tot die verbeelding en kreatiwiteit (skepping) nie algemeen nie, veral nie in die wetenskap nie. Hierdie dualismes sluit in: skeidings tussen mens en natuur; wetenskap en kuns (verbeelding); gees en liggaam, en dit deurtrek ons wetenskaplike dissiplines of vakrigtings, asook die manier waarop ons die toekoms en die onderwys van ons kinders, in terme van die omgewing en natuur, benader. Volhoubaarheid positioneer 'n kern diskoers oor die toekoms, spesifiek 'n onderhandeling oor die gelykheid tussen generasies. Volhoubaarheid stel verder 'n ekologiese benadering voor waarin sisteemdenke, holisme en die ondersoek van nuwe vorme van kennis subtiel besig is om die toekoms van die planeet te herskep. My persoonlike, alternatiewe, leerervaring van volhoubaarheid deur die Sustainability Institute (SI) het my baie nuuskierig gemaak oor die simboliese basis van volhoubaarheid. Verbeelding, kuns (stories) en simbole het 'n wesenlike rol gespeel in hoe ek baie van die empiriese en nie-empiriese, asook wetenskaplike en meta-fisiese aspekte van leer en volhoubaarheid geïntegreer het. Hierdie basis van ondersoek (nuuskierigheid) het my die onderrigseleenthede laat bevragateken wat hierdie “alternatiewe” aspekte van leer (verbeelding/ kuns) insluit.

Waldorf skole eien dat hulle in die opsig stories gebruik. Hierdie eienskap van Waldorf onderrig, gesien saam met 'n oorsig van omgewingsopvoedkunde, vorm die gevallestudie van hierdie tesis. Ek het 'n wesenlik transdissiplinêre studie onderneem. Alhoewel daar baie literatuur in die afsonderlike vakrigtings bestaan, het 'n volledige literatuuroorsig en analise, wat gedoen is om die studie te ondersteun, 'n gaping uitgewyws aangaande die raakvlakke tussen simboliek, volhoubaarheid en opvoeding (“simboliek-in-volhoubaarheid-in-opvoeding”).

Die studie is onderbou deur die volgende vakrigtings:

- Volhoubaarheid (gefokus op omgewingsetiek)
- Literatuur (tradisionele stories)
- Sielkunde (psigo-analise en omgewingsielkunde)
- Onderrig/ opvoeding (omgewingsopvoedkunde, Waldorf onderrig en volhoubare/ Ekologiese-opvoedkunde)

Daarom ondersoek hierdie studie die rol van verbeelding en simboliek (albei ontologies erken), asook stories, wat sommige van ons moderne wêreld se dualismes integreer. Die studie is gedoen in die groter geheel van volhoubaarheid en die moontlikheid daarvan om die toekoms te herskep en te verwesenlik. Dit fokus ook op die rol van hierdie aspekte om ander vorme van leer en kennis in die wetenskap te ontdek, wat uiteindelik volhoubaarheid, en die wetenskap van volhoubaarheid, steun.

Ek sluit die studie af deur 'n patroon uit te lig wat die kern idees van die studie – in verband met ekologiese-opvoedkunde, asook volhoubaarheid – ondersteun. 'n Patroon wat blywende en diep-gewortelde mens-natuur skakels uitwys.

Acknowledgement and thanks to:

- Eve Annecke, my supervisor and Director of the Sustainability Institute (SI), for insight and gentle support in the process of conducting and documenting this research. Your immense experience in the area of child education, as well as your lectures in leadership and ethics, is inspiring. Together with Professor Mark Swilling, for an extra-ordinarily meaningful learning process in the form of the (M.Phil.) Sustainable Development Planning and Management degree.
- The CSIR for affording me funding and time to make further study possible; I gratefully recognise and appreciate this investment in my future.

- The interviewees who participated in this research:

Helen van Zyl – for introducing me to Waldorf principles and sharing your insight and experience in the Waldorf education system.

Heleen de Villiers – for reading me stories (an unknown luxury in adult life!) and for sharing your wisdom and immense experience in traditional stories (in the Waldorf context) with me.

Mark Swilling – for providing inputs. Your reflection on a personal Waldorf education, now lived in the sustainability arena, is invaluable.

- My family for your prayers and support, never taken for granted, as well as my friends for wholesome meals, IT support and encouragement.



Dedication

I dedicate my learning and research process to *Yesterday, Today and Tomorrow*. This little potted plant, on the front stoep of my house in Johannesburg, dies every winter, miserably and, what seems to be, completely. I keep on watering it though. And against all apparent odds, every spring – just as I am about to give up hope for its continued existence – it sprouts small, fresh, bright green buds and little leaves. The telltale purple, lilac and white flowers of yesterday, today and tomorrow. It is this transformative, *gentle power of Nature* that I gratefully acknowledge in reflecting on the process of carrying out and documenting this research.

To my sister, who intricately deals with the vulnerable issue of children and the future every day.



Contents Page

Declaration	ii
Abstract	iii
Opsomming	iv
Acknowledgement and thanks to:	v
Dedication	vi
Contents Page	vii
SECTION 1	1
1. Introduction	1
2. This Study.....	3
2.1 “Rescue Mission Planet Earth”	3
2.2 Document Outline	5
3. Points of Departure.....	6
3.1 Unique and Creative Learning	7
3.2 Opposition to Current World View.....	8
3.3 The Human-Nature Connection through Stories.....	10
4. Methodology (Process of Reflection).....	11
4.1 The “Patterns That Connect”	12
4.2 Reflection through My M.Phil. Process	12
4.3 Combined Views.....	13
4.3.1 The Methodological Conundrum.....	16
4.4 Process of “Insight Gathering”.....	16
5. Transitioning to the Sustainability “Patterns of Learning” (Sustainability Framework).....	17
6. Setting the Scene: The Wisdom of Nature – A Swahili Story Set in the Context of Kenya, Tanzania and Zanzibar	18
6.1 Reflecting on the “Snake” Story	19
6.1.1 Science[fiction].....	20
SECTION 2	21
7. Introducing Section 2	21
8. Rationale for the Study (Content of Reflection).....	22
9. The Pattern that Connects the Sustainability Items of Learning	23
9.1 Sustainable Development.....	23
9.1.1 Sustainability and Social-Ecological Systems: the Narrative Link	26
10. Enter the Story.....	26
10.1 Environmental Ethics in Sustainability.....	27
10.2 The Globalisation Debate.....	29
10.2.1 The Alchemy of Imagination.....	30
10.3 The Complexity Debate	31
10.3.1 Pragmatic Ethics: A Way Forward	33
10.3.2 “Bottom-up Ethics”	34
SECTION 3	37
11. Introducing Section 3	37
12. Introduction: South Africa’s Environmental Education Scenario	37
12.1 From Environmental Education to a Positive Future Image of Sustainability.....	40
13. Waldorf Schools: Guiding the Spiritual Human Being to the Spiritual Universe	40
13.1 Method of Teaching and Connecting With the World.....	40
13.2 Fantasy and Imagination	41
14. Rudolph Steiner’s (1861-1925) “Stairway to Heaven”	42
14.1 Education directed at the whole child	43

14.1.1 The developmental stages.....	43
15. From 1919 to 2007: Back to the Future?.....	44
16. Imagination and Fantasy for Enduring “Knowledge” Frameworks?	45
17. Main Themes in Waldorf Education	45
17.1 Imagination: The Entry Point and Foundation for Waldorf Education and Teaching	45
17.2 Waldorf Methodology and Curriculum Designed To Connect Children with Imagination	46
17.3 Stories (Via the Imagination) Connect Children with Nature	46
17.4 Nature is embedded In the Child’s Learning of Him/ Herself and the Broader Environment.....	47
17.5 Nature in Waldorf Education Essentially a Transdisciplinary Concept.....	48
17.6 Waldorf Education Promotes Care and Responsibility for Nature in Children	49
17.7 The Archetypal Symbols in Stories Speak Directly To Children	49
18. Coping With the Future.....	50
18.1 Some Concluding Connections	50
 SECTION 4	 52
19. Introducing Section 4	52
20. Play-off between Depths and Surface: Unconscious and Conscious	53
21. The Work of Carl Gustav Jung.....	53
21.1 Lost in Translation	54
21.2 Found In the Dream	54
21.2.1 Sustainability: Devoid of Emotional Meaning	55
21.3 Archetypal Symbols and Images.....	55
22. The Role of Symbols	56
22.1 Archetypes and the Environment.....	57
22.1.1 Symbols [Re]Enchant and [Re]Connect Us with Nature.....	57
22.1.2 The Emotional Load of Symbols Brings Change	57
22.1.3 Archetypal Symbols Show the Way to an Integrated, Extended Science.....	58
23. Depth Psychology and Imagination.....	58
23.1 Imagine.....	58
23.1.1 One More Level of Depth.....	59
23.1.2 Before Grounding Theory in Current Discourse: All Roads Lead To Faust?	59
24. Environmental Psychology.....	60
24.1 Jungian Psychology in South Africa	61
25. Symbolic Frameworks Related To World Views.....	62
25.1 Changing the Current World View and Its Patterns.....	63
25.2 Remembering Indigenous Knowledge	64
25.2.1 The Personal Universal.....	65
26. Metaphors and Interfaces: Between the Human and Natural Worlds the Ecology Fails and Humankind Flounders	65
26.1 The Music of the Night: Harmonising Human Beings and Nature	66
26.2 The Psychological and Symbolic Landscape	66
 SECTION 5	 68
27. Introducing Section 5	68
28. Reaching for the Moon: a Brief History of Traditional Stories.....	69
28.1 Traditional Stories	69
28.1.1 The Nature of Being Human in Nature.....	69
28.2 Stories Reclaim Our Heritage: A Message from the President	71
29. Knowing Through Lineage: The Archetypal Message in Stories	71
29.1 Stories Make Sense in a Complex World	72
30. A Story of Imagination.....	72
30.1 Stories and Imagination: “Extend” Science and Complement Sustainability	73
30.2 From Stories: The Vision of a New (Sustainable) Future	74

31. Stories and Archetypes	76
31.1 The Archetypal Planning Link	77
31.1.1 A Vision of the Sustainable Future in Planning Through Stories.....	77
SECTION 6: Towards a Conclusion	80
32. <i>Building</i> a Sustainable Future with Imagination and Stories.....	80
32.1 Integrated Perspective on Sustainability Questions	81
32.2 Sustainability Education for an Ecological World View	82
32.2.1 Ecological Thinking in Education	83
32.2.2 Ecological Learning Creates Learning Communities: Learning Communities Create Ecological Learning	84
SECTION 7: Conclusion.....	87
32.3 A Pattern of Learning that Could Support [a] Sustainability [Imagination]	87
32.3.1 The Imaginative Framework.....	88
32.3.2 Stories and Symbols Support Transformation of World Views	89
32.3.3 Stories and Symbols Open Up Abstract Landscapes for Exploration of New Forms of Knowledge (What I Would Like to Call the Landscape of the Imagination)..	90
32.3.4 Symbolic Framework in Stories: A Pattern of “Good” towards Nature?	91
33. Possible Research Topics Stemming from This Research	92
Bibliography	93
ANNEXURES.....	101
Annexure 1: Semi-Structured Interview schedule with Helen Van Zyl	101
Annexure 2: Structured Interview schedule with Mark Swilling	104
Annexure 3: All Things Are Connected – A Nature Tale from Africa (Zaire)	105
Annexure 4: Turtle Returns the Gift – An Earth Tale from Japan	106
Annexure 5: The Children of Wax – An African Tale	108
Annexure 6: The Savage Skylark – A Nature Tale from Portugal.....	110

SECTION 1

1. Introduction

The *Eden Project* in Cornwall in the United Kingdom is currently being heralded as the eighth wonder of the world. This project aims to reconnect human beings and their ecological support base. Biomes (futuristic hothouses) contain plants from across the world, and humankind is invited to partake in fantastic exhibitions of ecology, technology and art in order to make or re-experience this connection, a connection that I would like to call *human[nature]*. This massive demonstration essentially includes art to facilitate this connection. Art, as “found objects” and sculptures made from natural and/ or recycled industrial materials, symbolises the divide or new-found connection. “The arts, in their broadest sense, are fundamental to Eden. We aim to blur the perceived line between the creative and the scientific, and use art to illustrate the vital link between plants and people”.¹ For children, especially, science and art merge in order to facilitate *sustainability thinking* – “[we use] creative trails that inspire sustainable thinking – teaching about the origins of products and objects that we use each day”.²

What started out as a fantasy and vision of demonstrating sustainable living, ecological design innovation and a [re]connection between human beings and plants, is now a tangible human-nature expression that could lead thousands of people to understand their inherent links to their natural resource base.



This is a transdisciplinary study, underpinned by the following fields:

- Sustainability (in itself a transdisciplinary field, with application in the built environment)
- Literature (storytelling, education and meaning)
- Psychology (in which I have rooted symbolism)
- Environmental ethics (which could be regarded as a sub-field of sustainability – or the other way around)
- Education (with a view to sustainability education).

In a modern world of fragmentation and embedded dualisms, the access to imagination and creativity seems minimal. This is a world that Durand (2000) describes as follows: “The basic alienation and disaster on which Western science and metaphysics are formed lie in these dualisms. Both memory and imagination were confined to the realm of the superfluous, [the] incoherent, and were not regarded as part of rational discourse” (Durand, 2000: 56). In the time of the romantic revival or romanticism, towards the end of the eighteenth century, “imagination” was, however, already thought to provide access to knowledge and truth, and in contemporary philosophy “imagination” is thought to exist as the notion of “imaginativeness”, something that sits within and across inner mental activities and observable behaviour (Speake (*ed.*), 1984: 164).

This study draws on these characteristics of the imagination:

- It could possibly bridge one (or more) of the dualisms prevalent in modern day science and society (for example, the split between imagination and rational discourse).
- It recognises other forms of knowing that could lead to a more comprehensive reflection on what it means to be a complete human being in a world in ecological crisis.
- Its transdisciplinary position within and across many disciplines, some of which critically underpin this study.

¹ <http://www.edenproject.com/education/474.html> - accessed on 26/10/2007

² <http://www.edenproject.com/childrens/index.html> - accessed on 26/10/2007

The aim of this study is to explore how this rather marginalised form of knowing – through appropriate education, symbolism and stories – could integrate and give credence to some of the basic aspects of sustainability. Specifically:

- Its consistent future-orientation through the mention of “future generations”.
- Notions of envisioning alternative, sustainable futures (that encompass technology and humanity).

Our Common Future or The Brundtland Report emerged, as one of many such documents, from a number of global conferences held on the environment and development in Stockholm (1972) and the Earth Summit in Rio de Janeiro (1992). This report captures probably the most well-known expressions of humanity, development and the environment in the future. It clearly outlines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs. As such it requires the promotion of values that encourage consumption standards that are within the bounds of the ecologically possible and to which all could reasonably aspire” (WCED, 1987: 43). Although this definition calls for limits to growth, the future focus here is also on the ability of future generations (children) to deal with the responsibility of living in, and caring for, the Earth that they will inherit. Chapter 25 of the Agenda 21 that deals with *Children and Youth in Sustainable Development*, states that:

- Children in developed and developing countries alike are highly aware of environmental issues.
- Children have to be actively drawn into environmental decision-making.
- Children are the most vulnerable to the effects of environmental degradation.

(UNCED Agenda 21, 1992)

Sustainability closely aligns with the field of environmental education from this intra-generational perspective. It is thus not surprising that characteristics of “future studies”, explored in environmental education by Hicks and Holden (2007), inform this study. Sustainability regularly uses scenarios and/ or modelling to deal with, for example, climate change scenarios, as well as the many manifestations of limits to growth encountered in the sustainability debate (Hicks and Holden, 2007: 502).

“‘The future’ cannot be ‘studied’ because ‘the future’ does not exist. Futures studies, *studies ideas about the future* (what I usually call ‘images of the future’) which each individual and group has. The images often serve as the basis of actions in the present. They often change over one’s lifetime, and may differ between men and woman, western and non-western images.”

(Dator, 2005, quoted in Hicks and Holden, 2007: 502)

A growing, but under-researched, awareness for *alternative futures* in education is emerging. In a study of youths and the future in the United Kingdom (UK), Hicks and Holden note – in line with the Agenda 21 – that environmental concerns were paramount in the minds of children and the youth (Hicks and Holden, 2007: 502-503). Although children have difficulty defining the future from an adult perspective, they show great concern for current environmental and ecological issues and can most definitely *envisage a world* they would like to grow up in (Hicks and Holden, 2007: 504).

The vision of a sustainable future for all expressed as, for example, sustainable cities and settlements, thus critically involves children. In sustainability parlance, many visions for the future are technologically driven. Inayatullah (1993: 236, in Hicks and Holden, 2007: 501), however, notes that futures studies in environmental education cross two modes of knowledge – namely the “technical concerned with predicting the future and the humanist concerned with developing a good society”. Many authors (Landry, 2006; McDonough and Braungart, 2002:

15; Sandercock, 2003: 162) call for this vision to extend beyond current knowledge that prompts change, i.e. beyond efficiencies, an integrated ecological base, sustainable technologies and sustainable transport planning (as examples). They call for “a different approach”, “different ways of thinking”, “something different” to actually make the change towards a sustainable future. Landry (2006: 11) notes that a sustainable city in this regard is also “psychologically and emotionally sustaining”. McDonough and Braungart (2002: 17), in addition, ponder the inclusion of human creativity, spirit and culture in quantitative ideas of ecological footprinting and waste management. From a development-planning angle, Higgins and Morgan (2000: 121) argue for creativity as a critical planning skill in responding to global issues (like sustainability). Sandercock (2003: 162) probably expresses this reconciled technical-humanist position with regard to the future the best: “There are a thousand and one urban reconciliation and regeneration stories and urban ecological dreams that can be dreamed, and a thousand tiny empowerments that can emerge by pursuing each of these dreams. This is how we *build the sustainable city*” [emphasis added].

2. This Study

2.1 “Rescue Mission Planet Earth”³

This is the very appropriate and catchy title for the Children’s Edition of Agenda 21 (Peace Child, 1994). This book was inspired and written by children, from over 100 countries, for children, to express the contents of Agenda 21 to children worldwide, and inspire them to action. Interestingly, this document reveals a glimpse into Al Gore’s early days as environmental campaigner.

“As chairman of the Space Sub-committee in the Senate, I strongly urged the establishment of a Mission to Planet Earth, a worldwide monitoring system staffed by children [and] designed to rescue the global environment.”

Albert Gore Jnr, quoted in Peace Child (1994: 7)

This children’s document is an endless and fascinating journey of colour, art, poetry and factual rigour(!) that expresses children’s understanding of the global ecological crisis. Having paged through the formal Agenda 21, I would go so far as to say that this document gives immense *meaning* to an otherwise cumbersome, lengthy and wordy formal Agenda 21 document. This impression could be due to the internalised interpretations of the global ecological crisis by children (who will inherit the Earth), as well as the contextual (geographical and ecological) nature of the children’s interpretations. What struck me most was:

- The immense insight and concern with which the children interpreted the ecological crisis.
- The vehicle of expression, namely art, poetry, mental maps to articulate their comprehensive empirical and non-empirical understanding.

As such, one child notes: “There is only one atmosphere. It has no borders. We don’t want poisonous gases floating around. We must react. All together.” (Child from India, in Peace Child, 1994: 13)

They, in particular, express the future perspective of education very succinctly and strikingly.

TO WANT + TO KNOW = TO ACT

(Peace Child, 1994: 74)

³ Title of the Children’s Edition of Agenda 21, 1994 (published on Earth Day)

This statement cleverly integrates the ethical and equity aspects associated with education in Agenda 21, namely to “make environment and development education available to people of all ages” (Peace Child, 1994: 73). Their perspective on education is written from a brown agenda (anthropocentric, to be explained later) perspective. In other words, lack of education is seen as a stumbling block to development. It does take a strong developing country focus, though, in stating that “all people, both adults and kids, have to get primary schooling before they can be taught about [the] environment and development.” (Ibid.)

Children and the youth in this global environmental context seem to emerge very strongly through themes of children’s rights, rights to participation and to be heard, and rights to a secure future where topics like birth control, for example, feature as an indication of unbalanced population ratios (Peace Child, 1994: 80).

Apart from this concerted global effort, it would seem that if any cognisance is taken of children in sustainability, it is usually through mainstream environmental education, lists of (pre-empting ethical) do’s and don’ts, conservation experiences, and/ or frivolous stories with self-evident “green” messages. The kind of imagination and creativity explored through this study, however, is of the kind that is nurturing for children and may generate in human beings enduring connections that support an ecological or holistic world view. These include mind-body, human-nature and human-technology connections. The step from these connections to deep ecology is a small one, as it is motivated by deep-seated and intrinsic views on the value of nature and humans-in-nature or humans-as-nature.

The planet’s crisis may thus be solved not only by a number of technical, rational and obvious fixes, but also, possibly, by an approach that draws on an integrated way of being, knowing and doing in the world. I would like to argue that *the crisis of ecology we face today might very well be a crisis of imagination*. In this regard the role of ethics, and in particular environmental ethics, is paramount. Although sustainable development focuses on the impact of development on the ecology, “sustainable development has become strongly associated with a moral imperative” (Hattingh, 2002: 5). In addition, one of the “essential learnings” – identified by Tasmania’s Department of Education (2002) – in the school curriculum is “personal futures”, which include educational experiences for children that will equip them to deal with the multiplicity of ethical dilemmas of the world we live in (Hicks and Holden, 2007: 503). One such approach of being, knowing (learning) and doing (ethics) is thus suggested through the connections made in this study.

An area, seemingly little probed in current sustainability discourse, is that of the interrelated aspects of symbolism, imagination and stories as key integrative and sense-making functionalities. Sustainability, in this regard, does not fully engage with appropriate education methods that absorb these functionalities in order to overcome the legacy of mind/ body dualities and (related) ecological degradation entrenched in the modern world view. These issues are explored as an underpinning thread running throughout this study. My M.Phil. (Sustainable Development Planning and Management)⁴ learning process seemed to open up other ways of making deep-seated human[nature] connections and use imagination and creativity to integrate the following aspects of sustainability:

- Qualitative and quantitative
- Tangible and metaphysical
- Theoretical and practical
- Past, present and future
- Social and natural science.

⁴ Henceforth referred to as M.Phil.

In continuously *reflecting on my own learning*, I realised that I consciously and unconsciously sought for meaning by engaging my imagination and creativity in the study process. I did this by integrating core theoretical and scientific learning, either with a story and/ or art. Initially I was quite sceptical as to how one might convey sustainability with “meaning” to children through appropriate education methodologies. This study will thus explore ways that support and nurture any steps that our children will take to develop imagination in the pursuit of a sustainable future. It is proposed that sustainability, storytelling and symbolism are expressions in contrast to the dominant modern world view. This world view is failing our planet and its people and is not providing a complete, integrated perspective of dealing with the current ecological crisis. We need to envision a new future through our children and the adults that they will become, and it is critical that education integrates this aspect of creating a connection between human beings and nature. An education approach that claims to create spaces for children’s imagination, like the Waldorf system, is thus critical in taking these connections into the future. As Annecke (2006) rightly notes, “we cannot leave sustainability just for adulthood”. The education study will thus be explored for the following links:

- Children’s natural inclination of giving meaning to the world (imagination, stories, etc.).
- Education methods that encourage and make space for the current shift towards the new ecological world view.
- Education that allows the creation of an enduring, positive image of sustainability into the future for children (and the adults that they become).

The future-orientation and visioning aspects of sustainability thus call on imagination and creativity that the human race has applied for centuries to evolve. Imagination that according to Durand (2000) resulted in technological feats like the landing on the moon.

The following M.Phil. modules inform this study:

- Sustainable Development
- Complexity Thinking and Systems Theory
- Leadership and Ethics
- Globalisation.

Key learning from these modules is expressed as a “*pattern of learning*” (to be explained in Section 2) or sustainability framework that serves as platform from which the rest of the study is explored. In order to make the connections, I explore the role of symbolism and stories in opening up spaces for the imagination and creativity in the sustainability discourse as it applies to “future-oriented” education process, as well as in a built environment application, e.g. geographically and spatially. Stories provide a language that carries these symbols across modernistic dualisms into the sustainability classroom – which is fertile ground from which to imagine a sustainable future.

This study is thus one reflection on how the first-mentioned fields *interface* to address an integrated vision of sustainability that could speak to future generations through a form of education that inherently supports human[nature], and does not perpetuate a mechanistic, modern world view that (amongst others) has contributed to the current, unprecedented ecological crisis.

2.2 Document Outline

Carl Gustav Jung’s work and processes were seen as radical for his time. In (gentle) opposition to reigning religious and scientific frameworks, and hugely alternative in terms of dealing with intangibles in knowledge and science (the unconscious, symbols, dreams), his work was highly transdisciplinary. In addition he, very sensitively, regarded the whole human being in his therapy (Jacobi, 1968). This unique approach and view on the world and humanity made his work particularly layered in understanding and rich in interpretation (albeit sometimes difficult to understand in totality). John Freeman’s view on the Jungian

process and approach, in *Man and his Symbols* (Jung, 1964), is very insightful as to how to interpret a research process that might not always be regarded as mainstream.

“Jung’s arguments (and those of his colleagues) spiral upward over his subject like a bird circling a tree. At first, near the ground, it sees only a confusion of leaves and branches. Gradually, as it circles higher and higher, the recurring aspects of the tree form a wholeness and relate to their surroundings.”

(Freeman, in Jung, 1964: 14)

In *Section one*, in which we most probably see only a muddle of branches and grass, I motivate the study and defend my research methodology. I provide a brief description of the research parameters, process and “insight gathering” aspects. This section ends off with a traditional story – as a challenge – that sets the scene for the rest of the document.

Section two outlines the rationale for the study that captures the essence of the “pattern of learning” or sustainability framework developed throughout the M.Phil. course. This section moves from an environmental ethics interpretation, since action for sustainability (decisions) and change are key themes that emerge throughout the other sections of the study.

Section three frames the case study, of which environmental education within the future-orientation aspects of sustainability, forms part. It specifically explores one example within the humanistic paradigm of education, namely the Waldorf school system. This section looks at the potential contribution of this education system in nurturing the imagination of children in support of sustainability and an enduring human[nature] connection.

Sections four and five delve deep into the research topic and, together with Section three, form the basis of the research. Section four explores the deep, underpinning psychological aspects of a human[nature] connection and its associated symbols within people and space (geography) from the angles of analytical and environmental psychology.

Section five pulls this discussion into the realm of stories. It looks at the type and role of stories/ narrative in supporting a human[nature] connection – as basis of sustainability.

Section six reflects on the research from a built environment and planning nuance, by drawing on ecological symbolism and sustainability education literature.

Section seven, in which I hope to show a more comprehensive tree, I conclude and summarize the research findings and suggest further research topic(s).

3. Points of Departure

The concepts of this study were difficult both to pin down and, even more, to describe accurately in terms of how I naturally comprehend them. This conundrum I found myself in at the start – and the end – of documenting this research could possibly be narrowed down to the following contributing factors:

- Firstly, the comprehensive nature of the fields I am working with – sustainability, psychology (for the roots of symbolism and imagination), literature (for stories and narrative), and environmental education (as case study). These fields *per se* are already complex, BIG and rich in underpinning fundamentals, theory, and supporting and counter-arguments.
- Secondly, the positioning of my research within and across the interfaces of these fields.
- Thirdly, the reflective nature of these fields. Each field provides content for continued reflection and increased understanding (that far exceeds the time parameters of this study). One could not possibly hope to adequately represent the totality of, for example, Carl Gustav Jung (1961; 1964) or Arne Neass’s (1972) Deep Ecology theories and

contributions in a mini-thesis. I thus tread very carefully and humbly where great minds have already beamed the way, and realise that this study might just be the beginning of a much bigger, continuing exploration.

In order to proceed I have thus had to drastically narrow down complex fields, theories and concepts, and I did this by *exploring patterns of thought* in these fields that speak to each other, as well as to the interrelated topics of this study – namely symbolism, story, ecology and [sustainability] education. The fields incorporated in this research are not studied for their own scientific/ theoretic contribution or depth *per se*.

The aim is rather to explore the relationships and *interfaces* of these fields as they intersect with key sustainability learning (see Section 2). This approach might also provide an extended perspective on science to include “other forms of knowing” that are pertinent to the sustainability debate. From the core field of this study, sustainability, comes a new science, namely sustainability science. Sustainability science is inherently transdisciplinary, deals with complexity and recognises the interface characteristics of research. It thus provides a scientific framework for this study. Sustainability science is characterised by:

- Use-inspired basic research
- Location at the interface between human society and its sustaining natural environment
- Focus on the resilience of complex social ecological systems (SES)
- Transdisciplinary approach to understanding system complexity and resilience
- Acknowledgement of multiple epistemologies (extending beyond objectivity of science to include the subjectivity of alternative knowledge systems)
- Emphasis on learning and adaptation.

(Burns *et al.*, 2006: 2)

Leopold in his *A Sand County Almanac*, for example, extended soil science to include the values of the entire biotic community. His ethic of extension enlarged the “boundaries of the community to include soils, waters, plants and animals, or collectively, the land” (Palmer, 2003: 24). Jung’s view on science was radical for the time. He purposefully worked unsystematically (Jung, 1961, in Laas, 2004) and not according to reigning religious and scientific frameworks. He extended science through the fundamental recognition and inclusion of the unconscious, dreams and archetypal symbols in his “science”, a realm where rationality and scientific certainty do not feature (Jung, 1964). “I cannot employ the language of science to trace this process of growth in myself, for I cannot experience myself as a scientific problem” (Jung, 1961: 17, in Laas, 2004). In addition, Bateson (1972), Capra (1996), Holling (1986, in Berkes and Folke, 2000) call for an integrated, extended view on science, where the unexpected, or surprising ecological processes also feature. As with Jung and Leopold, their views on extending empirical, rational science stem from a *transdisciplinary* background, interests and studies, including sound scientific knowledge in the fields of theology, archaeology, natural sciences, philosophy, alchemy, medicine, psychology and astrology (amongst others).

My own journey through this M.Phil. provided for many learning surprises, discoveries, transdisciplinary wonder and growth.

3.1 Unique and Creative Learning

This study [topic] emerged from a reflection on my own M.Phil. learning process. The M.Phil. is rooted in the creative and alternative learning environment created by the Sustainability Institute (SI) in collaboration with the School of Public Management and Planning (University of Stellenbosch). This learning process and the SI are embedded in the Lynedoch Eco Village, Stellenbosch and incorporate the following:

- Morning community work (organic farm, school, gardening. etc.)

- Self-reflection and reflection on the learning content and process in journals
- Group work
- Formal lectures and excursions
- Focused individual research assignments
- Thesis.

Working on the organic farm made the deepest impression on me in terms of connecting with nature and sustainability concepts. It provided me with symbolic and physical space in which to reflect on the week's learning. The Sustainability Institute, in this regard, thus provides a uniquely different – and very connected – way of learning about sustainability. From this experience with alternative education, I became deeply aware of the symbolic nature of my learning, which straddles the empirical and non-empirical, scientific and creative, imaginative aspects of sustainability. This unique interaction with sustainability made me wonder what is “out there” in terms of an appropriate education system that could hold or mimic this alternative learning process for children. As such, I knew that Waldorf education made certain claims in working with stories and the spiritual aspects of nature. This position of enquiry thus positions the study amid the fields that inform it.

3.2 Opposition to Current World View

Many topics unknown at the time of writing, like sustainability, are illuminated by Gregory Bateson's work because of its transdisciplinary nature, “both in their significance and vulnerability to distortion” (Bateson, M.C., 2000: xii). His epistemology opposes the materialistic epistemologies of academic departments and focuses on an ecologically integrated view. “Ideally, the relationship between the patterns of the biological world and our understanding of it would be one of *congruence, of fit*” [emphasis added]. He saw this fit as broader and “more pervasive” than the ability to predict based on simplification and selective attention (Bateson, 1972: 186). Bateson's work in this regard is likened to “imaginative recognition.”

The current, modern (also Western, neo-liberal, Cartesian, Newtonian, Aristotelian) world view – and its related lifestyles and development model(s) – has largely contributed to the ecological degradation that characterises our planet today (Bateson, 1972, Gill, 2002; McDonough and Braungart, 2002; Monbiot, 2006). Current ecological limits aligned with limitless development pressures (Dresner, 2002; Mebratu, 1998; Sachs, 1995) and human impact (IPCC, 2007; Stern, 2006) has resulted in a situation where the global environment/ecology is degrading rapidly and responding in unanticipated ways. A situation that requires immediate and long-term sustainability prioritisation (Monbiot, 2006; McDonough and Braungart, 2002; Norberg-Hodge *et al.*, 2000; Stern, 2006).

“Curtailing climate change must, in other words, become the project we put before all others.”
(Monbiot, 2006: 15)

Scientific thought – until the end of the nineteenth century – was underpinned by a Newtonian (in line with Aristotelian philosophy) epistemology.⁵ As with every epistemology, this epistemology is underpinned by a specific ontology or perspective about what exists (Moore, 1997: 584). In this regard, the Newtonian perspective upheld an objective reality that could be discovered and thus studied through objective observation in order to discover the “truth”. Newtonian thought is based on the following assumptions:

- *Reductionism* – whereby phenomena are reduced to their most basic elements in order to understand their functioning (the whole).

⁵ An *epistemology* refers to a particular way of thinking, according to which we *know* and *understand* the world around us (Meyer *et al.*, 1997: 583).

- *Linear causality* – whereby it is assumed that elements are linked through linear causal relationships.
- *Neutral objectivity* – whereby the “truth” can only be discovered when objects are being observed objectively and are not being influenced by the observer.

(Moore, 1997: 585)

This epistemology influenced all the major disciplines of the time, natural science, psychology and education. Cilliers (1998, 2000) associates this epistemology with the modern world view, whereby the world, our understanding of it and our functioning in it is subjected to rules of reductionism, linearity and neutral objectivity. A world view implies that our actions and outcomes of this understanding of the world, “truth” and reality will be in line with how we perceive reality. The main characteristic of the modern world view, based on reductionism, is a deep-seated fragmentation and disconnect between human beings and nature. This disconnect is supported at a fundamental level by philosophy, science and religions associated with the modern world view (Durand, 2000; Moore, 1997). In order to intervene effectively in this world or “reality” we need to understand it, and this understanding is intrinsically linked to our world view. Modernism thus allowed predictions of the future and certainty about knowledge. This single-minded approach to and understanding of the world, combined with political power, was often detrimentally exerted over people and nature by those “claiming to know the objective reality” (Swilling, 2002: 4). Bauman (1992: xi) describes this disconnection and dominance of human beings over nature as a split between “will-full subject and will-less object”. He elaborates by saying that modernism requires order and that this order is “bound to remain an artificial imposition on the unruly natural state of things and humans” (Bauman, 1992: xv). These statements confirm one of the fundamental perspectives of modernism, namely to be human one has to be rational, and certain aspects of human[nature] – at the time – were not regarded as human, but madness. This study thus explores themes that seem to oppose rationalism and empiricism⁶, insofar as it perpetuates modernistic dualities and the exclusion of other forms of knowing.

In today’s complex, postmodern world, modernism’s fragmented thinking, über-rationality and absolute ideas about knowledge, science and the world thus do not provide a comprehensive understanding of, and answers to, the environmental and social-ecological crisis(!) of our times any more. The world has become relational. Cilliers (1998: 113) describes this relational world as follows: “The obsession to find one essential truth blinds us to the relationary nature of complexity, and essentially to the continuous shifting of those relationships.” In this postmodern world, *knowledge cuts across boundaries* and disciplines (Lyotard, in Cilliers, 1998: 114) and, in the words of Swilling (2002: 10), provides social science with a way forward that “avoids the extremes of hopelessness and certainty, and brings the natural sciences a lot closer to the intricacies of life”.

Systems thinking and ideas on holism provided a drastic shift that moved our thinking and understanding closer to the complexities and intricacies of today’s world.

Von Bertalanffy’s (1950, in Moore, 1997: 585) system’s theory played an important role in moving major approaches from reductionism to holism, across most major disciplines. This idea – of grasping the world in its integrated wholeness, as a system, as an ecology – is long standing. For example, cybernetics (Bateson, 1972), an ecological approach or world view (Capra, 1996; Naess, 1972) and systems theory (Von Bertalanffy, 1950). These approaches share mutually supportive and recognisable epistemologies and could be grouped together under the banner of an ecological approach (which also has its distinguishing epistemology,

⁶ Empiricism, as scientific-philosophical view, is based on the assumption that experience through sensory observation is the only source of true knowledge, and rationalism assumes that human reason is the source of all knowledge (Meyer *et al.*, 1997: 583).

ontology and associated world view). Ecology refers to the fact that all things in nature are interconnected in a complex but systemic manner (Keeny, 1984, in Moore, 1997). Bateson's cybernetic principles of recursive feedback loops and circuits, which underpin the non-linear information distribution across these complex systems, are some of the most important contributions to the ecological approach. Many authors – from a wide range of fields – (Bateson, 1972; Blewitt, 2006; Capra, 1996, 1982; Cilliers, 1998, 2000; Hattingh, 2002; McDonough and Braungart, 2003; Nicolescu, 2002), are also calling for a new world view from which to solve the current ecological crisis. A world view that inherently supports the interconnectedness between human beings and nature, recognises complexity and systemic interrelations, as well as the interrelationship between human systems (social systems) and their underpinning ecological support base (Berkes and Folke, 2000; Beyers, 2006, Burns *et al.*, 2006, Swilling, 2004). They are, in fact, calling for an ecological approach to understanding and saving the planet.

The modern world view in its totality is thus being contested on a number of fronts. From the integrated nature of this study – storytelling (narrative), ecological symbolism, psychology and planning (narratives in planning) literature – the following responses against the modern world view are noted:

- Environmental ethics should be taught as it “provides the only answer to environmental problems generated in a neo-liberal economic context.” (Benton and Benton, 2004: 228)
- Current intense concern with “landscape in the arts and social theory is seen as a response to the shaking of the modern world view, which has attended the growing awareness of the ecology crisis”. (Gill, 2002:177)
- “Our modernistic understanding of entities, like the brain and computers – and not interactions – led to a kind of triumphalism, as if we could eventually explain the creative imagination.” (Bateson, M. C: 2000: vii)
- “In modern life we have stripped so many ideas of their emotional energy that we do not respond to them anymore.” (Jung, 1964, :49)
- Mind is not separable from its material base, “and traditional dualisms separating mind from body or mind from matter are erroneous. The unit of survival is always organism *and* environment.” (Bateson, G: 1972: 37)
- Key sustainability principles of “circular causality, alongside reflexivity and self-organisation underpin ecological thinking in educational change” (Elliot, in Keiny, 2002: iii). Keiny (2002: 89) notes that integrated, ecological thinking in education is oppositional to the standards-driven curricula characteristic of most “Western” societies.
- “We could see that the conventional environmental approaches – even the most well-intended and progressive ones – just didn't get it.” (McDonough and Braungart, 2002: 15)

3.3 The Human-Nature Connection through Stories

The relational and transdisciplinary nature of an ecological world view is expressed very well through stories, narrative and symbolism (Booker, 2004; Jung, 1964; Keiny, 2002). As point of departure, I thus assumed that the generic notions of “symbolism” and “imagination” could provide some clues to a deeper (“ultimate”) human-nature connection, the latter especially for children through stories and storytelling. By making these connections I hope to delve into the creative and deep-seated undertow of sustainability, a dimension of infinite possibilities, complexity and extended science that might link people across cultures, races and knowledge divides. I thus wanted to explore the ways in which imagination, symbols and stories

- allow us to understand the formation of some enduring human[nature] connections in sustainability that cut across some of the reigning dualisms of modern society, namely mind and matter, science and imagination (and art), and human beings and nature;
- oppose the modern world view in support of a new, ecological world view;
- potentially and naturally “just make sense” of the world to children (and adults alike); and
- are captured through appropriate education methodologies.

