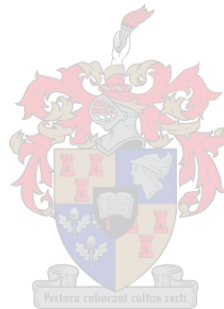


Design for Sustainable Communities - An Integral Perspective -

by

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Master of Philosophy in Sustainable Development Planning and Management at
the University of Stellenbosch”



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Declaration

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: 27 January 2010

Abstract

Given the complexities facing humanity in the light of impending social and environmental collapse, it is the design of sustainable communities at all levels of our society that must be achieved to limit this potential outcome. Attaining such a goal, it is known, requires that humanity 'consciously evolve'. Furthermore I suggest that Integral Theory, because it is grounded in the evolution of consciousness, provides an important map to help navigate this tremendous journey. In this thesis I use Integral Theory as a lens through which to understand and reflect on my experiences over the past eighteen years of the design and development of the Tlholego Village, one of the early experimental Permaculture and Ecovillage communities developed in South Africa.

Opsomming

Gegewe die kompleksiteit wat die samelewing in die gesig staar as gevolg van die dreigende sosiale en omgewings verval, is die ontwikkeling van volhoubare gemeenskappe op alle vlakke van ons samelewing noodsaaklik om so 'n uitkoms te verhoed. Om hierdie doel te bereik word dit voorgestel dat die samelewing bewustelik moet ontwikkel ('consciously evolve'). Verder stel ek voor dat Integraal Teorie ('Integral Theory'), gegrond in die evolusie van bewustheid, 'n belangrike roete kaart verskaf om die geweldige reis te navigeer. In hierdie tesis gebruik ek Integraal Teorie as 'n lens waardeur my ervarings tydens die ontwerp en ontwikkeling van die Tlholego Village (een van die vroeë eksperimentele Permakultuur en Eko-dorp gemeenskappe wat ontwikkel is in Suid Afrika oor die afgelope agtien jaar) verstaan en nabetrage kan word.

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Loving thanks to my wife Stephne and son David, for supporting me on this project, and for walking this journey together with our community friends from Tlholego. Finally much gratitude to my parents, Leon and Peggy, who in many ways have made it possible for me to do this work.

“If we the generation that faces the next century, don’t do the impossible, we shall be faced with the unthinkable.”

Petra Kelly (Co-founder of the German Green Party)

Table of Contents

Declaration.....	2
Abstact	3
Opsomming.....	3
Acknowledgements	4
List of Figures.....	6
List of Boxes.....	6
Chapter 1: Introduction.....	7
Chapter 2: Theory.....	17
Chapter 3: Vision and Early Years	77
Chapter 4: Praxis and Experience.....	104
Chapter 5: Conclusion	140
References and Additional Bibliographical Sources.....	150

List of Figures

Figure 1: Research Method and Structure	13
Figure 2: Four Quadrants of the Integral Framework	26
Figure 3: Waves of Development (memes) in Spiral Dynamics	34
Figure 4: Levels of Consciousness Development	36
Figure 5: Typical Psychograph Showing Lines of Development	38
Figure 6: A simplification of the Integral Framework for Humans.....	40
Figure 7: Matrix of Needs and Satisfiers.....	49
Figure 8: Four Quadrant Analysis of Key Sustainability Texts.....	72/73
Figure 9: Members of Tlholego Community	84/85/86
Figure 10: Tlholego Development Areas	103
Figure 11: Tlholego Village Zoning Plan	103
Figure 12: Value Meme Mosaic	108

List of Boxes

Box 1: Principles of Permaculture Design.....	71
Box 2: One day in the life of the Tlholego Village	93

Chapter 1: Introduction

Human beings have lived and sustained themselves in 'communities' of one form or another since the earliest of times, transitioning from tribal pastoralists to inhabitants of the information age in our emerging global world. Animals and plants can also be thought to live and grow together in communities. Communities are the places and spaces in which and through which we organise ourselves, change, and exchange and link together.¹

Today our environmental and social communities are seriously at risk of collapse (Diamond, 2006). Not necessarily because humanity is intrinsically evil or self destructive, as the eminent biologist Edward O. Wilson points out (Attenborough, 2005), but rather because of our success as a species. While for millions of years our actions did not incur undue damage to the planet as a whole, we now have developed a modern industrial and techno-scientific capacity that can eliminate entire habitats in an instant. We have overdone it and are now destroying the very foundation on which humanity is built.

The knowledge and awareness of societal 'overshoot'² (Meadows, 1992) and the potentially lethal relationship between our global fossil powered economy and the biosphere (Schumacher, 1974; Daly & Farley, 2004) has grown significantly since the birth of the modern environmental movement in the 1960s. What we are really facing is the convergence of a number of powerful trends. All of these factors could develop individually, but what's unique about our time is that the world has become a closed system. Stanford Research Institute³ senior social scientist, Duane Elgin (2001: 28) concludes: "There's no place to escape, and all of these powerful forces are beginning to impinge upon one another. Our situation is something like a set of rubber bands that you stretch out and out and out until they reach the limit of their elasticity, which is

¹The etymological root of the English word "community", according to the Internet encyclopedia Wikipedia, comes from the Latin term "communitatus", and is comprised of three elements, "Com-" - a Latin prefix meaning with or together, "-Munis-" - Proto-Indo-European in origin, meaning "the changes or exchanges that link", and "-tatus" a Latin suffix suggesting diminutive, small, intimate or local.

² To overshoot means to go beyond the limits without meaning to do so (Meadows 1992: 1)

³ <http://www.sri.com/>

the breaking point of the system. It's going to be another couple of decades until we reach the breaking point".

To provide further perspective here, over the coming few decades⁴ or so, at the same time that climate change is underway, we are going to add roughly two to three billion people to the planet, which is the equivalent of one Los Angeles city (+/- 10 million people) every month. We will be adding these enormous amounts of people to the planet at the same time a shifting climate makes food growing more uncertain. It is estimated that in the next 20 years 40% of the world's population will not have enough water to grow their own food. Most of these people are going to be in the poorest parts of the world, in developing countries where they have moved to the mega cities and are living in slums (Elgin, 2001).

Furthermore, 20% of all plant and animal species could be extinct in the next 30 years and 50% extinct in the next one 100 years (Elgin, 2001). Given the anticipated rise in population and the fact that per capita consumption of everything from water and energy to oil and food are growing exponentially, the pressures on biodiversity are likely to become intolerably intense (Bayon, 2008).

While we are tearing into the biosphere and provoking climate change, at the same time we are increasing the population load and thereby diminishing the availability of critical resources like water and fertile soil. Large-scale poverty and inequality, as Elgin (2001: 30) has affirmed, is another core factor. "If we set the poverty line at \$3 a day, its 60% of the world! And that means that whether it's a pair of shoes or a book to read or glasses, aspirin, vitamins, etcetera – the basics of life that must be purchased at world market prices are not accessible to 60% of the world population. But if you walk into the villages in India and Brazil, you see that even the poorest people have a television set. They are seeing, in living colour, lifestyles that will never be accessible to them. And historically those are the ingredients for revolution".