According to Bruno Bettelheim (1976), in his book entitled *The Uses of Enchantment: The Meaning and Importance of Fairy Tales*, fairy tales, myths and folklore allow children to learn about the complexities of their own behaviour, wisdom, as well as the complexities of the world they live in. In the process of growing up, children’s minds “can be opened to an appreciation of all the higher things in life by fairy tales, from which they can move to easily enjoying the greatest works of literature and art” (Bettelheim, 1976: 23). In addition, stories facilitate learning through the concepts of imagination and creativity for children. The literary and academic works of the Afrikaans writer and icon Elsabe Steenberg (1979, 1987) support this idea of learning through stories. She poses that children relate to stories in order to

- understand themselves in the world;
- relate their “inner” self-world with the “real” world;
- nurture their natural and rampant creativity and imagination; and
- externalise and/ or concretise fears, frustrations, hopes and joys in stories and images.

Her works entitled *My Kind en Sy Boek* (1979) and *Fantasie en die Kinderboek* (1987) provide invaluable insight into the iterative literary-psychological links of child development, and the resonance that this development has in stories and learning. Steenberg (1987: 3) warns against moralising children by using obvious and/ or nonsensical characters, environments, contexts and happenings. She advocates the use of fantasy to structure and guide children’s interpretations of the complexity of the world, personal ethics, decision-making and behaviour. These are all themes highlighted in sustainability literature, as will be shown in the following section. She specifically mentions the non-linear nature of writing children’s stories, which resonates the non-linear nature of a complex world and the non-linear nature of learning about sustainability, the environment and ecology. Through stories children not only learn about their complex self and how to conduct themselves in the world, but stories provide “a safe way out”, a way to make sense of an abundance of life’s complexities. Stories thus become maps of inner experiences and world experiences that children relate to through their imagination.

Teaching that supports this process of sense-making would thus seem natural in terms of acknowledging the complex, non-linear nature of human life, the world and nature. Stories, similarly, capture the complexity, interconnectedness and transdisciplinary nature of life (Bettelheim, 1976; Booker, 2004; David, 1991; Caduto, 1997). In addition, stories speak to the imagination of children and adults alike. Stories could thus be powerful vehicles for visioning and ethics alike, for manifesting dreams about a sustainable future.

4. Methodology (Process of Reflection)

This thesis is the result of a journey of integrated reflection, observation, experience and research⁷ throughout the M.Phil. course. It reflects a process of learning and personal cognition, as well as assimilation processes that:

1. Made sense of the diverging – and often contradictory – sustainability debates.
2. Connected the various items of qualitative and quantitative, scientific and metaphysical learning (spread over eight core modules) into a comprehensive meaningful whole.

In this process my imagination and creativity, through the use of stories and art, continuously extended “rational” science and *integrated* these sustainability items of learning into a coherent and meaningful pattern of learning.

⁷ Research in terms of the University of Stellenbosch’s requirements for a 50% module and 50% thesis option of the M.Phil – in other words, the completion of eight core modules, related journals, assignments and group work, as well as this thesis

4.1 The “Patterns That Connect”

The first compulsory module of the course – Sustainable Development – required students to develop a personal position on “sustainable development”. This position, developed as my first academic engagement with the literature, theory and multidimensionality of the concept, still serves as the foundation of the course for me. It is captured as follows: “Sustainable development is seen as a pattern of developmental ethics, priorities, choices and activities where human beings and the environment are interconnected beneficiaries, depending on certain realities (for example, depleted natural resources and human ability to create and develop new technologies), as well as the context (culture, development stages/ priorities, etc.)” (Beyers, 2005: 2).

The “patterns that connect”, coined in Gregory Bateson’s book *Mind and Nature: A Necessary Unity* (1979: 78), underpins this position on sustainable development and is seen as both the question and answer in dealing with the concept of sustainable development and sustainability – a new way of thinking, of linking developmental choices with environmental impact. (Beyers, 2005: 2). In the words of Bateson⁸, “If we continue to operate in a Cartesian dualism of mind versus matter, we shall probably also come to see the world in terms of God versus man, elite versus people, ... nation versus nation and *man versus environment*” [emphasis added]. It is doubtful whether a species having both an advanced technology and this strange way of looking at the world can endure. Bateson’s concern for the segregation, dissociation and dominance inherent in the modern world view – and its consequent way of life – *provides the response context for this study*. “The context of the alternative is the mainstream” (Alrøe and Noe, 2007: 7). Bateson continues by laying the following foundation theme for this study: “[B]reak the patterns which connect the items of learning and you necessarily destroy all quality.”⁹

4.2 Reflection through My M.Phil. Process

The discovery of “reality” or the “truth” through research has long been practised and debated. Whether a search for the “objective reality” or people’s subjective (meaning) worlds, many criticisms have been logged – since the nineteen sixties – against positivism. In order to align myself with the inherent characteristics of symbolism, narrative and sustainability, which oppose empiricism and positivism, I have to align myself with a methodology that recognises critique of empiricism, such as the reflexive methodology proposed by Alvesson and Sköldberg (2000). These authors (2000: 241) propose a reflexive methodology of work, where there is less focus on what empirical data can tell us about reality, and more about other virtues like creativity (as one example). A reflexive methodology incorporates the following critique: “The critics of empiricism – ranging from historians of science, sociologists of knowledge, psychologists of science and linguistic scholars, to ideological critics and philosophers – claim that culture, language, selective perception, subjective forms of cognition, social conventions, politics, ideology, power and narration all, in a complicated way, permeate scientific activity.” (Alvesson and Sköldberg, 2000: 1)

All these contextual, subjective and what is often seen as “irrational” elements influence the translation between research and reality. It is important to note that these authors do not shun empirical research, but critique and problematise current, mainstream qualitative research. Their critique includes the contention that qualitative research is not open enough to allow for the complexity of multiple interpretations, and underrates the need for reflection throughout the process of research (Alvesson and Sköldberg, 2000: 1-2). Reflexive research typically draws attention to the following processes:

- The complex relationship between processes of knowledge production and the various contexts of such processes.

⁸ <http://www.global-vision.org/bateson.html> - accessed on 15 July 2004

⁹ Ibid.

- The involvement of the knowledge producer.
(Alvesson and Sköldberg, 2000: 5)

These characteristics make a reflexive methodology particularly applicable to this study, as relationships between the fields of study cross dimensions from the intra-personal (psychoanalysis) to inter-personal (ethics and the role of people in nature), and eventually the spatial and geographical (as symbols open space between people and spatially). In terms of the second point, the topic emerged from a personal reflection of my own experience through the M.Phil. process. I am thus intricately involved in this process of knowledge production and research.

Aligning with the core themes of symbols and stories (narrative) explored in sustainability, Alvesson and Sköldberg (2000) draw on the metaphoric use of language characteristic to a reflexive methodology. To use Czarniawska-Joerges's (1992, in Alvesson and Sköldberg, 2000: 283) metaphor, the methodology of this study is thus that of "formulating a mystery and then solving it". Gergen and Gergen (in Alvesson and Sköldberg, 2000: 243) note that reflection often opposes hypothesis building and testing, as it disallows other forms of knowing that may arise in the process of reflection. I have not formulated a hypothesis or single research question, nor collected specific data to reinforce that, which would be a typical research design. A research design, as opposed to research methodology, is typified by the questions that it addresses (Mouton: 2001: 57), as well as a strong link to the end result. This methodology is thus an exploration that is not tied to a predisposed outcome through a hypothesis and/ or research questions.

The research is essentially qualitative. As summarised in Mouton (2001, 195) "a qualitative approach has the potential to supplement and re-orient our current understanding," thus allowing for feedback and self-assessment throughout the research process. Czarniawska-Joerges (1992, in Alvesson and Sköldberg, 2000: 283) further notes the use of the metaphor "insight gathering" instead of "data collection". I find this term more appropriate for this study, as this is exactly what happened in the course of working through the literature, interviews and personal experiences/ reflections. Alvesson and Sköldberg (2000) further note that creativity and reflection is found by working in the interfaces, in opposing exclusive, reductionist and pure empirical methodologies.

"Reflexivity arises when the different elements or levels are played off against each other. It is in these relations and in the interfaces that reflexivity occurs."
 "Reflexive interpretation is the opposite of empiricism and the theoreticism (the use of a single, abstract framework offering a privileged understanding)."
 (Alvesson and Sköldberg, 2000: 249)

Knowledge, according to this approach, cannot be separated from the knower, and through interpretation we bring meaning to data and facts (Alvesson and Sköldberg, 2000: 1). By rooting a significant part of this study in the psychology of individuals, I hope to show that our knowledge in sustainability is not, and should not be, separated from the knower – that is, it is context-bound. To be reflexive in a methodology thus means to think about the premises of our thoughts, and investigate the way in which the contextual issues – for example, culture and theory – of the researcher interact with what is being researched (Alvesson and Sköldberg, 2000: 245). A reflexive methodology thus really works at the connections made between and across fields of knowledge (as is the case in this research).

4.3 Combined Views

Due to the transdisciplinary nature of the study, its methodology will necessarily borrow from other fields. In opening up the research method beyond the empirical to new avenues of knowledge, I take the view that we actually partake in *science of the unexpected* – so-called

“emergence” in complexity theory (Cilliers, 1998, 2000), and Holling’s (1987, in Berkes and Folke, 2000: 6) “science of surprise”. Another way of looking at the reflexive methodology – in terms of acknowledging the connections made across the system of knowledge to be studied – might be what Cilliers (2000: 28) refers to as the “nature of a system”. In this regard my study, with its underpinning fields, could be seen as a complex system.

Following from this argument, I position imagination as an “unexpected”, a “surprise”, which brings us closer to understanding the nature of a system.

I follow a way of imagination and the unexpected where imagination could be explained via Nicolescu’s (2002) “included middle” as an expression of transdisciplinarity. That which remains when we have explored the disciplines. It could be an “intangible discipline” (if I can call it that) from which we (as engineers, planners, teachers etc.) create, envision, plan and design, and build futures with.

As such this study applies a methodology of working at the interface of recognised disciplines. It is thus transdisciplinary. Nicolescu in *Levels of Reality and the Sacred* (2002) notes that, “transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all disciplines. Its goal is the understanding of today’s world, of which one of the imperatives is the unity of knowledge” (Nicolescu, 2002: 3). It is an interest in this unity of knowledge that also supports this specific research topic. Nicolescu (2002: 3-4) continues by saying that “the perception of the sacred is first of all an experience irreducible to any theory. It concerns the silence between words, across words and beyond any word. The space between the levels of perception and the levels of reality is the space of this silence”. I concur with Nicolescu’s point of view.

Applied to this study, “the sacred” and “intangible” – imagination – could thus be at once within the disciplines, and across them. Thus not only something that is intangible and in the realm of “soft science”, philosophers, and artists, rather, I think it is within the *core of current science and in the realm of where science might want to go*.

Another aspect of my methodology that permeates the M.Phil., is the search for meaning in sustainability learning. This meaning is often an integration of “non-rational” and “rational” science (forcing the distinction, which I do not necessarily like to do), namely intuition, theory, imagination, empirical data, creativity and dreams. Reflexive research, in this regard, strongly relies on social constructionist notions (within a postmodern point of view, namely “surprise”/ “emergence”, which could be seen as Derrida’s “deconstruction” of the reductionist world view). For Steier (1991, in Alvesson and Sköldbberg, 2000: 244) reflection consists of the way in which we construct ourselves socially, whilst also constructing objects through research.

“Nothing means anything on its own. Meaning comes not from seeing or even observation alone. For there is no ‘alone’ of this sort. Neither is meaning lying around in nature waiting to be scooped up by the senses, rather it is constructed... in acts of interpretation.”
(Steedman, in Alvesson and Sköldbberg, 2000: 246)

Another research approach, appreciative inquiry (AI), is also rooted in the social constructionist view. AI is mainly rooted in organisational change, but Cooperrider noted that “human systems exhibit an observable and automatic tendency to evolve in the direction of positive images” (Cooperrider, 1990, in Oranje and Van Huyssteen, 2005: 5). The notion of imagination as driving force for humanity underpins this study, and aligns strongly with these ideas of AI that recognise the power that language and imagery have in shaping consciousness (see similarities with future studies). In addition, AI provides for a moral image of the future that could guide collective action (it thus holds implications for ethics) and it is

not focused on individuals, but engages the entire system (Oranje and Van Huyssteen, 2005: 6). AI focuses on methods that are highly narrative and qualitative by nature and focus, in particular on storytelling and narratives, in order to unearth “existing new knowledge”, i.e. take the best from people, systems and organisations that they could live into/ up to (Oranje and Van Huyssteen, 2005: 8-9). Mellish (1999, in Oranje and Van Huyssteen, 2005: 9) notes that AI provokes “imaginings regarding new ways of organizing, creative improvements,” and appreciates “the best of what exists, hopes for the future”.

“Research and theory must grapple with rational and emotional intelligence and focus particularly on the interplay between them.”

(Massey, 2002: 1, in Laas, 2004)

The methodology underpinning this study is thus highly reflective, narrative and inquiring. Clandinin and Connelly (2000: xiii) propose that lived experience is the starting point and the key term for all social science inquiry, and that examining this experience is key to education.

“With narrative as [a] vantage point, we have a point of reference, a life and ground to stand on for imagining what experience is and for imagining how it might be studied and represented in researchers’ texts. In this view, experience is the stories people live. Stories lived and told educate the self and others, including the young”.

(Clandinin and Connelly, 1999: xxvi)

Dewey notes an explicit characteristic of experience, namely continuity. In other words, one experience leads out of another. “Wherever one positions oneself in that continuum – the imagined now, the imagined past, or some imagined future – each point has a past experiential base and leads to an experiential future.” (Dewey, in Clandinin and Connelly, 1999: 2). This too is critical in how we think about education, as a child’s learning, a school or education policy always has a past, is changing and is going somewhere. Inquiry allows us to move back and forth between the personal and social and the present and the past and to do so “in ever expanding social milieus.” (Dewey, in Clandinin and Connelly, 1999: 3).

Oranje and Van Huyssteen (2005), writing from a developmental planning perspective about the deficiencies of the problem-solving approach in planning (built environment), note the minimalist, neo-liberal approach to planning and the absence of dealing with the past in planning practice and method. In other words, a lack of seeing planning, and people in planning, in the past, present, future continuum mentioned above.

The interface/ transdisciplinary nature of sustainability has also been explored through a “figure/ ground methodology” in view of planning interventions (Beyers, 2006). This metaphor for structuring research, interestingly, also emerges strongly in the education literature and narrative (story) literature (Grainger, 1997; Keiny, 2002). It plays on reflexivity’s ideas that the knower cannot be separated from the knowledge and context, just as figure and background cannot be separated from one another and give each other meaning and tangible implication. As a matter of interest, writers in the field of educational research (Clandinin and Connelly, 1999; Keiny, 2002) note that their research has been rooted in their own contexts, stories and experience and that the narrative and first-person writing styles are the most appropriate in reflecting this experience and contextual characteristics. In addition, they also reflect that, when writing in these styles, the organising tool of *foregrounding* and *backgrounding* becomes essential in organising research aspects.

All these explorations capture the links within human activity and its cognitive processes. In sustainability and ecological parlance these connections refer to social systems and their supporting ecological base. Berkes and Folke (2000) in their work *Linking Social and Ecological Systems* posit that there is no single, universally accepted way of expressing or

formulating the linkages between a social and ecological system. They capture these linkages as *patterns of interaction* (Berkes and Folke, 2000: 20). These patterns of interaction produce certain outcomes: “the biophysical environment may or may not be used sustainably; the functional performance of the ecosystem may or may not be damaged; and benefits may or may not be shared equitably and fairly” (Berkes and Folke, 2000: 20). This process of looking for connections and patterns (also *à la* Bateson) is the basis of proceeding in this study, as massive fields of knowledge had to be narrowed down. I thus looked for interconnecting patterns of thought.

4.3.1 The Methodological Conundrum

Using a reflective methodology, I often bumped up against the conundrum of engaging in issues/ stuff/ content that is correspondingly content (study) and study methodology (narrative), and also both epistemology and ontology, a way of knowing and knowing itself. Narrative inquiry, as approach, bridges these issues to an extent. Clandinin and Connelly (1999) used narrative inquiry – with philosopher Mark Johnson’s work on embodied metaphors – to understand the nature of teachers’ images of teaching, (thus the nature of the system – see argument above). Narrative inquiry is a phenomenon falling under study and method of study.

Narrative in this way provides insight into the continuity into individual’s lives and thinking, which aligns with similar ideas on narrative in literature, planning, psychology and anthropology (Clandinin and Connelly, 1999: 3). New inquiry in social sciences is that of narrative inquiry. It entered the narrative debate through educational research, planning, psychology, literature and anthropology.

It would seem from this section that narrative as methodology encompasses and bridges a number of methodologies, and unites knowledge from a number of fields.

4.4 Process of “Insight Gathering”

The process involved the following:

- An integration of M.Phil. learning from the core modules completed in partial fulfilment of this degree. This insight is presented in Section two of this study.
- A comprehensive literature review on the separate and integrated topics that underpin this study.
- This review included (i) a comprehensive journal search on the academic/ science search engines available to the Council for Scientific and Industrial Research (CSIR), (ii) a general internet search, (iii) a library search on site at the Stellenbosch University library, as well as (iv) “ad hoc” literature recommended through the interview processes.
- A case study review of environmental education in South Africa and the Waldorf school system.
- The case study process included (i) an extensive literature search (on environmental and ecological education in South Africa, Waldorf education methods and underlying philosophies), (ii) three interviews (outlined below), as well as (iii) participation in a school event in Stellenbosch (the winter solstice festival).
- The three interviews that underpin the Waldorf case study were:
 - Semi-structured. This interview was conducted with Helen van Zyl. Helen is a Waldorf parent, expert on Waldorf education and keen follower of Waldorf principles as lifestyle. She, for example, is very active in biodynamic farming, a philosophy that Rudolf Steiner founded. The questionnaire is attached as Annexure 1. Although the discussion followed the questions to an extent, the questions and responses were guided by the flow of the discussion. Eve Annecke was also present at this discussion.
 - Unstructured. This interview was conducted with Heleen de Villiers, doyenne in Afrikaans literature and an expert on children’s stories specifically. Her contribution is

extensive and includes writing on stories, their meaning to children through education, as well as their embedded symbolic themes. She, for example, translated the Grimm stories from the original German into Afrikaans. At the beginning of the interview, I described the study to her and the discussion, questions and responses followed from there in a fantastic and inspiring discussion.

Structured. This interview was with Professor Mark Swilling, who, as Professor in the School of Public Management and Planning, went through a process of Waldorf education. This questionnaire is attached as Annexure 2.

- The comprehensive literature review, as expected, revealed tons of literature within the specific academic disciplines. However, very little academic literature exists within the interface areas, which is the essence of this study. I thus had to interpret most of the interfaces from fields narrowed down through the lenses of symbolism, story and sustainability. These interfaces immediately narrowed the search to almost zero or only a few authoritative papers.
- A case study is an appropriate research method to set boundaries around a system of study. One case study can obviously not legitimise a study, but it is sufficient to lift out a pattern of thought (connections), and show conceptual links that might emerge from the fields that underpin this study (Mouton, 2001).
- In addition to the interviews, I also used *nature tales* and *earth tales*, as a form of triangulation. Themes from these stories are interpreted against the themes that emerge from the research.
- Experts, for the interviews, were identified according to a sampling method of *purposive sampling*, where the researcher purposefully chooses generally known or highly acclaimed experts in the field.
- Discussions with my supervisor, Eve Annecke, brought additional insight and structure to the document (and my thinking!).
- The end result of this process is the integration of the insights gathered in a research process that spanned, in effect, the entirety of the M.Phil. course. The process followed an iterative, circular process of making connections, looking for patterns and integrating knowledge from fields that do not necessarily talk to each other around education, imagination and stories in sustainability.

5. Transitioning to the Sustainability “Patterns of Learning” (Sustainability Framework)

Bateson (1972) noted that many ecological and sustainable “irreversibilities” characterise this time in human history. These include global warming, poisoned food chains, as well as contested world views and science on consumption and waste patterns. Providing this visionary clue from the 1970s, he however, expressed most concern about certain “habits of mind” that could worsen and fast-track these problems over time. These include short-term solutions, a narrow vision of human purpose, an isolated focus on individual persons, species and profit and not on systemic health, the tendency to let technological possibility or economic indicators replace reflection, and the effort to maximise single variables instead of optimising the relationships between a complex set of variables (Bateson, M.C., 2000: xiv). Thus, amongst the wealth of contesting epistemological and ontological expressions of *[un]sustainability*, this study explores some of these “habits of mind” that could lead to change and decision-making in support of a sustainable future.

Monbiot (2006: xviii), similarly, provides a clue that helps us make the transition into this study: “When attempting to determine what climate change will do to the planet, the choice, at first sight seems simple: the most credible sources are peer-reviewed academic journals. But the science – as science always should be – is contradictory and confusing. There is no ‘answer’, simply a *story with many tellers*, which changes everyday” [emphasis added] (Monbiot, 2006: xviii). Al Gore (2006) indicates, in contrast, that it is not the science that is contradictory and confusing, but political interpretations and games that use this scientific

information to push certain environmental and or developmental agendas. These contradictory viewpoints tie into Abma's (1999) viewpoint that not all stories necessarily promote the change we are looking for. Monbiot (2006: 20-42) refers to an entire body of literature and nay-sayers as "*The Denial Industry*" that produces "standard stories" that could support the business-as-usual agenda (and most often the development-at-the-cost-of-nature or jobs-über-all) agendas, as vigorously as other stories tell of a sustainable future.

The proof is in the planet's actual survival – or the type of story, rather, it seems.

6. Setting the Scene: The Wisdom of Nature – A Swahili Story Set in the Context of Kenya, Tanzania and Zanzibar

In the thick brush at the edge of the hill country lived a magnificent snake. Its eyes blazed and the scales that covered its skin were as hard and strong as any shield. Venom flowed from its long, curved fangs. In the moment of its hunger, this huge, powerful snake devoured any wild animal it desired.

One day, the snake sat sunning itself in a small clearing. Being close to the ground, the snake sensed a roar in the distance. Its tongue picked up a strong scent. Upwind, some young hunters were burning the brush to drive the game animals into the open. Crackling flames rushed toward the snake.

As it searched for refuge, the snake slithered out of the low brush and into the open along the border of a farmer's fields.

"Please help me hide," asked the snake. "The hunters are coming. They will kill me."

When he saw the snake the farmer was afraid.

"Do not fear me," the snake called out to the farmer. "I will not harm you."

The kind-hearted farmer took pity on the snake, as he did on all animals that were in need of help.

"Quickly," said the farmer as he opened the mouth of a large, empty grain bag, "crawl into this sack. The hunters will never think to look for you here."

As soon as the tip of the snake's tail disappeared into the mouth of the bag, some hunters approached. They were following the faint trail left by the snake's belly as it slid along the ground.

"Have you seen a large snake come this way?" they asked the farmer.

"No," he replied. "I have been working here all morning and have seen no sign of a snake. You must be reading an old trail."

"Thank you," said the hunters, and they walked on. When they were a safe distance away, the farmer opened the grain bag and whispered, "come out, the danger has passed."

The snake crept out of the sack, threw its coils around the farmer and held him fast.

"Let me go!" screamed the farmer. "I have just saved you life!"

"That is true," replied the snake. "But I have not eaten for many days. You will make a good meal."

"Then you will not let me go?" asked the farmer.

"No, I am starving."

"Before you eat me," said the farmer, "you could at least repay me for saving your life."

"That is only fair," said the snake. "I agree. Now what do you desire?"

"Let us have others decide whether you should eat me."

"If that is your wish, so be it," agreed the snake.

The snake followed the farmer to the edge of the field where a coconut palm tree had been planted. The tree listened carefully as each of them told his side of the story.

"Well," replied the coconut palm, "I know the nature of human beings. They eat my nuts and drink the sweet milk inside. Some even use my leaves to thatch their roofs. Why should I save a human being? I say the snake should have its meal."

"Let us ask the bee," said the farmer.

"As you wish," replied the snake.

“You must be joking!” replied the bee. Human beings smoke us out of our homes and steal our honey. They never give us thanks. I have no compassion for the farmer.”

“Perhaps the mango tree down by the road will understand my plight,” thought the farmer.

“Snake, let us go ask the mango to give us its judgement.”

“Lead on,” replied the snake.

Once it had listened to their stories, the mango tree spoke. “Year after year I stand here as generations of human beings pass by. They cool themselves in the shade of my branches and eat my fruit when they are hungry. Some break off my branches for firewood or to use as the shafts of spears for hunting the wild animals. Not once has a human being thanked me. Farmer, I see no reason why the snake should not eat you.”

“How could this be?” exclaimed the farmer. “Why should my life be such a trifle in the eyes of Nature?”

At that moment, the farmer spotted a gazelle grazing along the riverbank. To the gazelle the farmer now pleaded his case.

In response to his story, the gazelle told a tale of its own. “I am often the difference between life and death for the human beings. Without my meat, they would starve and perish. Because I am so generous, people take me for granted. Your life, farmer, belongs to the snake.”

A baboon was listening from where it sat on the branch of a nearby tree.

“Every creature does what it must in order to survive,” said the baboon. “That is the way of Nature.”

“But what of the snake?” asked the farmer. “One cannot blame the snake for its hunger,” replied the baboon “Like you, the snake is part of the balance that exists in the world.”

A snake is meant to eat its prey,
It catches as it can.
Its food will try to get away,
escape’s the way of man.

“What, then, do you have to say about whether or not I should eat the farmer?”
asked the snake.

“First, you must show me exactly how it happened,” said the baboon. “That sack does not look big enough to hold a snake as magnificent as yourself.”

The farmer then opened the bag and the snake crawled in.

“Are you able to close the bag with the snake inside?” asked the baboon.

“Yes,” replied the farmer as he drew the cord tight and tied it securely.

“Now, farmer, we will see what you have learned,” said the baboon. “Once again, the fate of the snake is in your hands.”

Story in *Earth Tales from Around the World* (Caduto, 1997: 157-160)



6.1 Reflecting on the “Snake” Story

Stories should ideally be left to speak for themselves. Or, in the words of Caduto (1997: xi), “stories have wings, too, which carry them far and wide on the winds of our imagination.” The “snake” story has been taken from a collection of *earth tales*. These stories, in the category of traditional stories, spring from the imagination and lives of people who live close to nature, who take care of the soil, animals and plants. These stories show that “people quickly learned that the harm they cause the world around them would one day come knocking on their own door.” (Caduto, 1997: xi)

What could this story be saying within the ambit of our planetary sustainability crisis? The coconut palm and mango trees, by capturing the nature of human behaviour towards Nature, expressed the basic premise of the current world view. They gave testimony that human

beings dominate, only to use them (the trees and their fruit) for basic needs¹⁰ and never give thanks in return¹¹ for the services offered in abundance. The mango tree, in addition, observed that generations of human beings with this attitude pass by *without changing their behaviour* towards the trees and the services they offer in support of basic human life on earth. The farmer, having contravened the rules (balance) of Nature, received testimonies from the animals and trees (Nature) that were unequivocally stacked against his survival. The baboon, symbolic of reason, hints at the fact that human beings have the ability to learn from mistakes and change their behaviour accordingly. By putting the snake back in the bag the farmer can now continue along two paths of life in nature:

(i) Suppress his conscience (snake as symbol for wisdom and subliminal link to nature), keep “it tied fast”, never to make that connection again and continue with his reckless [ab]use of nature. OR

(ii) The farmer can change the way he uses and takes responsibility for nature and, when he does have the courage to open the bag again, hope that his changed impact on nature will elicit positive testimonies from the plants and animals in favour of his life continuing on the planet.

How will we start our Earth story?

Stories characteristically start with an opening line.

“Now this story, I didn’t make it up!” is typical of a Sefwi storyteller from Ghana.

“Who did then?”

“Once upon a time, in a certain town.” Is the response from a storyteller in India.

A Mandingo storyteller from north-western Africa, begins by saying:

“A really unique story has no end.”

A typical Arab opening would be: “There was, there was not. Shall we tell stories, or sleep in our cots?” (Caduto, 1997: xi)

6.1.1 Science[fiction]

Science[fiction], comes to mind as an appropriate start to the sustainability story: Is the story science, or is the science story? This prelude certainly resonates with the Arab opening line: “There was [*climate change*], there was not. Shall we tell stories [*of our failing earth*], or sleep in our cots?” One cannot help but wonder whether science, in fact, is not trying to change this story, this very outlook on Nature. I would say that the science of the earth is story, the story of the earth is science, told over ages, told in every action we take today to ecologically and socially save our planet.

Science fiction is described as the “fictional treatment in print, films, television, or other media of the effects of science or future events on human beings. More precisely, science fiction deals with events that did not happen or have not yet happened. It considers these events rationally in terms both of explanation and of consequences, and it is concerned with the impact of change on people, often with its consequences for the human race”.¹² Two major events gave recognition to science fiction as a literature of relevance – the explosion of the first atomic bomb in 1945 and the successful landing on the Moon on July 20, 1969. Atomic energy and space flight had been two of the major subjects of science fiction almost from its beginning, but they had been ridiculed by traditional critics and even many scientists as “mere science fiction”. Both feats of human evolution were also, firstly, brave acts of imagination. I thus take the view of science in the role of climate change as an appositional indication (warning) of what Asimov has called “a science-fiction world”, where scientists and explorers give direction to major forces of change that face humanity. At this stage in ecological history, one might say that story and the science have met again.¹³

¹⁰ Food, shelter and tools (spears).

¹¹ Through care and mutual responsibility.

¹² Microsoft® Encarta® 2007. ©1993-2006 Microsoft Corporation – accessed 01/09/2007

¹³ Ibid.

SECTION 2

7. Introducing Section 2

The concepts “sustainable development” and “sustainability” form the base learning through which this study is explored and interpreted. In this section, I aim to connect some key items of learning that I have interpreted from selected M.Phil. modules.

These modules are:

- Sustainable development
- Complexity theory and systems thinking
- Leadership and ethics
- Globalisation.

The modules build on each other to highlight items of learning that I consider characteristic of sustainability. As point of departure, I highlight two themes emerging from these modules that are paramount to this section:

- I subscribe to the ideas of systemic (holistic) ecological limits. In other words, that the impact of our development, consumption and views of the future have come up against ecological limits (Bateson, 1972; Lichtman, 2003; Monbiot, 2006; Mebratu, 1998; Stern, 2006).
- I pose that amidst the complex, overwhelming sustainability debates, ecological degradation and global forces we should critically consider how we conduct ourselves in this world (ethics). In addition, I emphasise the action and intervention (“there is something we can do”) aspects of sustainability. I base my arguments here on Cilliers’s (2000) notions that decisions for sustainability have to be taken amidst great complexity in order to go forward, as well as Hattingh’s (1999) ideas of pragmatic environmental ethics.

Values, ethics and subsequent action for sustainability are major focus areas of this section. Learning from the *Leadership and Ethics* module is thus not discussed in isolation, but rather infused in the learning from each of the modules mentioned above. Ethics in the *Dictionary of Philosophy* (Speake (ed.), 1979: 112) is described as a “set of standards by which a particular group or community decides to regulate its behaviour – to distinguish what is legitimate or acceptable, from what is not.” It implies a philosophical enquiry, of making known the knowledge and value base from which sustainable action is sought.

Hicks and Holden (2007: 510), in their article *Remembering the Future: What Do Children Think?*, confirm that the temporal dimension has to be acknowledged in debates on the nature of education for sustainable development. They pose the following critical questions that should guide thoughts on sustainable development education:

- Where have we come from?
- Where are we now?
- Where are we probably heading?
- Where would we prefer to go?

They propose that the last two questions, especially, need to inform all education work. These notions of continuity, history and memory in sustainable development education are reflected in Benton and Benton’s (2004) paper, *Why Teach Environmental Ethics, because we Already Do*. Here the authors argue for a less precise meaning to the term ethics, based on Des Jardins’s position (in Benton and Benton, 2004) that the word “ethics” is derived from the Greek word *ethos* (meaning custom). “Ethics refers to the general beliefs, attitudes, or standards that guide customary behaviour” (Des Jardins, 2001: 17-18, in Benton and Benton,

2004). Ethics in this sense is less concerned with rules and decision-making and more with “explicating the beliefs, attitudes, values and standards that currently guide customary behaviour” (Benton and Benton, 2004: 229). They thus propose that ethics is not a rule book to be taught, but see *ethical responsibility* as “something that will come when students are given the critical thinking skills to self-reflect on their contemporary situation” (Benton and Benton, 2004: 229). Des Jardins (2001: 6, in Benton and Benton, 2004) defines ethics as “a self-conscious stepping back from our lives to reflect on what we *should* do, how we *should* act, and what kind of people we *should* be” [emphasis added].

8. Rationale for the Study (Content of Reflection)

As human beings we have never before faced a situation of such ecological (and interrelated social, economic, etc.) crisis as we do today, the most pertinent of which is probably climate change. Vlek and Steg (2007: 3), writing from an environmental psychology perspective, note that the majority of global environmental problems are in fact a problem of a social and behavioural nature. Human-made climate change is happening (Monbiot, 2006; IPCC, 2007; Stern, 2006), and its related ecological destruction is threatening the support base of life on earth. The much debated, calculated and speculated “greenhouse gases” (like CO₂ and methane) take centre stage in this debate. According to the World Meteorological Organization, the greatest increase in carbon dioxide has taken place during the past 50 years (of industrialization) and, as a result, the average global temperature has risen by 0.6°, which is the largest temperature rise during the past 1000 years (Monbiot, 2006: 5).

The following climate trends, as a result, are proved by science:

- The Arctic sea-ice has shrunk to the smallest area ever recorded, owing to warming oceans.
- The global sea level has been rising by two millimetres a year – partly due to rising levels of water, temperature, and molten ice.
- The world’s glaciers are retreating.
- Permafrost has started to melt.
- Parts of the rain forest are being transformed to savannah and trees no longer grow there owing to the excessive temperatures.
- 150 000 people die every year as a result of climate change, higher temperatures and the spread of disease.
- Coral reefs are dying (or bleaching).

Monbiot (2006: 1-10)

The results of these trends are (Monbiot, 2006: 6-7):

- Water shortages and water pollution.
- Droughts.
- Summer droughts and winter floods.
- Food insecurity, poverty and under-nourishment as crop plants reach their physiological limits.
- Crops deliver poor yields growth is disturbed and erratic.

These results were not anticipated in the standard models which can push the world to famine.

In the face of these trends, many authors (Monbiot, 2006: 205; Blewitt, 2006: xii; Gore¹⁴, Vlek and Steg, 2007) writing from the perspective of social and natural science, conclude that massive global dissonance, apathy and business-as-usual behaviour patterns exist that aggravate these environmental issues. Vlek and Steg (2007: 9) call this a “dilemma of the commons”. In such a dilemma, many individual actions (apathy is also seen as action by being non-action), as well as embedded cultural and institutional patterns, support a sub-optimal

¹⁴ <http://www.climatecrisis.net/> An *Inconvenient Truth* DVD, Paramount Home Entertainment - accessed on 5/08/2007

scenario. This is the case in today's ecological crisis, where many people's environmental apathy is cumulatively supporting a situation of ecological decay.

What does it take to make people realise their common behaviour is supporting a disastrous outcome? Monbiot (2006: 206) says that the birth of his daughter gave meaning to and made the imminent environmental catastrophes real for him. "But this baby, closer to the ecosystem than a fully grown human being, changes everything. I am no longer writing about what might happen to 'people'... I am writing about her. The world in which unrestrained climate change threatens the conditions which make human life possible, is the world into which she might grow" (Monbiot, 2006: 206). Similarly, Al Gore, in his documentary *An Inconvenient Truth* describes how the near-death of his son, placed the danger of losing that which is dear to you in the context of these environmental issues. In both cases, a future vision through children internalised the pressing environmental problems for these authors. In contrast, many politicians in powerful positions are well aware of these problems, yet their decisions and actions are not indicative of care, personal responsibility and solutions. "[T]hey hold it at arm's length, because if they acknowledge it, then the moral imperative to make big changes is inescapable" (Gore, 2006).

Vlek and Steg (2007: 12) note that, although people might be aware of big environmental issues (for example air pollution), they only really internalise "the environment" as under threat when it comes "close to home". Literally, when their *quality of life* and *immediate comfort zones* are threatened. Blewitt (2007) confirms this aspect of human behaviour when he describes how his small community became aware of sustainability issues only when their homes flooded during recent freak rains in England.

It would seem that a deep-seated human[nature] connection happens through normal individual psycho-dynamic processes of "caring about" and "taking responsibility" usually for what we hold dear and do not want to lose. Should people start seeing Earth and their very ecological survival base as one of the things they care about and do not want to lose, as in the case of these authors?

9. The Pattern that Connects the Sustainability Items of Learning

9.1 Sustainable Development

Many contested concepts of our time are as much characterized by their mainstream perceptions, trends and verified knowledge, as by the responses and expressions via art, literature, and cultural emergence that they elicit. "Sustainable development" and "globalisation" are, for example, considered as "Heaven or Hubris" (Maxwell, 2003) and "Consensus and Controversies" (Nederveen-Pieterse, 2004).