⁴ Study of the Greenland ice cores shows that the last ice age, about 120,000 years ago descended in a period of roughly two decades (Elgin, 2001:29).

With these tectonic stresses accumulating deep beneath the surface of our societies (Homer-Dixon, 2006), our global economic system, driven at least in the post war period by growth and insatiability (Schumacher, 1974; Daly & Farley, 2004) is not moving us any closer to social equity and environmental stability (Max-Neef, 1991) – in fact quite the opposite. Even for the materially wealthy, current research shows that in many instances happiness and wellbeing is essentially decreasing (Lane, 2000; Frey & Stutzer, 2002).

Tensions arising from sustained global inequalities and the current mode of economic growth represent grave fault lines within our societies. As Diamond (2006: 521) emphasises, “if we don’t make a determined effort to solve [these problems] and if we don’t succeed at that effort, the world as a whole within the next few decades will face a declining standard of living, or perhaps something worse”.

For most people global problems of sustainability are too overwhelming to contemplate and various forms of denial are the understandable and preferred response (Homer-Dixon, 2006). While science and technology have an enormous impact on how we view ourselves and the world, accepting change has never been that smooth or easy. Throughout history, it has been easier to deny or ignore information at odds with the prevailing worldview than to change (Walker & Salt, 2006). This was the case during Galileo’s time before the Ptolemaic view of the universe gave way to a heliocentric order; and when Darwin challenged the human-centric model of existence with the theory of evolution, igniting a debate that raged for years (and still rages in some parts of the world).

For humanity in the 21st century, we need to realise that there is no other planet to which we can easily turn for help (Diamond, 2006). Choices that seemed to be crucial to previous societies in tipping their outcomes towards success or failure were long-term planning and the willingness to reconsider core values (Diamond, 2006) – neither of which are leading priorities for most world governments, large multinational corporations or society at large.

Every great civilization believes itself to be exceptional, right up to the time it collapses (Homer-Dixon, 2006). One of the main lessons to be learned from the collapse of past societies, as Diamond (2005: 509) points out, "is that steep decline may begin only a decade or two after peak numbers, wealth and power have been reached". An important question for humanity therefore, is to what extent do we have it within ourselves and our global society to evolve the intelligences and capabilities required for adapting to such changing life conditions?

As global temperatures are rising, so too is our knowledge and experience of sustainability and sustainable development. Concomitantly our understanding is growing of the changes that will be required of us as individuals and collectives, if we are to circumvent the same fate as earlier civilisations who failed to recognise and respond appropriately to inherent but ultimately fatal practices within those societies (Diamond, 2006; Homer-Dixon, 2006).

One of the essential requirements for humanity to move toward a more sustainable future is to rethink the design of its communities. As Capra (1996: 4) has articulated: "This in a nutshell, is the great challenge of our time: to create sustainable communities – that is to say, social and cultural environments in which we can satisfy our needs and aspirations without diminishing the chances for future generations".

While this is surely one important step forward, revolutionary change-makers such as Don Beck and Andrew Cohen, working at the leading edge of human development, believe that what this world needs more than anything else is the evolution of consciousness (Beck & Cohen, 2004). Many other leaders in their fields, including renowned Stanford biologist Paul Ehrlich, have similarly called for a process of 'conscious evolution' that entails interdisciplinary scholarship and support for those who choose to tackle problems that cross boundaries of the moment (Swilling, 2004).

1.1 The Tlholego Village

Within this context of global sustainability challenges, I have applied myself in this thesis to understanding and reflecting on the design of sustainable communities from a theoretical, practical and personal perspective. I have chosen the Tlholego Village in the Northwest Province of South Africa as an appropriate case to support this work for two main reasons. Firstly, because leading sustainability thinkers and practitioners such as Norberg-Hodge (2000), Macy (1998) and Swilling & Annecke (2006) promote the importance of collaborative living arrangements such as cohousing and ecovillages, which in a broad variety of forms, encourage people and generations to explore new and innovative ways of caring for each other and their environment. Secondly, as I have been personally involved in the design and development of the Tlholego Village from its inception in 1990 up until today, I believe certain understanding can be derived from this experience which may be useful to others who feel driven to experiment and innovate in this field.

The Tlholego Village has its origins in an inspired vision that emerged during my explorations into the human potential movement⁵ in the late 1980s. This vision was about building sustainable communities in post-Apartheid South Africa based on holistic and ecological ideas. In 1991 the opportunity materialised to experiment with these ideas in a practical way on an overgrazed cattle farm with several farm worker families outside the town of Rustenburg in the Northwest Province of South Africa. This process gave rise to the formation of the Tlholego Learning Centre, which later evolved into the Tlholego Ecovillage, and today it is known simply as the Tlholego Village.

The conceptual framework central to this development work was that of Permaculture, developed by Bill Mollison and David Holmgren in the late 1970s. Permaculture is a design system for creating sustainable human environments (Mollison, 1991). The idea itself can be seen as a design response to the

⁵ The Human Potential Movement (HPM) arose out of the social and intellectual milieu of the 1960s and formed around the concept of cultivating the extraordinary potential that its advocates believed to lie largely untapped in most people. http://en.wikipedia.org/wiki/Human_Potential_Movement. 15th September 2008.

expectation of a world declining in energy and resource availability, with many similarities and overlaps with design processes drawn from nature (Holmgren, 2002). Permaculture is discussed in more detail on pages 69-71.

The Permaculture framework has provided a powerful interdisciplinary set of tools for thinking about sustainability and also for designing and building a local, sustainable, social ecological system. While this framework helped enormously to integrate site, energy, social and abstract elements within this system, there were nevertheless a number of things that did not work. These were most often to do with understanding and working with people, as collectives and as individuals and subjectively as well as objectively.

After nearly two decades of applying the Permaculture framework in this environment it became increasingly evident to me that a conceptual shift was required in order to progress further in this work. Another framework was needed, a map that could uncover more depth and breadth within the system under development. From this perspective, I have introduced the case for a much stronger organising framework for the development of sustainable communities in the form of Integral Theory⁶.

1.2 Research and Methodology

The objective of this research is to use Integral Theory to set up a lens that is useful in making sense of my experience in building sustainable communities over the past few decades, and to better understand the practical development work that took place in establishing the Tlholego Village during this time.

While I have used Integral Theory as the organising focus of this thesis, I describe a further four knowledge clusters that introduce important concepts and ideas related the design of sustainable communities. I used these concepts and ideas to assist in my general understanding – and analysis of – the Tlholego case. In addition, while I have not described the theories of

⁶ Integral Theory seeks a comprehensive understanding of humans and the universe by drawing on the key insights of the world's greatest knowledge traditions. Integral theory is discussed in more detail in section 2.3 on page 22 of this thesis.

complexity⁷ (Cilliers, 1998) and resilience⁸ (Walker & Salt, 2006) in this thesis, my thinking has been strongly influenced by them, and Permaculture as a system, can also be seen as a form of applied complexity⁹.

My research approach is presented in Figure 1 below and has been conducted according to methods described in Mouton (2001) that include ethnographic and participatory research, historical studies and conceptual analysis. Concluding lessons for the design of sustainable communities are informed by two phases of research. The first is a study of five theoretical themes closely related to the design of sustainable communities, and the second, an interpretation of the Tlholego case based on a language set up by the Integral Theory. This interpretation is also broadly informed by the other four theoretical themes investigated in the first phase of the research.

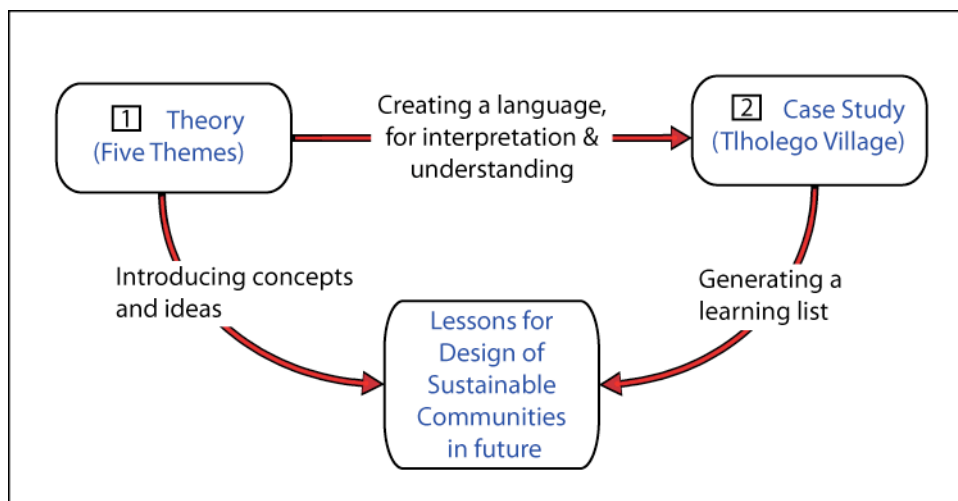


Figure 1: Research Method and Structure

⁷ In complex systems the interaction among constituents of the system, and the interaction between the system and its environment, are of such a nature that the system as a whole cannot be fully understood simply by analyzing its components. The brain, natural language and social systems are examples of complex systems (Cilliers, 1998).

⁸ “Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future”. (www.resalliance.org/576.php, 21 November 2009)

⁹ Professor Mark Swilling introduced me to the idea of Permaculture resembling a form of applied complexity during a complexity module at the Sustainability Institute (www.sustainabilityinstitute.net) in February 2003.

1.2.1 Five Theoretical Themes

Integral literature is related to and goes beyond the complexity literature (Capra, 1996 & 2002; Cilliers, 1998 and Walker & Salt, 2006). It is also useful for building a more rigorous understanding of sustainability (Brown, 2006; Daly & Farley, 2004; Dresner, 2002; Gallopín, 2003; Sneddon, 2005 and Stiglitz, 2002) and brings forth the requirements for a more robust sustainability theory.

A synthesis of the relevant theory has included a literature review of the following knowledge themes:

1. Integral Theory – Beck & Cowan, 1996; Brown, B. 2005a, 2005b, 2006; Hochachka, 2006 and Wilber, 1986, 1995, 2000a, 2000b, 2005, 2006, 2008.
2. Sustainable Development – Brown, L. 2006; Daly, 2004; Diamond, 1999, 2006; Dresner, 2002; Homer-Dixon, 2006 and Sneddon, 2005.
3. Globalisation / Localisation – Douthwaite, 1996; Hawken & Lovins, 1999; Max-Neef, 1991; Macy, 1998; Norberg-Hodge, 1991, 2000; Schumacher, 1974 and Shiva, 1998.
4. Measuring Sustainability – McLaren, 1998; Wackernagel & Rees, 1996 and One Planet Living (WWF / Bioregional).
5. Ecological Design – Van Der Ryn & Cowan, 1996; Holmgren, 2002; Mollison, 1990, 1991 and Todd, 1993.

1.2.2 Tlholego Case

My analysis and interpretation of the Tlholego case is based on my personal knowledge and experience, grown phenomenologically through direct engagement in developing this Village over the past 20 years. Primary data sources used in this research include: direct research outcomes, evaluation reports, an extensive photographic library, founding documents, funding

proposals, minutes of Rucore¹⁰ directors meetings, newspaper articles, the organisation website, personal diaries, project designs, published articles, workshop outcomes and written letters. Unless otherwise stated all this information is available at the Rucore company office in Kommetjie, Cape Town. Some information may be from data stored in memory (brain) and is appropriately footnoted.

In addition to primary sources, secondary information is based on extended conversations I have had with global experts in this field who visited and spent time at Tlholego. These include amongst others Albert Bates, Bill Mollison, Brian (Buddy) Williams, Brian Woodward, Ewald Viljoen, John Wilson, Joanne Tippet, Joseph Kennedy, Mark Swilling, Max Lindegger, Robina McCurdy, Tom Ward and Tshepo Khumbane.

While the aim of this research has been to use Integral Theory to make sense of the Tlholego Village process in the context of sustainable community design, this approach, together with the complicated nature of sustainability and the design of communities in general, is in reality a much larger project than can be contained within the parameters of this assignment. As a result there are likely to be various gaps and lacunae in this research work.

Similarly I have endeavored to remain as objective as possible when reflecting on the Tlholego case. I also recognise that my long-term involvement in the project and personal subjective perspectives have influenced any conclusions that I have come to. Likewise my own abilities in understanding and integrating Integral Theory will have limitations.

At the same time, given the unparalleled pressures on human society to adapt to changing life conditions in the coming decades and to create more sustainable communities at local and global levels, I believe this empirical work may be useful in setting foundations for a deeper understanding of what is required. The Tlholego case as an experiment in 'conscious evolution', has been

¹⁰ Rucore, the Rural Educational Development Corporation is the parent organization that has pioneered the Tlholego Village project.

about “taking responsibility for an unknown future” (Cilliers, 1998: 139), while emphasising “learning, experimentation, locally developed rules and embracing change” (Walker & Salt, 2006: 147). I understand this approach draws in some of the rudiments for building sustainable communities that leading thinkers including Homer-Dixon (2006) and Walker & Salt (2006) tell us are fundamental to understanding sustainable systems at this decisive moment in time. I believe this fact in and of itself is fair justification for current and further research in this field.

1.3 Thesis Structure

Chapter Two provides an overview of Integral Theory, moves onto the remaining four knowledge clusters and concludes with an integral perspective reflecting on this body of theory as a whole.

Chapter Three introduces the Tlholego case in descriptive terms; Chapter Four reflects on the main learning experiences arising from this case, making use of the Integral lens discussed in Chapter Two.

Final arguments are made and conclusions drawn in Chapter Five.

Chapter 2: Theory

In this chapter I explore sustainability concepts to understand and think about sustainable communities and their design. I also introduce Integral Theory as the main language I have used to interpret and make sense of the Tlholego Case.

Chapter Two is organised into nine sections. In the first two sections I introduce the notion of sustainable communities and their history and emergence in contemporary mainstream society. I make the point that a stronger integrating framework is needed, in the form of Integral Theory, if our conscious evolution is to inform the future design of sustainable communities.