Environmental protection, and deep-seated notions of protection, care and responsibility, preceded the debates of sustainable development and sustainability. For example, Rachel Carson's *Silent Spring* (1962), Capra (1996) and Arne Naess's (1972) ideas on deep ecology and the establishment of Green Peace in the 1970s (Gifford, 2007: 200). Environmentalists in the 1970s already pointed to key ecological limits against the exponential growth and development of the time. In this time the *deep ecology* debate noted that a radical paradigm shift, based on the recognition of *core values*, is required if we are to address the global ecological crisis. Naess posited in this time that "the essence of deep ecology is to ask deep questions" (Capra, 1996: 7). Hattingh (1999) resonates that environmental ethics serves as "rhetoric devices; [to] open up questions, not settle them". Throgmorton (2003: 42) responds by saying that in the 1980s the limits-to-growth argument lost some credibility in the face of global trade that seemed to eradicate "local limits to growth", and because of the realisation that economic growth was needed for poverty alleviation and growth (especially in developing countries). In response to this situation the "limits-to-growth" argument" was

formulated into what is now known as the well-known Brundtland¹⁵ definition of sustainable development (stated earlier), a statement for the commons. In the 1990s, at the Earth Summit¹⁶ in Rio, most national governments adopted the idea of sustainable development as “a package of conventions” on, for example, the climate, biodiversity, etc. The best-known document coming out of this process is the *United Nations Environmental Programme’s Agenda 21* – an 800-page plan for saving the planet (Throgmorton, 2003: 43).

Although the Brundtland report was seen as a “statement for the commons”, the systemic, interconnected notions of global ecological services and limits were not prioritised, and development, based on a system of substitution was still seen as the paramount objective. The following ideas are thus regularly associated with the notion of “sustainable development”:

The triple-bottom-line approach to sustainable development is probably the most widely ascribed to by practitioners and policy makers alike, as it balances social, environmental and economic priorities through a mechanism of substitution (GRI, 2002: 9). This view promotes a net “sustainability” effect resulting from substituting capital¹⁷ from the three spheres. Ayers *et al.* (1996: 3) describe the current model of development as a state where “a constant output can be maintained indefinitely only if there is a high degree of substitutability”, in other words, a state where human capital (people, machines) is an almost perfect substitute for environmental degradation and/ or depleted resources. This view gives rise to two main sustainable development ethical perspectives. Sustainable development in theory and practice essentially distinguishes between anthropocentric (human-driven) and ecocentric (nature-driven) *value approaches* (Maxwell, 2003). From an environmental ethics perspective, Hattingh (2001: 10) emphasises the prioritisation of human beings and nature by highlighting the tension between these two approaches in sustainable development. Anthropocentrism emphasises the resource value of human beings, and ecocentrism the inherent value of nature, “nature for its own sake.” In the case of anthropocentrism, or weak sustainability, environmental problems are seen as management problems, and limits to growth are thus seen as technology (substitution) and organisational issues (Hattingh, 2002: 9). This view is also known as weak sustainability. The Johannesburg Memorandum (Sachs, 2002:18) provides further insight into the current development model by describing it as an “industrial economy wasteful of both nature and population.” Similarly, Nash (2003: 36) motivates the argument by saying that “our species [human beings] have become a terrible neighbour to the thirty million and more species sharing space on this planet. Our numbers and technology are wreaking ecological havoc” – indeed, a way of survival (sustaining homo sapiens) that is based on a way of life that is killing us. In other words, a way of life that essentially:

- consumes resources at a rate much faster than nature can replace them;
- pollutes ecosystems; and
- increases social exclusion and inequality.

(Beyers, 2005)

The *ecosystem* debate, however, negates the linearity of near-perfect substitution. “Species and their environment are connected in a complex web of interrelations that are fundamentally not linear and evolutionary, with lags and discontinuities. Degradation of ecosystems, and hence the services they provide, often is irreversible” (WRIR, 2002: 229).

¹⁵ Report by the World Commission on Environment and Development (the Brundtland Commission), *Our Common Future*, 1987

¹⁶ United Nations Conference on Environment and Development

¹⁷ Ayers *et al.* (1996) describe capital as any stock – human or natural – that yields a flow of valuable goods and services into the future. Human or manufactured capital refers to factories, buildings, etc, and human capital to education skills, knowledge, etc. Natural capital refers to the various ways that “the environment powers production” and indeed supports most aspects of human existence (Ayers *et al.*, 1996: 5). Two types of natural capital are distinguished – non-renewable (fossil fuels, mineral deposits) and renewable. Of importance here is that renewable capital is active and self-maintaining – for example ecosystems! Non-renewable natural capital generally yields no services until extracted

Sustainable development seen in this broader sustainable living perspective implies notions of *care*, as expressed in *Caring For The Earth: A Strategy For Sustainable Development* (IUCN *et al.*, 1991, in Hattingh, 2002: 10). In this regard the carrying capacity of the earth is a critical notion. Another critical reflection on the earth's carrying capacity is the concept of "*environmental space*" that refers to the potential of the environment on a global level (Opschoor, in Dresner, 2002: 85). Environmental space means that "at any given point there are limits to the amount of pressure that the earth's ecosystems can handle without irreversible damage". Given the current scale of consumption, global trade and personal aspiration, however, this potential is under serious threat. The World Resources Institute Report (WRIR, 2002: 225) indicates that the overall capacity of ecosystems to deliver goods and services is decreasing, yet our (human) demand for ecosystem products – from water to food to timber – continues to increase. Ecologically the damage has been done and continues to be done. Maxwell (2003:7) urges that the loss of environmental systems should be reversed.

This notion of environmental *potential* is in line with current thinking on the whole systems perspectives of "sustainability", which assesses the ability of ecosystems to provide services to the earth's many and diverse social systems (Berkes and Folke, 2000: 11). Here sustainable development is seen as multidimensional aspects and process-oriented (Blewitt, 2006; Pearce, 1996; Robinson; 2004). Pearce (1996: 312) describes sustainable development as "a process instead of a fixed destination". The Brundtland report (WCED, 1987: 9), in addition, states that, "sustainable development is not a fixed state of harmony, but rather a *process of change* in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs" [emphasis added]. These views negate an either/ or scenario for sustainable development and create an opportunity for change towards environmental and developmental harmony that lies in recognising and building the patterns that connect human growth, learning, needs, aspirations (and related natural resource consumption) with our earth's (precarious!) ecological reality and processes, as well as the environmental impact of "living" and continuing life on the planet (Beyers, 2005: 9). Ecocentrism provides for strong or robust sustainable development.

This view, according to Hattingh (2002: 12-13) calls for sustainable development transformation at a radical level of challenging dominant production patterns, a change in lifestyle and fundamental reorganisation of social governance. In this view, nations challenge the global distribution of natural resources. Sustainable development is often seen as based on a northern model of development. Sachs (2002: 16) remarks correctly in saying that "Northern development has shaped Southern desires". De la Court (1990: 128) supports this statement by describing the dominant pattern of development today as based on Western culture, which has created a universal order (values, economics, science) driven by private interests, consumption and profits. This view acknowledges (according to Eckersley, 1992: 17-21, in Hattingh, 2002: 13) the loss of meaning, the dualities of extreme wealth and poverty, and the dislocation of tribal cultures and urban future that are associated with the psychological costs of a dominating instrumental rationality.

The words "sustainability" and "sustainable development" were used interchangeably to linguistically justify almost any development action, plan and impact related to development, economic growth and/ or environmental consciousness or protection. Robinson (2004: 382), for example, notes that we are living in a world where *we cannot escape multiple conflicting values, moral positions and belief systems related to the issue of sustainability*. Blewitt, (2006: 1) hits the nail on the head when he says the tension in the two terms sits between "development" and "sustainable" – and key ethical questions of decision-making and action arise at this point.

Simply stated, *strong sustainability* – in line with the above arguments – *means that there are (natural) limits beyond which economic development cannot go and weak sustainability means that nature acts as resource for economic development.*

9.1.1 Sustainability and Social-Ecological Systems: the Narrative Link

Given the constrained resources perspective outlined above, sustainability – as opposed to sustainable development – can be seen as “the long-term viability of both the natural systems within which social systems are embedded, and the social systems themselves that are so dependent on the services provided by natural systems” (Swilling, 2004: 12). It thus places the focus firmly on the fact that we have to change our development paradigm in order to meet the realities of finite natural resources and ecological systems under threat (implying resilience). Where sustainable development with its diverging value underpinnings could lead to a perpetuated depletion and (ab)use of natural resources, *sustainability* looks at the ecological and social interrelatedness of survival on the planet, where development is not necessarily the dominant driver. Robinson (2004: 370) says sustainability “focuses the attention where it should be placed, on the ability of humans to continue life within environmental constraints”.

Blewitt (2006: 2) argues that the openness of the term sustainability offers the possibility of integration, synergy and synthesis “of a social learning process that *bridges the gaps* between the social and ecological, the scientific and spiritual, the economic and political” [emphasis added]. According to Robinson (2004: 382), technological fixes (in terms of achieving a sustainable future) are needed, but not essential to bring these connections together. He hints at what might be needed to tie the diverging aspects of sustainability together. The contribution of sustainability could in his view lie in dialogue and partnership. “Sustainability is the emergent property of a conversation about *what kind of world we collectively want to live in now and in the future*” [emphasis added] (Robinson, 2004: 382).

Blewitt (2006), Beyers (2006), Robinson (2004) and Swilling (2004), with Eckstein and Throgmorton (2003), thus position sustainability, its “successes” and contributions in terms of making the connections between the human and ecological across knowledge systems (epistemological) and political (ontological) systems. Social-ecological interaction of this nature is captured as social ecological systems (SES). Firstly, it is pertinent to know that in sustainability a systems approach is “replacing the view that resources can be treated as discrete entities in isolation from the rest of the ecosystem and the social system” (Berkes and Folke, 2000: 2). Social ecological systems (SES) are described as ecological systems that are intricately linked with and affected by one or more social systems (Anderies *et al*, 2004) or that “social-ecological” emphasises the integrated concept of human beings-in-nature (Berkes and Folke, 2000: 4).

Blewitt (2006: 3) notes that both “sustainability” and “sustainable development”, cutting across a number of epistemological and ontological issues, could most probably function as a heuristic. In other words, “a method or system of education or learning by which a person is enabled to find things out for him/ herself and to fully appreciate the *contested nature of knowledge*, nature, the environment and sustainability” [emphasis added] (Macnaghten and Urry, 1998, in Blewitt, 2006: 2).

10. Enter the Story...

<p>“What does that mean – ‘tame’?” “It is an act too often neglected, “ said the fox. “It means to establish ties.” “To establish ties?” “Just that,” said the fox.</p>

“... if you tame me, then we shall need each other.”
“Men have forgotten this truth,” said the fox. “But you must not forget it. You become responsible, forever, for what you have tamed.”
Antoine de Saint-Exupéry (1945: 70)

Within the sustainability discourse, I specifically explored the notion of *meaning* that could result from an integrated, normative view on sustainability, and I was curious to know how deep-seated, value issues of *care*, as “other forms of knowledge”, link to action and *responsibility*. Macy (1998: 45) provides a clue by saying that “our interdependence with all life [on] Earth has profound implications for our *attitudes and actions*” [emphasis added]. Sustainability requires intervention and action, and in this regard the normative ideas that result from the differing ways of looking at sustainability/ sustainable development could serve as guidelines for personal action (Hattingh, 2002: 14). In order to make these connections I used a clip from *The Little Prince* story as integrative conceptual framework on which to hang the essential learning of the module. This is where the meaning emerged for me (I fully acknowledge that there are many interpretations on this reflexive way of working and that “meaning” could be highly subjective).

“Our dominance over earth’s productive systems gives us enormous *responsibilities*, but great *opportunities* as well” [emphasis added] (WRIR: 236). According to Leopold (2003), ethics assumes that individuals are part of a community, where ethics governs interactions in the group (system). By extending notions like love and respect, the role of *homo sapiens* is changed “from conqueror of the land-community to plain member and citizen of it” (Leopold, 2003: 39). This notion implies *respect* for fellow members and respect for the community. Leopold’s ethics of the environment thus include the *use of land* (within the community/system), but with a distinct caveat of an in-turn obligation that the use places on the community. His view on resource use specifically includes the values of respect and care.

Quite a few authors, including Bateson (1979: 78), Macy (1998: 45) and Nash (2003: 36) refer to our interrelatedness (establishing ties) with the planet, rooted in a deep-seated belief of care and conserving that which intrinsically sustains us physically and emotionally.

The pattern at this point thus highlights the critical role that social and personal ethics play in making decisions and trade-offs related to sustainability. Moving through the continuum of

- recognition (of the facts, of science supporting sustainability trends and of impact on the environment),
 - internalisation (in other words, establishing some personal connection with these issues), and
 - response and action (through ethics),
- a distinct pattern emerges that links continuous learning with a flourishing planet (Beyers, 2005).

10.1 Environmental Ethics in Sustainability

“Ethics” and “values” are often used interchangeably in broader sustainable development contexts. Palmer (2003), however, points out the link between the two terms when she notes that “the environmental ethics debate concerns value theory” – in other words, “*what* is considered to be *valuable*, and from where does such value come?” (Palmer, 2003:16). In value theory the distinction between instrumental (use-inspired value) and non-instrumental value (intrinsic value) is made up front (Palmer, 2003) to address these questions. The latter is known for further contention, namely whether intrinsic nature value is derived objectively or subjectively. However:

- J. Baird Callicott (in Palmer, 2003) argues that all values are subjective (human-created/ anthropogenic), but in the context of this debate they do not have to *remain* human-

centred (or anthropocentric). Human beings can thus value the world intrinsically (apart from its usefulness to them).

- Holmes Rolston (in Palmer, 2003: 17), in contrast, argues that “value in the natural world is objective; it pre-exists human beings, is located in individuals, species, ecosystems and evolutionary processes, and would continue even if human beings were to become extinct. For this reason the natural world objectively contains intrinsic value”.

Ethics enters the value-theory debate when we are faced with making decisions about how human beings should act in the non-human natural world, especially when perceived values come in to conflict and whether certain decisions will be made in support of one particular set of values over another (Palmer, 2003) 17). “An environmental ethical edifice must, like any other ethical construction, be built on value theory; the two are, ultimately, inseparable” (Palmer, 2003: 17). The ethical constructs of environmentalism are thus built on value theory. In the realm of sustainability that cuts across social and natural science, the qualitative and quantitative, and tangible and intangible, we will not always be able to decide what is important and has value, based on quantitative, scientific facts. Hattingh (2001: 9) notes that “the concepts of sustainability/ sustainable development entail much more than the quantitative notion of something that can last indefinitely, i.e. forever”. He introduces a pertinent *qualitative element* that entails answering value questions, which he poses as follows:

- What is so valuable that it should be sustained?
- With a view to whom or what is the sustainability of this valuable something pursued?
- How is sustainability pursued?
- What are the criteria for sustainability – so that the question can be answered whether and when we have reached a state of sustainability?¹⁸

Rachel Carson describes this qualitative element as a scenario. She tells a fable (story) in which the people themselves caused the silence of a new Spring.

“There was once a town in the heart of America where all life seemed to live in harmony with its surroundings. The town lay in the midst of a checkerboard of prosperous farms, with fields of grain and hillsides of orchards where, in spring, white clouds of bloom drifted above the green fields. Then a strange blight crept over the area and everything began to change. Some evil spell had settled on the community. Everywhere was a shadow of death. There was a strange stillness. The birds, for example – where had they gone? It was a spring without voices. In the gutters under the eaves and between the shingles of the roofs, a white granular powder still showed a few patches; some weeks before it had fallen like snow upon the roofs and the lawns, the fields and streams. No witchcraft, no enemy action had silenced the rebirth of new life in this stricken world. The people had done it themselves.”

(Rachel Carson, 1962: 1-3, author of *Silent Spring*, in Throgmorton, 2003: 41)

Throgmorton (2003: 41-42) argues that this fable inspires four similar, basic and intertwined questions that anyone who deals with sustainable places should deal with:

- What should be reborn tomorrow?
- What are the boundaries of “our place”?
- How can we build a future that gives a “reason to value life”?
- Who are “we”?

In the Children’s Edition of Agenda 21 (Peace Child, 1994: 90) Jon Hafmer, a child from Thailand, wrote a similar story:

¹⁸ According to certain authors *sustainable development is the process* and *sustainability the outcome* – that which it wants to achieve (Blewitt, 2006; Robinson, 2004).

“CHARLIE

Hello! My name is Charlie and I’m six years old. I have one brother and one sister. We live in a nice house next to a clean river. Everyone in our neighbourhood is happy. Until the “plant” arrived. It was to give jobs and make us all happy, but the air started to smoke. It was hard to breathe deep. Our nice river was turning brown. We all ignored it for we had hope.

We waited...

People started getting sick and my mother was ill very often. She coughed a lot, but we had hope!

We waited...

My mother was taken to hospital. She had lung cancer. People were leaving our nice neighbourhood.

We still had hope! We waited...

My little sister got lead poisoned but not severely.

Now we drink bottled water.

We had hope. We waited...

I don’t want to wait anymore. Something has to be done. I don’t want to be hurt anymore.

Something has to be done. I don’t want anyone to be hurt any more.

I have hope.”

From the realm of art (narrative) – in a different geographic setting – comes another story of a silent Spring, where a similar set of value-based and ethical questions are posed by Hattingh (2002, 2002) and Throgmorton (2003).

Ethics thus underpins the basis of our decisions and actions related to sustainability, and Hattingh (2001: 28) concludes pertinently that, given our engagement with the ethics of sustainability/ sustainable development, we “confront ourselves with the multidimensional question of what it means in concrete terms on a personal, institutional, national and international level to live within the limits of supporting ecosystems, to work towards a fair distribution of resources in the world, today and in the future, and to make room for participative democracy when we have to determine what weight we should give to environmental protection, the integrity of nature and quality of life in our thinking about social political and economic development.”

Hattingh’s views highlight the action aspects, and values that drive these actions and decisions. Palmer (2003: 18), however, positions sustainable development ethics (as expressed by Hattingh) as values within the ambit of anthropocentric environmental ethics approaches, or a view that considers the non-human natural world ethically in terms of its instrumental value to human beings (Palmer, 2003: 18). Dasgupta (in Dresner, 2002: 79), similarly criticises a view of non-declining capital by saying that a better “approach would be to look at the total well-being of future generations over different paths of development”.

10.2 The Globalisation Debate

In similar vein with the other modules, I used art to express the many perspectives associated with views associated with globalisation – tangible and intangible. The art works of Jan van der Merwe, a contemporary South African artist who creates works of art with found objects (*objets trouvés*), brought meaning to this module. Art denotes a range of aesthetic objects and an aesthetic object refers to “material structured in such a way that it moves human being by involving *especially the imagination*” [emphasis added] (Degenaar, 1993: 54).

Globalisation, as an expression of world trends, could be interpreted, experienced, feared, manipulated, rationalised, and defined in many different ways, depending on the context and position of the definer. The ambiguity inherent in the concept is a constant theme in the globalisation debate (Della Porta and Tarrow, 2005; Nederveen-Pieterse, 2004; Rosenau, 1999). As art casts a prism of interpretation potential, the description of globalisation, as a

“prism in which major disputes over the collective human condition are now refracted” (Nederveen-Pieterse, 2004: 7), highlights the fact that that questions of power, inequality, ecology, state control and identity simultaneously refract when considering the term “globalisation” (Beyers, 2006a: 2). The everyday interpretation of globalisation is probably the experience of a “shrinking world” (Nederveen-Pieterse, 2004), the technology revolution (Sassen, 1996; Swilling, 2004) or media images through film¹⁹, art and literature. All these manifestations, however, imply that globalisation transcends national borders. Globalisation can be contextualised within a whole paradigm of earth, ecology and human systems that operate across the planet. Within this context, globalisation is a web of moving trends, underpinned by the global ecological resource base (Beyers, 2006a: 6). Thus, there are two “webs of life” (based on Capra, 1996), globalisation trends and the ecological foundation, underpinning and sustaining these trends. Typically climate change – in terms of the work of many scientists and interpreters like Gore and Monbiot – could be placed in the global arena.

Globalisation is thus viewed as *multidimensional* (Nederveen-Pieterse, 2004) and not pure economic expression. I postulate that these webs meet and intersect at various scales and at moments that are not anticipated (emergent) within a complex world, which reflects one of the main points of consensus in the globalisation debate – namely that globalisation is uneven (Nederveen-Pieterse, 2004) or “framegrative” Rosenau (1999: 1011).

In this unevenness, key shifts continuously happen. Della Porta & Tarrow (2005) refer to these shifts as *scale shifts* – in other words, when local activism transitions to transnational activism. This shift from the local to the transnational does not necessarily cancel out local and domestic movements, issues and actions, but “simultaneously and interchangeably reflect[s] domestic and universal issues” [emphasis added] (McAdam & Tarrow, 2005). This statement, in addition, is infused from a *values* perspective when Della Porta and Tarrow state that “the personal is political”, and that the “apolitical lifestyles” of children (and others) could be useful for mass aspects of mobilisation of core issues in globalisation, but it “does not lead to responsible lifestyles in impressing local disputes and personalising this experience into a local and/ or international language of *value*...” [Emphasis added] (Della Porta & Tarrow, 2005: 13) Artists (in many manifestations), however, could provide the alchemy to interpret domestic issues and “transposition” this protest/ response into domestic value propositions that resonate globally. (Beyers, 2006a: 12)

10.2.1 The Alchemy of Imagination

The globalisation debate notes an interesting tension between the global and local, individual and collective: “global spaces are moving into local places and local repercussions are occurring on a global scale” (Rosenau, 1999: 1009). Rosenau (1999) makes a case for individuals in social movements. “Individuals are as much a part of the globalisation process as any other basic category of social-theoretical discourse” (Rosenau, 1999: 1007). In this regard, he refers to the skills revolution in an era of “framegration” where individuals as “agents for change” (Rosenau, 1999: 1010) have learnt to adapt to changing environments.

“People have learned to adapt to the massive traffic jams, the paralyzing strikes, the crime, the electrical brown-outs, the markets and malls – and there is every reason to believe that this has enhanced their skills in coping with the contradictions and uncertainties of the events that unfold beyond their urban communities.”

(Rosenau, 1999: 1011)

Rosenau’s argument is that, given the associated analytical skills of adaptability and transformation, people thus have a greater capacity to focus on their emotions and are thus

¹⁹ For example, social commentary delivered through the film “V for Vendetta”, referring to social uprising against a hegemonic state in Britain after the devastation caused by the United States lead Iraq war.

more aware of their values with respect to the course of events. The notion is that the dynamics of this “framegrative era” freed peoples’ imaginations, “their capacity to envision alternative futures, lifestyles and circumstances for themselves, their families and cherished organizations”. Rosenau (1999:1011) is critically important for this study. Bayat (not dated) and Rosenau (1999) see the *imagination* as one of most powerful forces at work in freeing up people who live below the poverty line. Bayat, in addition, expresses a characteristic globalisation theme, namely tension between the state and civil society, which sometimes manifests in a meta-narrative of private and public space. Friedman (2005: 131) in this regard sees civil society as a “sphere of action”, which reflects the Habermasian model of public space, where people in one way or another participate in democratic talk. It assumes freedom of speech and assembly, and “bring[s] pressure on the political class to ensure that power does not amass in the hands of the few” (Friedman, 2003: 132).

From the built environment perspective, democratic space and physical space, which make the former possible, are key themes. Malik (2001: 877) notes that (non-western) cities, for example, require a different approach, which “balance[s] their needs with its resources, related to culture and identity and engage[s] in debate to define its social, cultural and moral responses.”

The work of Jan van der Merwe is steeped with his own history and context, and positions art and the stories that the artworks tell, within a particular space, space in history, geographical space and personal/ collective space (Beyers, 2006a). Degenaar (1993: 53) notes the linkages in this regard – that art is one of the symbolic forms which constitute culture. By using art as one perspective on the core ideas of globalisation, it:

- acknowledges the duality inherent in globalisation response (I specifically looked at responses against mainstream, neo-liberal globalisation), namely global trends (universalities) and domestic values and responses (interpretations); and
- captures the deep-seated humanity, expression and vulnerability that is the core of globalisation response, that which remains in the wake of time, in the wake of revolution (Beyers, 2006a: 1).

Nederveen-Pieterse (2004) notes that, in this process of contestation (protest, alternative globalisations), society provides the basis of legitimacy and consent. In thus applying the theoretical perspectives of globalisation to art (the works of a contemporary South African artist), this legitimacy and consent is rooted in the participation of an individual who expresses:

- highly personalised and internalised issues;
- context bound issues that resonate in the local and personal realms; and
- clear, readable values and concerns through works of art that communicate in universal symbols and language.

(Beyers, 2006a: 13)

“From the perspective of those who have long been hemmed in by the realities of life on or below the poverty line, the freeing up of imaginative capacities is among the most powerful forces at work in the age of framegration. The imagination is today a staging ground for action, and not only for escape”.

(Rosenau, 1999: 1011)

10.3 The Complexity Debate

As in the case of the sustainable development module, I used a story to express two aspects of complexity theory, namely that complexity inherently retains some intangible aspects (spiritual, mystery, more than the sum of the parts) that set it apart from merely complicated phenomena, and that complexity – on the other side of the spectrum – retains a tangible,

practical aspect. Both aspects (on a continuum) move through philosophical and theoretical enquiry to practical application, which is why I see it as an alternative approach, similar to an ecological approach.

“Those who arrive in Thekla can see little of the city, beyond the plank fences, the sackcloth screens, the scaffoldings, the metal armatures, the wooden catwalks hanging from ropes or supported by sawhorses, the ladders, the trestles. If you ask ‘Why is Thekla’s construction taking such a long time?’, the inhabitants continue hoisting sacks, lowering leaded strings, moving long brushes up and down, as they answer, “So that its destruction cannot begin”. “Where is the plan you are following, the blueprint?” “We will show you as soon as the working day is over; we cannot interrupt our work now,” they answer.
Work stops at sunset. Darkness falls over the building site. The sky is filled with stars. “There is the blueprint,” they say.

Calvino (1997: 127)

Italo Calvino’s story also shows both these aspects, and I used it as a metaphor to illustrate the spiritual (cosmic)/ technical interface that we often face in incorporating different forms of knowledge about the environment – and, being in the environment, in sustainability. His story particularly applies to the built environment and planning. This point of departure is sensitive to the notion that complexity is irreducible, and any attempt to model, narrow down and/ or even “fully” comprehend complexity represents an ontological and epistemological reduction of the real world situation – thus a loss of meaning and knowledge (Cilliers, 2000; Clayton and Radcliff, 1996). An important point should be made here – namely that a complex system could be any system that displays the following characteristics:

- It consists of a large number of elements, which interact dynamically, whose level of interaction is rich. The interactions are non-linear, in short range of each other, and there are loops in the interconnections. Complex systems are open systems, which operate far from equilibrium, they have histories and the individual elements are ignorant of the behaviour of the whole system Cilliers (1998: 119).

Ecological and social systems in sustainability are simple examples. This study *per se* could also be viewed as a complex system owing to the characteristics described above. *Complexity* recognises the *relational* nature of the world (Cilliers, 1998: 112) and it acknowledges the limitations of our own knowledge (Cilliers, 2000: 27). Cilliers, however, critically holds that an acknowledgement of a limitation of knowledge is not enough – in order to push the boundaries of science, life, etc., we have to *take an ethical position*. He thus notes “the unavoidability of an ethical dimension to all decisions made in a complex environment” (Cilliers, 2000: 23), especially when one is deciding on the nature of the system and the resultant knowledge attributed to (or resulting from) that system. This is because the “nature of a complex system is the result of the relationships distributed all over the system” (Cilliers, 2000: 28). This nature is often captured through a combination of different forms of knowing or making connections between disciplines and fields of study – a very important point as basis for this study.

Ethically the responsibility thus remains with sustainability practitioners to apply ethical rigour when delineating systems of study. Alexander (1979: 9), one of the authoritative planners and urban designers, proposes that we all dream of making a “living world” where it is a fundamental human instinct to “make a part of nature”. Alexander might be saying that we (as designers and sustainability practitioners, for example) have a desire to “complete” a world that already provides clues for how we should live in it. McDonough and Braungart’s (2002: 16) statement that “Nature does not have a design problem. People do.”, supports Alexander’s ideas that we have to start aligning our world views, ethics and technologies to suit the “design framework” already proposed by nature, if we want to come close(r) to a

sustainable environment. Complexity as a shift in world view could thus allow for the acknowledgement of new forms of ecological, intuitive and non-linear knowledge that are human and resonate in nature (Beyers, 2006b), in particular related to:

- *ethics* that support decision making in modelling complex²⁰ systems; and
- *ethics* that inform the boundaries of modelled systems (what is included and excluded by means of the boundary).

In addition, complex systems have histories and cannot be conceived of without taking their *contexts* into consideration. Systems/ phenomena gain meaning in the process of interaction between open systems, i.e. in the process of interacting with their environments (Cilliers, 2000a: 9). Degenaar notes that culture is a transformation of nature into human environment, or nature in the presence of human beings (Degenaar, 1993: 52). When representing the complexities in a system it is impossible to capture that system as a whole. Degenaar (1993: 52), writing from the perspective of complexity of culture, art and transition in South Africa, notes, on meaning, “the meaning of a word is the use of a word in context; the context should provide us with clues to understand the meaning in the situation”. Although probably semantics, it is interesting to see how he frames complexity as ways of understanding the world (i.e. “-ity”, postmodernity, modernity, etc.), where Cilliers describes it as way of thinking at a time (period of history in time). Pre-empting Krog (2003) and David (1991) in the section that deals with Jungian psychology, I use Degenaar’s reference to ongoing revolution in times of transition – namely, fighting hierarchies, power and domination. In terms of ongoing revolution he asks the most pertinent question.

The crucial question is whether we have a liberating vocabulary, an imaginative conceptual framework, and appropriate philosophical strategy to cope with this radical period of transition.

Degenaar (1993: 51)

10.3.1 Pragmatic Ethics: A Way Forward

Differing value theories – and resulting ethics – are thus very evident in the sustainable development/ sustainability debate, specifically in view of strong and weak sustainability (Hattingh, 2001). The juxtaposition of these positions highlights the fact that, although sustainable development/ sustainability might have differing value theories, a number of authors are calling for practical interventions to address the realities of today’s environmental problems, a key theme in the environmental ethics debate. Hattingh (1999: 76) refers to this action in environmental ethics as pragmatism, which specifically calls for the establishment of transforming practices, institutions and experiences that can sustain a shift to addressing environmental problems within current and future-oriented frameworks, or what Hattingh (1999:78) refers to as the ability of ethics to remind human beings that we have the power to “*shape new values*”. Pragmatism – in the work of Light and Katz (in Palmer, 2003: 32) – “cannot tolerate theoretical delays to the contribution that philosophy may make to environmental problems”. It denotes an acceptance of “moral pluralism, growing out of the complexity of particular situations and relating to whole webs and needs of desires”.

Pragmatism springs from another juxtaposition. Just as a complexity world view and perspective could be misinterpreted to represent “life, the universe and everything else” (Cilliers, 1998), environmental ethics could be seen as an all-inclusive concept that draws on a wide variety of ethical traditions (Palmer, 2003: 16). Within this spectrum, environmental ethics is seen as a response to crisis, namely the inability of conventional ethics to respond to current environmental problems (Hattingh, 1999: 80) Amidst this “all-encompassing” environmental ethics discourse, theorising and in-fighting, environmental pragmatism is seen

²⁰ We model complex systems in order to reduce complexity for comprehension.

as a way of responding to, and addressing actual environmental problems and crises (Hattingh, 1999: 79).

Hattingh (1999: 80) also describes the concept that environmental pragmatism “opens up a valuable practical and historical perspective on the diversity of positions within environmental ethics. Environmental pragmatism would suggest that we place the diversity of positions in environmental ethics within a historical framework.” Cilliers (1998: 122) describes history in postmodern society (as a complex system) as a “collection of traces distributed over the system”, that is always open to many interpretations, in the way many interpret environmental ethics through the “plurality” perspective posed by both Palmer (2003) and Hattingh (1999).

Within environmental pragmatism concrete environmental problems are always placed within a particular context and theory plays a secondary role. As said earlier, within complexity theory contextual application is critical (Cilliers 2003). Lyotard (in Cilliers, 1998: 114) argues for a narrative understanding of knowledge (in various contexts) that rejects an interpretation of science as representing the totality of all knowledge, and rather portrays knowledge as “a *plurality of smaller stories* that function well within the *particular contexts where they apply*” [emphasis added]. These stories are often told by the associated symbolism and spirituality attached to them in a specific context.

According to Hattingh, there is no final truth from which environmental problems could be solved. Cilliers (2003: 108) confirms this perspective by indicating that “modern ethicists would argue for universal ethical principals, principles that would always apply to everybody, so-called meta-narratives. The failure of such principles to provide criteria for proper ethical behaviour in actual, practical circumstances is not the result of a lack of moral integrity on the part of modern thinkers, but of the limitations of modernist rationality.” This debate of one “truth for all” addressed by Cilliers (2003) vis-à-vis a plurality of truths applicable in varying contexts resonates the above debate to this point – i.e. the ideas of *plurality* and *monism* in environmental ethics.

Palmer (2003) indicates that monism, as opposed to a plurality of ethical frameworks, is widely contested in environmental ethics. Hattingh (1999) indicates that this philosophical debate or quest for an environmental/ ecological ethic is still continuing, with its main beginnings in the 70s, and specifically 1975 with the publication of Holmes Rolston’s article “Is there an ecological ethic?”. The so-called “foundation” debate is characterised by whether we should be looking for a single foundation supporting a coherent environmental ethic (moral monism), or accept a plurality of different principles related to environmental ethics (moral pluralism) (Hattingh, 1999:69). Palmer (2003:26) phrases the two approaches as follows: “Is it possible, within an ethical constituency so large that it could include the entire planet, to arrive at a single governing ethical principle or set of consistent principles to apply to all ethical problems [monism]?” – this vis-à-vis new ideas in environmental ethics of “differing ethical frameworks with application to different situations”.

What seems to be repeated in this debate is the notion of people embedded in their cultural and ecological frames of reference and/ or contexts. Interestingly, anthropological symbolism (as expressed by Geertz, in Gill, 2002) allows for context-based interpretation of values, which also features in these processes of “bottom-up” ethics or ethics that are emergent from the context, situation and place.

10.3.2 “Bottom-up Ethics”

The relationship between place and environment has been articulated by writers in the fields of ethics and social critique (Norton and Hannon, 2003). This relationship points towards smaller and decentralised communities, with strong commitments to place. Sale (1985, in

Norton and Hannon, 2003), specifically focused on a concept called “bioregionalism” that advocates a strong sense of place in understanding cultures. In this regard, bioregions refer to areas that have common characteristics between their soils, plants and animals or, in the words of Hattingh (1999: 80), explore sustainability of a region over time, i.e. in history. This is quite a radical view as, according to proponents of this view, bioregions should replace national states, with long-range implications for local and global governance and power relationships. The amount of people per bioregion should then be calculated based on the notion of *carrying capacity* – in other words, the number of human beings living at a level of resource use that is minimally intrusive on their environment. Bioregions also demarcate living space in line with how human beings think and live, based on natural geography. These ideas are radical, but not new (Fox, 2003: 254). Many of these ideas are reflected in the built-environment approach of sense of place. Architects, planners and designers from the 1970s to the 1990s most probably articulated the idea of sense of place most strongly. They were especially motivated by the spiritual and tangible idea of “spirit of place”/ *genius loci*. These interests, according to Norton and Hannon (2003: 502), range from the cultural and physical distinctiveness of local communities (for example Lynch, 1960 and 1972) to phenomenological/ aesthetic studies in planning theory and design (architecture). Both the bioregional and sense-of-place examples could be seen as ethical frameworks as they tie together the natural/ spatial environment and its associated *metaphysical* aspects.

According to Arne Naess (2003 [1972]), the ecology movement has two strands – deep and shallow ecology. Deep ecology (as recognised movement) concerns the metaphysical, ethical and political. Deep ecology rejects the idea that human beings and nature are separate, and proposes the idea of the complex interrelatedness of everything (Palmer, 2003: 30). Ethically, deep ecology promotes equality, especially at the level of the bioregion. This notion of bioregional equality is one of the most debated issues in environmental ethics (Palmer, 2003: 31) This leads to the eight principles of deep ecology and further reformulation of Naess’s ideas. One of the principles is that nature has intrinsic value, independent of the usefulness of nature for human purposes. Fox (2003: 252) captures the deep-seated ideas of this movement in saying that deep ecology rejects the figure/ ground boundaries of the “human-in-nature” view, and replaces them with a holistic, total-field or Gestalt perspective. This view is “totally non-anthropocentric as human beings are viewed as only another strand in the web of life, pursuing their own particular evolution”. The metaphysical aspects of deep ecology is one of its trademarks, focusing on *holism and the extension of the self*. The idea of the extended self is highly debatable and criticised (Palmer, 2003: 31-32). I also move away from this notion of the whole universe, all matter, being one extended self, and rather follow the notions of analytical psychology, in later sections, to further explore these deep-seated ideas of values, ethics and how people are moved to action.

I subscribe to Hattingh’s idea that environmental ethics is “not only one of thinking but also of doing – i.e. practising environmental ethics” Hattingh (1999: 81).

If, as mentioned earlier, complex systems denote new forms of knowledge that bring us closer to the intricacies of life, and environmental ethics (from a value base and through pragmatism) promote strong decision making, individuals would have to fall back on more than the usual modernistic scientific approaches to interpret values, nature, themselves, the globe, ethics and ethical decision-making for sustainability action if they would want to proceed in a meaningful (and sane!) way.

“Environmental ethics has not succeeded in developing a value theory, in the form of a single coherent doctrine, profound enough to support the practical concerns of environmentalism, and is unlikely to develop one in the near future. This is no cause of despair; such diversity should be understood as a characteristic of the historical phase within which environmental ethics finds itself, and as a rich *source of creativity* from which to draw when we conceptualise and respond to environmental problems” [emphasis added].

(Hattingh, 1999: 68).

Rosenau's (1999: 1011) perspective on imagination ideally positions the individual – and individual internal processes – as the interface for interpreting ethics and values in this debate. These values could then, through the *transpositioning* processes mentioned in the globalisation debate, move from the individual to the collective, before allowing communal and broader community values and ethics to emerge and concretise.

SECTION 3

11. Introducing Section 3

Section 3 captures the case study of this thesis. The case study comprises:

- An analysis of the role of environmental education in transferring core ideas and understanding of the environment (social, natural and built) and ecology to children.
- An exploration of an alternative form of education, namely Waldorf or Steiner education, to see where and how spaces could be opened up for transdisciplinarity and the imagination in children's education.
- An interpretation of three interviews conducted with prominent and highly experienced people connected to Waldorf education. Their connections are either directly as parents involved in the Stellenbosch Waldorf School (Van Zyl, 2007), or through literature (stories) (De Villiers, 2007), or having been through the Waldorf school system as a child (Swilling, 2007).

In documenting the above, the case study briefly outlines:

- The concept of environmental education
- Its place in South Africa
- The missing link between sustainability ideas in the curriculum and actual change and action for sustainability
- Waldorf founding principles, based on the philosophy and contributions of Rudolph Steiner
- Waldorf educational methodology
- Themes that permeate the Waldorf teaching methodology and content
- Concluding remarks.