In sections three to seven I describe the five key knowledge themes that I refer to in the introductory chapter. I begin with an overview of Integral Theory and introduce four main components of the Integral Framework. In the following section on sustainable development, which is a vast topic, I have contained my discussion to aspects of the global economic system, inequalities in this system and problems with the current modes of economic development. I include in this section a transdisciplinary¹¹ perspective on human scale development (Max-Neef, 1991) that includes a fresh look at poverty, human needs and their satisfiers. In section 2.5 I discuss some positive and negative aspects of globalization and situate localization as a key strategy in addressing many of the negative impacts. In section 2.6 I take a look at various ways of quantifying sustainability and sustainable development and in section 2.7 I talk about ecological design in relationship to human needs and the environment, concluding with a description of Permaculture.

In section 2.8 I assess several current approaches to sustainability from an Integral perspective, using tools made known in the Integral section. Finally I

¹¹ “Transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond each individual discipline. Its goal is the understanding of the present world, of which one of the imperatives is the overarching unity of knowledge” (<http://en.wikipedia.org/wiki/Transdisciplinarity>, 24 November 2009).

end this chapter with a list of key ideas to be carried forward in the future design of sustainable communities in general and specifically in my interpretation of the Tlholego case that follows in Chapter 3.

2.1 Sustainable communities in the mainstream

Community patterns of living have been the norm for most of human history. Our roots are tribal where our lives were deeply connected to each other and to nature, providing both security and intimacy. For thousands of years people have lived in large extended families, tribal networks or small villages that genuinely functioned like communities. Even today a large percentage of our global society still live in tribal villages. Until fairly recently a good sense of neighborliness was present in most places. It is only since our urban societies have become technologically advanced with increased personal wealth and transient lifestyles that people have, "lost touch with a strong community consciousness" (McLaughlin and Davidson, 1986: 11).

McLaughlin and Davidson (1986) have described a conscious community, as distinct from a modern-day neighbourhood or town, as a group of people with a common purpose who have agreed to cooperate and create a sense of unity together. Communities of this nature have consistently sprung up in response to the ills of society. Beginning with the first ashrams of the East and the monasteries of the West, this process continued in the early communities of America, in the Utopian movement of the 1800s, the Kibbutz movement in Israel, the hippy communes of the 1960s and the new communities of the 1980s. In the United States, the intentional communities of the 1980s were working to restore a sense of community in neighbourhoods and towns driven by increasing consumption and individualisation.

In the 1990s we have seen the rise of a global ecovillage movement. Ecovillages being communities of people who strive to lead a sustainable lifestyle in harmony with each other, other beings and the Earth (Jackson & Svensson, 2002).

According to Ross Jackson (2004), one of the founders of the Global Ecovillage Network (GEN), the ecovillage movement, while still in its early stages of development, is part of a global trend that is in opposition to the negative impacts of globalization. While the more visible responses seen within the anti-globalization movement protest the corporate dominated global economic model through street demonstrations and consumer boycotts, the ecovillage movement is actually about committed individuals who are quietly building small sustainable communities with the resources they have. Ecovillages, in this way, offer a lifestyle that is possible for everyone on the planet, and are seen as models of how we can all eventually live, if the social and environmental threats to our society are to be taken seriously.

While many thousands of ecovillages around the world are focused on realising this vision, the ideal ecovillage does not yet exist. The development of ecovillages is a work in process, a fundamental dimension of a new paradigm that humanity is moving toward, and where much is yet to be learned. What do exist are thousands of partial solutions in a multitude of variations on the same general theme. "These ecovillages are emerging in different cultures, under different climactic conditions, and under different kinds of societies, but linked together, as if in one extended global family, by a common life-based value system that defies traditional divisions of race, religion and culture" (Jackson, 2004: 2).

Ecovillages and sustainable communities have, for the most part, been built by groups of people rather than developers (Jackson, 2004). Through their strong environmental and social dimensions, these communitarian movements have influenced the design of sustainable communities that are becoming mainstream today.

At present, both local governments and professional developers, in developed and developing countries, are establishing a variety of sustainable community programmes. While there are definite differences in the design of ecovillages compared with mainstream sustainable communities, both are in response to growing sustainability challenges.

Leading examples of mainstream sustainable community programmes include the Communities Plan in the City of London, United Kingdom (2007); the Regional Sustainability Indicators Collaboration in the City of Melbourne, Australia (2007); and the Sustainable Communities Pilot Programme of the Development Bank of Southern Africa (2007). These programmes have transcended traditional theoretical and planning frameworks for urban and rural development.

Mainstream sustainable communities are important vehicles through which larger sustainability strategies at city level are being implemented. This is important because the future of humanity will be largely urban (Brundtland, 1987). By 2050, up to seven billion of the nine billion expected inhabitants on this planet will live in cities (Swilling, 2004a). Within this context, the sustainability challenges of cities, and therefore of humanity itself, is to a large degree inextricably tied to the sustainability challenges of the communities that make up our cities in the future.

2.2 The need for a stronger integrating framework

Ecovillages and sustainable communities are innovatory global initiatives. For Robert Rosenthal, Professor of Philosophy at Hanover College, "ecovillages, and the larger social movements of which they are an integral part, are the most promising and important intentional community movement in all of history" (in Jackson, R. 2004: 1). Practically, these initiatives have motivated the introduction of sustainability principles in community design, shifted the mindsets of local planning authorities, and inspired a generation of new thinking and action.

Even so, given the magnitude of global challenges we now face, our society does not yet have the livelihood models it needs for adapting to current changing life conditions. The need is to provide a greater quality of life both for those who do not as yet have access to their fair share of environmental

space¹², as well as for those driven to reform their lifestyles of multi-planet consumption¹³ and move toward one-planet realities.

There are certain sustainability perspectives that the current theoretical frameworks for ecovillages and sustainable communities do not altogether include. Innovation in this field has advanced primarily within the objective realm of social infrastructure. It is becoming apparent however that the inclusion of subjective spaces, both within individuals and in our collectives, is of equal importance in realising these aims.

While development in general focuses on the overall wellbeing and development of societies with various specific interventions, the methodologies to date are implemented in ways that are not exactly integrated. Concomitantly, the profound depth and complexity of the issues at hand require more integrated approaches (Hochachka, 2006).

Swilling (2004a: 19) has made the important assertion that within the sustainability movement, and particularly within cities, "replication and transformation is unlikely until the process of 'conscious evolution' within these locals has matured over time to a point where they represent alternatives that are self evidently preferable to an increasingly unviable status quo". In the end only a profound change of attitudes, a spiritual and ethical change, which brings deeper transformations, can make cities truly sustainable (Girardet, 2001). This is of course true within both the urban and rural context.

If this is the case, then certainly we will need a stronger theoretical framework for designing sustainable communities in the future. Such a framework would need, among other things, to include the means for understanding and engaging the realms of consciousness and conscious evolution.

¹² The concept of environmental space is the amount of any particular resource that can be consumed by a country without threatening the continued availability of that resource, assuming that everyone in the world is entitled to an equal share. Environmental space is discussed in more detail in section 2.6.2 on page 61.

¹³ The idea of multi-planet consumption relates to the concept of ecological footprint, which is a measure of human demand on the Earth's ecosystems in comparison with our planet's capacity to regenerate. From this perspective certain societies use far more than what one planet can regenerate and others far less. This concept is discussed in more detail in section 2.6.1 on page 58.

I have argued in the following chapters that Integral theory provides us with such a framework; a map which designers and developers of ecovillages and sustainable communities can use to better view and understand the requisite perspectives influencing the development of community processes and in this way assist communities to become more sustainable.

2.3 Integral Theory

In this section I present an overview of Integral Theory as the organising language and scaffold that I have used to articulate a 'stronger' conceptual framework for the design of sustainable communities.

Much of Integral Theory has existed in one form or another since ancient times. Although specific insights and comprehensive understanding, which makes the Integral vision so powerful, did not fully emerge until the late 20th century. Integral Theory traces its lineage through the work of Alfred North Whitehead, Henry Bergson, Pierre Teilhard de Chardin, Sri Aurobindo Ghose, Jean Gebser, Jurgen Habermas and Clare Graves. Most recently, the theory has been expanded, clarified and further developed by Ken Wilber, Robert Kegan, Don Beck, Allan Combs, Jenny Wade, and others (IDA¹⁴, 2007).

While Integral Theory has evolved through this lineage of leading thinkers, I refer extensively to the work of philosopher Ken Wilber as my main source and reference. Wilber has formulated an Integral model or framework known as AQAL (all quadrants, all levels, all lines, all states, all types), which is also founded on the social practice of Integral Methodological Pluralism (IMP)¹⁵ (Wilber, 2008). The Integral map or AQAL framework articulated by Wilber makes Integral Theory accessible and applicable to everyday practical reality and is now being applied to sustainable development, governance, education,

¹⁴ IDA is an acronym for Integral Development Associates

¹⁵ IMP, roughly speaking, refers to the consciously learned or naturally inherited methodologies representing all manner of embodied living, doing, injunction, action, engagement, interaction, and inquiry. Such methodologies would include: phenomenology, structuralism, hermeneutics, semiotics, cognitive science, empiricism, social autopoiesis and systems theory (Snow, 2007).

medicine, psychology, business, future studies, leadership, politics, religion, and numerous other disciplines (Brown, 2005a).

Wilber's Integral Map provides a framework through which to observe ourselves and the world around us in more complete and effective ways. It is also an unbiased framework that can be used to identify any activity from the arts to dance to business to psychology to politics to ecology. It also allows each of these domains to converse with the others, and in this way facilitates and accelerates the formation of cross-disciplinary and transdisciplinary knowledge (Wilber, 2005).

Based on extensive cross-cultural study, Integral Theory attempts to form a comprehensive map by including the best elements from the world's great traditions. This map uses all the known systems and forms of human development – from the ancient shamans and sages to today's advancements in cognitive science – and refines their major components into these five simple factors (AQAL framework) that are also keys to unlocking and aiding human evolution (Wilber, 2005).

Integral Theory takes literally everything that all the various cultures have to tell us about human potential – about spiritual growth, psychological growth, and social growth - and puts it all on the table. However, as Wilber (2005: 22) points out: "It's one thing to simply lay all the pieces of the cross-cultural survey on the table and say, 'they're all important!' and quite another to spot the patterns that actually connect all the pieces. Discovering the profound patterns that connect is a major accomplishment of the Integral approach". In this way, Integral Theory attempts to find the fundamental keys to human growth, based on the sum total of human knowledge now open to us.

2.3.1 Holons and Hierarchy

Before describing the elements of the AQAL or Integral framework, it is useful to mention two important concepts that underlie this theory.

According to evolutionary biologist Elisabet Sahtouris (2000 & 1998), Ken Wilber (1995), and others, reality as a whole is not composed of things or processes but of holons. In other words the Kosmos or patterned nature of all domains of existence is made of wholes that are simultaneously parts of other wholes, with no upward or downward limit.

The philosopher scientist Arthur Koestler (1982) suggested we call each whole thing within nature a holon – a whole made of its own parts, yet itself part of a larger whole. A universe of such holons within holons is then a holarchy. Since reality has no separate wholes or separate parts, this approach moves beyond the traditional argument between atomism (all things are fundamentally isolated and interact only by chance) and wholism (all things are simply strands or parts in a larger web or whole) (Wilber, 1995).

For Sahtouris (2000), the universe of all these parts within parts, or wholes within wholes, reminds us of the Chinese or Russian dolls that fit into one another. For Wilber (1995: 33), "Before an atom is an atom, it is a holon. Before a cell is a cell, it is a holon. Before an idea is an idea, it is a holon. All of them are wholes that exist in other wholes, and thus they are all whole/parts, or holons, first and foremost (long before any 'particular characteristics' are singled out by us)".

Wilber (1995) describes what all 'patterns of existence' or holons have in common in terms of 20 basic tenants¹⁶ that derive from modern evolutionary and systems sciences. These basic tenants are operational in the three main domains of evolution, which are the physiosphere, the biosphere, and the noosphere (or in matter, life and mind) that make this universe a genuine universum ('one turn'). A more complete description of the 20 tenants is unfortunately beyond the scope of this thesis.

A further concept that is central to Integral Theory is that of hierarchies. Firstly let me emphasise the important distinction between growth hierarchies and dominator hierarchies. In *The Chalice and the Blade*, social scientist Riane Eisler

¹⁶ Twenty tenants described in detail in (Wilber, 1995: 33-78)

(1988) makes an important distinction between 'dominator hierarchies' and 'actualisation hierarchies'. The former are the unyielding social hierarchies that are tools of oppression, the latter are growth hierarchies that are necessary for individual and cultural development and for most biological systems as well. Whereas dominator hierarchies are the means of oppression, actualisation hierarchies are the means of growth. As Wilber (2000a: 26) points out: "It is growth hierarchies that bring together previously isolated and fragmented elements. Isolated atoms are brought together into cells; isolated cells into organisms, organisms into ecosystems, ecosystems into biosphere, and so on. In short, growth hierarchies convert heaps into wholes, fragments into integration, alienation into cooperation".

Wilber (2000a) writes about one of the most challenging problems he faced in finally emerging with an integral philosophy. The hard part for him was to do with hierarchies. As he explains, "at one point I had over two hundred hierarchies written out on legal pads lying all over the floor, trying to figure how to fit them together. There were linguistic hierarchies, contextual hierarchies, and spiritual hierarchies. There were stages of development in phonetics, stellar systems, cultural worldviews, autopoietic systems, technological modes, economic structures, phylogenetic unfoldings, superconscious realisations.... And they simply refused to agree with each other" Wilber (2000a: 39).

Towards the end of a three-year period of living like a hermit, grappling with this problem, the whole thing eventually started to become clear to him. What crystallised for Wilber (2000a) at this time was that all the various hierarchies fall into four major classes. Some refer to individuals, some to collectives, some are about exterior realities, some about interior ones, but they all fit together seamlessly. Wilber's four classes are now understood and classified in terms of the 'four quadrants' of the Integral framework.

2.3.2 The Integral Framework

The complete integral or AQAL framework is described in terms of five essential elements, these being quadrants, levels, lines, states and types. In terms of the

scope of this thesis I will refer primarily to four of these five core elements, namely quadrants, levels, states and lines.