12. Introduction: South Africa's Environmental Education Scenario

Education is about the provision of skills, knowledge and understanding to human beings in order to live successfully in their world (Neal and Palmer, 1990, in Tlhagale, 2004: 30). Environmental education aims to equip people to cope with future challenges in a rapidly changing global and local environment (Bignaut, 1993, in Tlhagale, 2004: 30).

At a meta-level, environmental education is thus closely aligned with transformation in the social arena. Issues like children's rights, gender roles, access to knowledge, equality in terms of education, access to education and the right to a healthy environment (in South Africa's Bill of Rights, for example) are paramount issues in this debate (David, 2007; Lotz-Sisitka, 2002: 97; Hicks and Holden, 2007). The beginning of the twenty-first century signalled immense changes for children's education (David, 2007: 425), not the least of which are the challenges and volatility related to contested modernist epistemological and economic certainty (Lotz-Sisitka, 2002: 99). Against this background of change and transformation, Tlhagale (2004: 34) expresses the idea that environmental education is multidimensional and embraces ecological knowledge and understanding, total people environments, psychology, sociology and public participation in decision-making – and, as such, it should be integrated into all subjects. Environmental education is thus a transdisciplinary phenomenon.

Increasing international anxiety about children's roles and values in facing global social issues like woman's roles – affected by teenage pregnancy and woman-headed households – is another concern (David, 2007: 426). These issues, seen with violence, environmental instability and decay, as well as social decay, underpin what is thought of as citizenship in education, which relates to the "personal" in methodologies of environmental education. In this regard, David (2007: 427) notes the idea of a new form of citizenship, namely

“ecological” citizenship, which embodies a “commitment to justice and compassion and is necessary to achieve sustainable development” [emphasis added]. David (2007) specifically explores the potential of schools and education to develop these “ecological citizens” and a curriculum that focuses on the normative aspects of sustainability.

The Agenda 21 notes the central role of education in shaping value orientations and social action (Lotz-Sisitka, 2002: 100). This document describes environmental education as socially transformative, continuous and based on respect for all life. Social justice, equity and transformation are paramount aspects of environmental education in South Africa, promoting an understanding of diverse cultures and the root causes of environmental problems. NGO pressures resulted in the recognition of democratic principles of education, insofar as these refer to the socially constructed notions of knowledge. Janse van Rensburg (1995, in Lotz-Sisitka, 2002), for example, looked at environmental education as a responsive process to change in collaboratively developed capabilities and resources, *in local contexts*.

In many African countries environmental education is seen as peripheral to education. However, South Africa’s transformation provided a unique opportunity to explore the social change role in environmental education. Since 1992 educational transformation has focused on including environmental education in the standard curriculum.

In addition, many stakeholders are involved in environmental education. As such, *conservation experiences* and nature experiences are offered either through schools and/ or other entities. The South African National Biodiversity Institute (SANBI), for example, offers environmental education programmes in major centres in the country. They cover curriculum-linked lessons for all grades. In this process they encourage a hands-on, interactive approach for children to discover their environment through careful observation, recording and interpretation of data. Lessons are multilingual and also promote community-based environmental issues through awareness-raising²¹.

The University of the Western Cape notes that “because of agreement that our environmental crises are the result of problems with modernity, educators have begun to move away from teaching approaches that stress ‘wildlife experience’ or ‘nature study’ – i.e. merely teaching about the scientific aspects of nature”.²² The focus has now shifted to ecological education – in theory, at least.

This change reflects what the International Union for the Conservation of Nature (IUCN) expressed in terms of environmental education, years before the sustainability debate even came to fruition (1977). The IUCN spearheaded the ideas of environmental education. They had, already in the 1970s(!), noted that environmental education²³:

- is a life-long process at all levels of education;
- is about the interactions which occur in the natural, the built and the social environments;
- is for developing attitudes and value systems which lead to socio-economic improvement through positive social interactions and the maintenance of the natural and built environments;
- aims to develop individuals’ understanding, skills and feelings of empowerment that are necessary for the above-mentioned aims; and
- requires a holistic and preferably interdisciplinary approach to teaching.

These changes are currently promoted in education, as education *about* and *for* the environment. The Environment Education and Sustainability unit at the University of Rhodes

²¹ <http://www.sanbi.org/education/kirst2.htm> - accessed 24/10/2007

²² http://www.botany.uwc.ac.za/inforeep/what's_EE2.htm - accessed 24/10/2007

²³ Ibid.

was (and continues to be) closely involved in policy and curriculum developments in the country. They express this emphasis shift by regarding community consciousness as an integral part of the ethos of the unit and their work.²⁴

In South Africa, the following major initiatives frame environmental education (a study done by Lotz-Sisitka over ten years in South Africa from 1992, the Rio Earth Summit, to 2002):

- The Environmental Education Policy Initiative (EEPI)
- The Environmental Education Curriculum Initiative (EECI)
- The Learning for Sustainability Pilot Project
- National Environmental Education Programme for General Education and Training (NEEP-GET)

The NEEP (Dikhololo, 1993) is a collaborative project coordinated by the Department of Education with the aim of supporting teachers in implementing environmental education at schools and integrating it with the outcomes-based curriculum. This initiative is supported by the National Department of Environmental Affairs and Tourism (DEAT)²⁵. The EEPI and EECI preceded NEEP, as support committee and interest groups respectively. The Learning for Sustainability Project was a pilot project carried out in six provinces that concentrated on resources and research-based approaches in environmental education.²⁶ The programme is underpinned by the following principles:

- Participation, ownership and sustainability
- Responsiveness to context
- Reflexive and applied competence (integration of theory and practice)
- Utilisation of existing resources
- An integrated, collaborative and co-ordinated approach.

Lotz-Sisitka (2002), however, expresses concern with how successfully actual integration of environmental thinking in curricula takes place. As such, she notes that NEEP-GET in some cases led to misinterpretations of the learning curriculum, with related superficial learning outcomes. As such the environment is an integral part of the curriculum, but the outcomes are often not congruent with the aim of the initiative (Lotz-Sisitka, 2002: 110). David's (2007) international perspective on this is that although core, systemic and idealised issues of the environment are integrated into curricula worldwide, the focus is often a neo-liberal concern for the environment. Tlhagale (2004: xi), in a South African context, expresses this disconnect between sustainability ideas (in other words, people and their resource base) and the environmental education that should support those ideas into action. She notes that especially in South Africa's rural areas, the international standards, often applied to environmental education, should be broken down and simplified in order to fit into the lifestyles, value systems, social systems and education of people at grassroots level, in order to achieve sustainability. The University of the Western Cape's environmental education section echoes this idea when they say that programmes have achieved different outcomes, ranging from awareness-raising to knowledge *on* the environment – but that, with environmental problems still worsening after 25 years of debate in the arena, educators are still insisting on practical, action-g geared understanding and implementation of these ideas.²⁷

Generalised environmental education thus do not go a long way in closing the gap between understanding, internalising and changing behaviour that is usually the outcome of sound environmental knowledge, education and internalised understanding.

²⁴ www.ru.ac.za/community/environmental_education/ - accessed 24/10/2007

²⁵ http://www.environment.gov.za/ProjProg/2003NEEP/capacity_building_21052003.html - National Environmental Education Programme (NEEP) - accessed on 24/10/2007

²⁶ Ibid.

²⁷ http://www.botany.uwc.ac.za/inforeep/what's_EE2.htm - accessed 24/10/2007

“Environmental education is that component of education that enlightens and conscientises people about their immediate environment.”

(Tlhagale, 2004: xi)

12.1 From Environmental Education to a Positive Future Image of Sustainability

The rational educational paradigm, associated with industrial sociocultural theory, is characterised by the importance ascribed to production, growth, competition. etc., that favours dominance of nature (Tlhagale, 2004: 31), nature as resource value, and exploitative or even weak sustainability. In my view this form of education could perpetuate the current ecological crisis and does not support “new forms of knowledge” associated with a transdisciplinarity and an ecological world view embedded in sustainability thinking. This study thus focuses on the humanistic learning processes. This type of education articulates respect, harmony and interconnected relationships with nature, and is focused on the learner and the learning process (Tlhagale, 2004: 32). As such, the Waldorf education system – which could also be seen as an alternative form of education – is the focus of this study.

The premise is that, although environmental education, as seen above, obviously acknowledges sustainability aspects, there somehow seems to remain missing link(s) between these ideas in the curriculum and creating a framework for children that will lead to enduring change in their actions, attitude and feelings towards sustainability.

Before we delve into the Waldorf discussion, I want to touch on the last point made, namely children’s feelings as their image of, and attitude towards, the environment, which is a critical aspect of the future-orientation of sustainability.

As mentioned in the introduction, Hicks and Holden (2007) express two underpinning aspects of futures studies (or, in the context of this study, future-orientation of sustainability), namely personal futures and world futures. The latter include, for example, an emphasis on the future where acting for human benefit and sustaining ecological systems are in balance, as well as the pivotal role that technologies play in a new era of design and development. By including both these future elements in over-arching learning on the environment, it “helps legitimate the exploration of alternative futures in the classroom” (Hicks and Holden, 2007: 503). They emphasise that education should guide children on how to think critically and creatively about the future – whether this future is personal, local or global.

Waldorf education claims to work with children’s natural development phases in order to develop an integrated, enduring framework of thinking about themselves, the world and the environment, that sustains children in their development to adulthood.

13. Waldorf Schools: Guiding the Spiritual Human Being to the Spiritual Universe

The Waldorf school system was established by, and is founded on, the philosophies of Rudolph Steiner (1861-1925). He initially founded a school for factory workers of the Waldorf Astoria Cigarette Company in 1919. The emphasis of this school’s learning was – and remains into the current curriculum – on a day filled with learning based on the arts, fairy tales, music and *imagination*.

13.1 Method of Teaching and Connecting With the World

Waldorf education is based on a view and understanding of the *whole human being*, as a being of body, soul and spirit. The education mirrors the basic stages of a child’s development from childhood into adulthood. This form of education aims to instil in its learners an appreciation for their background (not necessarily based on nationality, ethnicity, etc.), as

members of humanity and world citizens.²⁸ In pre-primary school Waldorf education cultivates the child's deep, inborn natural attitude, belief and trust in, and reverence for, the world as an interesting and good place to live in.²⁹

Primary school education focuses on the use of artistic elements as a means to relate to and understand the world, and build an understanding of what the different subjects entail. In high school this base shifts into a more conscious cultivation of an observing, reflecting and experimental scientific attitude to the world, "focusing on building an understanding of what is true, based on personal experience, thinking and judgement."³⁰

The Waldorf school day follows a "rhythm that fights fatigue and supports balanced learning". This rhythmic aspect is also mirrored in a focus on learning the rhythms of nature³¹, the seasons, and seasonal festivals related to myths and traditional stories. In the early years activities are taught in groups (typically same-age groupings) with the teacher leading. Academic subjects are taught more traditionally at this time, with children being taught at their desks in a group (Stephenson, not dated: 1-3). The learning day starts with one long lesson focusing on one subject. This long lesson allows the teacher to integrate many facets of learning associated with that subject.³² In contrast to mainstream education, the teacher evolves with the same group of children, ideally right through primary school. This teacher provides the main lesson each day which, according to Waldorf education, provides continuity that is lacking in today's world.

Arts always underpin teaching in the Waldorf curriculum and are included in the widening of the learning spiral to engage children's full abilities. The curriculum can be seen as an "ascending spiral"³³ with the long lessons that begin each day, and concentrated blocks of study that focus on one subject for several weeks. "As the students mature they engage themselves at new levels of experience with each subject. It is as though each year they come to a window on the ascending spiral that looks out into the world through the lens of a particular subject." In this way all aspects of knowledge are included in the ever-deepening and widening spiral of the subject.³⁴

Subjects are not geared to teach a specific vocation. They are, rather, developed into the Waldorf curriculum to educate capacities that every human needs. Waldorf education takes the view that children are gifted in various directions, but the choice of a vocation is left to the adult, with the early education "laying a palette of experience to choose one's interests from."³⁵

13.2 Fantasy and Imagination

"When children relate what they learn to their own experience, they are interested and alive, and what they learn becomes their own. Waldorf schools are designed to foster this kind of learning" [emphasis added] (Barnes, 1991). According to Waldorf education principles, the less conscious aspects of our human nature should also constantly be nurtured and guided. In this regard, the arts and practical skills make an essential contribution to the education of children. Children are encouraged to work through many dimensions of learning related to one particular subject – colour and form; tone, drama and speed; eurhythmy as part of physical movement; clay, wood, fibre and metal; and elements of nature from the garden. This

²⁸ www.waldorfanswers.org/Waldorf.htm What is Waldorf Education? - accessed on 29/08/2007

²⁹ Ibid.

³⁰ Ibid.

³¹ http://en.wikipedia.org/wiki/Waldorf_education - accessed on 04/05/2007

³² www.awsna.org/education-class.html -Waldorf Classroom and Curriculum - accessed 29/08/2007

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

intellectual and sensory range provided throughout the curriculum successfully supports learning through the whole being – head, heart and hands.³⁶ For younger children, especially, play is seen as the work of the young child, and “the magic of fantasy, so alive in the young child”, is an important part of how the teacher works with the child. “The teacher regularly incorporates storytelling and fantasy into the curriculum.”³⁷

14. Rudolph Steiner’s (1861-1925) “Stairway to Heaven”

Born in Croatia, Rudolph Steiner subsequently established himself as an Austrian philosopher, social thinker, educator, artist and esotericist. Apart from founding the Waldorf Schools, he is probably best remembered for founding the philosophy called “Anthroposophy”, establishing the concept of “biodynamic farming”, as well as the artistic form of “Eurythmy”.³⁸

Although a study of his vast philosophical contribution *per se* is not the focus of this discussion, it is worth noting – as the underpinning philosophy guiding Waldorf Education – Steiner’s path leading to this unique philosophy. As point of departure, “anthroposophy” means “a path of knowledge, to guide the *spiritual* in the human being to the spiritual in the universe” [emphasis added]. Anthropocentrists are those who, as an essential facet of their lives, pose certain questions on the nature of the human being and the universe, just as one experiences hunger and thirst.”³⁹

As part of his philosophical enquiries Steiner also explored ethical individualism, to which he later added a more explicitly spiritual component. His particular epistemology is derived from J.W. Goethe’s world view, where “thinking is no more and no less an organ of perception than the eye or ear. Just as the eye perceives colours and the ear sounds, so thinking perceives ideas.”⁴⁰ In fact, Steiner was the editor of Goethe’s main works, and a contemporary of Nietzsche. In the 1890s Nietzsche’s sister approached Steiner to put the Nietzsche archive in Naumburg in order. Steiner also regularly spoke at the Theosophical Society on a range of topics, including Goethe’s fairy tales, The Green Snake and The Beautiful Lily. In the early 1900s he lectured throughout Europe on his scientific/ spiritual research. He posited that, through *freely chosen ethical disciplines* and meditative training, anyone could develop the ability to experience the spiritual world.⁴¹ He thus positioned ethics in terms of a distinct link to spirituality (a Stairway to Heaven, so to speak).

Steiner emphasised transformation in Goethe’s approach, from physical sciences (where experiment played the primary role) to, for example, plant biology, *where imagination is required to find the biological archetype (Urpflanze)*. Steiner’s philosophy denies a justification to separate faith and knowledge, or the spiritual and natural worlds. Anthroposophy is a human-centred spiritual philosophy that speaks to deep spiritual questions of humanity and our artistic needs. Anthroposophy also deeply recognises the human need to relate to the world in scientific facts (reflecting philosophies of Aristotle, Plato and Aquinas) – and it is this dual perspective that makes it known as a *spiritual science*.⁴²

³⁶ www.awsna.org/education-arts.html -Waldorf, The Arts and Practical Skills - accessed on 29/08/2007

³⁷ http://en.wikipedia.org/wiki/Rudolph_Steiner, pp 1-23 - accessed on 04/05/07

³⁸ “Eurythmic movement” is movement with a *meaning*. It will replace those motions based merely on the anatomy and physiology of the physical body.

³⁹ http://en.wikipedia.org/wiki/Rudolph_Steiner, pp 1-23 - accessed on 04/05/07

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² <http://www.waldorfanswers.org/Anthroposophy.htm> - accessed on 04/05/2007

“On this basis anthroposophy strives to bridge the clefts that have developed since the Middle Ages between the sciences, the arts and the religious strivings of man as the three main areas of human culture, and builds the foundation for a synthesis of them for the future.”⁴³

14.1 Education directed at the whole child

Written in the 1919 *Zeitgeist*, Rudolph Steiner’s article, “An Introduction to Waldorf Education: An Essay by Rudolph Steiner” shows that his pre-industrial revolution view on education is that of holism. In other words, his views on what “modern” education was supposed to be were, in 1919, the same as what we are trying to achieve in a post-modern society through sustainability education. He made it very clear that the school is founded on the principles of idealism, but that this idealism should be rooted in a curriculum that develops faculties in children that will equip them to work in “modern society” (keeping the *Zeitgeist* in mind) and make a good life (Steiner, 1969[1919]: 1). In this article he expresses the fundamental idea of education being directed at the whole human being, *life force* and *nature*. Steiner developed a curriculum that became as successful as that of Maria Montessori, based on “genuine knowledge of the developing human being” (Steiner, 1969[1919]: 2).

His ideas at the time called for the strengthening of the will, as reflected in his own words:

“The soundness of this idea [establishing the school] is questionable; but it is impossible to develop the will (and that healthiness of feeling on which it rests) unless one develops the insights that awaken the energetic impulses of will and feeling. A mistake often made presently in this respect is not that people instil too many concepts into young minds, but that *the kinds of concepts they cultivate are devoid of all driving life force*” [emphasis added].
(Steiner, 1969[1919]: 2)

He, however, concluded on this reflection that one can and should only proceed in the education of children from the vision and “*living understanding*” of the *whole human being*. As such, the teachers’ *living insight (experience)* becomes very important in the teaching and curriculum, and he made it clear that in Waldorf schooling children will – obviously – also advance fast enough in terms of factual knowledge, compared to parallel traditional curricula (Steiner, 1969[1919]).

14.1.1 The developmental stages

Waldorf education inherently recognises the interconnected role of the child’s development responses and absorption ability in terms of learning. As such, Barnes (1991: 1) notes that the curriculum and learning is structured according to developmental stages, early childhood, middle childhood and adolescence.

In primary school the child is undergoing a very important transformation. From birth to six years the child is very open to everything that immediately surrounds him/ her in the human environment which, through imitative instinct, gives form to his/ her own developing powers. In other words, the child naturally discovers his/ her world and should be allowed to do so. From this time onwards the child is open to the teacher’s natural authority and is susceptible for what is taught in this manner. “The authority is taken for granted by the child from a dim feeling that in the teacher there is something that should exist in himself too” (Steiner, 1969[1919]: 2-3). Authority is thus seen as something inherent in the child, which she/ he can mimic and recognise in the teacher. It is thus not something externally forced on the child. Steiner proposes that the child will metamorphose into this internal, latent power through the sensitive Waldorf education process. A key requirement of Waldorf education is thus teachers that are sensitive observers who have a keen sense of “life’s subtlest manifestations in the

⁴³ <http://www.waldorfanswers.org/Anthroposophy.htm> - accessed on 04/05/2007.

human being” (Steiner, 1969[1919]: 3). According to Steiner, this sense of human development must shape the curriculum. “Knowledge of the special needs of each *life period* provides a basis for drawing up a suitable curriculum” [emphasis added] (Steiner, 1969[1919]: 3).

Around the ninth year, the child develops a keen sense of self that establishes a relationship with nature and to the world around him/ her in such a way that “one can now talk more about the connections between things and processes themselves, whereas previously he was interested most exclusively in things and processes only in relationship to man” (Steiner, 1968[1919]: 3). In this regard the Waldorf education system is thus about introducing the right “factual” information at the right developmental stage of the child. If this does not happen, the child might not be susceptible to what is being taught and might not fully integrate the full effect of the knowledge. In this process, imagination, stories and art keep on playing an enduring and integral part. “[T]he real teacher, the real educator, is not one who has studied educational theory as a science of the management of children, but *one in whom the pedagogue has been awakened by awareness of human nature*” [emphasis added] (Steiner, 1969 [1919]: 4).

15. From 1919 to 2007: Back to the Future?

Hicks and Holden’s (2007) current research on environmental education – within a futures perspective – corresponds with Steiner’s education in terms of children’s internal interaction with the ecological crisis we face today.

An investigation into the hopes and fears of four- and five-year-olds in Australia (by Page, 2000: 31, in Hicks and Holden, 2007: 504) found that they are clearly “engaged by current issues of pollution, the environment, contemporary music and warfare.” Children in this group were very aware of the negative affects of global warming, litter and deforestation. Their futures were expressed as a combination of fantasy, “some based on stories and some based on the adult world they knew.” Page also reflected that children in this group had difficulty thinking globally, but they could express their personal futures and hopes/ fears very well.

Research conducted in the UK shows that primary school children, seven- to eleven-year-olds, showed *increasing awareness of social and environmental issues* and were concerned about the affects of these on their environments. Engagement with these children through questionnaires (a study conducted by Hicks and Holden in 1995) showed a clear desire for a *better quality of life*. They have an overwhelming desire for peace, a better environment and less violence. Their responses incorporated the built and natural environment. They were, for example, concerned with the loss of parks, increasing numbers of factories and traffic congestion.

“Discussions revealed a genuine concern about environmental issues and also a desire to be better informed and to know what they could do.” They indicated that environmental action and campaigns and relationships would make their world “a better place”.

(Hicks and Holden, 2007: 506)

Secondary school children became more pessimistic about both local and global futures as they grew older. Children at this level (in Finland and the UK) were more optimistic about their own futures, but pessimistic about the quality of life for people globally. Their involvement in action for change was seen as a key difference between primary and secondary school children (Hicks and Holden, 2007: 507), with primary school children feeling and believing that they could still do something about the global environment through basics like recycling, not littering, saving energy, etc.

16. Imagination and Fantasy for Enduring “Knowledge” Frameworks?

Steiner emphasised the importance of imagination and fantasy in child education. Many mainstream education methodologies focus on the absorption of facts and a fervent goal to make children understand everything. Steiner warns against this approach for a very important reason. He notes that when children are taught in a way that engages the child’s interest in all aspects, the recollection of facts – in later life – will reveal an enduring framework of integrated knowledge that is sustained through life (Steiner, 1969[1919]: 4)

“Of prime importance for the cultivation of the child’s feeling-life is that the child develops its relationship to the world in a way such as that which develops when we incline toward fantasy. If the educator is not himself a fantast, then the child is not in danger of becoming one when the teacher conjures forth the realms of plants and animals, of the sky and the stars in the soul of the child in fairy-tale fashion.”

(Steiner, 1919, copyright, 1969: 4)

By the end of the ninth year, Steiner recommends the use of natural history descriptions from plant and animal life in order to highlight natural forms and processes that can be used in understanding the human form and phenomena in human life. These analogies could – through imagination and stories – help the child release emotional energies that are hoping to develop from the depths of human nature. At the age of twelve the child is ready to understand things without reference to the human being, for example the mineral kingdom, physical world and meteorological phenomena (Steiner, 1919, copyright, 1969: 4-5).

In the primary grades the focus is thus on integrating the child’s understanding of the world, reverence (in the very early grades) and *what is beautiful about the world*, whilst contextualising knowledge that will later lead to an understanding of science. In high school, this leads to a conscious cultivation of observing, reflecting and a scientific attitude towards the world, focused on building an understanding of what is true about the world based on personal experience, thinking and judgement.⁴⁴

This instinctive progression in learning thus grounds learning and knowledge about the self and the world in the inner development of the child, as well as practical life. In primary school the human being is thus grounded in the nature of being human and in nature. From this perspective, Waldorf education sends highly integrated human beings into secondary school education, where the basis of the human[nature] connection seems to already have been solidified.

17. Main Themes in Waldorf Education

This part of the case study describes the main themes interpreted from the interviews conducted with Helen van Zyl (Van Zyl, 2007) on 19 June 2007, Heleen De Villiers (De Villiers, 2007) on 20 June 2007 and Professor Mark Swilling (Swilling, 2007) on October 2007. The aim with these interviews was to balance the preceding theory, especially in view of people’s lived experiences with Waldorf education, as well as their views on the potential of Waldorf education to support sustainability. The following themes emerged:

17.1 Imagination: The Entry Point and Foundation for Waldorf Education and Teaching

The entry point and foundation for Waldorf education is the imagination. Imagination in this form of teaching opposes mainstream, post Second World War education that is characterised by reductionist content, teaching methods and world views.

⁴⁴ <http://www.waldorfanswers.org/Waldorf.htm> - accessed on 04/05/2007

Imagination, firstly, permeates the teaching methodology and, secondly, places a responsibility on Waldorf teachers. In terms of the first, children are encouraged to free play in nature with direct contact (as far as is safe) with the four key natural elements, namely water, air, fire and earth. In simply playing with, for example water the child establishes a deep connection with the element of water. Through reliving the day's experiences – re-enacting what happens at home, for example watering plants, washing and cooking – this connection with water becomes a “living” element, “living water”. An essential outcome of this type of methodology is thus that the child is allowed to make direct contact with the living elements of nature, whilst re-enacting daily life. The child thus connects with archetypal symbols (water, air, fire and earth) that mediate daily routines of growing up in an interconnected world.

In terms of the latter, the Waldorf method places the responsibility of imagination on teachers. Teachers have to be imaginative and are encouraged to hold a positive image of each child at the end of the teaching day, and approach the child from this positive basis the next day. Imagination in this way mediates negative behaviour and influences in the classroom.

“It is fantastic that a study is being conducted to link environment – particularly sustainability – and education. The obvious place to start in teaching sustainability – according to Waldorf education principles – is to start with children's imagination” (Van Zyl, 2007).

17.2 Waldorf Methodology and Curriculum Designed To Connect Children with Imagination

The Waldorf methodology and curriculum is designed to connect children and their inherent imaginative capabilities. This connection is achieved by providing facilitated space (supervised free play in nature and specialised Waldorf teaching materials), as well as by incorporating stories and storytelling into the teaching methodology and content. This learning happens in the physical space in the classroom or an outside setting, in the interactive space between teacher and child, as well as the abstract space of the imagination – the space where stories flourish.

A nature table, for example, is set aside in each classroom where children can feel free to exhibit their own interpretations of, or collections from, nature in their daily classroom routine. These exhibits are often integrated, through stories, into lessons. In addition, seasonal festivals, regularly arranged by the school and its community, allow children to “experience” the many stories about nature and the seasons that they have imagined when these were told in lessons. Biodynamic farming activities feature strongly in the curriculum and are planned according to astrological principles. In this way children regularly engage, through practical activities, with the abstract.

17.3 Stories (Via the Imagination) Connect Children with Nature

Waldorf education sets an entire atmosphere of respect for nature throughout its curriculum and the activities proposed for children, especially through the continuous emphasis on storytelling. Waldorf education *integrates nature and stories in natural and practical ways* that are easy for children to relate to.

It is clear from the interviews that certain stories are regarded appropriate and prescribed in the Waldorf curriculum to align with the specific phases of the child's development. One example of such a link is in geography where the spiritual-scientific link is made naturally and throughout teaching this subject to children as they progress through the grades. The mineral kingdom in terms of mountains, for example, is seen and grounded – symbolically –

in the child's body as the back, spine and bones from which minerals and nutrients and support flow for the entire body. Similarly in biology, the heart is not seen as the mechanical reductionist symbol of a pump, it is expressed as the holistic symbol of the ocean with the arteries representing rivers.

In this regard, the unique Waldorf method again places a responsibility on teachers. Teachers are taught skills to write their own stories applicable to a subject, and/ or appropriate African myths and fairy tales are currently used. In Class five, for example (age 10), mythology appeals to children as at this age the body is probably the most balanced it will ever be. Stories of the Greeks and their Olympic games (as history lesson) are favoured, and internalised without effort or boredom (because they reflect the child's developmental stage). Subconsciously the child is given the opportunity to relive the triumphs of the athletes. In contrast, Class six (age 11-13) corresponds with the search for role models, leaders and heroes. Stories of the orderly, organised and "follow-the-leader" Roman Empire are thus chosen to resonate with children of this age.

"The Root Children" (the Afrikaans story, "Die Wortelkindertjies") is another beautiful example of how the connection to nature is made through stories.

The story goes as follows: The root children have been sleeping all winter. Just before springtime Mother Nature knocked at their door to wake them up. With her she had little pieces of fabric and sewing tools for them to sew their new dresses for spring. They hastily set to work – each choosing the colour suited to them. When they were done, they put on their new frocks and also scrubbed down the beetles and hedgehogs for spring. When they were done Mother Nature opened the door and all the root children spilled into the fields in colourful splendour! They toiled to get their work done, but they were now part of the new spring and cycle of life. When autumn approached, Mother Nature called them back, gave each one a hug and sent them back into their houses in the tree roots, until next spring.

17.4 Nature is embedded In the Child's Leaning of Him/ Herself and the Broader Environment

Nature is thus embedded in the child's learning of nature, him/ herself and the broader environment through an *imaginary framework*. One of the lessons for Grade 12 learners is that of nurturing and establishing the *passion* that naturally develops in children at this age. Passion does not always come through facts, and the curriculum should support this developmental phase to establish the characteristic in the person, not the fact. The Waldorf education approach assumes that people are born with an integrated nature connection, which modern world views, lifestyles and related reductionist education later break down.

By grounding teaching in everyday home rituals, natural rituals, rhythms (for example the seasons) and cycles, learning is mediated between elements of nature (and its key symbols) and the child's imagination. "V for valley" is, for example, taught in the alphabet by visualising a valley between two mountains, and holding up two fingers to mimic this valley. Through the imagination, education once again becomes a "living education", as in the case of play and engaging with elements of nature. The child learns from an early age what is living, and thus close to him/ her and consequently worth protecting in this imaginative framework established through the connections of stories, nature and inherent symbols in education.

Two respondents indicated that their entry point to Waldorf education is through practical, everyday work in the form of gardening/ farming. Swilling (2007) indicated an early Waldorf experience connected to gardening, woodwork, weaving and sowing. He is of the opinion that, to this extent, Waldorf education is rooted in an age where farming was a family-based

craft – an ideal of working the land (with notions to organic and biodynamic farming). He cautioned, however, that these ideals are relative (relative versus absolute value systems).

17.5 Nature in Waldorf Education Essentially a Transdisciplinary Concept

In Waldorf teaching methodology and content nature is thus not separated from the person and the knowledge that is conveyed. Scientific facts are of course conveyed, but in a way that is simply stated, *not overemphasised as the only truth* and only perspective on the learning associated with a particular subject. Other forms of “knowing” and knowledge related to nature is also incorporated into, and actively encouraged in, the curriculum. Nature in the Waldorf curriculum is thus typically Transdisciplinary, with nature stories and facts weaving through history, geography and science classes. In addition, the school and supporting community engage in festivals related to the seasons, for example the mid-winter solstice festival of St Michael, where old lifestyles and “baggage” are symbolically burnt and the light of the big bon fire signals the lengthening of the days and imminent spring. Community life is thus in tune with learning and the rhythms of nature.

“Waldorf education provided me with a context for learning that was pervaded by spiritual reference points” (Swilling, 2007). Waldorf education, unlike other forms of religious schooling, has its own non-denominational rituals and routines that embed a sense of a wider consciousness. Swilling (2007), again balanced the discussion, by saying that this is, however, is not necessarily the same as a sense of nature. Here Swilling’s (2007) views are different from Van Zyl’s (2007) in saying that Waldorf education might still be rooted in a sense of evolutionary hierarchy, which is not necessarily “healthy” from a deep ecological perspective. Van Zyl indicated, as below (16.6) that according to Waldorf principles animals are seen as an evolutionary extension of human beings – we are all thus always connected to other species, plants and animals. Nevertheless, there is a general agreement that “nature is alive and part of a spiritual universe rather than a mechanical process that simply obeys fixed knowable scientific laws” (Swilling, 2007).

Waldorf education is also seen as education without fear. “I have often seen youth like a flower that can bloom to its full potential with the right nurturing and unconstrained by attacks, or it can wilt or experience stunted growth” (Swilling, 2007). Waldorf education allows for the former, because the spirit of being a child is respected, rather than seen it as something to be dominated.

Storytelling directly addresses the transdisciplinary aspects of Waldorf education. Well-known little verses and poems often signify the change of the season and natural rhythms, and are used in school activities. The winter solstice festival, for example, resonates with Shakespeare’s *A Midsummer Night’s Dream*, and highlights themes and images of treading lightly in the dark of night, of listening and breathlessly anticipating the wonders and magic that lurk in the bushes at night. These images are more than symbols, they are the language of children, of imagination and of living and seeing the world as a connected whole. Imagination in this way links the body and the spirit and the images become “living symbols” (De Villiers, 2007).

De Villiers (2007) further specifically indicated that symbols emerge as patterns from stories through correlations between the pictures created by the imagination and real life experienced by the child at school, at home, etc. Verses by iconic Afrikaans writers like Marais (*Die Dans van die Reën*), D.F. Malherbe (*Swawelliedjie*) and D.J. Opperman (*Boer*) artistically express the celebration felt by human beings and nature as the rain finally comes, the intricate workings and home-making of swallows building their clay nests, and the integrating work of the farmer who connects earth, sun and rain to feed the city and nation.

Artistic expression (poetry) thus transforms facts into human expression that children can relate to.

“Imagination means being able to see as many connections between things as possible, and to see how these connections can change or be changed. It means being [able] to see current realities as they are, but also to see different ones in many different permutations. *Fearless thinking* is really what imagination is all about” [emphasis added] (Swilling, 2007).

17.6 Waldorf Education Promotes Care and Responsibility for Nature in Children

“Within Steiner philosophy all living creatures are extensions of human beings, and as human beings we thus have a responsibility in terms of caring for those creatures that are more perfect extensions of ourselves than what we could be” (Van Zyl, 2007). At this level of imagination, living creatures are part of every human being. This view embedded in Steiner philosophy has significant moral and ethical implications by default. Van Zyl (2007) noted that when an extension of something (animals, plants) comes from yourself, and your care for it, is ingrained in your imaginative framework as a child, the question posed here is whether, when a child grows up to be an adult, he/ she will be able take decisions or actions that harm that creature, species or element of nature. The proposition is thus: when caring and responsibly is ingrained from a memory of imagination, one would continue along this path in later life when making decisions about the environment and others.

Similarly, Grimm’s fairy tales provide a particular theme that captures “nature” – responsibility and caring for the ecological resource base. Often in these stories the father’s sons, as main figures, go out into the world and encounter many animals on their way. Characteristically one of the sons would be more humble and/ or “not the cleverest” in terms of possessions and consumption. The brothers would, for example, come across a row of ants or swarm of bees that they want to step on or swat in order to kill, when the “humbler” brother stops them from doing the evil deed. Later in the stories the “thankful” animals will help this boy when he faces potentially life-changing challenges and tasks. These responsibility themes often emerge in these fairy tales. They are based on subconscious layers in human beings that speak universally.⁴⁵ “The story is the symbol, and themes emerge across and between stories to create universal patterns of understanding and interpretations of the world. Moral lessons and role models often emerge, based on good deeds in fairy tales. In this regard the humble person, who works with nature and only uses what he/ she needs and helps other creatures in need, is often depicted, not as the hero, but as the person who in the end triumphs with nature over personal adversity” (De Villiers, 2007). Personal transition thus goes hand-in-hand with an integration of nature in many of these stories.

17.7 The Archetypal Symbols in Stories Speak Directly To Children

In Waldorf education the teacher typically presents a story, without dramatising or infusing it with personal opinion and emphasis, in order to allow the child to make the connections. Certain fairy tales are suited for certain seasons, for example, through the archetypal symbols inherent in the story. Stories containing themes of transformation are often told for Class six age groups, where natural development is at a transformative stage in the child. Symbolism in this regard makes the link between nature and the child’s imagination, and speaks directly to the child. Archetypal symbols thus mediate between the story and child’s natural development stage recognised in Waldorf teaching methodology and teaching content.

Stories like these also have the power to localise accepted Westernised symbols in a cultural setting. The African story of the woman who could not have children and was shunned by her tribe for being barren is an example. The woman worked the lands with love and dedication

⁴⁵ This view also ties in with Monbiot’s (2006) interpretation of Goethe’s *Faust* – i.e. that our actions of today, of living it up and annihilating resources while they are there, will probably come back to haunt us.

and sowed seeds to grow food (as metaphor for children), but every day the birds would swoop down and eat the seeds that she had sown. One day she was visited by a pair of doves who told her to plant a little seed in each of her knees, and put one seed in each of two earthen pots. She did exactly as she was told. The doves gently flew in one night while she slept, and in the morning when she woke she had two beautiful little babies waiting in the earthen pots! The doves in this African cultural setting and story replaced the stork as symbol of “immaculate birth” or “bringer of babies”.

It is thus about themes in stories that speak for themselves, and teachers should not explain stories to children. The children will pick up the symbols, make the connections and learn what they are receptive to learn at the time (De Villiers, 2007).

In African stories, for example, agriculture and the roles of men and women in their related activities all have significant and tangible spiritual meaning. In traditional stories men would work with milk and cows, and the women would work the lands and till the soil. These agricultural and typical natural elements reflect daily routines, like collecting fire wood, growing food and sacrificial rituals (fire) for the forefathers. Cattle play a particular mystical role in these stories. When the cows and/ or plants (crops) are failing, the intermediaries with the spiritual world – the forefathers – are brought in to mediate meaning and provide guidance on what should be done in terms of correcting this situation with the natural world, whether through accessing new or different information or doing things (culturally) differently. In one particular story, a community who lived close to a mystical wood had problems with failing crops. Everyone in the community knew that they were not allowed to enter the wood for fear of angering the forefathers and further punishment. One day, however, a young girl ventured into the forest and decided to bring a sacrifice to the forefathers, and thus speak to them about the situation. Traditionally it was not the role or place of females to engage with higher knowledge in this regard, and she was banished from the community. When the plants and crops, however, recovered the community took her back in and made her a medicine woman, thus recognising her form of knowing and mediation with new knowledge.

18. Coping With the Future

Hicks and Holden (2007: 508) refer to “other case studies [that] highlight the importance of a supportive learning environment in helping young people feel positive about their future.” They quote Gidley (1998), who found that children at a Steiner school demonstrated very strong feelings of activism, self-confidence and empowerment “to create their own preferred futures”. Gidley attributed this sense of “agency” to the philosophy and methods of Steiner education, which emphasises “artistic, imaginative, values-based and holistic education experiences” (Gidley, 1998, in Hicks and Holden, 2007: 508).

18.1 Some Concluding Connections

The Waldorf teaching methodologies and content – based on Steiner’s unique philosophies – reflect the notions of complexity characteristic to the sustainability debate. Waldorf education reflects the relational nature of the world and knowledge as expressed by Cilliers (1998:112). This transdisciplinary approach of weaving nature into and across scientific subjects is a clear example of dealing with the complex, relational nature of the world and knowledge. It also aligns with the incorporation of other forms of knowledge in science, in particular referring to the inherent spiritual nature of Waldorf education and surprising aspects of complex phenomena (often described as emergent behaviour in systems), for example the imagination that cuts across and through all Waldorf subjects.