To the extent that I will explain in part the rudiments of the integral framework, it is important to point out that while the AQAL framework maps the forces at play in the evolution of any holon or holarchy, it is nevertheless only a map and not the actual territory. However, as Wilber (2005) points out, working with a map that utilises the full range of available resources, ensures a greater likelihood of success in any particular situation.

A. Quadrants

Every holon has four major aspects or quadrants (Wilber, 1995), representing four very different types of holarchies (Wilber, 2000b). The four quadrants, as shown in Figure two below, “simply refer to four of the most important dimensions of the Kosmos, namely the interior and the exterior of the individual and the collective” (Wilber, 2000a: 42).

		INTERIOR	EXTERIOR
INDIVIDUAL	<p>CONSCIOUSNESS "What I experience"</p> <p><i>Areas studied:</i></p> <p>"I", subjective realities, e.g. self and consciousness, states of mind, psychological development, mental models, emotions, will.</p> <p style="text-align: right;">UL</p>	<p>BEHAVIOR "What I do"</p> <p><i>Areas studied:</i></p> <p>"It", objective realities, e.g. brain and organism, visible biological features, degrees of activation of the various bodily systems.</p> <p style="text-align: right;">UR</p>	
	COLLECTIVE	<p>CULTURE "What we experience"</p> <p><i>Areas studied:</i></p> <p>"We", intersubjective realities, e.g. shared values, culture and worldview, webs of culture, communication, relationships, norms, boundaries, customs.</p> <p style="text-align: right;">LL</p>	<p>SYSTEMS "What we do"</p> <p><i>Areas studied:</i></p> <p>"Its", interobjective realities, e.g. social systems and environment, visible societal structures, economic systems, political orders, natural resource management.</p> <p style="text-align: right;">LR</p>

Figure 2: Four Quadrants of the Integral Framework with respect to humans and the physical environment (Brown, B. 2005a: 11).

The four quadrants can also be seen as items available to every person's awareness right now. All major languages have what are called first-person (I), second-person (we) and third-person (it) pronouns. Variations of these pronouns are 'the beautiful', 'the good' and 'the true', which are also found in all major languages since beauty, truth and goodness are very real dimensions of reality to which language has adapted (Wilber, 2005).

Broadening upon this notion, first-person (or 'I') deals with self-expression, art and aesthetics, and the beauty that is in the eye or the 'I' of the beholder. Second-person (or 'you/we') refers to goodness, or the way that 'we' treat each other, and whether we do so with decency, honesty and respect, or basic morality. Third-person (or 'it') refers to objective truth, which is best investigated by science. So, as Wilber (2005: 24) explains, "the 'I', 'we', and 'it' dimensions of experience really refer to art, morals, and science. Or self, culture, and nature. Or the Beautiful, the Good, and the True".

Furthermore Wilber (2005) points out that every event in the manifest world has all three of these dimensions. Any event can be looked at from the point of view of the 'I' (how I personally see and feel about the event); from the point of view of 'we' (how not just me but others see the event); and as an 'it' (or the objective facts of the event).

Any integrally informed path would therefore take all these dimensions into account. And as Wilber has concluded, "If you leave out science, or leave out art, or leave out morals, something is going to be missing, something will get broken. Self and culture and nature are liberated together or not at all" (2005: 24).

In this way the fundamental dimensions of 'I', 'we' and 'it' become the foundation of the Integral framework. Subdividing 'it' into singular 'it' and plural 'its' arrives at the four quadrants. And therefore, "all four quadrants with all their realities, mutually interact and evolve – they 'tetra-interact' and 'tetra-evolve'" (Wilber, 2000a: 52).

The four quadrants are a simple way to organise the innumerable subjective and objective dimensions of individuals, societies and the environment (Brown, B., 2005b). While Figure two on page 26 provides a graphical representation of the four quadrants, I now give a brief description of the main constituents of each of these quadrants. Both are adapted from Brown, B. (2005b).

The upper-left quadrant (UL) represents all the factors that directly influence an individual's experience of the world. It is a map of an individual's subjective experience and interior. The upper-left quadrant covers the entire realm of self and consciousness. Everything someone expresses in first-person, 'I' language is associated with this quadrant. This includes one's thoughts, feelings, intuitions, sensations and intentions. The upper-left quadrant concerns the role that an individual's mental model, psychological makeup, multiple intelligences, states and stages of consciousness, beliefs, emotions, pathologies, will, and conditioning have in shaping his or her attitude (which in turn influences behavior). This part of the Integral framework houses what an individual experiences, which includes why he or she does something.

The upper-right quadrant (UR) represents the exteriors of individuals. In humans, this is an objective map of one's behavior, brain and organism. All individual things, described in third-person, 'it' language, form this quadrant. The UR consists of what any thing or event looks like from the outside (e.g., brainwaves, using birth control or turning off the lights). It concerns the role that human health and behavior have on any occurrence. This part of the Integral framework houses what an individual does.

The lower-left quadrant (LL) represents all the realms and reasons that directly influence a group's experience of each other and the world. It is a map of intersubjective realities, the interior of collectives. The lower-left quadrant covers the entire arena of culture and worldview. All expressions that are stated in second-person 'you' language and first-person plural 'we' language lie in this domain. This includes the values, practices, beliefs, perceptions, meanings, and ethics that are shared. The lower-left quadrant highlights how religions, ideologies, morality, background contexts, the attitudes of family and friends,

and other facets of intersubjective reality – even communication itself – shape the shared disposition toward the world. This shared disposition, in turn, influences the actions a group takes collectively. This part of the integral framework encompasses what a group collectively experiences, which includes why a group does things together.

The lower-right quadrant (LR) represents the arena of objective descriptions and explanations of how our social, economic, political, and ecological systems operate. It is a map of exterior-collective, interobjective realities, encompassing all systems and the physical environment. Everything described in objective, third-person 'its' language that refers to collectives falls into this domain. This includes physical structures, architectural styles, the ecological web of life, modes of information transfer (e-mail, ideograms), and social structure (survival clans, ethnic tribes, feudal orders, agrarian empires, industrial states, value communities, informational global federation, etc.), population size, even classroom layout. The lower-right quadrant concerns all the areas where groups do things together, or where nature operates. The truths from these areas can help show how these collective actions and systems affect everything else. This part of the integral framework houses what a collective does.

B. Levels

All four quadrants show growth, development or evolution (Wilber, 2005). That is, they all show stages or levels of development, not as rigid rungs in a ladder but as fluid and flowing waves of unfolding. This happens everywhere in the natural world, just as an oak unfolds from an acorn through stages of growth and development or an African elephant grows from a fertilised egg to an adult organism in well-defined stages of growth and development (Wilber, 2005).

Likewise with humans, Wilber (2005) explains that these stages unfold in distinct and significant ways. In the upper-left quadrant the self¹⁷ and consciousness unfolds from body to mind to spirit. In the upper-right quadrant,

¹⁷ The self is the individual person from his or her own perspective and can be broadly defined as the essential qualities that make a person distinct from all others (http://en.wikipedia.org/wiki/Self#Essence_of_oneself, 26 November 2009).

our bodies expand from atoms and molecules, to an organism with a neural cord, and still further to one with a complex neocortex. In the lower-left quadrant, our shared worldviews expand from egocentric to ethnocentric to worldcentric. This expansion of group awareness allows social systems, in the lower-right quadrant; to expand from simple hunter-gatherer groups to more complex systems like nation states and eventually even to global systems.