The notion of extended care and responsibility inherent in Waldorf education reflects the same ideas in the sustainability debate (see paragraph 10.). In the globalisation discussion “imagination” featured strongly as an ability (a tool) through which human beings internalise

values and shift these values from the individual to the collective spheres. In Waldorf education similar scale shifts and connections are attributed to the “imagination” when children connect freely from deep within themselves to nature and their community (world). By using the imagination to connect to everyday practical realities (through re-enactment), the link to ideas of pragmatic ethics (see 10.3.1) is established.

It would thus seem that Waldorf education, seen within the ambit of the preceding sustainability section, meets most of the criteria for ecological education (see 12.). Waldorf education in this regard makes connections across and through the natural, built and social environments; deals with the development of values related to teaching; supports a feeling of empowerment within children; and develops the curriculum in a transdisciplinary fashion.

The embedded predisposition for nurturing the “imagination” in Waldorf education, however, sets it apart from ecological education as proposed in the South African scenario. Imagination in Waldorf education, opens up spaces that allow children to connect with nature at the most opportune time in his/ her stage of development. This connection is amplified by the use of appropriate stories and fairy tales that contain embedded archetypal symbols that speak directly to the children. This unique aspect of Waldorf education and gap in terms of current, standard environmental education in South Africa, support the core exploration of this thesis. Particularly the exploration of a deep-seated, enduring human[nature] connection, and education methods that might offer more than standard ecological/ environmental education to facilitate this connection.

Through the development of an imaginative framework in children we thus achieve two goals in support of sustainability:

- Scale shifts from the individual to the collective to potentially transposition stories for sustainability between the self, schools, community and the world.
- Embed an enduring human[nature] connection within an imaginative framework that might guide children about nature into adulthood. They (we) might, thus, later act in support of sustainability from this imaginative framework.

SECTION 4

19. Introducing Section 4

I concluded the previous section with an indication of the pivotal role that imagination – through the establishment of an imaginative framework – plays in Waldorf education. The case study discussion thus rests in this section, as deeper exploratory base.

This section explores the deeper ideas around imagination, human[nature] connections and how these form part of the individual and collective psyche. The all-encompassing field of psychology provides a vast range of angles and theories from which to consider human psychology and the human-environmental interconnection. However, when it comes to the topics of the imagination (imaginal), symbols, whole systems and human-ecological interconnectedness (sustainability), the psychoanalysis work of Jung is authoritative. “Psychoanalysis partly resulted from a whole movement dedicated to the rehabilitation of the imaginal by means of systematic study of the image and modalities of the imagination” (Durand, in Sells, 2000: 54).

This broad field (psychology is both an academic and applied discipline⁴⁶) is thus narrowed down significantly in this section to focus on:

- Symbols and imagination. This work is based on the founding work of Carl Gustav Jung (1975-1961), who in essence explored what it means to be *a whole person*. Jung, seen as the father of analytical psychology, based his work and therapy on, amongst other things, a fundamental human-nature connection. In addition, Durand’s (2000) work significantly contributes towards understanding Jung and the imagination from a historical-psychological perspective.
- An interpretation of the ecological symbolism interface as it stems from the following literature: symbolism, spatial symbolism, environmental psychology, anthropological symbolism and environmental ethics literature. A comprehensive literature review revealed that published literature on the exact topic of the study is scarce (for example, ecological symbolism). I thus had to interpret the study from the above selections of literature.

This section aims to show that symbols and imagination play an intricate, multidimensional role in vastly extending and enriching mechanistic, rational science. As mentioned before, I tread lightly in proposing alternative and integrated avenues for scientific exploration. This study by no means attempts to displace bodies of science. It should be seen as identifying a possible integrated space of science and humanity where imagination and creativity plays the legitimate role they have in sustaining and moving humanity forward, as they have done through eons.

“In this synchronic universe, of which the eternal return and redundancy of the imaginary tale are typical, linear causality and determinisms based on identity and noncontradiction no longer work, submerged as they are by the tide of ambiguous relationships: the thread of discourse is caught in the synchronic mass of meanings.”

(Durand, 2000: 60)

⁴⁶ <http://en.wikipedia.org/wiki/Psychology> Psychology (Greek: "Knowledge of the soul (mind)") involves the scientific study of mental processes and behaviour - accessed 15/10/2007

20. Play-off between Depths and Surface: Unconscious and Conscious

Fritjof Capra's work explores change in living systems from a whole-systems (*ecological*) paradigm of Earth, as well as the related interconnection between human beings and nature (ecology). Capra fundamentally considers human beings' "embeddedness in natural and social environments" (Capra, 1996: 6). The primary human context – the natural world or ecology – is thus the basis from which we move in terms of an ecological perspective.

Jung is one of the prominent figures enlightening the world about its symbolic and archetypal base and functioning. He posed that the invisible, or concealed, aspects of life (often denied by modern science) provided by dreams, imagination, fantasies and visions transcend the personal sphere and involve the contents of the *collective unconscious*.

"Mythological themes, symbols, rooted in the universal history of mankind (or reactions of extreme intensity) always indicate the participation of the deeper strata."

(Jacobi, 1968: 39)

"Beyond the transcendental self, beyond the self fragmented by existence, beyond the world of phenomena, another modality of being is revealed: the modality of the *mundus imaginalis*, that gigantic net, woven by the *dreams* and the desires of the species [emphasis added], in which the little realities of everyday life are caught despite themselves."

(Durand, 2000: 60)

In line with Capra's (1982; 1996) position in physics, Jung also makes a fundamental human-nature connection as basis of his analytical psychology. Very importantly, this foundation of his work stems from an early childhood impression where he experienced the sacred (God) in terms of nature.

"'Yes', I thought, this is it, my world, the real world, the secret, where there are no teachers, no schools, no unanswerable questions, where one can be without having to ask anything."

(Jung, 1961: 97, in Laas, 2004)

"Our psyche is part of nature, and its enigma is a limitless."

(Jung, 1964: 27)

He, secondly, extends rational science to human beings embedded in the invisible, concealed aspects of life, namely the unconscious workings of dreams and symbols that exert a determining influence on psychic life, and life as a whole. As Jung clearly states, "there are unconscious aspects of our perception of reality" (Jung, 1964: 23). These symbols and unconscious manifestations also have a dominant functional character. They manifest through archetypes to provide an almost default framework for behaviour. Jung's work could thus be very insightful in linking deep-seated psychological frameworks with outcomes and behaviour. His work in the area of archetypal symbolism in fact confirms the potential to link action, behaviour and outcome aspects (functional character) to deep rooted values, as well as the more pragmatic level of ethics. The latter, in psychological terms manifests at a more "superficial" or conscious level (decision-making).

These aspects, as well as this complicated interaction between the conscious and unconscious, will now be looked at.

21. The Work of Carl Gustav Jung

It is well known that human beings use symbols to convey meaning in their written and spoken words (and other expressions). Jung critically distinguishes here between symbols and signs. A symbol has additional connotations that imply something vague, unknown and/ or hidden from us. "A word or an image is symbolic when it implies something more than its obvious and immediate meaning" (Jung, 1964: 20). It thus holds a "a wider 'unconscious'

aspect that is never precisely defined or fully explained. Nor can one hope to define or explain it” (Jung, 1964: 21). As our minds thus explore symbols, they are led to the realm beyond reason, and Jung argues that “we constantly use symbolic terms to represent concepts that we cannot define or fully comprehend” (1964: 21). This, for example, is the reason why religions use symbols. Jung refers to this aspect of symbolism in psychology as the conscious use of symbols.

Human beings, however, also produce symbols unconsciously and spontaneously in the form of dreams (Jung, 1964; Durand, in Sells, 2000). Jung continuously grappled with the concealed/ invisible, yet real, aspects of human life. His particular and continued interest in symbols, the unconscious mind and dreams – those aspects that lead into the realm beyond reason – is based on limited human perception and understanding. Jung posits that human beings never fully perceive or comprehend anything, and that scientific instruments only partly compensate for the deficiencies in our senses. However, no matter what instruments we use, “at some point he [a human] reaches the edge of certainty beyond which conscious knowledge cannot pass” (Jung, 1964: 21).

21.1 Lost in Translation

Apart from the fact that human beings do not comprehend fully, Jung also maintains that “there are unconscious aspects of our perception of reality” (Jung, 1964: 23). These, firstly, are our normal sensory perceptions (sight, sounds etc.) that are translated from the realm of reality into the realm of the mind. In this process, Jung maintains that they become “psychic events” whose nature is unknowable. Secondly, we absorb certain events or events that we have not taken note of consciously, subliminally (Jung, 1964: 23). In both cases these “psychic events” are stored in the unconscious, and revealed to us through intuition, deep reflection and thought – and in dreams, not as rational thought but as symbolic images (Jung, 1964: 24).

“Whoever denies the existence of the unconscious is in fact assuming that our present knowledge of the psyche is total.”

(Jung, 1964: 25)

“And this belief is clearly just as false as the assumption that we know all there is to know about the natural universe.

(Jung, 1964: 27)

Within the field of complexity theory that critically supports sustainability it is well accepted that knowledge about the world is incomplete, and that current, rational science cannot claim a single, objective truth and science base.

21.2 Found In the Dream

For Jung, dreams have definite, purposeful structures that indicate an underlying idea or intention. In this regard, every dream tells a unique story, as unique as the individual who dreamt it, and it is in following the story of the dream that meaning emerges (Jung, 1964: 30). Through a number of case studies and many dream examples resulting from deep therapy sessions, Jung identified the “*anima*” (female elements in every male) and “*animus*” (the male in every female) as key symbols in dreams. He thus identified both male and female in every person (also *yin* and *yang* in Chinese philosophy) and, in doing so, grounded his work in a philosophy of unified opposites. Dreams and associated symbols – in a story or narrative format – thus serve the purpose of balancing out the conscious mind, compensating, so to speak, for the losses of limited knowledge and sense-perception (Jung, 1964: 67).

Jung also inherently believed in the unconscious association with natural elements, which meant that some symbols essentially carry meaning of natural/ environmental/ ecological

origin (Jung, 1964: 45-49). In rational thought we strip concepts of these psychic or unconscious meanings. But these concepts express themselves and their unconscious meaning in dreams (Jung, 1964: 43).

21.2.1 Sustainability: Devoid of Emotional Meaning

What psychologists call psychic identity is thus stripped out of our world of things. Blewitt (2006) argues that it is exactly this void of lived experience and a deeper connection made with the content of these words those results in the meaninglessness of the terms “sustainability” and “sustainable development”. As sustainability practitioners, planners and scientists, we work with highly emotive issues, yet our language, scientific reports and accounts of life, – people’s lives, are stripped of this emotional energy. Jung proposes that we often use these ideas and words in our speech, but they do make a deep impression on us, and that “something more” is needed to make us realise things effectively – in other words, in such a way that it might change our actions and behaviour. This is what dream language does: “its symbolism has so much *psychic energy* that we are forced to pay attention to it” [emphasis added] (Jung, 1964: 49)

Throgmorton (2003), writing from an urban-planning perspective, dreamt of the technological harm to his city, his [in]ability to change the outcome, and his vision of a better future.

“I can see it clearly in the distance. Although the nuclear power plant is many miles away, its cooling tower glitters in the fire’s raging glow. How lucky I am, I think, as I watch the fire’s contaminated smoke drift away from me to the right. But then the wind shifts, and bright red cinders begin to waft toward me. Some settle on my arm.”

(Throgmorton, 2003: 39)

His dream describes the unsustainability of his hometown – the prospect that the way of life that dominated his typical American city could not be sustained. But, most importantly, he noted that the dream signalled hope that his town could become more sustainable (Throgmorton, 2003: 41). His dream language thus exposed a number of qualitative and non-empirical dimensions with regard to spatial, geographical “place”, and moved him to action to eventually spearhead a number of sustainability initiatives in his town.

This type of discussion informs the built environment context from two aspects. Firstly, as planners and built environment practitioners we would have to realise that we use and work with emotive, non-rational words, feelings and expressions from people – our work is about people in the built environment – in our work, planning and scenarios of the future. Secondly, we might start to subtly introduce these narratives into our work as recognised forms of research and science in order to reflect the true reality of the world we work in and the audience we address. Granted, dreams and visions might seem “far out” and belonging in the realm of philosophy, “soft science” and the non-empirical. But, if we think about it, it really is about the people, life and the very essence of what we try to capture in building a sustainable built environment. “To talk about urbanity, life, diversity, etc., without talking about memory, spirit, desire, playfulness, fantasy etc., would be bizarre. Or to talk about sustainability without talking about hostility, hope, caring, greed and nurturing...” (Sandercock, 2003: 153)

21.3 Archetypal Symbols and Images

Symbols occur in all kinds of psychic manifestations, not just dreams, but also in symbolic acts, feelings and situations. Jung refers in this regard specifically to *collective symbols*, which are mostly religious. In this regard Jung’s work is often described as archetypal psychology. Hillman (2000: 14) notes that, stemming from the notion of depth psychology, the archetype is the most ontologically fundamental of all Jung’s psychological concepts, with the potential to probe psychological problems beyond scientific models and language.

Jung initially referred to these motifs and symbols in the collective unconscious as “primordial images”, then, after exposure to the *Corpus Hermeticum*⁴⁷ as “archetypes”. With regard to the *Corpus Hermeticum*, Jacobi (1968: 39) says the following: “But someone might say that the seal is not the same and entire in all its impressions. The seal however, is not the cause for this, for it imparts itself wholly and alike in each case, but the differences in the participants make the impressions unlike, although the *archetype is one, whole and the same*” [emphasis added]. Jung’s proposition that the archetype is interpreted and individualised by participants at this point diverges from Arne Naess’s ideas of Deep Ecology, and it is here that I put forward the human[nature] aspect of this study.

As human beings there are specific individual traits that allow us to make decisions for the environment – a “will” that Steiner (1969[1919]) refers to in children. We can harness this will for, and in support of, sustainability. David (1991) refers to these ideas as individuation, where archetypal symbols help us to transcend our current selves. From our current symbolic framework we can thus take action from deep-seated symbolic patterns that support the current world view and ecological crisis. Or we can move through these deep-seated internal processes to a place where our symbolic framework reflects a balanced, systemic human beings-in-nature symbolic framework that supports action for sustainability.

Deep Ecology poses that the self loses all definition in the “wholeness” of nature.

Jung noted that people across cultures and the world universally celebrate and recognise certain life processes and elements. These include, for example, death, power, resurrection, heroes, mother and father figures. He believed that these symbols form an innate mental framework derived through human evolution that is common in every human being. It is present in individuals as the unconscious and manifests collectively through the collective unconscious.

The production of archetypes by children is especially significant, because one can be quite sure that a child has had no direct access to a specific tradition and has not been conditioned by the specific world view to a great extent. Based on dream analysis, Jung (1964: 72-76) describes how a little girl’s dream contained primitive collective images that were equivalent to the doctrines taught to young people in primitive tribes for initiation rites. In these rites they learn about gods and/ or God, what the “founding animals” do, how the end of the world will come and the meaning of death. The girl had no direct or indirect (through parents, family, education, etc.) link to this culture and ritual practices. There was thus no “logical”, rational reason for her to have “known” these images, other than through the collective images and unconscious, Jung asserted.

“Like the instincts, the collective thought patterns of the human mind are innate and inherited. They function when the occasion arises, in more or less the same way in all of us.”
(Jung, 1964: 75)

These are what Jung called “archetypes at work.”

22. The Role of Symbols

Symbols could hamper or promote change. If prejudice is held through meanings attached to cultural symbols, change will be impossible. Jung distinguishes between natural and cultural symbols (Jung, 1964: 93). The former are derived from the unconscious and represent an enormous variation on archetypal images. Cultural symbols are used to express “eternal

⁴⁷ <http://en.wikipedia.org/wiki/Hermetica> A body of Greek texts that deal with subjects like magic, alchemy and, sometimes, Gnosticism – accessed on 1/11/2007

truths” and are mostly related to religious concepts. People are often very emotional about these symbols, and they could thus function in the same way as prejudices. Here Jung (1964: 94), almost tough-in-cheek, notes that modern man does not understand how much his “rationalism” has put him at the mercy of the “underworld”. He has freed himself from superstition, but he has lost his spiritual values to a dangerous degree.

22.1 Archetypes and the Environment

“Today for instance we describe matter; we describe its physical properties and conduct experiments in laboratories. But the word remains dry. How different was the former image of matter – the Great Mother that could encompass and express the profound emotional meaning of Mother Earth.”

(Jung, 1964: 94)

Jung identified two basic archetypal symbols/ images that are closely connected with human beings and human[nature]. Firstly, the Mother Earth symbol, as described in the quote above, and, secondly, a Father Spirit. What used to be the spirit is now identified with intellect, and thus ceases to be the Father of All (Jung, 1964: 95). These two archetypal images lie at the foundation of the distinction between the contrasting thought, environmental management and consumption systems of the East and West.

Earlier these principles – Mother Earth and a Father (spirit) – were worshipped, with meaning attached to rituals etc., which showed their psychic significance. But now in pure scientific parlance, these have become abstract principles that people do not attach the impacts of their actions to. As scientific understanding grew, our world became more dehumanised of these human-nature connections and their inherent *psychic energies*. The energy – that, according to Jung, *leads to action*.

Jung, in particular, belabours the dissociation of human beings and nature, especially urban dwellers (Jung, 1961, in Laas, 2004) and the loss of a deeper connection or identity with nature. “Man feels himself isolated in the cosmos, because he is no longer involved in nature and has lost his emotional ‘unconscious identity’ with natural phenomena” (Jung, 1961, in Laas, 2004). Symbolic implications of natural phenomena are, it seems, lost. Thunder is no longer the voice of an angry god. No river contains a spirit, no snake the embodiment of wisdom (see the introductory “snake” story).

22.1.1 Symbols [Re]Enchant and [Re]Connect Us with Nature

Humankind’s contact with nature has gone (Bateson, 1972; Blewitt, 2006; Capra, 1982, 1996), and with it has gone the profound emotional energy that this symbolic connection supplied (Jung, 1964). Although dreams compensate for this loss by the symbols in our dreams, they also bring up our original nature, which is expressed in the language of nature. Our scientific language these days does not always conjure up the meanings of the words we use (Jung, 1964: 94-96). Whether our external world is thus stripped of superstitious and irrational elements, it does not mean our inner world has been freed from a longing to be intrinsically connected to nature (Jung, 1964: 96). For example, how many people are still afraid of the number 13? Jung calls this mixed-up being – characterised by a curious mix of long-acquired mental images – *man and his symbols*.

22.1.2 The Emotional Load of Symbols Brings Change

This discussion could take up many pages, however, one of the most important contributions from the field of Jung’s archetypal symbols is that an archetype appears in practical experience as image and emotion (Jung, 1964: 96). The main characteristic of an archetype is thus both the image and the emotion, present and in context. By being charged with *emotion*, the *image gains psychic energy* (numinosity). It becomes dynamic and some kind of

consequence must flow from it. James Hillman, who in the 1950s ran the Jung Institute in Zurich, explains (2000: 12) that a school of thought in terms of “being Jungian” is in itself an experience unique to an individual, with connotations of existence or “being” according to unformulated beliefs and practices based on what is called emotional energy in psychological terms. Being Jungian, like a symbol, is thus highly subjective, also connective, and suggests a certain emotional atmosphere, wherein symbols, dreams and action (behaviour) emanating from these are constant themes (Hillman, 2000: 12).

This view from Jung gives more insight into the basic premise posed in this study, namely how people are moved to action from a human[nature] connection.

These archetypal images are pieces of life itself, images that are integrally connected to the living individual by the bridge of the emotions. If you have not experienced the psychic energy associated with an image and symbol, it will be mere words/ images. “The mere words will be valueless and meaningless” (Jung, 1964: 98). They gain meaning when this numinosity is taken into account.

22.1.3 Archetypal Symbols Show the Way to an Integrated, Extended Science

For ages in the long past, the original mind was the whole of man’s personality. As consciousness developed, the conscious mind lost contact with some of that psychic, primitive energy. Yet our unconscious seems to have preserved some of these primitive characteristics (Jung, 1964: 101). It thus might not be a question of turning the “anecdotal” into science or merging “soft” and “hard” science, as though these are separate entities and minds. In fact, Jung’s work could change our perspective here, in addressing the *whole mind of science* (so to speak), capturing value-laden aspects of feeling and emotion, together with core scientific fact and empirical information. Together these might inform the science of sustainability, of human beings in nature.

23. Depth Psychology and Imagination

23.1 Imagine

The landing on the moon started as a dream, a flight of fancy, a scientific impossibility. Confusing the mythical with the utilitarian dimension constitutes one of the greatest mystifications of our time (Durand, 2000: 55). Durand further proposes that the basic disease that our culture is dying from is a minimisation of images and myths, as well as humankind’s faith in positivist, rationalist civilisation. Dominant Western societies proclaim symbolism and myths dead, in favour of a “superhuman” ability to synthesise all theologies and metaphysics into “a radiant form of positivism.” (Durand, 2000: 54). Durand, however, proposes that the imaginal resurfaced in the field of psychology, coinciding with the romantic revolution in literature that called for the restoration of the imaginal (the image and imagination as act) against the “iron centuries of technocracy” (Durand, 2000: 55). This re-emergence of the archetypal should, however, be looked at both from the viewpoint of:

- what it tried to guard against; and
- what it discarded as future sources of corruption and further alienation between the worlds of the esoteric and scientific.

Something to guard against, certainly, is further devaluation of the human soul, which in a classical sense can be traced back to a Cartesian and Aristotelian world views (dualism of mind), where the soul was removed (separated) from matter – the classic *dualisms* of mind and body, mind and nature, human beings and nature (Bateson, 1972; Capra, 1982). Many poets, politicians, novelists and historians alike concur (according to Durand, 2000: 54-55) that “herein lies the basic alienation and disaster on which Western science and metaphysics are formed. Both memory and imagination were confined to the realm of the superfluous,

incoherent and were not regarded as part of rational discourse” (Durand, 2000: 56). In the eighteenth century rationality ebbed slightly and made way – through the work of, amongst others, Hume and Kant – for “experimental” emotional sensitivity. Literary individuals (the poets), as explorers of this newfound spirituality, again laid the foundation for *rediscovering the imagination*.

“With the romantic poets the exploration of the imaginal became a real field of knowledge.”
(Durand, 2000: 56)

This new knowledge laid the foundation for the significance of images and imagination almost a century before psychologists like Freud and Jung practiced their craft. In this time (preceding Freud and Jung), thanks to the work of Gerard de Nerval the image acquired ontological depth, and provided a foundation for later depth psychology.

“With Nerval, Baudelaire, and later, Rimbaud, Novalis and Holderin, a New World opened up for exploration, one that belongs to the specific spirituality of unreason. *Imagination*” [emphasis added].
(Durand, 2000: 57)

The human soul was thus made for a world beyond the rational, phenomenal one. “Imagination is therefore the possibility of experiencing the noumenal, and the imaginal is the New World” (Durand, 2000: 58).

23.1.1 One More Level of Depth

Of importance here is that Nerval, who laid this integrative foundation for imagination, meditated on *Goethe’s Faust* when he anticipated Jung (and even Nietzsche) in the following quote:

“It would indeed be comforting to believe that nothing which had touched intelligence is lost and that eternity preserves a sort of universal history which can be perceived by the soul’s eye as a divine synchronism, perhaps one day initiating us into the science of those who can see at a glance the entire future and the entire past.”
(Durand, quoting Nerval, 2000: 59)

23.1.2 Before Grounding Theory in Current Discourse: All Roads Lead To Faust?

It is thus of immense interest to note a clear pattern emerging in the literature. A number of current prominent writers (Monbiot, 2006; Gifford, 2007; Throgmorton, 2003) in the fields of climate change (Monbiot, 2003), environmental psychology (Gifford, 2007) and sustainability story (Throgmorton, 2003) all interpreted the current ecological crisis from an artistic, *imaginative* foundation – they all used Goethe’s Faust as metaphor in their work! The pattern continues with Rudolph Steiner’s reflection on Faust in his philosophies that founded the Waldorf Schools movement. Not only did these authors bridge scientific fact with the symbolic, artistic and literary, they incorporated learned experiences (for example, dreams) as metaphors in expressing the whole of the phenomenon they were dealing with. They referred to Faust as a metaphor for our indiscriminate and unsatisfying use and domination over nature and the ecological resource base (that we know are running out at a pace that ALREADY exceeds earth’s carrying capacity). We are thus “selling our souls” whilst the going is good. Gifford (2007) also used the classic Shelley (1818) poem as metaphor for his rendition of our planetary collapse and human domination over nature.

I met a traveller from an antique land
Who said: Two vast and trunkless legs of stone
Stand in the desert. Near them, on the sand,

Half sunk, a shattered visage lies, whose frown,
And wrinkled lip, and sneer of cold command,
Tell that its sculptor well those passions read,
Which yet survive, stamped on these lifeless things,
The hand that mocked them, and the heart that fed,
And on the pedestal these words appear:
“My name is Ozymandias, King of Kings:
Look upon my works, ye Mighty, and despair!”
Nothing beside remains. Round the decay
Of that colossal wreck, boundless and bare
The lone and level sands stretch far away.

Percy B. Shelley, 1818 (in Gifford, 2007: 200)

Why is this? To highlight the depth and width of the ecological crisis we are dealing with – the fact that these issues cut through and across humanity and ecology? Is it a reflection of the shortfall of pure scientific knowledge and language to capture this knowledge as it races into a new ecological paradigm and tries to make connections that we know are there, yet do not have the language and science to – yet – prove and/ or describe?

Or is it simply the fear of what will be lost if we reject our planet and its supporting ecological life source at such a fundamental human level, when we knowingly continue to reject nature and ecology from our imaginations, our powers of envisioning and ultimately change? We might find some answers from the field of environmental psychology that deals with the interaction between human beings and nature.

24. Environmental Psychology

The sustainability narrative is characterised by interactivity between human beings and the supportive ecological base. Captured within the very broad field of environmental psychology these complex interactions define environmental psychology. “Environmental psychology is an area of psychology whose focus of investigation is the interrelationship between the physical environment and human behaviour and experience” Holahan (1982: 3).

The field of environmental psychology immediately grounds psychology in the realm of the physical environment, and suggests three key psychological processes that underpin environmental interaction, namely:

- Perception: This involves the process of apprehending the environment through sensory input that is immediately present. The diversity of stimulation from the environment thus forms a coherent and integrated picture of the world.
- Cognition: This concerns the storage, organisation, reconstruction, and recall of images of environmental features that are not immediately present.
- Attitudes: These are the favourable or unfavourable feelings that people have toward features of the physical environment.

(Holahan, 1982: 24).

Holahan (1982) indicates that all three processes integrate to provide us with images of the environment. Environmental cognition is of particular importance, as it:

- plays a central role in terms of education and how children are taught to “recall” the environment in later years; and
- it directly relates to ordering and imaging the geographical environment (which supports the broader built environmental undercurrent of this study).

(Holahan, 1982: 24-26).

Cognition further relates to each person's unique mental map of the environment, which researchers have confirmed is not a true representation of the objective spatial environment, but inevitably influences our attitudes and behaviour related to the environment (Holahan, 1982: 49).

It is interesting to see how this recognised field of social science has integrated the functioning of symbols and imagination into, for example, the use of mind maps and environmentally symbolic frameworks.

Lourdel *et al* (2007: 170) used cognitive maps as a way to understand students' comprehension of sustainability. According to them, cognitive maps show how knowledge is interconnected in long-term memory, which refers to an integrated and interconnected perspective on knowledge and learning. In this case "information is neither copied nor remembered, it is interpreted according to the knowledge the person already has" (Lourdel *et al.*, 2007: 171). They concluded that cognitive maps can be useful "to represent both the concrete and theoretical notions that are already known, thus helping to identify partial or erroneous knowledge" (Lourdel *et al.*, 2007: 171).

A key characteristic of environmental psychology is the processes by which people adapt to the complex demands of the physical environment or "all of the processes engaged in by living systems in interacting with their environment". The definition's emphasis is on a "total organism interacting with a holistic environment" (Holahan, 1982: 4).

The second characteristic is that psychological processes are recognised in the interaction between human beings and their environment. "Psychology" describes the mediating effects of physical settings on human activity – in other words, the mediating link between environmental conditions and behavioural outcomes, both individually and in groups (or socially) (Holahan, 1982: 4). People develop complex coping strategies to deal with possibly negative environmental situations, which also focus on the creative ways in which people have dealt with and coped with the environment. Holahan (1982: 6) refers to this as an adaptive, rather than deterministic, model to behaviour. In this regard, Gunter *et al* (1999: 623) note that community responses to toxic contamination are shaped by the nature of the environmental disruption, as well as the interpretative frames through which those disruptions are appreciated. This study *confirms the contextual relevance of the symbolic perspectives* in people's responses to nature and environmental perturbations. This perspective joins environmental sociology's assumption that biospheres and social structures are interdependent, with a key assumption of symbolic interaction, that people act on the basis of meaning attributed to events and conditions. "The symbolic dimension directs our attention to individual and collective ponderings that occur when people try to make sense of those things they encounter in their environment" (Gunter *et al.*, 1999: 625). Very importantly, they argue that this perspective provides interpretative space in cases of empirical ambiguity (as is the case in most environmentally complex problems).

Environmental psychology is by nature an interdisciplinary field (Holahan, 1982: 7). It is orientated to the resolution of practical problems and formulation of new theory, and varied research methods, relying quite often on experimental research methods and action research to reflect the complexity dealt with in the human-environmental interface (Holahan, 1982: 8-9). Established in people's behaviour in their settings and unique environments, this earlier rendition of environmental psychology thus emphasised the contextual relevance of studying the complex interrelationships between people and their environments.

24.1 Jungian Psychology in South Africa

At a time of drastic change and transition (immediately pre-and post democracy) in South Africa, it was felt that Jungian studies would have something to offer the country, because the

problems to be solved at the time embraced a multitude of cultures and changes. Julian David (whose work was commended by Sir Laurens van der Post) wondered whether, in this *context* of multitudes (expressions, cultures, knowledge), Jung’s insight into the psyche and its symbols could build “bridges of understanding which enable people to discover the *universal psychological patterns* that are present in all individuals [emphasis added] – and in so doing provide a meeting place for their minds and heart” (David, 1991: 7). Antjie Krog, in her book on transformation in post-apartheid South Africa, *A Change of Tongue* (2003), alludes to what one of these psychological patterns might be in the African context. “Transformation and change is not the same thing. You may appoint a new manager, or get a new name for your country, without changing direction, without changing ‘the firmament’. Things have been changed, but not transformed.” Krog (2003: 126) thus describes how, for a country to transform, it has to change – or rediscover – its *essence*. This essential change takes place on different levels and in different phases, one of which is at the very level of humanity – Ubuntu.

“The most profound opposite of Apartheid. More than forgiveness or reconciliation. More than ‘turn the other cheek’. It is what humanity has lost.”

Krog (2003: 159)

Both authors, drawing on basic human psychological characteristics, are in fact exploring (very eloquently) those deeper layers of humanity, of connecting with ourselves, each other, our world, past and a transformed (better?) future.

25. Symbolic Frameworks Related To World Views

Benton and Benton (2004) applied symbolism very creatively in the teaching of environmental ethics. By conducting a very interesting thought experiment, feelings (“how do you feel?”) and action (“what do you do?”) repercussions were tested at the hand of “a bargain purchase in a foreign country” (Benton and Benton, 2004: 231). They used two different world views, namely a typical neo-liberal versus religious, organic world view to simulate these links. When they changed what the students knew about the context and situation, most of the students adapted their interpretation and indicated that they felt guilty about “a steal” bargained from a poor vendor. Some didn’t, but the important outcome of the exercise is that “they grasp and understand that something is unconsciously guiding their reactions (how they feel and what they might do) even if they are unable to explain it. And they grasp the importance of understanding what this something is” (Benton and Benton, 2004: 232). It is also interesting to note that first-round feelings and actions were associated – almost by default – with a neo-liberal, modern world view. When the unconscious “knowing” associated with this world view was explained and challenged with another world view (religious, organic) their feelings (first) and then resultant behaviour changed.

One could thus argue that what we know is broadened by “metaphoric” or “symbolic” references to another way of knowing and world view. This view is supported by what Jung described as psychic energy and collective archetypal symbols. Once the emotional energy (“how you feel”) has been explored in terms of the two world views (archetypes), in the specific context (foreign country), many students changed their behaviour.

The authors also believe this is what education should do. Students first have to become aware of the latent ethical dimension in everything. In this case Benton and Benton (2004) use symbolism as metaphor to bring out these ethics in context. Their premise for writing this paper is that “metaphors organise feelings, courses of action, and cognitive understanding” (Benton and Benton, 2004: 229), and they intellectualised this premise through the work of Clifford Geertz’s model for analysing sacred symbols. Des Jardins (2001: 157, in Benton and

Benton, 2004) notes that “a primary role of descriptive ethics is to make explicit the models and metaphors that shape our understanding of the world”.

25.1 Changing the Current World View and Its Patterns

This view is embedded in a context where the greater number of people experiences the collapse of, and rejects, the modern world view. When caught between two worlds, “one dead, the other powerless to be born” (Gill (2002: 179). Gill (2002) proposes that *history* gives us a mirror in which to reflect upon other major world view shifts. For example, the rise of Christianity from the ferment of Judaism, Greek philosophy and Mithraism. During the Classical Age, this “pattern of social transformation created the need for new forms of social solidarity and ethical justification, but the changes manifested themselves with extraordinary *intensity at the level of the person*” [emphasis added] (Gill, 2002: 179).

Gill (2002: 180) thus proposes that change in the symbolic framework is required to change a world view, and this change starts essentially at the level of the person. In times of transformation, a symbolic framework allows people to make sense of their inner life and endure its tensions (see also Bettelheim, 1976; Booker, 2004; Grainger, 1997; Steenberg, 1987 in terms of stories and narrative). As a result people can form collective relationships with others through newly discovered and established ethics.

“[The] growing awareness and extent of the potential for environmental catastrophe has revealed and shattered some core elements of the modern world view” (Gill, 2002: 180) – especially elements where exploitation of nature was seen as base for social progress. Gill notes that the elements – action, decisions, outcomes, etc. – have lost credibility although they live on in institutions and everyday, business-as-usual routines (also see McDonough and Braungart, 2002; Monbiot, 2006). “Solutions to these problems can only come through subjective and inter-subjective ‘conversion’ through which we find the personal and collective capacities to learn to be other than we are” (Gill, 2002: 181). In terms of a change in world view, the contemporary quest for reorientation, “is at its most intense on the terrain of our personal and collective relationships to the natural world” (Gill, 2002: 181).

Not everybody is pro-symbolism, and this debate has travelled the circles of philosophy. Heidegger iterates our desire to reject a modern, scientific, technocratic attitude, which sees the earth as an object to be subdued. He generates an alternative “symbolic language that evokes the possibility of a way of being in the world in which we could experience an at oneness and a caring relationship with the earth” (Gill, 2002: 181), whilst Habermass, on the other hand, is suspicious of symbolic language, referring to the spellbinding and enthralling power of symbols (scary symbols). He proposes that language has surpassed symbolism, and that the three aspects of human beings, namely external nature, social world and subjective (inner) world underpin our capacity to communicate and reach agreement on how we should act (ethics) in relation to problems confronting us. He makes a link between sacred symbols and the potential hegemonic content and power of these symbols, especially in terms of politics and religion. According to him the objectifying attitude to the natural world is one of the great achievements of modernity. Yet, Gill argues, in agreement with Jung’s psychic energy, that the weakness of Habermass’s position – a fear of the symbolic – leaves us with a perspective that “lacks the imagination stirring, motivation galvanising and reorienting power of symbolic understanding” (Gill, 2002: 182).

Gill – very interestingly, in terms of the previous discussion on anthropocentric and ecocentric ethics and strong and weak sustainability – proposes a middle road between Heidegger and Habermass’s positions. Heidegger distinguished between “earth” and “world”. The world is the familiar context in which people of a particular era experience their everyday life, a place where its possibilities and constraints come into being. Earth “is that upon which the world rests and depends”, Gaia or Mother Earth. “The earth is that which sustains and

shelters. Earth is irreducibly spontaneous, is effortless and untiring” (Gill, 2002: 183). There is continuous strife between the two. With these two ideas of being in the world, Gill’s point reflects the basic tension in the sustainability debate from a symbolic perspective – anthropocentric/ ecocentric ethics, and weak/ strong sustainability. Heidegger is one of the strongest philosophical influences on the Deep Ecology movements, where the deepest form of self-realisation is the total, mystical identification with the cosmic principle of life.

I think Gill’s contribution lies in the balanced view that he brings in the symbolism debate. Because symbols so vividly express world views based on the emotional charge associated with their meaning, they also store immense power. Gill (2002: 189) proposes that modernity, for example, challenged this total potential for power with clearly delineated, expert spheres (disciplines) with different criteria for validity, thus splitting the power base of symbolism, so to speak. This is the legacy we are currently trying to reunite – again – under a new symbolic framework of change and new ethics.

“The challenge is to conceive a way in which the revelatory power and emotional charge of symbols can be recovered without sacrificing the critical openness and fallibilistic reason which modernity has made available. The sphere of artistic creation and appreciation can be considered as a reflexive space where the symbolic meaning can be contested, developed and evaluated.”

(Gill, 2002: 189)

The interface between the human and natural world becomes one of the most important places for understanding these issues.

“The symbolising capacity over time differentiates itself into myth, language, art and theoretical knowledge” (Gill, 2002: 193). Gill thus calls for an interpretative approach of anthropological symbols (social symbols). To recover *what has been forgotten* or gone *unrecognised* in theological terms is referred to as “anamnesic reason” or “thinking that resists the forgetting of things which we need to keep in mind. The modern world view has at its heart a distinctive form of forgetting” (Gill, 2002: 194).

“Ecological thought, which seeks to reorient us in our relationship to the earth and orient us to the tasks we must address, must be anamnesic thought, which recuperates what has been forgotten and seeks retrospective reconciliation with the past.”

(Gill, 2002: 194)

25.2 Remembering Indigenous Knowledge

Indigenous knowledge (IK) has it at heart to remember culture, history and symbols of indigenous peoples. Kelbessa (2002) indicates that indigenous practices of many African societies have included environmental ethics that “can serve as the basis for modern environmental ethics.” This statement signals a different form of knowledge associated with ethics, namely indigenous knowledge practices, experiences, etc. Although not the focus of this discussion, IK in this regard is always evolving and involves both old and new ideas and beliefs, and is embedded in community practices, culturally based values systems, as well as systems of production and consumption institutions and rituals (Kelbessa, 2002: 48). Kelbessa (2002) criticises Callicott’s assumptions made of Africa’s environmental ethical base, namely that: “Africa looms as a big blank spot on the world map of indigenous environmental ethics for a very good reason. African thought orbits, seemingly, around human interests. Hence one might expect to distil from it no more than a weak and indirect environmental ethic.” In line with David (1991), Kelbessa (2002) proposes that Africa has much to offer in terms of an environmental ethic that could be bridged through basic archetypal symbols of traditional leadership, pastoral care and religious stewardship of the environment. At this point, although

I am not elaborating on it, I take Kelbessa's (2002: 50) point that values are not the only driver towards behavioural change towards the environment. Different, contextually relevant, forms of knowledge that emerge from interpreting symbolic activities of people that are already in the environment are also powerful drivers. In this regard the recognition of women's knowledge in the story debate is critical. Ideas of eco feminism – as symbolic of breaking the twin domination over women and nature – emerged as strongly, and deeply, as that of Deep Ecology.

Ellen *et al.* (2000: 26) really make the connections in the following extract: “The failure to take into account the co-existence and interconnections between both empirically and symbolically motivated criteria within any system of knowledge, inevitably leads to limited understandings and perhaps even fundamental failures of understanding about how IK operates and how its is situationally successful.” They clearly demonstrate the critical link between contextually embedded systems of knowledge and recognising symbolic and empirical forms of knowledge. Indigenous knowledge, for the purposes of the study, is used as an example of one of the less recognised and marginalised forms of knowledge in our Western, modernistic, mechanical-world-view culture. The purpose is thus not broader analysis of this form of knowledge.

25.2.1 The Personal Universal

Capra (1996) in a chapter *Knowing What We Know*, confirms the symbolic integration in human knowledge, communication and ethics when he notes that according to the “Santiago theory [Humberto Maturana], human consciousness with its abstract thought and symbolic concepts, arises out of cognitive processes that is common to all living organisms” (Capra, 1996: 287). He confirms that communication is context-bound and historical (Capra, 1996: 288). “To be human is to exist in language, in language we coordinate our behaviour, and together in language⁴⁸ we bring forth our world.”

This human world centrally includes our inner world of abstract thoughts, concepts, *symbols*” (Capra, 1996: 290). “According to Maturana, we can understand human consciousness only through language and the whole social *context* in which it is embedded,” thus resonating Callicott's ideas of community “nests” and social hierarchies as embedded complex systems within systems. As opposed to pure scientific knowledge, Lyotard's (in Cilliers, 1998: 128) “narrative knowledge” is described as having criteria that are flexible and defined by the society in which the narrative functions. “[N]o specific linguistic form is privileged in these narratives. They lend themselves to a variety of knowledge games.”

Symbolism expresses through other forms as well, for example, poetry, dance and natural phenomena. In this paradigm of experiencing and viewing the world (complexity, whole systems, ecology, etc.) many “other forms” of knowing persist and exist. One of these ways of knowing is the recognition of archetypes and symbols through storytelling – as proposed in my thesis topic. “Stories are embedded with instructions which guide us about the complexities of life. Stories enable us to understand the need for and the ways to raise a submerged archetype” (Estés, 1992: 15-16). Stories could thus become the language/ carrier of symbols, integration and connection.

26. Metaphors and Interfaces: Between the Human and Natural Worlds the Ecology Fails and Humankind Flounders

Gill (2002) proposes a new meeting place of the human world and the earth where a new sense of the human condition, set within ecological constraints, can be reflected upon. He symbolically represents this meeting place as “landscape”.

⁴⁸ Language is one of the (be)holders/carriers of symbolism...

26.1 The Music of the Night: Harmonising Human Beings and Nature

Gill (2002) tells the story of Ros Edwards's "sacred" style of work, who composed his music in a room opening onto sensory-rich bushland. His music necessarily ended up reflecting nocturnal sounds and rhythms. He notes that "Edwards conceives of himself and the natural world as active agents. In finding his language as a composer, the landscape is also finding a new landscape through which it can speak."

Symbolism thus not only gives a voice to human beings to express their unconscious world and natural desire to link to and with nature, it also provides an avenue through which nature "speaks" to human beings. There is thus an interactive link between human beings and nature when personal, internalised communication with nature is happening. Many listeners (open listeners) then respond to what has been embodied in this symbolic form. The traditional nature tale – *Everything is Connected* (DeSpain, 1996: 13-16) (Annexure 3) – could show that we are free to respond to nature's sounds (very literally, but figuratively to nature's call) any which way, but that if we do not listen to her inherent voice of wisdom, disaster follows.

One music critic – listening to Edward's music, for example, said that he "hears an attempt to emphasise the need for a balance between human beings and the natural world, a world which humanity neither seeks to control nor reject" (Gill, 2002: 178). What one finds in the composer's account of his creative experience and the critic's response is "a wish coming from deep within the person for a communicative and reciprocally caring relationship with the earth" (Gill, 2002: 178). This notion of care has been established in the "patterns that connect" framework for sustainability through the first module's research (Beyers, 2005).

Edward's music was the symbolic expression of the *landscape* as the *place where the earth and human world meet* and contend. This interpretation opens up a fantastic array of manifestations of the symbolic relationships between human beings and nature in sustainability parlance and newly developing sustainability science. It provides a tangible dimension to symbolism that directly ties to the technology, innovation and sustainable design aspects of sustainability. It could also provide an opportunity for children's dream worlds to gain tangible sustainability expression in the form of alternative future scenarios, as proposed by Hicks and Holden (2007).

This link between symbolism and landscape – virtual and real – is supported, amongst other things, by groups in the ecology movement that seek "to create a way of life in which both the earth and the human world can be sustained. I see these symbolic and practical yearnings and efforts as part of a *shift in world view*" (Gill, 2002: 179).

This symbolic expression is not only virtual or abstract, but spatial/ geographic as well.

26.2 The Psychological and Symbolic Landscape

Professor Kevin Lynch, the well-known urban planner and designer, initiated this psychological interest in the ways people form mental images or maps of the geographical environment (Lynch, 1960). According to Holahan (1982:50), Lynch's work legitimised the scientific study of environmental images at a time when psychological exploration of "cognitive processes and mental imagery was not in vogue". Urban landscape elements such as paths, edges, nodes and landmarks, for example, make up people's mental maps of urban areas. A cognitive or mental or environmental map is an individual's organised representation of some part of the geographic environment. It thus "stands for" the environment (Holahan, 1982: 56). These maps are symbolic in nature and expression and might thus have universal value, which also makes these maps a communication tool at a broader, human, level. A central feature of a city is that its residents are linked by a shared system of symbols and a common mode of communication. "Shared representations of the environment provide the

symbols and collective memories that are essential to social communication” (Holahan, 1982: 65). Downs and Stea (1977: 92, in Holahan, 1982: 65) note that communication in the urban environment is very rich in symbols that help to regulate both positive and negative feelings toward the environment.

When we think, conceptualise, comprehend, understand, etc., we match the states and processes of symbolic models with the wider world. “Imaginal thinking is neither more nor less than constructing an image of the relevant features of the environment and then manipulating it under various hypothetical conditions and constraints” (Galanter and Gerstenhaber 1956, quoted in Benton and Benton, 2004: 233). People thus do not just see something, they are conscious of it as being and meaning something.

This section has thus highlighted the following:

- The inherent links to extended forms of knowledge and being a complete human being through the working of the unconscious and symbols.
- The working of the unconscious in guiding us to nature (and natural symbols) in the process of translating this “unaccessed” knowledge to our conscious mind and functioning.
- The ontological depth of archetypal symbols and the image – through the work of Jung (1964 and Durand (2000).
- Deep-seated human-nature connections inherent in the human psyche that is seen to be embedded in nature and the environment (Jung 1964 and Holahan, 1982).
- A review of environmental images through cognition processes and ecological symbolic maps in the field of environmental psychology.
- What we know is broadened by “metaphoric” and/ or “symbolic” references to our world views, and that the “psychic energy” associated with these symbols could lead to action and change (in world views).
- Archetypal symbols could reorient our understanding of the ecological crisis in how to build a sustainable environment, especially in incorporating people’s voices, emotions and visions of the future into our work.
- Symbols also provide a symbolic landscape for exploring interfaces and new knowledge in support of wholeness as human beings in an integrated environment.

The interface between the human and natural world is the best expression of symbolic meaning (Durand, 2000; Gill, 2002; Jung, 1964). “Landscape” (as expressed by Gill (2002) as a virtual and spatial connection) can be a carrier of collective memory and can be created and recreated through telling stories of particular places (Gill, 2002: 195). In this way we *build up layers of stories* of successive eras which have occurred at a particular place on earth. Gill (2002) calls this layering “thick place”. The next section looks at how stories facilitate the creation of “thick places” in place, space, self and nature.

SECTION 5

“It is a curious characteristic of our modern civilisation that, whereas we are prepared to devote untold physical and mental resources to reaching out into the furthest recesses of the galaxy, or to delving into the most delicate mysteries of the atom – in an attempt, as we like to think, to plumb every last secret of the universe – one of the greatest and most important mysteries is lying so close beneath our noses that we scarcely even recognise it to be a mystery at all. At any given moment, all over the world, hundreds of millions of people will be engaged in what is one of the most familiar of all forms of human activity. In one way or the other they will have their attention focused on one of those strange sequences of mental images which we call a story.”

Booker (2004: 2)

27. Introducing Section 5

Many books will tell you stories, but they will not necessarily tell you what a story is. There seems to be consensus, though, that stories bring “more” to our often rational and limited sensory perception of the world and life. Stories make meaning of the complexities of life and stories reflect the intricacies and many dimensions of life that we cannot always – consciously – tap into.

“Stories extend your imagination to see the world from perspectives other than your own.”

(Nanson, 2005: 34)

“When we construct a narrative, we produce a textual structure that underscores the mixture of acting and suffering which constitutes the very fabric of life”.

(Booker, 2004: 2)

“Stories match life.”

(Grainger, 1997; 92)

In its simplest form a “story” refers to a sequence of events. A narrative is a text, composed in any medium (play, fairy tale, myth, folk tale, soap opera, life history, etc.), which describes a sequence of real or unreal events. It derives from the Latin verb *narrare*, which means “to recount” and is related to the adjective *gnarus*, meaning “knowing” or “skilled”. The word “story” and “narrative” can thus be used as synonyms, but “story” can also be used to refer to the sequence of events described in a narrative.⁴⁹ Stories display certain characteristics, rather than pure definitions. In a story every action, character and story element has meaning and purpose. Derrida, for example, purposefully displaces boundaries related to literature (and philosophy). He proposes that the boundaries of literature can never be certain; “texts have traits, characteristics” (Collins and Mayblin, 2005: 99). He suggests that texts share these characteristics with other texts in, for example, philosophy and politics.

This section thus focuses on exploring stories in this way. The characteristics have been interpreted from a comprehensive literature review that focused on extracting sources that speak to stories/ narrative in the underpinning fields of the study. In keeping with the theme of exploring deep-seated connections between the fields that support this study and sustainability, this section focuses in particular on traditional stories. Traditional stories are steeped in history and reflect the deeper aspects of human relationships both internally and with the world/ environment.

⁴⁹ <http://en.wikipedia.org/wiki/Story> - accessed on 28/08/2007

28. Reaching for the Moon: a Brief History of Traditional Stories

Before the written word, knowledge about the world, explanations of natural phenomena, histories of different peoples, their gods, fears and hopes were shared through stories. Many traditions of storytelling existed. Grainger (1997: 17-20) explains a number of examples. Bardic storytellers (Anglo-Saxon *gleemen*) were polished professional storytellers and performers. They were later replaced by *minstrels* (the Normans) who used song, dance and verse to tell their stories. In addition, religious storytelling was seen as particularly useful, as it engaged listeners effectively and shared symbolic religious meaning. Stories of this kind are found in Christian, Jewish and Hindu religions. Folk storytelling also took place in homes and markets, and folk tales were mainly told by untrained tellers. This type of storytelling is prolific in Africa, where groups use folk tales to transfer cultural meanings and heritage to new generations (Grainger 1997: 19).

Industrialisation and the influence of the printed word in the fifteenth century signalled the demise of the oral storytelling tradition (Estés, 1992; Grainger, 1997; Durand, 2000). Print coincided with artificial lighting and other industrial priorities, and storytelling as an integral social communication tool fell by the wayside. In the mid-nineteenth century many traditional tales from the European tradition were collected for posterity. These tales were rewritten for children and many tales were “sanitised” according to the moral codes of the day (Estés, 1992; Grainger, 1997). Stories by the Brothers Grimm were particularly subjected to the *moralising* process. Christian symbols were often used to replace pagan symbols. An old healer, for example, became an old witch. Sexual elements were simply omitted and helpful animals and creatures became demons or bogeys (Estés, 1999: 16). Estés, however, claims that the archetypal elements and their inherent psychic energy are still present and provide clues for children, and adults alike, on how the inner and outer worlds work. Medlicott (1989, in Grainger, 1997) observes that storytelling, however, is re-emerging from a completely new breed of storytellers that are not tied to a specific tradition, but “are born from the eclectic mix of modern urban life” (Grainger, 1997: 21). In fact, Grainger (1997: 21-22) suggests that there is a Western revival of storytelling that could be responding to a “reawakened aesthetic and human need for telling and listening to stories”.

Traditional tales, specifically, belong to this tradition of oral storytelling – i.e. stories that have been handed down by word of mouth through generations and across cultures. Traditional tales include a vast range of stories – for example, jokes, personal tales, family anecdotes, folk and fairy tales, myths and legends (Booker, 2002; Grainger, 1997). Grainger (1997: 21) describes the beautiful metaphor used in Ireland, where this span of stories is called a ladder to the moon. The first rung of the ladder starts with human stories on earth, and the last rung reaches the moon, with stories of its origin.

28.1 Traditional Stories

Stories in this study refer to traditional tales, as these tales encompass humanity and human beings in the world (or human beings as part of the world), and human’s interaction with nature (Caduto, 1997). Traditional tales have been altered by the many and vastly different traditions, cultures and histories they have travelled through, and they survive to this day not only because they are entertaining and inspiring, but because they offer “alternative worlds which embody imaginative, emotional and spiritual truths about the universe” (Grainger, 1997: 23). This statement captures the essence of this section.

28.1.1 The Nature of Being Human in Nature

Earth tales, nature stories and stories on the ecology are seen as traditional stories (Caduto, 1997; DeSpain, 1996; Nanson, 2005), because they have survived from aboriginal peoples, from people’s deep connections with the soil, earth, land and animals (Caduto (1997). Nanson (2005: 2) notes that in traditional cultures storytellers are seen as “tradition bearers” who

remind us how to live in a sustainable relationship with the natural world. In his opinion environmental storytellers are recovering some of these skills today. He notes in his book that environmental storytelling – thus stories on the environment/ ecology – has the specific potential to bridge things that have come into opposition with each other in the current modern world view, namely humankind and nature, the inner world of myth, spirituality and imagination and the outer world of science, politics and empirical reality (Nanson, 2005: 60).

Folk tales, for example, emerged from communities that needed to find ways to share their wisdom and experience in a memorable manner. Many authors (Bettelheim, 1976; Coles, in Clandinin and Connelly, 2000; Grainger, 1997; Steenberg, 1987) believe it is this particular characteristic that makes traditional stories a central resource for storytelling in education, particularly in multicultural classrooms. In folk tales, for example, animals frequently feature alongside – or instead of – human beings, both of whom succeed through their quick-wittedness or some kind of trick. Fairy tales, on the other hand, open the world of the supernatural, magic, kings and queens (Grainger, 1997: 23). Famous fairy tales are the Brothers Grimm’s Rapunzel, Snow White, Hansel and Gretel, Hans Christian Andersen’s The Wild Swans and the Snow Queen. Fables are short stories with overt morals, and myths tend to refer to stories which explain the origins of natural and supernatural phenomena (Grainger, 1997: 24).

Traditional tales deal with powerful archetypal issues and can give children insight into the patterns and motives of human behaviour (also see Bettelheim, 1976; David, 1991; Steenberg, 1987, 1979).

They explore general themes, such as:

- Good and evil
- The nature of the supernatural
- The origins of the earth and man
- Rich and poor
- Young and old
- Beauty and ugliness
- Animals and helpers of people
- The quest to test individual skills
- The journey as a symbol of self-discovery.

(Grainger, 1997: 26)

“Oral stories give children easy access to complex issues which challenge the human race” Grainger (1997: 27). Sense and meaning of life are thus embedded in the human qualities of the characters, their predicaments and the metaphoric language. By exploring issues such as justice and injustice, and the moral codes of the characters, the ethics and values can be examined and bridges between reality and fantasy built. In this regard traditional stories are functional in the educational setting. One example of this functionality is the stereotypes often found in these stories, meaning that character traits are often polarised. People are often presented as very good or very bad, and in some case race and class are stereotyped. Chandappa (1989, in Grainger, 1997), however, notes that this stereotyping provides the opportunity for children to engage with diversity and deal with differences that face them in the classroom every day.

In addition, traditional tales have distinctive story patterns and repetitive narrative structures which make them especially suitable for retelling to young children. The language of traditional tales is also full of symbol, metaphor and imagery, which appeal to children of all ages (Grainger, 1997: 31-35).

Within different contexts and cultures traditional tales (in their different forms) thus guide and support the natural human ability to connect to each other and to nature through experience, as well as real and imaginative characters, events and interactions.

28.2 Stories Reclaim Our Heritage: A Message from the President

During Heritage Month (in 2007), President Thabo Mbeki wrote a letter in *ANC Today* with the title *We Are Children of a Rich Heritage*. Herein he made a plea for cultural groups to understand themselves – thus an internal reflection – and their languages, customs, as well as the languages and customs of other groups in the country. He specifically addresses the stories, ubuntu and poems (art) of these groups. He quoted former president of Haiti Jean-Bertrand Aristide in saying that we should follow the spirit of these words, of the art of our country. “The emphasis, however is more on the words which connote additional layers of *meaning* rather than those which simply denote their meanings” (Mbeki, 2007: 2). In this statement the President reflects ideas of Jung’s (1964) symbols as signalling meaning other than what is immediately associated with the phenomenon/ idea. He also mirrors ideas of “thick description” (Gill (2002), which layers meaning, over time and through the retelling of stories specific to place. He also refers to anamnestic reason – *reminding us not to forget that which should not be forgotten* (see 24.1).

He further suggests that the language of art – poems, stories, literature – becomes a mirror to the soul, and he calls for [South] Africans to embrace their stories and words in order to discover the layers of meaning (history) that are embedded in them. He notes how the Xhosa people love to converse and tell stories in order to preserve history and share wisdom. In referring to *Indaba* (News), the first African newspaper, he noted that in 1862 this newspaper was seen as a national container wherein the value of the nation should be kept: “Let the elderly pour their knowledge into this container. Let all our stories, folk and fairy tales, traditional views and everything that was ever seen, heard, done and all custom, let them be reported and kept in the national container” (Mbeki, 2007: 3)

He wrote this to remind people that for Africans to liberate themselves they had to maintain their most valuable possessions, their history, their value system, their customs, their heroes and heroines – all wrapped up in their (oral) literature.

(This whole paragraph is referenced as Mbeki, 2007)

29. Knowing Through Lineage: The Archetypal Message in Stories

When we tell stories we thus tap into a long lineage of storytellers and stories. In the Mexican tradition, some of the oldest traditions are called *cantadoras* or *quentistas*. They tell stories for their healing properties based on the archetypal messages contained in them. “For them the story is a medicine which strengthens and arights the individual and the community.” Estés (1999: 19). When teaching children through stories, we thus inevitably tap into a *history that goes as far back as the earth is old*, giving immense *historic perspective* to the message and themes of the story and the story itself.

“If there is a single source of story and the numen of story, *this long chain of humans* is it” [emphasis added].

(Estés, 1999: 19)

Estés (1992: 463) confirms Jung’s (1964) psychic energy as characteristic of archetypal symbols found in traditional stories. She notes that when working with stories we are handling *archetypal energy*. It can animate and enlighten, but in the wrong place and wrong time it can also have no effect. Bettelheim (1976, 13) also noted that “if your child does not respond to a specific story the one night, it simply means he[*she*] is not acceptable for it at

that given moment,” but might be the next night. David (1991) and Estés (1992) propose that the archetypal energy in stories is transformative, it changes us, and – according to Estés (1992: 463) – if “there is no change there has been no real contact with the archetype”. She further argues that telling these stories places a big responsibility on the teller and that people have to be “wired” to tell these stories to children.

29.1 Stories Make Sense in a Complex World

“Stories and story-telling is an ancient art form, an integral part of human existence, and the most enduring form of education. It is an accessible and creative form of communicating and reflecting upon experience, both real and imagined, yet it is much more than this.”

Grainger (1997: 13)

Grainger (1997: 23), writing from the perspective of promoting the rightful place of stories in education, notes that the differences between folk and fairy tales, myths and legends, etc., are fluid, but that these stories “all reflect communal ways of making sense of experience”.

Stories speak directly to our senses and evoke feelings, but most importantly they demand the engagement of our imagination and encourage the development of thinking and learning (Grainger, 1997: 8). Children, in particular, learn to make sense of the world through constructing their own stories and hearing stories from their own and others’ culture and heritage (Bettelheim, 1976; Grainger, 1997: 9). Enabling children to tell tales and engage in stories thus develops their creative competence and enhances their self-awareness.

A story or narrative in the social and psychological fields can be described as “an oral or written performance involving two or more people interpreting past or anticipated experience” (Boje, 1995: 1000, in Abma, 1999: 170). This interpretation refers to stories as lived experiences where people give meaning to their life experiences through stories (again see Blewitt, 2006; Bettelheim, 1976; Booker, 2004; Steenberg, 1987; Throgmorton, 2003). For children, meaning in life is a prerequisite for normal functioning. In addition, the meaning carried through cultural heritage further grounds children in developing themselves and discovering the world. Bettelheim (1976: 4) argues that literature is the best carrier of meaning and cultural heritage for children. Already in the seventies Bettelheim was concerned with the type of literature that was supposed to nurture children’s abilities to develop their complex inner worlds. Literature was too shallow, developed to entertain and/or simply inform. “The acquisition of skills, including the ability to read, becomes devalued when what one has learned to read adds nothing of importance to one’s life” (Bettelheim, 1976: 5).

The interpretation of stories for meaning is thus different from scientific description and explanations. In stories the events are temporarily linked, whereas scientific models use causal laws to make the connections (Abma, 1999: 171). This sequentiality (order of events) rather than the truth or otherwise of the story usually determines the plot (and meaning). Different non-linear and linear orderings are thus possible, giving voice to many interpretations in various contexts or at any given time. Nanson (2005: 25-26) also notes that ecological storytelling elicits a sense of connection, which he describes as an emotional investment in the location where the story and its telling takes place.

30. A Story of Imagination

Every culture, however, presents its own definitions of “story”. What is recognised as story in one situation may not be in another. Some cultures call for spontaneity and digression, whilst others call for formal, near-exact repetition of revered text⁵⁰ regarded by the culture and

⁵⁰ <http://www.storynet.org/Resources/KnowledgeBank/whatisstorytelling.html> - accessed 26/04/2007

society as a story (these would include some of the “formal” fairy tales and mythologies known to Western cultures). Bettelheim (1976) describes the characteristics of a story as follows: “For a story to hold the child’s attention, it must entertain him and arouse his curiosity. But to enrich his life, it must stimulate his *imagination* [emphasis added], help him to develop his intellect and to clarify his emotions, be attuned to his anxieties and aspirations, give full recognition to his difficulties, while at the same time suggesting solutions to the problems which perturb him” (Bettelheim, 1976: 5).

Stories thus truly transcend formal, modern disciplines by providing an interpretative and imaginative space for people/ children from and through which to meaningfully experience the world and interpret life.

In addition, stories embed concrete, contextualised examples of action, as well as the consequences of action that inform choices about behaviour. “As such, stories offer situated strategies for action” (Abma, 1999: 172). This view reflects not only the contextual and historical perspective of stories, but also their socio-political and ethical connotations, as they also contain an inherent potential for power. In other words, a situation where some people are allowed to tell their stories and others not (Abma, 1999: 170). Some stories are thus told, heard and validated, others not. Many stories in “Western’ culture, for example, follow a masculine rationality, which in turn sets the tone for rational, linear values and ethics. “As interpretations, stories contain an evaluative or moral framework” (Abma, 1999: 171). These frameworks are, for example, carried through into planning and other far-reaching activities which impact directly on our natural resources base(s).

30.1 Stories and Imagination: “Extend” Science and Complement Sustainability

Nanson (2005) specifically places stories and meaning in the realm of reconnecting human beings – especially our urban and suburban populations – with the natural world. He suggests that current global media do not explain environmental problems to our disconnected (urban) populations. Stories, through storytelling, would be one medium that connects with people at an emotional level and is least likely to be corrupted by oil companies in terms of telling the “truth” and scientific facts about ecological phenomena, like climate change. “One of the most important things that storytelling can do in environmental education is to help human beings ‘comprehend the stories’ of the non-human world” (Nanson, 2005: 34).

One of the University of British Columbia’s prestigious Trudeau scholars (Frank, 2005, in Chan, 2005), reported in her doctoral thesis that “storytelling is our chief moral compass”, and that by studying the *interface* between *story* and *science* – each maintaining its own integrity and working with each other – “storytelling can bring into sustainability different kinds of knowledge, different ways of knowing, different ways of experiencing the natural world” (Frank, 2005: 2)

Storytelling and stories, in addition, have the ability to capture the “nature of science”. Without the inclusion of the “nature of science” in curricula, science is seen as a meaningless series of facts that scientists “discover” and others merely memorise in schools. This might be an easy way to teach science, but it leads to a number of social problems and a lack of meaning. Bickmore *et al.* (2006) point out that if science is viewed as purely factual and ambiguities are later made public about a particular theory, for example biology or global warming, this ambiguity is seen as “junk science”. Science as “the facts” is also probably the most boring way of presenting facts and scientific content to children. It is critical that in primary school “the nature of science” is taught over facts, giving an integrated view of the world, people and ecology, rather than disciplinary facts. This view mirrors Waldorf education. Science could thus initially be presented as a form of storytelling – where facts (observations) and stories (hypothesis and theories) are integrated to bring the whole realm of the particular science to the child (Bickmore *et al.*, 2006).

Thus, whether fictional stories, narratives of our daily lives, or history expressed as stories, this peculiar form of narrative (story) surrounds and permeates our very being and life.

“In fact what we are looking at here is really one mystery built upon another, because our passion for storytelling begins from another faculty which is itself so much part of our lives that we fail to see just how strange it is, our ability to ‘imagine’, to bring up to or conscious perception the images of things which are actually not in front of our eyes.”
 Booker (2004: 3)

30.2 From Stories: The Vision of a New (Sustainable) Future

Booker (2004: 7) continues to say that somewhere in our heads the words in stories trigger off the mental picture for each of these things. We do not know how or where these images are produced, but we have the capacity to conjure up these images of places, people and things not present in our physical sense and even things we know do not exist.

Can we, as such, conjure up the sustainable future?

Sequences of these images emerge as our dreams. These dream images have been outlined by Jung (1964) and Throgmorton (2003) in describing how he moved into action to tackle a debilitating environmental problem in his environment. When we wake up from a dream, we focus on these “mental patterns” we call stories. The making of these patterns serves a far greater purpose in our lives than we realise. Booker (2004) proposes that stories told all over the world have shown to have similar patterns or themes. His views on the collective pattern aspects (plots) of stories tie into views of collective symbolic archetypes in humanity (Jung, 1964) and consequently in stories.

One theme in particular – as in the similarities between the contemporary story of *Jaws* and that of eighteenth-century *Beowulf* – is the immense threat posed by some monstrous figure of evil, which is challenged by the hero in a climactic battle and eventually killed (Booker, 2004: 5 and 184). Similarly, Booker (2004) aligned the pattern in the German legend Faust, the Greek myth of Icarus, Shakespeare’s *Macbeth*, and Vladimir Nabokov’s *Lolita* as follows: Initially the mood is that of anticipating something great or worth achieving, a dream stage when everything seems to go unbelievably well. This stage is followed by a stage of frustration where it seems that things are mysteriously going wrong, then a nightmare stage where things simply do go horrendously wrong and, finally, a final moment of death and destruction (Booker, 2004: 44).

When Monbiot (2006), Beauregard (2003) and Durand (2000) use the theme of Goethe’s *Faust* as analogy for human domination of nature and climate change, they could be, in fact, raising a submerged (collective) archetype. “Sustainability is the antidote to Faustian self-destruction on the one hand and complacency and indifference on the other” (Beauregard, 2003: 70, referring to Harvey, 1996; Houghton, 1999 and Jacobs, 2000).

I thus make the following interpretation:

<i>Monbiot (2006: 1-19) and Beauregard’s (2003: 70-71) Faustian interpretations on climate change and environmental decay</i>	<i>Booker’s universal themes/ plots and collective archetypes noted by Durand (2000)</i>
In development planning, Faustian self-destruction is associated with a top-down approach that imposes modernisation on developing nations (including structural	Initially the mood is that of anticipating something great or worth achieving,

<p>adjustment policies) (Beauregard, 3002: 69).</p> <p>For Monbiot (2006: 2) Faust is humankind, restless, dissatisfied. Mephistopheles is “fossil fuel”. Faust’s miraculous abilities are the activities that permit human beings to achieve.</p>	
<p>“When progress is pursued in the absence of any consideration of its human costs, Faustian self-destruction is the result.” Beauregard (2003: 70) notes that this type of development is endemic to modernisation.</p> <p>Twenty-four years (in the Faust drama) is almost the same as that in which we are able to live in all “voluptuousness”, where human beings can flourish unabatedly on to the richness and abilities that fossil fuels provide (Monbiot, 2006: 2-3).</p>	<p>...a dream stage when everything seems to go unbelievably well...</p>
<p>Many planners have now come to realise that urban sprawl, “the current version of perverse development”, which assumes that environmental resources are infinite, is causing unprecedented environmental damage. “Sprawl has replaced urban renewal as the prime example of the Faustian self-destruction of the city” (Beauregard, 2003: 71).</p> <p>After twenty-four years, the devil comes for Faust, after he has lived it up and used his abilities to amazing ends. Faust obviously does not want to end his triumph (in development and domination over nature) (Monbiot, 2006: 2).</p>	<p>a stage of frustration where it seems that things are mysteriously going wrong,</p>
<p>Numerous toxic sites produced during country’s (USA) rise to world industrial dominance provide an example of the lingering costs of industrialisation (planning).</p> <p>After realising how good it has been on earth using his abilities to the maximum to create a lifestyle of comfort and lavishness, and in not wanting to change his ways, Faust begs for mercy to not go to hell, “but it is too late. They drag him down to hell” (Monbiot, 2006: 2-3).</p>	<p>...to a nightmare stage where things simply do go horrendously wrong...</p>
<p>We have not – yet – reached this place in the Faustian drama in terms of global environmental catastrophe. However, many species and people have already paid the price (often those who – in contradiction – did not live the lavish life that fossil fuels made possible). Sustainability offers hope.</p>	<p>ending in a final moment of death and destruction.</p>
<p>Beauregard offers hope as placeholder for</p>	

<p>final annihilation. “Sustainability encourages people to be responsible for the environment, other living organisms, and future generations. To embrace sustainability is to be sensitive to the threatening consequences of action and the disastrous consequences of inaction.” (Beauregard, 2003: 72)</p>	
---	--

31. Stories and Archetypes

The notion that certain themes and patterns recur through human storytelling is thus not new. Through the centuries many writers, anthropologists, psychologists and scholars have tried to explain this puzzle from many angles – i.e. why the same basic types of story should be found in the literature, folk tales and myths of different cultures around the world. Booker (2004: 7) proclaims that there is not really a “story that does not ultimately spring up from the same source, which is not shaped by the same archetypal rules and spun from the same universal language”. The difference is that each of the archetypal “characters” present values and relate to each other and their environment in different ways (Booker, 2004: 5-9). Stories, which express the archetypal pattern underlying them that enables the story to come to a fully resolved and satisfactory ending, are thus the real stories that psychologists refer to as carrying meaning, and which can be used to translate learning from generation to generation.

Abma (1999), however, also remarks that “western” stories of the last 200 years show a remarkable tendency towards sex and violence, but also towards disintegration, male domination, etc., which distinguishes these stories from anything seen before in history. This position refers to stories that reflect the entrenched current world view. Booker notes, very importantly, that these stories include the same archetypal images that show what has gone wrong and what is amiss in not bringing the stories to a satisfactory ending.

The story, *The Lord of the Rings*, from South African inspiration, contains all seven universal plots outlined by Booker (2004), namely:

- Overcoming the monster
- Rags to riches
- The quest
- Voyage and return
- Comedy
- Tragedy
- Rebirth.

Why is it important to make the sustainability connection in his? We have seen that sustainability cuts across and through all the plots of life and in this process two story themes emerge:

- A small number of plots underpin almost any and every story told: “There are indeed a small number of plots which are so fundamental to the way we tell stories that it is virtually impossible for any storyteller ever entirely to break away from them” (Booker, 2004: 5).
- These plots provide a universal language, symbolism, which directs the story, often beyond the storyteller’s control. “The more familiar we become with the nature of these shaping forms and forces lying beneath the surface of stories, pushing them into patterns and directions which are beyond the storyteller’s conscious control, the more we find we are entering a realm to which the recognition of plots themselves proves only to have been the gateway. We are in fact uncovering nothing less than a kind of hidden universal language, a nucleus of situations and figures which are the very stuff from which stories are made. And once we become acquainted with this symbolic language and begin to

catch something of its extraordinary significance, there are literally no stories in the world which cannot then be seen in a new light: because we have come to the heart of what stories are about and why we tell them” (Booker, 2006: 5-6).

31.1 The Archetypal Planning Link

Planning has in a sense already started to give direction to its central themes through stories. Stories in the sustainability-planning realm thus also have a particular function.

“Sustainable development is not a special interest; it is process motivated by ecological problems that we unavoidably have in common, and it is in the public interest.”
(Blewitt, 2006: 178)

Stories from a planning (built environment) perspective are “verbal expressions that narrate the unfolding of events over time and in some particular *location*” [emphasis added]. Stories – through language – thus frame what has happened to a set of characters in a particular time and place. Eckstein purposefully does not include the equally important quantitative planning aspects – modelling, maps and numeric data that help to interpret planning phenomena – in this definition, as she wants to represent those “marginal modes of planning theory and practise that attend to continuously unfolding and competing narratives that create visions of the past, present, and future, and thus impinge on decision-making” (Eckstein, 2003: 14-15).

Leonie Sandercock (2003: 164) refers to the multiple uses of stories and storytelling in the world of planners and planning. Stories reflect community visions (also see Waller, 2003: 6), and are used as research methods, and community participation techniques (also see D’Cruz and Satterthwaite, 2004). Sandercock proposes that planning research and reports should reflect the emotions that planners and built-environment professionals deal with. They should “celebrate survival” (as proposed by Linda Tuhiwai Smith, a Maori woman), and pass on the “beliefs and values and memories of injustice, rage, indignity, and sorrow” (Sandercock, 2003: 163-164).

“We move back and forth between critical and narrative modes. We use stories as tools to keep memory alive, to celebrate our history and identity, to elicit lessons about how to act effectively, to inspire action, and as tools of persuasion in policy debates”.
(Sandercock, 2003: 166)

31.1.1 A Vision of the Sustainable Future in Planning Through Stories

Standard stories have the ability to generate truth claims that are protected from test and debate. “The standard story is so self-evident that its claim to validity outweighs the need for justification or proof” (Abma, 1999: 171). The standard story can be either challenged or used to reinforce knowledge and/ or behaviour. Abma (1999: 172) notes that the introduction and re-telling of marginalised stories might offer valuable insight into changing behaviour and practice. Eckstein (2003: 13) also indicates, in this regard, that “carefully told and carefully heard stories do have the potential to act as a bridge between engrained habits and new futures”.

These new futures were the specific focus of Waller (2003: 3) in the development of a community visioning and storytelling process for Western Australia’s Sustainability Policy Unit (Department of the Premier and Cabinet). Community visioning is a process whereby the community envisions or imagines the future it wants. She positioned *storytelling* as a powerful tool for sharing and understanding the many and diverse community stories about a regional place by shaping these into a shared story for a particular region. Storytelling is a profound way of defining a region’s sense of place, and of creating a shared understanding of the past, and shared vision of the region’s future (Waller, 2003). It is well argued that

sustainability is best achieved at the regional level (Lichtman, 2003 SACN, 2006), etc. Waller (2003: 4) further argues that the sustainability of a region requires an understanding of the beliefs, values and perceptions that local people hold about their local place if the aim of sustainability is to integrate social, economic and environmental aspects of that region. Because a place's identity is a multidimensional mix of physical and non-physical, ordinary and extraordinary components, storytelling provides the best point of departure from which to integrate these into a meaningful story by communities (Waller, 2003: 5). This idea aligns with the notions of bioregionalism and contextual knowledge previously discussed.

The objectives of storytelling and community visioning include the ability to reveal:

- Community values
- Community aspirations
- Trends and forces affecting the community and region
- Inter-relationships between the economic, social and environmental aspects of the region, and beyond
- Multiple perspectives
- Regional sustainability issues and possible causes
- Possible solutions to sustainability problems
- Factors that may enhance or obstruct regional sustainability
- Past, present and future sense of place
- Factors that may detract from the actual sense of place.

(Waller, 2003: 8)

Its outcomes include:

- A shared regional community story
- Creations of a shared regional community vision
- Definitions of the region's actual/ desired sense of place
- Development of concrete actions to achieve the above vision and goals.

(Waller, 2003: 8-9)

Storytelling and narrative in the sustainability debate thus expose a number of qualitative and non-empirical dimensions with regard to "place". In addition, places have histories and are constantly changing. When people develop a sense of place these changes superimpose upon the visible surface "an unseen layer of usage, memory and significance – an invisible landscape, if you will – of imaginative landmarks" (Buell, 2001: 67, in Throgmorton, 2003: 45). This is typically how people will remember places and tell stories about these memories to their children and grandchildren (See Gill's (2002) "thick place" in the previous section).

This section thus indicated that stories cannot be defined, but display characteristics. Some key characteristics are:

- That "story" brings more to our limited and rational sensory perception, makes meaning of the world to children, and explains the complexities of life that we cannot always describe in a rational, conscious way.
- There is a long lineage of traditional stories and storytelling that speaks to meaning in the outer and inner worlds.
- Nature stories and earth tales, specifically, provide insight and learning about human connection with the soil, animals and earth.
- Stories bridge the dualisms of the modern world view.
- Fairy tales and folk tales are often used to show lessons of "good" behaviour by human beings towards animals, plants, etc., and they then respond kindly ("gratefully") in return. Traditional tales thus show archetypal themes of, for example, "good" over evil.