Further insight and understanding of these stages or waves of development can be drawn from the field of development psychology. Development psychology is the study of the growth and development of the mind – the study of interior development of consciousness evolution. Wilber (2000a) has pointed out that there is a striking similarity, in general terms, between the models presently used within the field developmental studies. Whether, from Clare Graves to Abraham Maslow; from Deirdre Kramer to Jan Sinnott; from Jurgen Habermas to Cheryl Armon; from Kurt Fischer to Jenny Wade; from Robert Kegan to Susanne Cook-Greuter, there appears a remarkably consistent story of the evolution of consciousness.

To illustrate these stages of unfolding more clearly, I draw on one of these models, that of Spiral Dynamics, developed by Don Beck and Christopher Cowan, and based on the pioneering work of Clare Graves. Spiral Dynamics looks more closely at values, while other researchers have focused on developmental sequences such as cognition and self-identity (see Figure four on page 36).

Graves's orientation was to integrate biological, psychological and sociological systems, thus meshing human knowledge and breaching the walls of academia that separated disciplines and fields (Beck & Cowan, 1996). Graves (in Beck & Cowan, 1996: 28) proposed, "that the psychology of the mature human being is an unfolding, emergent, oscillating, spiraling process marked by progressive subordination of older, lower-order behaviour systems to newer, higher-order systems as man's existential problems change".

Graves outlined eight major levels of waves of human existence, called memes¹⁸, based on extensive research and data collected in first, second and third world countries. The Graves model has been tested on more than fifty thousand people from around the world and there have been no major exceptions found to the general scheme (Wilber, 2000a).

When the person is positioned in a particular stage of existence, as Wilber (2000a: 6) points out, "he or she has a psychology which is particular to that stage. His or her feelings, motivations, ethics and values, biochemistry, degree of neurological activation, learning systems, belief systems, conception of mental health, idea of what mental illness is and how it should be treated, conceptions of and preferences for management, education, economics, and political theory and practice are all appropriate to that state".

What follows is a simplified description of the stages or waves of unfolding in Spiral Dynamics, adapted from Linscott (2002), Wilber (2000a) and Beck & Cowan (1996).

It is important to recognise, as Wilber has emphasised, "that none of these schemes gives the whole story, or even most of it. They are all simply partial snapshots at the great River of Life, and they are all useful when looking at the river from that particular angle" (2000a: 6).

The eight developmental stages are stacked in a spiral and colour-coded for convenience. The stages are rational responses to environment and the challenges of existence, and they evolve as new environments (and new technologies) present new challenges. These stages (or mindsets or adaptive intelligences) do not measure intelligence or lack of it. They have no intrinsic moral content; individuals at any particular stage are still capable of good or evil. No particular stage on the spiral is superior to another; it is simply appropriate to current life conditions.

¹⁸ For Spiral Dynamics, "a meme is simply a basic stage of development that can be expressed in any activity" (Wilber, 2000a: 7).

Very briefly, these colour-coded stages are (Wilber, 2000a; Beck & Cowan, 1996; Linscott, G. 2001):

1. Beige (archaic-instinctual), beginning roughly 100,000 years ago: Where the impulse is for sheer survival and procreation. People live in small hunter/gatherer bands.

2. Purple (magical-animistic), beginning roughly 50,000 years ago: Hunter/gatherer bands have evolved into complex communities of tribal order where hierarchies are unchallenged, customs are scrupulously observed, the individual is secure in his niche, there is a warm communality, the collective wisdom of the tribe is revered and there is a strong sense of communion with the shades of departed ancestors and with the forces of nature which are seen as magical.

3. Red (power gods), beginning roughly 10,000 years ago: The rebellious individual breaks away from the constraints of tribal order (often under the impact of urbanisation) and asserts him or herself for survival in a new and dangerous world. Instant satisfaction is demanded for there may be no tomorrow.

4. Blue (mythic order), beginning roughly 5,000 years ago: In reaction to the amoral anarchy of existence at the previous level, the individual withdraws into rule-based order (often religion) in which codes of behaviour are strictly set and observed. Reward (perhaps in the hereafter) depends entirely on the individual's observance of those rules.

5. Orange (scientific achievement), beginning roughly 300 years ago: Breaking free from the stultifying rules and regulations of the previous level, the adventurous individual seeks to fully harness the forces of nature for profit and individual comfort. This is the mindset that drives entrepreneurial endeavour and which (in contrast with the rigidity of Blue) is comfortable with political and other trade-offs.

6. Green (the sensitive self), beginning roughly 150 years ago: In reaction to the grossness and materialism of the previous level, as well as to the perceived profit of a small group at the expense of the masses, individuals and groups pursue egalitarian agendas of justice, fairness and resource sharing. They also seek to protect the earth's resources from over-exploitation.

7. Yellow (integrative), beginning roughly 50 years ago: At this mindset Graves identified a qualitative shift to a higher order of integrated thinking, what Spiral Dynamics refers to as a shift from first-tier to second-tier thinking. The individual is now capable of seeing value in all the previous levels, and the need to integrate them, not destroy those whose values he does not share. Whereas the individual at Red will despise tribal order (Purple), reject the rules of Blue and accept entrepreneurial Orange only to the extent he can exploit it (typically, gangsterism), the individual at Yellow can appreciate the need for a sensible sharing of wealth and a caring for the global commons and the less fortunate; for an entrepreneurial economy (Orange) without which there can be no wealth; for rules and regulations (Blue) without which there is anarchy; for a channelling of the raw individual energies (Red) of detribalised individuals into constructive pursuits; and for communities which desire to be tribally organised (Purple). For example, integrated thinkers might be aware of the plight of those small bands of hunter/gatherers the San (Beige level) still in existence in Botswana, Namibia and South Africa, who are being marginalised by changing land ownership patterns and the interests of commercial agriculture.

8. Turquoise (holistic), beginning roughly 30 years ago: This describes a mindset that is still evolving – a holistic and essentially spiritual understanding of the cosmos and of the place of humans in it.

In practice no individual is likely to be at only one level. She or he is more likely to contain other mindsets and shift towards or away from them as circumstances warrant. A truly integrated thinker will recognise that all stages of the spiral have a role to play if the resources of the earth are to be developed on a sustainable basis. As Linscott (2002) asserts, no single mode of existence is going to save the planet.

The following figure provides a graphical representation of the various waves of development or (memes) in Spiral Dynamics. The first six memes, coded Beige to Green, represent first-tier thinking systems, and the next two memes, Yellow and Turquoise, second-tier thinking systems. Generally first-tier thinking sees the world through the particular lens of its own meme, whereas second-tier thinking tends to see the world in terms of the whole spiral where individuals are born into beige and continue to evolve through the spiral in response to life conditions. From a second-tier perspective, when considering the development and survival of our species, it is the overall health of the spiral that is most significant and the prime directive of Spiral Dynamics.






WAVES OF DEVELOPMENT OR MEMES IN SPIRAL DYNAMICS							
Developmental Level	Pictograph	Thinking (Self)	Value Systems	Lifestyle (Lives for)	Motivational System	Focus	Theme
8 (Turquoise)		Holistic (Integral Self)	Compassionate, spiritual, intuitive, interconnected	Wisdom	Experiential	Community	Whole View
7 (Yellow)		Systemic (Hoistic Self)	Flexibility, spontaneity, competence supersedes status	Mutuality	Existential	Individual	Flex Flow
6 (Green)		Humanistic (Sensitive Self)	Community, harmony, equality, relativistic	Harmony	Affiliation	Community	Human Bond
5 (Orange)		Materialistic (Achiever Self)	Entrepreneurial, strategic, success-driven	Gain	Independence	Individual	Strive Drive
4 (Blue)		Absolutistic (Mythic Self)	Purposeful, authoritarian, "one-right-way"	Later	Security	Community	Truth / Force
3 (Red)		Egocentric (Egoic Self)	Power-driven, exploitative, no boundaries	Now	Survival	Individual	Power Gods
2 (Purple)		Animistic (Magic Self)	Sense of family/tribe with time-honoured traditions	Group	Assurance	Community	Kin Spirits
1 (Beige)		Automatic (Instinctual Self)	Group bands together to stay alive	Survival	Psychological	Individual	Survival Sense

Figure 3: Waves of Development (memes) in Spiral Dynamics (Wilber, 2000a; Beck & Cowan, 1996)

Linscott (2002) describes the stratification of memes within our global society as ranging almost entirely between the Purple and Green memes of the spiral. From this perspective the developed world is comprised, for the most part, of the Blue (authoritarian), Orange (entrepreneurial) and Green (egalitarian) memes, while the under-developed world consists mainly of the Purple (tribal) and Red (power driven) memes. Partially developed countries such as the Philippines and South Africa have citizens living side by side, who possess most of these two meme ranges. In these more complex societies subsistence tribalists will struggle for a livelihood off the land while the recently urbanised hustle for a living in urban slums. Many individuals find stability and peace of mind in the Church, while forceful entrepreneurs try to squeeze what they can out of the available resources. Where postmodern or more integral values do exist, those people who possess them are generally in a minority, where they can often be confined to university campuses.

Therefore as Wilber (2000a) points out, people argue from different perspectives, which are more to do with their personal subjective realities than better objective evidence. What is true from a basic understanding of developmental levels is that no amount of Orange scientific evidence will necessarily convince Blue mythic believers. Likewise, no amount of Green bonding will impress Orange assertiveness, and no amount of Turquoise holism will dislodge Green pluralism - unless such individuals are actually ready to develop forward through the vigorous whorl of unfolding consciousness. This is why 'cross-level' debates are rarely resolved, and why it is so easy for people in these situations to feel unheard and unappreciated.

To complete this section of stages of development, I have included Figure 4 on the following page, which shows the Spiral Dynamics waves of development within a wider context of development psychology as Wilber and others have shown. This figure depicts key features of an individual's consciousness, such as cognition (what one is aware of), values (what one considers most important), and self-identity (what one identifies with).

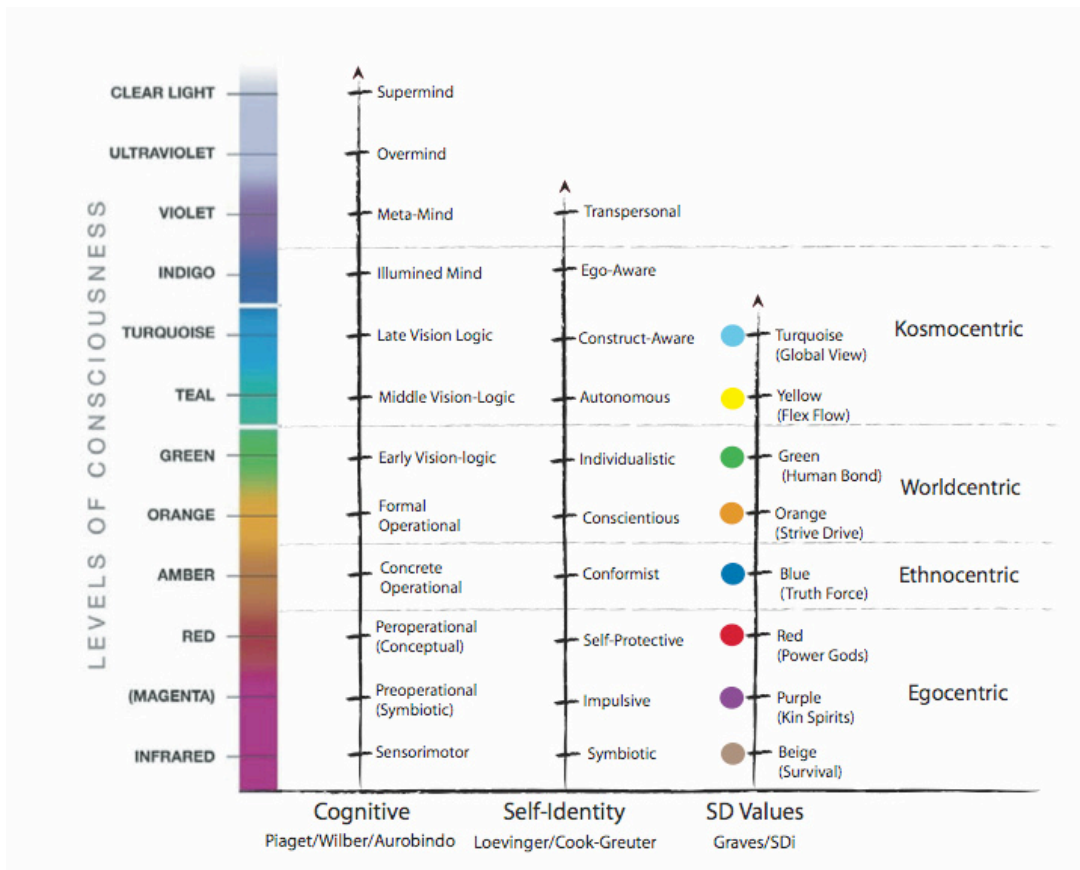


Figure 4: Levels of Consciousness Development (Brown, B. 2006: 2)

C. Lines

The next element I will describe in the AQAL framework is that of developmental lines. Through the levels or waves of development described above, flow many different lines or streams of development, following the uneven, nonlinear nature of most development (Wilber, 2000a).

Developmental lines have to do with the fact that virtually all people are unevenly developed, in the sense that some people are highly developed in one area, say in logical thinking, but poorly developed in another, for example, in emotional feelings. This concept was made known by Howard Gardner using the idea of multiple intelligences, and each of these multiple intelligences grow, or can grow, through the various stages as described in the previous section (Wilber, 2005).

Humans exhibit over a dozen different multiple intelligences or developmental lines (Wilber, 2005). Some of the more important ones include:

- **Cognitive** line (awareness of what is)
- **Moral** line (awareness of what should be)
- **Emotional** or affective line (the spectrum of emotions)
- **