- Stories' display prompt action and resolution through morals and values, which have deep implications for ethics.
- Stories and narratives are seen as an imperative in the built environment and planning, in finding consensus amongst people (shared understanding) of current problems vis-à-vis sustainability
- They also provide the basis from which built-environment practitioners can agree about the future and give expression to sustainability at a regional level.
- Stories contain the images inherent in imagination, as well as the emotional aspects, which are the psychic energy/ archetypal symbols, that could lead us to developing narratives and stories of an alternative future. Children do it all the time!
- These images could lead us to develop new narratives and stories for change.
- Stories capture people's emotions and feeling-worlds, as well as the scientific. They bridge the two, and help us define and envision the sustainable city, the sustainable region and a sustainable future.

SECTION 6: Towards a Conclusion

32. *Building a Sustainable Future with Imagination and Stories*

Throgmorton (2004: 48-49) argues that the claim of sustained growth equalling sustainability ignores negative externalities (for example, air pollution and traffic congestion), and these externalities are not priced into goods and services. Consequently consumers consume more resources and produce more waste and pollution than could ever be economically and/ or ecologically justified. Some eco-economists argue that these externalities should be priced into consumer goods, but Throgmorton (2003: 49) argues that people's behaviour will compensate for these price corrections by simply buying elsewhere (or imported goods!). This blissful ignorance on the part of consumers in terms of what is used and produced and the resultant systemic impact on the ecology is thus pervasive.

“Spatially and psychologically disconnected from the resources that sustain them, consumers and citizens drift blissfully along in a kind of sleepwalking that Langdon Winner (1986) calls ‘technological somnambulism’.”

(Throgmorton, 2003: 50)

Buell (2001, in Throgmorton, 2003: 50) calls this dissociation “environmental unconscious”, or an impossibility to become fully conscious of environmental connections. Note here that this unconscious – referring to a disconnect or dissociation – is in stark contrast to Jung's (1964) unconscious (as mental faculty), which in fact brings us closer to nature. I am thus going to refer to a dissociation in terms of Throgmorton's (2003: 50) argument. This issue is critical in moving towards a conclusion – as in the words of Davison (in Throgmorton, 2003: 50) – environmental somnambulism or dissociation “hinders our ability to see what truly matters in our lives and inhibits our ability to see that there are other possible ways of living”.

However, to counter the effects of these negative ways of living, Buell suggests that we engage in “acts of *environmental imagination*” (Buell, 2001, Throgmorton, 2003: 51). This idea is also reminiscent of Waller's (2003) ideas of community visioning discussed in the previous section (see 31.1.1). More importantly, Throgmorton classifies three key, basic and achievable sustainability interventions as “acts of environmental imagination” – hooray! He proceeds to suggest that these three acts could be captured and carried out through potentially *persuasive stories*. Stories that show us how we can “build a future that gives us a reason to value life?” (Throgmorton, 2003: 50).

In a built-environment arena, imagination could thus give direction to overcome current sustainability problems by engaging in acts of environmental imagination. The power of this guiding and transforming force – imagination – can be harnessed for planning, and many other professions, through stories.

The three acts of proposed environmental imagination are:

- A modest ecological footprint.
- Equitable and fair distribution of resources (which one could almost interpret as a developmental state approach or the “factor-10 economy” that Throgmorton refers to).
- Regionality.

What Throgmorton proposes as acts of environmental imagination are in line with what many authors propose for the future of sustainability, not only in South Africa, but also globally. In proposing a figure/ ground analogy for sustainable cities (Beyers, 2006), the issues of

poverty, the interrelationship between people's consumption and waste patterns and the ecological base (Swilling, 2004), regionality (Lichtman, 2003; SACN, 2006), as well as participation, shifted into prominence against the general sustainability debate as background (D'Cruz and Satterthwaite, 2004; Pieterse, 2003). I, for example, used an "ecological footprint" concept to highlight the issues of disproportionate resource distribution in cities (Beyers, 2006: 17). Gasson (2002) applied the ecological footprint to explore the resource distribution for Cape Town, and Lichtman (2003: 4), in addition, notes that the poor bear the brunt of environmental degradation in cities, living in "sustainable poverty". Swilling (2004: 3) notes that over-consumption by the middle class exploits natural resources and leads to "imbalances in the distribution of resources" to the poor. In addition, SACN (2006) and Lichtman (2003: 21) note that sustainability should be implemented on a regional scale, where cities learn from each other by sharing information in sustainability practices.

In a sense, I think that most practitioners in the built environment have become dissociated (like most people) from their natural connections (the ecological implications of their work), as well as their imaginations and "physic" energy that drives their images of a sustainable future. How are we going to address the basic sustainability issues in the built environment, without being able to imagine that there is a sustainable future out there? In other words, make it a global and personal future (based on Hicks and Holden, 2007) for ourselves and others? Even more radical expressions of sustainability are emerging, like happiness indexes to measure development. These new expressions are *imagined* and currently captured as stories of what could be. In addition, to construct sustainable places we must redefine who we are. In order to do this, "diverse people must be able to encounter one another as part of their everyday practice, hear another's stories, and hence become conscious of those remote effects [externalities of being environmentally dissociated]" (Throgmorton, 2003: 58)

Basic human values, and notions like happiness, are the stuff of stories as they cut across cultures in the sustainability debate. These values could thus be seen as some of the basic symbolic manifestations of sustainability that we work with, that resonate from the individual to the collective (see Beyers, 2005; Rosenau, 1999; Jung, 1964).

"Storytelling enables people of all backgrounds and abilities to frame a sense of what is, reflect on what needs to be done, and then engage with others about the sensibility of their stories."

(Beauregard, 2003: 65)

In our current world there are many stories for and against sustainability, and some of the counter-stories could "undermine the ability to imagine a sustainable city" (Beauregard, 2003: 66). Beauregard, in addition, notes that these counter-stories include two sustainability arguments, namely that "only experts know how to manage the environment" and that "sustainability will undermine prosperity".

32.1 Integrated Perspective on Sustainability Questions

Given the integrated perspective on sustainability, education, stories and psychology I return to the questions posed in Section 2. Not to answer them, but to leave them as a challenge for the reader to consider how his/ her perspective might have changed since these questions were first encountered.

Hicks and Holden (2007: 510) posed the following set of questions for sustainable development education:

- Where have we come from?
- Where are we now?
- Where are we probably heading?

- Where would we prefer to go?

Hattingh (2001: 9) introduced a qualitative element to sustainability with the following value questions:

- What is so valuable that it should be sustained?
- With a view to whom or what is the sustainability of this valuable something pursued?
- How is sustainability pursued?
- What are the criteria for sustainability – so that the question can be answered whether and when we have reached a state of sustainability?⁵¹

Throgmorton (2003: 41-42) argued the following questions for the development of sustainable places:

- What should be reborn tomorrow?
- What are the boundaries of “our place”?
- How can we build a future that gives a “reason to value life”?
- Who are “we”?

32.2 Sustainability Education for an Ecological World View

Children’s participation and schools are seen as very important in supporting sustainability (Blewitt, 2006; Roe, 2007), especially by making geographical (Roe, 2007) and internal (cognitive, unconscious) connections (Jung, 1964; Steiner, 1969) to sustainability.

There are thus many stories for many systems, and schools are seen as one of the systems in constant dialogue with the ecology, its community, the children and the stories formed by these groups.

In the field of psychology, systems theory (pertinent to family therapy) focuses on a therapeutic context (Moore, 1997: 583). Within this context human beings communicate ideas and meaning through language, and based on Bateson’s (2000) ecological approaches, this meaning and these ideas form an *ecology* of ideas within a system (Moore, 1997: 583). Within an ecosystem approach people assign meaning to everything they interact with, and this meaning is the reality or truth for a certain person/ group (Moore, 1997: 589). People construct their own meanings (which obviously may vary), but for that certain person or group that meaning is valid. Meaning is also conveyed through language. Peirce (in Keiny, 2002: 199) notes that in self-organised systems – natural and social systems – social systems are semiotically coupled (and natural systems are structurally coupled), which means that the human being participants share a system of signs and language in order to share interpretations of their environment. When the participants of this community share their interpretations in conversation, they develop a culture or shared understanding and meaning. The system of signs or language emerges from the community of speakers, develops its own existence and determines the speakers’ way of thinking (Maturana and Varela 1998, in Keiny, 2002: 1999) and changes and adapts as the community changes and adapts.

Translated from Afrikaans: “One must also keep in mind that the ecosystem approach shows a constructivist epistemology, which highlights the idea that the meaning that a person attaches to an object or experience is not determined by the object, but by the person.”
(Dell, in Moore, 1997: 589)

According to the ecosystem approach this *network of meaning* represents the way the individual perceives and looks at the world. I have also already argued that stories hold specific meanings and insights about how people deal with the complexities of life and the

⁵¹ According to certain authors *sustainable development is the process* and *sustainability the outcome* – that which it wants to achieve (Blewitt, 2006; Robinson, 2004).

world (Bettelheim, 1976; Booker, 2004; Grainger, 1997; Jung, 1964; Keiny, 2002; Steenberg, 1987).

As these patterns of meaning thus integrate, we move closer to an understanding that narrative/ stories support the emerging ecological world view, but that stories moreover provide a vehicle that brings us closer to connecting the sustainability “items of learning” (Section 2). It also connects these items of learning within a context. And schools are ideal nodes or contexts where these connections can and should happen. Environmental education has the potential – when seen in the context of Waldorf education – to develop and share these stories for the region and use them in all forms of education (thus internal and external function of environmental education).

32.2.1 Ecological Thinking in Education

In contrast to the approach of Newtonian, linear thinking, Keiny, in her book *Ecological Thinking: a New Approach to Educational Change* (2002), proposes an alternative approach to education, based on ecological thinking. This approach involves a re-conceptualisation of the interactions between learners, teachers and curriculum content, which implies “changes in the epistemological models that shape the ways teachers mediate and represent knowledge to learners” (Elliot, in Keiny, 2002: ii).

Education based on ecological thinking places child-centred learning up front and focuses on the development of a conceptual framework wherein the child guides his/ her own learning. The curriculum is designed to support this process (Elliot, in Keiny, 2002: iii), thus linking pedagogy (child development) and curriculum development (much like Waldorf education). Simultaneous teacher knowledge-development is encouraged to match these phases in pedagogy and curriculum development. In this model of education the key sustainability principles of circular causality, alongside reflexivity and self-organisation, become key aspects of the way knowledge is presented (Elliot, in Keiny, 2002: iii).

Keiny (2002) notes that ecological education is particularly oppositional to standards-driven curricula characteristic of most “western” societies. Holistic knowledge of the teacher is honed by assessing problems as they arise (through action research in the classroom) and the resulting adaptation of the curricula to respond to this change. These problems could occur at pedagogical level and/ or environmental (contextual) level. This process of reflecting on the classroom and learning processes enables the teacher to gain a holistic perspective on the knowledge generated and transferred to the learners (Elliot, in Keiny, 2002: iv).

Ecological education also highlights the constant play-off between the individual and the community. Ecological thinking is seen as “a mutuality between the person and his/ her community, culture and faith,” over time (Keiny, 2002: vi). These views on ecological education certainly broaden the views on ecological education held in South Africa, as laid out in Section 3.

“The implications of this conception to the individual person are enormous: As humans we have the capacity to *recreate* our world, to *reconstruct* our society and culture, which on the other hand, constitute the bed of our identity” [emphasis added].

Keiny (2002: vi)

Keiny (2002) bases her aspects of ecological thinking in educational change on Bateson’s (Bateson in Harries-Jones, 1995) concept of “ecological understanding”. She relates educational change to an epistemology across different fields, for example “engineering, town planning, organisational development, psychotherapy [and] family life” (Keiny, 2002: 10).

At this point the critical link between the “pattern that connect the items of learning” theme of this thesis (see 4.1) connects with the Waldorf education case study (see 13. and 17.), and extends through these notions of ecological education.

32.2.2 Ecological Learning Creates Learning Communities: Learning Communities Create Ecological Learning

The first major difference that ecological thinking provides in education – as opposed to the traditional, linear “top-down” and/ or “bottom-up” approaches – is the link between the learner and community, where the learner(s) and school become agents for change in the community, and the links between the learner, community and teacher, who introduces new curricula as these relationships grow and change. The point made in Section (see 10.3.2) is particularly relevant here – “bottom-up ethics” play an enormous role in how schools become involved in their communities.

According to the Australian government, “sustainability education develops skills, knowledge and values that promote behaviour in support of a sustainable environment. It is not confined to formal schooling. It also occurs in a wide range of non-formal education settings at work and at home.”⁵² It developed the first-ever formal, national agreed-to description of the purpose and nature of environmental education for sustainability for all years of schooling, which includes procedural aspects for quality teaching and administration to enhance the functioning of the school and the community within which it is embedded.

As such, the *Sustainability Institute* is intricately linked with two schools embedded within the ecological living ethos of the *Lynedoch* eco community. The *Lynedoch* Primary and Pre-Primary School inherently links activities of the eco village in the learning and curriculum of the children. Not only do they share physical and functional space (on-site and shared buildings), this interaction brings children into the daily, practical issues of what it means to live a sustainable life. Learning connections are thus embedded in the connection between the community way of life and their ecological resource base, which is respected and cared for. The preschool is based on Maria Montessori’s education principles, which, although methodologically different from Waldorf education, also establishes a strong human[nature] connection early on, which includes respect for the self, others and environment.⁵³

The *United Nations Decade of Education for Sustainable Development* is currently under way (2005-2014). Australia, in response to this decade for learning, established a Research Institute in Education for Sustainability (ARIES), an Education for Sustainable Development Grant Programme, as well as a Sustainable Schools Initiative. The USA, similarly, has the Kids for Saving Earth’s (KSE) environmental education curriculum. KSE provides free environmental education curriculum (by mail and online) on topics including conservation, endangered species, rain forests, toxic waste, health issues and many other ecological concerns for children. Their slogan is: “I promise to keep it healthy and beautiful.”⁵⁴ These programmes have integrated environmental education across the curriculum that reaches beyond the classroom and places emphasis on engaging with the community, working from the global to the local level.

“Reaching beyond the more customary ‘green’ activities to embrace community arts and design, and literature programmes, to reach a much larger audience.”⁵⁵

⁵² www.environment.gov.au/education/ - accessed on 02/05/2007

⁵³ I observed one Montessori *Lynedoch* pre-school class – with Naledi

⁵⁴ www.kidsforsavingearth.org/ - accessed on 02/05/2007

⁵⁵ www.greenflagschools.org/curriculumlinks.htm - accessed on 02/05/2007

In line with Waldorf education, these schools have incorporated arts to go beyond the customary and include all knowledge aspects of the phenomenon.

Sustainability education – based on ecological thinking – thus has a spatial/ geographical implication. Schools teaching this type of curricula integrate within the local community and recognise the learning associated with the systems in which they are embedded. Their communities – owing to global communication – are also not only the immediate geographical community, but extend learning into the global realm, another typical issue pertinent to the sustainability debate.

These schools thus mimic what I posed in terms of globalisation: that the schools internally, through their own form of ecological education that responds to the unique, contextual, ecological and sustainability issues, develop their own set of responses. These include curricula and community-outreach programmes. Most importantly though, they contain the values, future perspectives (hopes) and ethics of that community. Through global interaction with other schools and resonating similar values (symbolic values) these stories can be transferred into the global arena.

Communities of learners are sites for reflection as they create space for questioning basic assumptions, agendas and actions (Keiny, 2002: 12). The subsystems of the educational system, based on this perspective are thus iteratively students and teachers, as well as parents and teachers who develop new curricula based on their context-specific ideas, needs and collaborating research, as well as teacher educators to ensure global relevance and social broader context.

Within the sustainable cities paradigm Pieterse's ideas (2003: 2) on "epistemic communities" and "organic intellectuals", where the latter are always on the move, seeking new alternatives and ideas to link sustainability interventions to quality of life improvements for people, gain significance here. In this regard sustainability education, through active schools that link communities in children's learning, play a vital role in promoting sustainability interventions.

"Ecological thinking represents an alternative vision of educational change, replacing current top-down and bottom-up models. The latter, based on their linear thinking, imply causality as well as power and control. In contrast, ecological thinking involves a circular, collaborative and interactive orientation of learning. It is both the process and the product, with emphasis placed on the double role of all participants, teachers and students, researchers and all those who take part in this learning process."

Keiny (2002: 197)

Keiny indicates that the following eight assumptions – based on system science, cybernetics, organisational learning and operations research – apply to complex learning systems. Many of these assumptions also align with the characteristics of complex systems (see 10.3) and sustainability science (see 3.):

- Self-organisation: Complex systems organise themselves – i.e. their structural and behavioural patterns are the result of interactions among the parts of the system.
- Observation: The observer is included in the domain of the description, i.e. *subjectivity*.
- Reflexivity: "Reflexive systems are composed of knowing subjects continually generating new states (thoughts) about themselves and able to theorise about them and modify themselves accordingly" (Keiny, 2002: 198)
- Indeterminism: It is not possible to determine the direction of change (what Cilliers (2000) refers to as "emergence").
- *Environment*: Or *context* has an integral role in the manifestation of the phenomenon.
- Causality: Circular causality implies that cause and effect are interchangeable.

- Holism: The entity is best understood by considering it in its entirety – the sum is more than the parts.
- Relationships: The unit of analysis, rather than the components of the system.

From a cultural-historical perspective, activity integrates human actions into a coherent whole, which forms the basis for meaningful interpretations and actions for the learner. “How a person acts on objects demonstrates how he/ she stands in the world” (Keiny, 2002: 200). This statement reinforces the action aspects related to a particular world view that is underpinned by an epistemology. Keiny elaborates on her ideas of ecological thinking to root them in living what you believe, or “living education”, which means “living one’s educational philosophy or experiencing one’s educational values rather than merely espousing such theories”. In this regard also see the “living education” aspects of Waldorf education (see 17.4).

Starting from the primacy of the practical – “to think from the standpoint of action”.
(Macmurray, 1957, in Keiny, 2002: 204)

Maturana, elaborating on Bateson, broadened the idea of cognition as the “process of knowing with living” (Keiny, 2002: 204). It is thus a broader concept than thinking, involving perception, emotion and action – in the human realm cognition involves language, conceptual thinking and all other attributes of human consciousness (also according to Capra, 1996).

Sandercock (2003: 150) notes that caring about others and sharing responsibility for the physical and spiritual condition of the living space is part of the positive energy of creating a community. When the notion of learning is thus broadened into living, the gamut of human emotion comes into the realm of learning as well, not just scientific fact. Jung’s ideas of numinosity (psychic energy or emotion related to images), together with the “passion” that is picked up and nurtured during certain life stages of children in Waldorf education (see 17.4), resonate here.

The very first-mentioned “science-fiction” (see 6.1.1) becomes a very achievable goal for education at this point.

“The language traditionally used in planning practice has been a rational discourse that explicitly avoids the realm of emotions, which is of course the stuff of storytelling.”
(Sandercock, 2003: 153)

We have seen that emotions run the gamut of the technical to the ephemeral. When we consider sustainability we thus connect with our basic humanity in all these aspects. Stories do the same. We can effectively teach children about technical planning details, as well as what it means to be human in today’s world through ecological thinking in education, sustainability education.

SECTION 7: Conclusion

This section ties together the reason for this research, integrates the literature and insight gathered from the case study, and reflects on the themes and connections that emerged from the study.

In Section 1, I mentioned that this study (topic) emerged from a personal reflection on my own M.Phil. learning process (paragraph 3.1), and that one of the practical aspects of the M.Phil. – work on the organic farm – opened up symbolic and physical space for me in which to reflect on the learning process and content. The aim of this study was thus to look at the role of symbolism and stories (as expressions of imagination and creativity) in sustainability, specifically focusing on the future-orientation aspects of sustainability, namely ecological education, and the spaces in which the imagination opens up pathways in education that move children (and obviously, later, adults) towards sustainability.

This study was complex in scope and content – one that ideally should be positioned at PhD level for further exploration. I thus cannot capture all the possible patterns and links that might emerge from this interrelated topic at this stage or that might spring from outside interpretations of this study. I thus highlight what I think is one pattern of learning emerging from the study that supports the topic.

32.3 A Pattern of Learning that Could Support [a] Sustainability [Imagination]

Bateson's (1972) "connecting the items of learning" conceptually and methodologically underpinned my M.Phil. studies from the beginning (see paragraph 4.1). It is thus only fitting that in concluding this study, one of his interpretations would apply as well. Mary Catherine Bateson (2000), his sister, reflected on his search for basic continuities that support change. She notes that Gregory Bateson positioned *story as a form of thought* as this continuity. He lamented the fact that environmental degradation is continuing. It was also his view that ecological health continues to elude us – and perhaps indeed depends upon the "*reconstruction of patterns of thought*" (Bateson, M. C., 2000: xii). Mary Catharine Bateson also referred to archetypal symbols – their "psychic energy" – when she described continuity at the hand of an education example. The concept of "tiger", for example, gains *meaning* when it is connected to a personal, subjective and unconscious embedded meaning within the person. When applied to Gregory Bateson's "patterns that connect", the items of learning in "the tiger" are not only the individual elements of its physiology (its science) making up the entity, but the interactions and broader patterns of "tiger" in the persona – the context and the interface of the two.

Waldorf education mirrors the child's development through specific development stages. Interaction with knowledge about the world (in other words, the content of learning through lessons and experience) is structured around the child's abilities, natural receptiveness of, and inclination towards, knowledge and the world at a particular stage of development (see paragraph 13.1).

Stories and the imagination play a pivotal role in this process (see 16.1 and 16.2). Stories give children insight into life's complexities and processes in a way that is non-threatening and natural to their development. The imagination, through its image and emotional faculties (psychic energy), brings energy to this equation, which – based on this research – leads to action (see 21.1.2) and an understanding of one's motives for decision-making (see 23 and 24). It also allows the child to shift between fact and fiction – real life and fantasy – in a way that is continuous (see 4.1; 10.3; 12; 13.1), and reflects the intricacies of life (see 3.2), and the histories of particular phenomena (in other words past, present and future). Swilling (2007)

noted in his interview that the imagination “means being able to see as many connections between things as possible. It means being able to see current realities as they are. But also see different ones in many different permutations”. From the basis of imagination, children can voice some of their current ideas and concerns related to the current ecological crisis, but also envision alternatives in terms of an improved environment, better social relationships, more trees, less litter (see 12.1) and a sustainable future.

Both stories and the imagination oppose the dualisms inherent in the current modern world view – in particular those of a split between mind and matter, imagination (through art) and science, and human beings and nature (see 22.1 and 29). These two functionalities of human cognition are also inherently transdisciplinary and deal with extending science to access new knowledge, or knowledge not normally perceived or sensed (3 and 20.1).

Through an active imagination, which is encouraged in Waldorf education – in fact, it is the premise from which Waldorf education proceeds (see 16; 16.1 and 16.2) – the child can thus relate what is learnt and experienced in the real world with fantasy. The real-world realm and the contextuality of stories are reinforced through the notions of sustainability and ecological education in terms of establishing links between the school communities (both local and through global communication) and the learning material (curricula), school and children (see 31). In this regard, the Sustainability Institute (SI) is an enduring example of grounding the M.Phil. programme in an eco village set-up for school and “epistemic” community learning.

Traditional stories hold deep-seated morals and values about how we live in the world and make decisions for and about the environment. These ethical lessons, especially those embedded in traditional stories, are constantly transferred to children throughout the learning day and integrated with factual learning. Here I use De Villiers’s (2007) example of the grateful animals as archetype in stories to highlight the ethical decisions made by characters in a story. In the earth tale *Turtle Returns the Gift* – Annexure 4 – a sea turtle returns the benevolent sea captain’s son in exchange for the captain’s having saved his life on a previous occasion. The captain did not know, when he saved the turtle’s life, the turtle might – in gratitude – one day return a much bigger gift. The captain thus operated from a personal ethic of care and responsibility, not because he knew he might one day need the turtle.

These ideas of respect – for the intrinsic and spiritual value of nature are reflected in Deep Ecology and bioregionalist ethics (see 10.3.2), which look at care, learning, values and responsibility on a regional basis.

32.3.1 The Imaginative Framework

Traditional stories and earth tales, in particular, carry clues for how people act in the world in terms of nature, and of their use, responsibly and caring for the earth (see 27.1). This information is stored and transferred – through symbols – across generations, cultures and history (see 28). They thus inherently reflect some form of history and memory, which is a continuous view of looking of the world. Children naturally relate to this perspective (see 1 and 31.1.1), knowing where I am, in order to know where I can go. From the case study outcomes – the notion of an imaginative framework – again becomes very important as concluding concept. Namely, the idea that we can now act for sustainability from an early developed foundation – formed by the imagination and archetypes via stories – that intrinsically connects humans and nature.

From the psychology discussion we have seen how symbols – specifically archetypal symbols – could bring about an emotional charge needed for action. Sustainability, Waldorf and sustainability education, stories and symbols cut across disciplines and represent life, and ultimately converge at the level of the imagination where scale shifts between the inter-personal and intra-personal – deep-seated human[nature] – seem possible. This thinking very

succinctly summarises the pattern of learning from this exploration and constitutes a possible sustainability imaginative framework.

Within stories, morals and values hinge on an imaginative framework that allows the child to discover his/ her own nature in the complexity of life, as well as across the divides of modern dualisms – by using spiritual knowledge and marginalised knowledge. The nature story of *The Savage Skylark* – Annexure 6 – contains a message on how a woman’s knowledge and intuition, which are in tune with nature’s rhythms, provided practical insight into her husband’s situation. By allowing nature to take its course, she saved people from losing their jobs and livelihoods.

Stories and imagination thus open up spaces internally and across modern divides of science and spirituality. Stories and the arts are ingrained in Waldorf education in all subjects and stages of development. The modern divides thus almost do not exist in Waldorf education, the very divides that we are now – later in life – trying to bridge through sustainability science, and sustainable and ecological education. In fact, children are encouraged to first explore a phenomenon from its metaphysical and spiritual and artistic aspects, before learning its facts. According to Waldorf education, they can then later analyse and critique the facts from this personalised position of meaning. This shift is significant in how education is approached vis-à-vis a sustainable future.

Storytelling thus connects the child with:

- his/ her imagination (the metaphysical aspects of nature);
- his/ her body (through focused movements); and
- nature (through recognition of and participation in nature festivals, the rhythm of nature, as well as the nature of the basic elements – earth, air, fire and water), which children are encouraged to explore and discover at their own pace.

It seems that – through the imagination and arts in teaching – a framework develops where basic feeling (*a connection with the self and motivation for decision-making*) is incorporated, which is naturally transdisciplinary and makes space for deep-seated values and morals to emerge. When we thus follow Benton and Benton’s (2004) ideas that ethics is not a list of do’s and don’ts, but a *self-reflective* process, it would not be a stretch to incorporate ethics in this imaginative framework of learning.

In this sense Waldorf education and ecological education sees the world as a connected whole. “The images in stories are more than symbols, they are the language of children, of imagination and of living and seeing the world as a connected whole” (De Villiers, 2007). Stories are reflections of life and its interconnections (see 26.). Stories thus give children the abilities, concepts and faculties to deal with this interconnectedness, whilst grappling with multidimensional issues of sustainability and the ecology – namely ethics, context and a future perspective. All these are embedded in some form or another in stories and come across when children are ready to receive them (according to Bettelheim, 1976).

Van Zyl (2007) referred to “living education” in terms of children being connected to their daily routines and the contextual base of the home/ parents, and school community. De Villiers refers to “living symbols” in stories that make the connections between body and spirit (which is a deep-seated modernistic dualism). These two come together in what I would like to call landscapes of the imagination and “living landscapes”.

32.3.2 Stories and Symbols Support Transformation of World Views

An exploration of the basic motivations of people’s actions, in other words the deep-seated feelings and meanings they associate with the symbols of the world view within which they act, could reveal their reasons for making decisions and thus their specific symbolic

framework (see 10.1). In the sustainability debate, one of the core issues for non-action and resistance to change is the fact that many people function and take decisions about the environment from a modernistic world view, and are apathetic towards today's environmental concerns and ecological crisis. As such, their motivations – feelings about and inherent meanings of what they are doing/ psychic energy – are not researched or aligned to sustainable outcomes. They are thus simply perpetuating lifestyles of dominance over nature, over-consumption and injustice in resource distribution, without really thinking (and feeling) about it.

The implication for education is twofold: when people know more about their current situation, how they are affecting others and the environment, they might change their perspective and their behaviour (see 24). Students in Benton and Benton's (2004) case study, acting from a neo-liberal sustainability perspective, changed their behaviour when they recognised how it negatively affected others and the environment. Children, conversely, expressed clearly – through future studies and the Children's Edition of Agenda 21 – that they were very aware of environmental issues and wanted to know what they could do to transform their current situation into one more in line with what they *imagined the sustainable future to be*. In addition to working with symbolic frameworks, stories have the ability to transform current narratives that are not in support of sustainability, into narratives that support sustainability.

As seen from M.C. Bateson's example of the "tiger", the imagination allows us to make integrated, empirical and metaphysical links in terms of knowledge associated with a phenomenon. Sustainability education, based on ideas of Waldorf education, could start to change the patterns that connect the understanding around consumption and waste patterns inherent in the sustainability debate. A framework that integrates these ideas into the human being (human[nature]) and recognises ingrained symbolic frameworks – told by standard stories – could open up space to identify the current economic and business-as-usual patterns of people. By identifying a new symbolic framework – through this emotional, internal connection and new stories – new economic patterns could be laid down. These changes permeate into the spatial and geographical realm through a "sense of place" and the developments of a regional vision for sustainability. Planners and built-environment practitioners could give spatial expression to these innovative, new and creative sustainable economic patterns.

32.3.3 Stories and Symbols Open Up Abstract Landscapes for Exploration of New Forms of Knowledge (What I Would Like to Call the Landscape of the Imagination)

Based on my own learning experience, the many qualitative and quantitative, empirical and metaphysical, as well as imaginative and scientific aspects of sustainability met in this abstract, symbolic landscape. The methods of organic farming, for example, provided specific symbols – earth, planting, harvesting, and seeing the cycle of nature. The symbolic landscape, in this regard, provided exploration of especially the ethical base of sustainability. Extended ethics – of including the values of the entire biotic community into the land (Leopold, 2003) – and pragmatic ethics (Hattingh, 1999) lead this argument. Symbols according to Jung (1964), Estes (1992) and others are highly context-driven, and as such are placed within the dimension of bioregional environmental ethics (see paragraph 10.3.2). Gill (2002), in addition, explained how this symbolic landscape immediately resonates with the arts, creativity, imagination and the spiritual – a key aspect of Waldorf education. He proposes that where the human and the natural worlds meet is the best place to address sustainability – thus, where fact meets fiction, where the end of human knowledge extends into the infinity of nature. *Symbols in this way re-enchant us with nature* (see 21.1.1).

By symbolically capturing certain sustainability aspects at this level I suggest that we are able to draw images from the metaphysical, attach meaning and emotional energy to them, and

relate this meaning through decision-making and practical/ pragmatic action (ethics, see paragraph 10.1) into the human world of practical sustainability interventions.

32.3.4 Symbolic Framework in Stories: A Pattern of “Good” towards Nature?

Estes (1992) and Mbeki (2007) noted the long lineage of people who tell stories for a number of reasons: to regain what may have been lost – for example, heritage, the voices of minority groups, to heal and “aright” people with society, and to remember what should not be forgotten (numinosity). Traditional stories also display archetypal symbols and patterns of “good” over evil (see 27.1.1). In such a symbolic framework people display moral values and characteristics toward nature and are, often, rewarded in return (see 16.2). The lineage of storytellers and stories could be a symbolic connection of people who – through stories – have found “good” patterns in themselves in terms of living and dealing with nature. This aspect of stories leads us to possible *symbolic frameworks* that underpin stories and either steer us to or away from sustainability.

In terms of interpreting Mbeki’s (2007) healing notions, Jung’s idea that the human mind was initially at one with nature applies. This “ancient mind” was not the separated mind and functionalities brought about by years of evolution in dualism, industrialisation and modernism. It could be that by regaining some functionality of this ancient mind – through symbols, imagination and stories – we might “heal” and find “good” in ourselves towards nature and others that has been there for eons.

Children and adults alike can thus – through the symbolic bridges between stories and the human (unconscious) mind – find spaces of good in themselves through the stories told about nature and ecology. One could see the work of Al Gore as continuing this lineage of storytellers. From a positive, resolved place within himself he sees a “good”, alternative vision of the future.

From these archetypal themes in stories the image, and the psychic energy associated with it, speak to the imagination as future perspective in sustainability. Hicks and Holden (2007) grappled with these issues when they noted that children should have the ability to form personal and global futures about the environment. The focus of ecological/ sustainable education should thus be to allow children to find these “good” aspects and spaces about the environment within themselves, and become “good ecological citizens” and adopt “good” behaviour patterns in support of sustainability.

The archetypes in stories can also be aligned with Steiner’s (1969[1919]) ideas of developing “the will” in Waldorf education. It would seem that stories have the ability to direct the will of a child by providing examples of how other characters exercised their will towards the environment. By being kind and considerate to animals, by not being greedy and by sparing the life of an animal (in *Turtle Returns the Gift*).

This notion of “good” is not standardised – as in a good or bad child, or naughty and good behaviour. The focus of this discussion is to open a positive internal space through imaginative, artistic and transdisciplinary education, like Waldorf education, which is personally grounded and can be collectively shared in support of a sustainable future.

A sustainability imagination might thus give us insight into deep-seated human[nature] connections that can take us from where we are – in ecological crisis and trapped in modernistic dualisms – to where we want to be, with a sustainable future based on an ecological world view.

Let's therefore raise the submerged archetype of sustainability in ourselves and our children that immediately, and in the future, moves us to care and take responsibility for our ecological actions and endeavours.

33. Possible Research Topics Stemming from This Research

How can a sustainability imagination rewrite the introduction story of the snake? Will the animals and Nature give testimony to our changed symbolic frameworks, associated ethics and sustainability outcomes in order to save our lives?

Other possible topics include the following:

- What are the sustainability stories?
- What are the stories/ narratives that could capture the stories and changed education paradigms?
- What are the stories of sustainability in the built environment, and how do we work across the empirical and non-empirical to find them?



Bibliography

Abma, T. (1999). "The Role of Stories in Sustaining and Transforming Professional Practise", in Josselson, R., and Lieblich, A., (eds.), *Making Meaning of Narratives*, California: SAGE Publications.

Alexander, C. (1979). *The Timeless Way of Building*, New York: Oxford University Press.

Alrøe, H.F. and Noe, E. (to be published in 2008). "What Makes Organic Farming Move – Protest, Meaning or Market? A Polyocular Approach to the Dynamics and Governance of Organic Agriculture", *Agricultural Resources, Governance and Ecology* [Obtained via e-mail communication, with permission from editor, Professor Ika Darnhofer (University of Natural Resources and Applied Life Sciences, Vienna)]

Alvesson, M. and Sköldbberg, K. (2000). *Reflexive Methodology: New Vistas for Qualitative Research*, London: Sage Publications.

Anderies, J.M., Janssen, M.A. and Ostrom, E. (2004). "A framework to analyze the robustness of social-ecological systems from an institutional perspective", *Ecology and Society* 9, 1: 18 [Online] <http://www.ecologyandsociety.org/vol9/iss1/art18/>.

Ayers, R., Castaneda, B., Cleveland, C.J., Costanza, R., Daly, H., Folke, C., Hannon, B., Harris, J., Kaufmann, R., Lin, X., Norgaard, R., Ruth, M., Spreng, D., Stern, D. I., and Van den Bergh, J.C.M. (1996). "Natural Capital, Human Capital and Sustainable Economic Growth"; paper from a workshop on *Assessing the Role of Human and Natural Capital in Economic Production*, Boston University Centre for Energy and Environmental Studies: MacArthur Foundation.

Baird Callicott, J. (2003). "The Case against Moral Pluralism", in Light, A. and Rolston, H. (eds), *Environmental Ethics: An Anthology*, Oxford: Blackwell Publishing.

Barnes, H. (1991). "Waldorf Education. An Introduction", *Educational Leadership Magazine* (October) [Online] <http://www.awsna.org/education-intro.html> -- accessed 04/05/2007.

Bateson, G. (1972). *Steps to an Ecology of Mind*, Chicago: University of Chicago Press.

Bateson, M.C. (2000). Foreword (in Bateson, G. (1972). *Steps to an Ecology of Mind*), Chicago: University of Chicago Press.

Bauman, Z. (1992). *Intimations of Postmodernity*, London: Routledge.

Bayat, A. (not dated). "Cairo's Poor: Dilemmas of Survival and Solidarity", *Middle East Report*: [Online] <http://www.merip.org/mer/mer202/poor.html>.

Beauregard, R., A. (2003). "Democracy, Storytelling and the Sustainable City", in Eckstein, B. and Throgmorton, J. (eds), *Story and Sustainability: Planning, Practice and Possibility for American Cities*, Massachusetts: The MIT Press.

Benton, R. (Jr). and Benton, C. (2004). "Why Teach Environmental Ethics? Because We Already Do", *Worldviews* 8, 2-3: 227-242.

Berkes, F. and Folke, C. (eds) (2000). "Linking Social and Ecological Systems for Resilience and Sustainability", in Berkes, F. and Folke, C. (eds), *Linking Social and Ecological Systems*:

Management Practices and Social Mechanisms for Building Resilience, Cambridge: University Press.

Bettelheim, B. (1976). *The Uses of Enchantment: The Meaning and Importance of Fairy Tales*, England: Thames and Hudson.

Beyers, C. (2005), *The Squirrel on the Cash Register – Mapping a Personal Position on Sustainable Development*, Stellenbosch: Assignment in partial completion of the M.Phil. (Sustainable Development Planning and Management).

Beyers, C. (2006). “A Figure/Ground Analogy for Integrating Sustainability and Planning”, *Town and Regional Planning* 50 (November): 13-25.

Beyers, C. (2006a), *Like Poetry for Revolution – A Perspective on Art and Expression in Response Globalisation*, Stellenbosch: Assignment in partial completion of the M.Phil. (Sustainable Development Planning and Management).

Beyers, C. (2006b), *The Complexity of Being Naturally Thermally Comfortable – Looking at Environmentally Sound Housing through the Lens of Complexity Theory and Systems Thinking*, Stellenbosch: Assignment in partial completion of the M.Phil. (Sustainable Development Planning And Management).

Bickmore, B. R., Thompson, K., Graham, C., Grandy, D. and Tomlin, T. (2006). “Science as Storytelling for Teaching the Nature of Science to Preservice Teachers”, paper delivered at *Philadelphia Annual Meeting*, Pennsylvania Convention Centre (October): Geological Society of America (GSA) [Online]
http://gsa.confex.com/gsa2006AM/finalprogram/abstract_114637.htm – accessed 26/04/2007.

Blewitt, J. (2006). *The Ecology of Learning. Sustainability, Lifelong Learning and Everyday Life*, London: Earthscan.

Booker, C. (2004). *The Seven Basic Plots: Why We Tell Stories*, London: Continuum.

Burns, M., Audouin, M. and Weaver, A. (2006). “Advancing Sustainability Science in South Africa”, *South African Journal of Science*, 102: 379-384

Caduto, M. (1997). *Earth Tales from Around the World*, Colorado: Fulcrum Publishing.

Calvino, I. (1997). *Invisible Cities*, London: Vintage.

Capra, F. (1996). *The Web of Life: A New Scientific Understanding of Living Systems*, New York: Anchor Books.

Capra, F. (1982). *The Turning Point: Science, Society and The Rising Culture*, London: Flamingo.

Chan, L. (2005), *New Stories to Sustain Earth: Trudeau Scholar Challenges the Notion that Scientific Data Alone Should Guide the Way We Live*, University of British Columbia: UBC Reports 51, 8 (August).

Cilliers, P. (1998). *Complexity and Postmodernism: Understanding Complex Systems*, New York: Routledge.

- Cilliers, P. (2000). "What Can We Learn From A Theory of Complexity?", *Emergence* 2, 4: 7-13.
- Cilliers, P. (2003). "Complexity, Ethics and Justice", *Humanistiek* 19: 19-25.
- Clandinin, D. J. and Connelly, F. M. (2000). *Narrative Inquiry: Experience and Story in Qualitative Research*, California: Jossey-Bass Publishers.
- Collins, J. and Mayblin, B. (2005). *Introducing Derrida*, Cambridge: Icon Books.
- David, J. (1991). *Interweaving Symbols*, Cape Town: Kaggen Press.
- David, M.E. (2007). "Changing the Educational Climate: Children Citizenship and Learning Contexts?", *Environmental Education Research* 13: 4 (September) 425-436
- D’Cruz, C. and Satterthwaite, D. (2004). *The Current and Potential Role of Community-driven Initiatives to Significantly Improve the Lives of "Slum" Dwellers at Local, City-wide and National Levels*, Unpublished Memo.
- Degenaar, J. (1993). "Art and Culture in a Changing South Africa", *South African Journal of Philosophy* 12, 3: 51-56.
- De la Court, T. (translated by Bayens, E. and Harte., N.) (1990), *Beyond Brundtland: Green Development in the Nineties*, New York: New Horizons Press.
- Della Porta, D. and Tarrow, S. (2005). "Transnational Processes and Social Activism: An Introduction", in Della Porta, D. and Tarrow, S. (eds), *Transnational Protest and Global Activism*, Colorado: Rowman & Littlefield.
- De Saint-Exupéry, A. (1945). *The Little Prince*, Great Britain: Mammoth.
- DeSpain, P. (1996). *Eleven Nature Tales: A Multicultural Journey*, Little Rock: August House Publishers, Inc.
- De Villiers, H. (2007). Interview Conducted With C. Beyers in view of Completing this Thesis – personal interview, Stellenbosch.
- Dresner, S. (2002). *The Principles of Sustainability*, London: Earthscan.
- Durand, G. (2000). "Exploration of the Imaginal", in Sells, B. (ed.), *Working with Images*, Connecticut: Spring Publications.
- Eckstein, B. (2003). "Making Space: Stories in the Practice of Planning", in Eckstein, B. and Throgmorton, J. (eds), *Story and Sustainability: Planning, Practice and Possibility for American Cities*, Massachusetts: The MIT Press.
- Ellen, R., Parkes, P. and Bicker, A. (2000), *Indigenous Environmental Knowledge and its Transformations: Critical and Anthropological Perspectives*, Netherlands: Harwood Academic Publishers.
- Estés, C. P. (1992). *Women who Run with the Wolves*, London: Rider Books.
- Fox, W. (2003). "Deep Ecology: A New Philosophy of Our Time?", in Light, A. and Rolston, H. (eds), *Environmental Ethics: An Anthology*, Oxford: Blackwell Publishing.

- Friedman, J. (2005). "Civil Society Revisited: Travels in Latin America and China", in Keiner, M., Koll-Schretzenmayr, M. and Schmid, W. (eds), *Managing Urban Futures: Sustainability and Growth In Developing Countries*, London: ASHGATE.
- Gasson, B. (2002). "The Ecological Footprint of Cape Town: Unsustainable Resource Use and Planning Implications", paper read at the *National Conference of the South African Planning Institution*, Durban.
- Gifford, R. (2007). "Environmental Psychology and Sustainable Development: Expansion, Maturation and Challenges", *Journal of Social Sciences* 63, 1: 199-212
- Gill, G. (2002). "Landscape as Symbolic Form: Remembering Thick Place and Deep Time", *Critical Horizons* 3, 2: 177-199.
- Grainger, T. (1997). *Traditional Storytelling in the Primary Classroom*, Warwickshire: Scholastic Ltd.
- Global Reporting Initiative (GRI) (2002). *Sustainability Reporting Guidelines*, Boston.
- Gunter, V. J., Aronoff, M. and Joel, S. (1999). "Toxic Contamination and Communities: Using an Ecological-Symbolic Perspective to Theorize Response Contingencies", *The Sociological Quarterly* 40, 4: 623-640.
- Hattingh, J. (1999). "Finding Creativity in Diversity of Environmental Ethics", *Southern African Journal of Environmental Education* 19: 68-84.
- Hattingh, J. (2001). "Conceptualising Ecological Sustainability and Ecologically Sustainable Development in Ethical Terms: Issues and Challenges", *Annals of the University of Stellenbosch* 2 (2001).
- Hattingh, J. (2002). "On the Imperative of Sustainable Development: A Philosophical and Ethical Appraisal", in Janse van Rensburg, E., Hattingh, J., Lotz-Sisitka, H. and O'Donoghue, R. (eds), *Environmental Education, Ethics and Action in Southern Africa*, Pretoria: Human Sciences Research Council.
- Hicks, D. and Holden, C. (2007). "Remembering the Future: What Do Children Think?", *Environmental Education Research* 13:4 (September): 501-512.
- Higgins, M. and Morgan, J. (2000). "The Role of Creativity in Planning: 'The Creative Practitioner'", *Planning Practice and Research* 15(1&2): 117-127.
- Hillman, J. (2000). "Editorial Postscript: Why 'Archetypal' Psychology?", in Sells, B. (ed.), *Working with Images*, Connecticut: Spring Publications.
- Holahan, C., J. (1982). *Environmental Psychology*, New York: Random House.
- Inter Governmental Panel on Climate Change (IPCC) (2007). *Working Group II Contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report: Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability – Summary for Policy Makers*, IPCC.
- Jacobi, J. (1968). *The Psychology of C.G. Jung*, London: Routledge & Kegan Paul.

Jung, C. G. (1964). “*Approaching the Unconscious*”, in Jung, C. (ed.), *Man and his Symbols*, London: Aldus Books Limited.

Keiny, S. (2002). *Ecological Thinking: A New Approach to Educational Change*, Maryland: University Press of America, Inc.

Kelbessa, W. (2002). “Indigenous and Environmental Modern Ethics: Towards Partnership”, in Presbey, G. M., Smith, D., Abuya, P. and Nyarwath, O. (eds), *Thought and Practice in African Philosophy*, Kenya: Konrad Adenauer Foundation.

Krog, A. (2003). *A Change of Tongue*, South Africa: Random House.

Laas, J. J. (2004). “*Curriculum Vitae van Verbeelding*” Meestersgraad Pretoria: Universiteit van Pretoria. [Online] <http://upetd.up.ac.za/thesis/available/etd-09302004-113726/unrestricted/00front.pdf>.

Landry, C. (2006). *The Art of City Making*, London: EARTHSCAN.

Leopold, A. (2003). “The Land Ethic”, in Light, A. and Rolston, H. (eds), *Environmental Ethics: An Anthology*, Oxford: Blackwell Publishing.

Lichtman, R. (2003), *Sustainable Development: From Action to Concept*, Switzerland: E-Systems Foundation Report.

Lotz-Sisitka, H. (2002). “Curriculum Patterning In Environmental Education: A Review of Developments in Formal Education in South Africa”, in Janse van Rensburg, E., Hattingh, J., Lotz-Sisitka, H. and O’Donoghue, R. (eds), *Environmental Education, Ethics and Action in Southern Africa*, Pretoria: Human Sciences Research Council.

Lourdell, N., Gondran, N., Laforest, V., Debray, B. and Brodhag, C. (2007). “Sustainable Development Cognitive Map: A New Method of Evaluating Student Understanding”, *International Journal of Sustainability in Higher Education* 8, 2: 170-182.

Lynch, K. (1960). *The Image of the City*, Massachusetts: M.I.T. Press.

Macy, J. and Young-Brown, M. (1998). *Coming Back to Life*, British Columbia: New Society.

Malik, A. (2001). “After Modernity: Contemporary Non-Western Cities and Architecture”, *Futures* 33: 873-882.

Maxwell, S. (2003). “Heaven or Hubris: Reflections on the ‘New Poverty Agenda’”, *Development Policy Review* 21, 1: 5-25.

Mbeki, T.M. (President of South Africa) (2007). “We Are Children of A Rich Heritage” *ANC Today*, 28/09/2007.

Mebratu, D. (1998). “Sustainability and Sustainable Development: Historical and Conceptual Review”, *Environmental Impact Assessment Review* 18: 493-520.

McAdam, D. and Tarrow, S. (2005). “Scale Shift in Transnational Contention”, in Della Porta, Donatella and Tarrow, S. (eds), *Transnational Protest and Global Activism*, Colorado: Rowman & Littlefield.

- McDonough, W. and Braungart, M. (2002). *Cradle to Cradle: Remaking the Way We Make Things*, New York: North Point Press.
- Monbiot, G. (2006). *HEAT: How to Stop the Planet Burning*, London: Penguin Group (Allen Lane).
- Moore, C. (1997). “Die Ekosistemiese Banadering”, in Meyer, W. F., Moore, C. and Viljoen, H. G. (eds), *Personologie: Van Individu tot Ekosistiem*, Sandton: Heinemann Voortgesette Onderwys (Edms) Bpk.
- Mouton, J. (2001). *How to Succeed in Your Master’s and Doctoral Studies*, Pretoria: J.L. van Schaik.
- Naess, A. (2003[1972]). “The Deep Ecological Movement: Some Philosophical Aspects”, in Light, A. and Rolston, H. (eds), *Environmental Ethics: An Anthology*, Oxford: Blackwell Publishing.
- Nanson, A. (2005). *Storytelling and Ecology: Reconnecting People and Nature through Oral Narrative*, United Kingdom: University of Glamorgan Press. [Online] <http://www.h-net.org/reviews/showrev.cgi?path=62541170440291> – accessed 26/04/2007.
- Nash, R. F. (2003). “Wild World”, *Resurgence*, 216: 36-38.
- Nederveen-Pieterse, J. (2004). “Globalisation: Consensus and Controversies”, in Nederveen-Pieterse, J., *Globalisation and Culture: Global Mélange*, Colorado: Rowman and Littlefield.
- Nicolescu, B. (2002). “Levels of Reality and the Sacred”, address at the *International Conference: Foundations and the Ontological Quest: Prospects for the New Millennium*, Vatican (January).
- Norberg-Hodge, H., Merrifield, T., and Gorelick, S. (2000). *Bringing the Food Economy Home: The Social, Ecological and Economic Benefits of Local Food*, Devon: International Society for Ecology and Culture Publishers.
- Oranje, M. and Van Huyssteen, E. (2005). *Not Just another Day in Africa*, Pretoria: CSIR Parliamentary Grant Report.
- Palmer, C. (2003). “An Overview of Environmental Ethics”, in Light, A. and Rolston, H. (eds), *Environmental Ethics: An Anthology*, Oxford: Blackwell Publishing.
- Peace Child International, in association with the United Nations (UN) (1994). *Rescue Mission Planet Earth: A Children’s Edition of Agenda 21*, New York: Kingfisher.
- Pearce, D. (1996). “Sustainable Development: the Political and Institutional Challenge”, in Kirby, J., O’Keefe, P. and Timberlake, L. (eds), *The Earthscan Reader in Sustainable Development*, London: Earthscan.
- Pieterse, E. (2003). “Grasping the Breeze of Time to Come... Exploring Thoughts on Realising Integrated Urban Development Despite the Forces of Fragmentation”, Paper presented on the *State and Society in south Africa: Faultiness of Crises and Sites of stabilisation Conference*, University of the Witwatersrand.
- Robinson, J. (2004). “Squaring The Circle: Some Thoughts on the Idea of Sustainable Development”, *Ecological Economics* 48: 369-348.

- Roe, M. (2007). "Feeling 'Secretly': Children's Views on Involvement in Landscape Decisions", in *Environmental Education Research* 13, 4 (September): 467-485.
- Rolston III, H. (2003). "Value in Nature and the Nature of Value", in Light, A. and Rolston, H. (eds), *Environmental Ethics: An Anthology*, Oxford: Blackwell Publishing.
- Rosenau, J. N. (1999). "The Futures of Politics", *Futures* 31: 1005-1016.
- Sachs, W., et al. (2002). *The Joburg Memo: Fairness in a Fragile World*, Berlin: Heinrich Böll Foundation.
- Sandercock, L. (2003). "Dreaming the Sustainable City: Organising Hope, Negotiating Fear, Mediating Memory", in Eckstein, B. and Throgmorton, J. (eds), *Story and Sustainability: Planning, Practice and Possibility for American Cities*, Massachusetts: The MIT Press.
- Sassen, S. (1996). *Losing Control? Sovereignty in an Age of Globalisation*, New York: Columbia University Press.
- South African Cities Network (SACN) (2006), *State of the Cities Report*, Johannesburg: SACN
- Speake, J. (ed.) (1984). *A Dictionary of Philosophy*, London: Pan Reference.
- Steenberg, E. (1979). *My Kind en Sy Boek*, Pretoria: HAUM Literêr.
- Steenberg, E. (1987). *Fantasie en die Kinderboek: 'n Kernhandleiding*, Pretoria: HAUM Literêr.
- Steiner, R. (1969[1919]). *An Introduction to Waldorf Education: An Essay by Rudolph Steiner*, The Anthroposophic Press: [Online] http://wn.rsarchive.org/Articles/IntWal_index.html.
- Stephenson, M., S. (not dated). *Montessori and Waldorf Schools*, [Online] <http://www.michaelolaf.net/MONTESSORI%20and%20WALDORF.html> accessed 04/05/2007.
- Stern, N. (Sir). (2006). "Stern Review: Economics for Climate Change", Executive Summary [Online] <http://www.hm-treasury.gov.uk/>.
- Swilling, M. (2002). "Two Cultures: The Intellectual Basis for Greater Collaboration between the Sciences and Humanities in the 21st Century", opening address for the workshop on the *Origins of Humanity and the Diffusion of Human Populations in Africa*, Stellenbosch (September).
- Swilling, M. (2004). "Rethinking the Sustainability of the South African City", *Development Update* 5, 1.
- Swilling, M. (2007). *Interview Conducted with C. Beyers In View of Completing This Thesis – e-mail exchange interview completed whilst in England. 26 October 2007.*
- Throgmorton, J. (2003). "Imagining Sustainable Places", in Eckstein, B. and Throgmorton, J. (eds), *Story and Sustainability: Planning, Practice and Possibility for American Cities*, Massachusetts: The MIT Press.

Tlhagale, M. P. (2004) *Environmental Education as a strategy towards sustainable living for rural communities (Master's Thesis)*, Pretoria: Pretoria University, [Online]
<http://upetd.up.ac.za/thesis/available/etd-12022004-141010/unrestricted/00dissertation.pdf>

United Nations Conference on Environment and Development (UNCED) (1992). *Agenda 21*, Rio de Janeiro: United Nations (UNCED).

Van Zyl, H. (2007). *Interview Conducted With C. Beyers In View of Completing this Thesis* – personal interview, with Eve Annecke, Stellenbosch.

Vlek, C. and Steg, L. (2007). “Human Behaviour and Environmental Sustainability: Problems, Driving Forces and Research Topics”, *Journal of Social Sciences* 63, 1: 1-19.

Waller, S. E. (2003). *Story-Telling and Community Visioning: Tools for Sustainability*, Background Paper for the State Sustainability Strategy, Western Australia: Sustainability Policy Unit (Department of the Premier and Cabinet).

World Commission on Environment and Development (WCED) (1987). *Our Common Future*, Oxford: Oxford University Press.

World Resources Institute Report (WRIR) (2003), *Report and Executive Summary of World Resources Institute Reports for 2003*, Washington DC: World Resources Institute.



ANNEXURES

Annexure 1: Semi-Structured Interview schedule with Helen Van Zyl

Dear Helen,

Thank you for agreeing to meet with Eve and me with regard to my [mini]thesis as part of my studies at the Sustainability Institute. My thesis is grounded in the broader sustainability principles, as integrated through my M.Phil. in Sustainable Development Planning and Management journey. The topic of my study at this stage is “Decoding Sustainable Development for Children through Symbolism and storytelling”. Focusing on the role of *alternative* environmental education in this process, as it explores children’s comprehension of sustainability through their own, natural/inherent symbolic translation of core sustainability principles. Also, how these principles could be transferred, captured and iteratively reinforced through storytelling.

This topic no doubt unpacks into many elements and I am hoping to explore the alternative education/sustainability/child-symbolism interface with you in particular. Especially how children, in the Waldorf education system, link with “nature”, assign images and iteratively integrate knowledge on nature, ecology and the environment through symbolic and storytelling processes (both Waldorf philosophy and teaching methodology). These questions serve as guide, I am also interested in other aspects that you might introduce in terms of this topic based on your experience. I believe that the link between this study and Waldorf (and Montessori) education might be mutually reinforcing and enabling (natural link), and I would like to test this view. My view of sustainability comprises pattern aspects, natural resource limits, whole systems perspective on human activity and ecology, an embedded environmental ethical stance on how to proceed within this global context of environmental and ecological stress, as well as the power of internalisation (spiritual and intellectual), individuation and action to bring about tangible change.

My first-round literature review indicates that Waldorf education emphasises a number of these sustainability principles, as well as key aspects of the study, namely:

- Education is based on wholeness, the spiritual, mental, physical and psychological being of the child over any particular academic curriculum. “Both systems (Waldorf and Montessori) stress the importance of the natural environment, absence of plastic, keeping in touch with nature and natural materials.”⁵⁶
- Fantasy and imagination, through play, are seen as the work of the young child, and “the magic of fantasy, so alive in the young child”, is an important part of how the teacher works with the child (Stephenson, 2007: 2). The teacher incorporates storytelling and fantasy into the curriculum.
- Education focused on developing the whole human being, also developing the “will”, “but it is impossible to develop the will unless one develops the insights that awaken the energetic impulses of will and feeling”⁵⁷ (Steiner, 1969: 2).
- Transformation of the soul of children; “around the ninth year [developmental stage] a sense of self awakens in the child a relationship to nature and to the world about him such that one can now talk to him more about the connections between things and the processes themselves, whereas previously he was interested mostly in things and processes only in relationship to man” (Steiner, 2007: 3). This quote to me signifies the sustainability (whole systems) and symbolism interface.

⁵⁶ <http://www.michaelolaf.net/MONTESSORI%20and%20WALDORF.html> - accessed on 4/05/07

⁵⁷ http://wn.rsarchive.org/Education/IntWal_index.html - accessed on 4/04/2007

- Artistic education of the child as key aspect of the curriculum – eurhythmic movement, movement with meaning.
- “Of prime importance for the cultivation of the child’s feeling-life is that the child develops its relationship to the world in a way such as that which develops when we incline toward fantasy. If the educator is not himself a fantast, then the child is not in danger of becoming one when the teacher conjures forth the realms of plants and animals, of the sky and stars in the soul of the child in fairy-tale fashion” (Steiner, 2007: 4).
- “If, at the end of the ninth year, one begins to choose descriptions of natural history from the plant and animal world, treating them in a way that the natural forms and processes lead to an understanding of the human form and phenomena of human life, then one can help release the forces that at this age are struggling to be born out of the depths of human nature” (Steiner, 2007: 4).
- Students are given self-reflection and thinking skills rather than knowledge.

Ethics, a key aspect of sustainability, is something that should not be taught according to strict rules and guidelines. It rather comes when students are given critical “thinking skills to self-reflect on their contemporary situation” (Benton and Benton, 2004: 229). Steiner also said that children should learn about their situation in the world. Bettelheim reflects on this statement from a child development (vis-à-vis fairy-tales) perspective, indicating that children’s minds “can be opened to an appreciation of all the higher things in life by fairy tales, from which they can move to easily enjoying the greatest works of literature and art” (Bettelheim, 1976: 23). Julian David, writing from an archetypal, Jungian and symbolic perspective, indicates that fairytales are the main repositories in a culture of archetypal material (David, 1991, 12), which could provide a bridge between the archetypal response of children to stories and the ethics and core, integrative and contextually specific principles of sustainability. Rosenau, in the sustainability (globalisation) genre, supports the role of individual internalisation in order to move to action in a global arena. “Individuals are as much a part of the globalisation process as any other basic category of social-theoretical discourse” (Rosenau, 1999: 1007). “From the perspective of those who have long been hemmed in by the realities of life on or below the poverty line, the freeing up of imaginative capacities is among the most powerful forces at work in the age of fragmentation. The imagination is today a staging ground for action, and not only for escape” (Rosenau, 1999: 1011). This is the type of pattern that I would like to lift out for the key aspects that I have identified throughout the M.Phil. Please see the attached excerpt from my thesis proposal.

I have identified a few key questions from my literature review thus far, and I hope to explore these, as well as an open-ended discussion with you based on your impressions of this information and the meeting as it develops naturally.

- The Waldorf curriculum is infused with imagination, storytelling, art, wholeness, and if “environment” is not demarcated as a discipline one would find in mainline education curricula, how is the environmental/ nature link made?
- What are the main sustainability (integrated environmental, social, economic, as point of departure) aspects of the Waldorf curricula?
- There is a marked difference in how fantasy is involved in curriculum in Waldorf and Montessori philosophy; (“W” is the work of the child, more fantasy than academics initially; “M” focuses on the “real world and its inherent complexities as base of creativity”).
 - How is the imagination/ fantasy link made in the curriculum?
 - Do teachers “recognise” the environment and engage consciously its concepts and ideas?
- Waldorf education emphasises the environment; how do children relate to “this environment” in the Waldorf curriculum?

- Please explain through which activities.
- How would you define symbolism in the Waldorf curriculum? Is it embedded, constellated (created) or a case of continuity (emerging from activities), or not recognised (an issue) at all?
- If so, what are some of the key images/ symbols used in the curriculum?
- Can you provide examples of children’s images and symbols of the environment?
- What aspects of the “nature connection”, through images, art [symbols?], do you introduce at which development stage?
 - Do you have examples of having done this? Responses from children?
- Can you identify a specific link to the environment, nature (Sustainability, SD) in sensitive periods; any link here, and any symbolic reference to the seeking of knowledge in this regard?
- The use of the right education materials seems a priority in Waldorf education; which materials are used to integrate environmental ideas/ knowledge?
- Is a particular environment or approach to the environment proposed in teachings? I noticed wastefulness is for example not encouraged; any other such “ethical” cautions?
- What we know is broadened by symbolic or metaphoric references and/ or a change in symbolic framework (especially a change in world view, shifting from a modern world view). How do children relate to this?
 - How do Waldorf curricula approach the issue of world view (as basis for ethics, for example)?
- There seems to be potential for a new symbolic relationship for sustainability in human nature connections (Gill, 2002):
 - How can Waldorf education support this potential in the symbolic/ nature connection?
- Do we explicitly state nature symbols in stories or let children interpret nature from everyday story time? This question in particular intrigues me.

I appreciate the time you are willing to give to this endeavour and will reference our discussion as resource for my study.

Thank you and looking forward to meeting you,
Christelle Beyers.



Annexure 2: Structured Interview schedule with Mark Swilling

Dear Mark,

I would appreciate it if you could fill out the attached questionnaire with regard to being a Waldorf parent[s] and having been Waldorf-schooled (I didn't realise this initially!). Please forgive me if some of these questions seem personal and probing; it is the nature of the study. Feel free to thus only answer what you feel comfortable with. I could also use fictitious names to protect privacy, if you prefer.

Mark, your perspectives from Waldorf schooling vis-à-vis your current position as sustainability crusader/ academic (professor)/ practitioner, and Waldorf parent are very informing.

Please look at the following questions, thank you:

1. What do think are the main connections between your Waldorf education and your current work, activities in the sustainability arena?
2. Are there any stories or themes from this education that made you love justice, equality, ecology? You have said that you are not an ecologist, but work for justice and equality.
 - a. At what level, for example, supporting your personality, or content of work? If, so please describe.
3. Do you remember any examples of symbols, stories, themes in your Waldorf education that have stood you in good stead throughout your career and early "activist" years especially? (If I am allowed to ask this ☺)
4. Why the decision to also school your child in the Waldorf system?
5. What is your view on imagination; how would you describe it from a sustainability context?

Best,
Christelle.



Annexure 3: All Things Are Connected – A Nature Tale from Africa (Zaire)

In Despain (1996: 13-16), *Eleven Nature Tales – A Multicultural Journey*.

Long ago a cruel chieftain ruled a remote village in Africa. He was a tyrant who demanded that his orders be obeyed on pain of death. Everyone lived in fear of him, but for an elderly grandmother who had lived long and seen much. She was the only person in the village brave enough to tell the chief the truth.

The village was located near a large marsh inhabited by numerous amphibians and insects. The people were sung to sleep each night by the gentle croaking of frogs. *Crribbitt, crribbitt, crribbitt.*

One night the chief awoke from a bad dream, and couldn't get back to sleep. *Crribbitt, crribbitt, crribbitt* was all he heard. Because he was in a foul mood, the frog's song wasn't at all soothing. It was most irritating.

Crribbitt, crribbitt, crribbitt.

"Quiet!" cried the chief. "I want all the frogs to stop croaking! I demand silence, and I want it now!"

The frogs weren't used to taking orders from humans, and kept on singing.

Crribbitt, crribbitt, crribbitt.

The frogs kept him awake for the rest of the night, and the chief wanted revenge.

He called the people together early the next morning, and said, "The frogs disobeyed me. Go to the marsh with your sticks and kill them. If I hear the croak of a single frog tonight, I'll turn my revenge upon you."

All the villagers, except for the old grandmother, grabbed their sticks and ran to the marsh.

"Since you are so old and slow, I'll allow you to stay in the village," said the chief.

"And since you are so foolish in your demands, I'll tell you what is true," said the grandmother. "All things are connected."

"What does that mean?" asked the chief?

"You will see," replied the brave woman. "You will soon see."

A strange silence engulfed the village that night. Without the song of frogs to lull them to sleep, the villagers were restless. The chief, however, slept soundly, and was convinced that he had made the right decision.

Several days later, another sound was heard in the village. *Zzzz, zzzz, zzzz.*

Mosquitoes came in swarms and bit everyone in their sleep. *Zzzz, zzzz, zzzz.*

The chief awoke in anger, batting a thousand mosquitoes away from his head. "Leave me alone!" he cried. "Get out of my house or I'll have you killed, too!"

The mosquitoes answered by buzzing even louder, and biting him again and again.

Zzzz, zzzz, zzzz.

The following morning, the chief told his people to return to the marsh and kill all the mosquitoes. It was an impossible task, however, as there far too many insects. Without frogs to eat the larvae, the mosquito population rapidly increased. Thousands upon thousands were hatched each day, and now they ruled the marsh and everything nearby. The village swarmed with hungry mosquitoes, and the animals, as well as the people, suffered.

The villagers secretly packed up their belongings and moved far away during the night. Now, the chief had no one to rule over.

At last he understood what the grandmother had meant. All things are connected.

Crribbitt, crribbitt, crribbitt.

Zzzz, zzzz, zzzz.

Gulp.



Annexure 4: Turtle Returns the Gift – An Earth Tale from Japan

In Caduto (1997: 145-147), *Earth Tales from Around the World*.

Once there was a statesman named Fujiwara no Yamakage, and he had many children. Fujiwara loved his children with all his heart, especially his youngest son. The child was also deeply loved by his stepmother, who treated him with great kindness.

One day, a messenger knocked on Fujiwara's door. When the door swung open, the man proclaimed, "I have a message here for Master Yamakage."

"Please come in," said Fujiwara with a gesture. "What is your message?"

"It is contained in this letter," replied the messenger as he handed an envelope to Fujiwara.

Fujiwara opened the envelope and read. He smiled, thanked the messenger and saw him out the door. Then, Fujiwara gathered his family together. "I have good news," he said. "I have been appointed Viceroy of Kyushu. We are going on a great journey." Fujiwara's wife and children were very excited.

"When shall we leave?" asked the children.

"Tomorrow," replied the father.

The following morning, Fujiwara, his family and their entourage sailed for Kyushu. It was a long journey of many days. On the third day, the wind began to howl and whip the seas into a froth. Waves, which loomed like mountains above the small sailboats, began to break over the decks. Sails tore under the strain of the fierce wind.

"Quickly, we must get everyone below deck," said Fujiwara. At that moment, a tall wave washed over the deck and carried his youngest son overboard. In desperation, Fujiwara jumped over the gunwale and tried to snatch the child from the clutching fingers of the violent waves. But he was too late.

"Stop the ships and release the lifeboats!" he cried to those on deck. All night long the sea raged as Fujiwara and his crew rowed the swells in search of the child. When morning broke, a calm settled over the wind and sea. As the sky cleared and the sun rose in the east, an exhausted crew lay sprawled on the decks. The child was lost.

Since there was nothing else they could do, the convoy continued on its journey. Fujiwara and his wife were grief-stricken over the loss of their beloved son. Husband and wife retired to their cabin and cried themselves to sleep.

As Fujiwara entered the land of dreams, a giant sea turtle appeared to him. "Yamakage," said the turtle, "have you lost faith? Do you not remember how you saved me from the cormorant fisherman who caught me in his net? Two years ago, in the capital, you saw me captive and took pity upon me. You bought me from the fisherman, who was going to kill me for turtle soup. You saved my life. Now is my chance to show gratitude." With those words, the turtle pulled his head beneath the water and was gone.

"Sir, sir!" cried the captain as he shook Fujiwara from his slumber. "Come up on deck immediately. Something is swimming towards us and we do not know what it is."

Fujiwara and his wife jumped from their cot and soon stood looking over the railing where everyone was gathered. Closer and closer came a small, white object. "Perhaps it is a porpoise," said one of the hands.

"No, a porpoise would not ride upon the surface in that way," replied Fujiwara.

As it drew near, the figure of a child dressed in a white frock appeared. It was riding on the back of a great sea turtle. The smiling child looked perfectly content – splashing and playing with the water one moment, then holding tight onto the neck of the turtle whenever a wave broke over its shell.

"Look!" cried Fujiwara's wife. "Our son is coming back to us!"

She and her husband rowed out to meet their son. As they came to the turtle, they lifted the boy off its back and into the lifeboat. Through his tears, Fujiwara looked into the eyes of the great turtle and thanked him for his kindness.

At that joyous moment, Fujiwara finally remembered that two years ago, he had made a pilgrimage to the temple of Sumiyoshi. While he sailed toward the docks of that city, a cormorant fisherman pulled his boat alongside and offered his wares. Fujiwara saw a large turtle upon the fisherman's deck. As he gazed into the turtle's gentle eyes – the same eyes into which he was now staring – Fujiwara's heart had filled with compassion. He traded his own priceless pilgrimage cloak to the fisherman in exchange for the turtle. Then, he released the turtle back to his home in the sea.

Two years later, as the turtle's head once again disappeared beneath the waves, Fujiwara snapped out of reverie. He realised that the great sea turtle had repaid his kindness by saving the life of his beloved son.



Annexure 5: The Children of Wax – An African Tale

In Grainger (1997: 56-57), *Traditional Storytelling in the Primary Classroom*.

It wasn't in my time and it wasn't in your time, but it was in someone else's time that, nestled beneath the Matopos hills in Africa, there lived a family whose children were made entirely of wax. The mother and father were distraught when they realised that their children were not like others, who were made from flesh and blood. They couldn't understand it. Why had they been picked upon like this? One wax child was enough, but two, three, four children of wax? Their mother wept and wondered, but she loved them in her heart and came to care for them, as all mothers do for their children. Their father loved them too, and built them a dark wooden hut in which they could live. There they stayed, safe inside during the time of sunlight until the twilight hour descended and the heat from the sun's rays could harm them no more. The children therefore slept most of the day and came out to work at night, taking the cattle to the watering holes, tending the crops and cleaning out the compound, much as the flesh children did during the daytime.

Their hut had no windows, so the sun could not penetrate the gloom, although the youngest child, Ngwabi, had scratched and scraped a tiny chink in one wall through which he was able to peer when the sun was at certain positions in the sky.

Ngwabi loved to listen to the laughter and voices of the children outside and to catch occasional glimpses of them as they played in the sunlight. His dreams were full of possibilities and imaginings. Unlike his brothers and sisters, who accepted that they would never know what the world was like. Ngwabi longed to see the world. At night he would stare into the distance, searching the silhouettes of the hills with his eyes, wondering what lay beyond them. He saw the paths leading this way and that, but could never follow them, for this was far too dangerous at night time.

He shared his thoughts with his brothers and sisters, speaking to them of his dreams and his desire for freedom.

"We are imprisoned in this hut by day and in a shroud of darkness by night," he complained.

"We do not know what the world is really like."

However, his siblings recognised that there were advantages to being wax children, for such children know no pain and they were dutiful sons and daughters who could work twice as hard as a child of the flesh, for they would never tire. But poor Ngwabi continued to dream. He began to withdraw into himself and his world of silent possibilities. His desire deepened, his frustration increased. He could think of nothing else. One day, unable to restrain his longing any further, he rushed out of their hut, out into the world, out into the light, out into the glaring temperatures of the midday sun.

Of course he could not last long out there in the searing heat and, as his body began to melt, he cried out to his family to save him. His brothers and sisters heard his dying cries, but cruelly could do nothing to help him. They were even forced to close the door of the hut against him as the sun's rays scorched in towards them. All strength drained from Ngwabi and soon he was just a pool of melted wax, a liquid mass in the blazing sunshine.

When night fell the children left their hut and gathered around the now hardening wax which had been their young brother Ngwabi. His eldest sister carefully scooped up the wax and they walked solemnly to their special place, where many a time the four of them had sat together, talked and told stories. Then, in silence, Ngwabi's sister fashioned a great bird out of the wax. For feathers, they each pressed leaves from the trees into this wax bird. The leaves would protect the wax from the heat of the sun. It was a magnificent creature – its head proud, its eyes inquisitive, its feet firm.

The children took the bird to their parents and told them what had happened. Their mother took the bird in her hands and wept as she kissed Ngwabi goodbye. Their father, too, kissed it tenderly as he held the bird close to his chest. The wax children did not work that night, but

placed the great bird on a rock that stood before their hut. They then joined hands and sat around it together in silent tribute and communion.

As dawn broke, the children returned to their hut and crowded together around the small hole in the wall that Ngwabi had made. Their eyes watched and wondered. As light seeped up over the hills, it seemed as if the bird drew breath and took energy from the sun. Its wingtips moved, stretched and fluttered. Its head turned as it looked searchingly around. Slowly and gracefully, the great bird which they had created took off up into the air. As it disappeared from their sight overhead, they could hear its wings beating. It circled their hut three times and then took off in the direction of the hills.

Ngwabi, their brother, was free at last.



Annexure 6: The Savage Skylark – A Nature Tale from Portugal

In Despain (1996: 55-60), *Eleven Nature Tales – A Multicultural Journey*.

A wealthy landowner and his wife lived in the southern part of Portugal. They had a large house and several barns, and field upon field for growing crops. The husband believed himself superior to his wife in intelligence. The wife knew better.

One day, the wife decided to plant a large vegetable garden and asked her husband to have a nearby field cleared of brush and trees. The landowner sent one of his labourers to do the job. At day's end, the rich man inspected the field and discovered that the work hadn't been accomplished.

He sent for the man and asked, "Why isn't the field cleared? What did you do all day? What do you have to say for yourself?"

The worker wrung his straw hat in his hands and said, "I tried to do the work, but couldn't. Every time I raised my axe to a tree, I was attacked."

"Attacked by what?" demanded the landowner.

"A skylark," came the sheepish reply.

"The skylark is a small bird," said the landowner. "The skylark sings when it flies. How could a single, small singing bird chase you, a grown man, away from your work?"

"But, sir," said the labourer, "this was no ordinary skylark. This bird was ferocious. This bird was savage! She flew all about my head and pecked at my eyes. She wouldn't let me get near the trees."

"What nonsense!" cried the landowner. "I'm sending you and two more men to the field tomorrow. Have it cleared by sundown."

That night, the rich man discussed the situation with his wife.

"My worker is an imbecile," he complained.

"No, husband, he isn't at fault. Keep everyone away from the field for a few days and things will sort themselves out."

"You make little sense, wife," he said. "Problems aren't solved by avoiding them."

"As you wish," replied his wife.

At the end of the following day, the landowner asked the three men assigned to the field to report on their progress.

"We are sorry, sir, but it was impossible to clear the field," explained one of the men. "The skylark is unbelievable! She darted all about us and pecked at our heads. We tried to swat her out of the air with tree branches, but she is too fast and furious. We couldn't drive her away. Please forgive us."

"Forgive you? I should fire you!" responded the rich man. "Tomorrow I'll send five of my best men to do the job, and the foreman, too. No skylark will stop me from clearing a field!"

That night, he again discussed the problem with his wife.

"I may have to fire the lot of them for incompetence. Imagine, grown men not able to deal with a small bird."

"Leave the field alone for just a few more days, husband. The problem will soon vanish."

"Dear wife, you know little about how to run a farm," he said.

"As you wish," she responded.

At the end of the third day, a nervous foreman reported to the landowner.

"We have failed in the task, sir. The skylark attacked us again and again. We threw rocks and hit at her with shovels and clubs, but she's too fast. I've never before seen such a savage bird."

The rich man angrily dismissed the foreman. That night, he told his wife that she would have to forget about the new garden patch.

“The bird,” he explained warily, “has won.”

“Oh, I’ll have my garden,” she said. “The skylark will be gone in a few days and then we can clear and plant.”

“That is wishful thinking.” He said. “That bird isn’t about to leave us alone.”

“As you wish.” She said.

A week went by and a strange thing happened. A worker reported that, while working near the garden-field, he saw the skylark fly away. Not only that, but three baby birds flew close behind her.

The landowner immediately sent a crew of men to the field. It was soon cleared and ready for planting vegetable seeds.

That night, he questioned his wife. “How did you know the skylark would leave?”

“It seemed to me, husband, that a creature willing to fight so hard to keep others away had to be protecting her family. It was also reasonable to assume that, once the children were old enough to fly, she would lead them away from such a dangerous place.”

“You are wiser than I realised, dear wife.”

“As you wish, dear husband,” was all she said.

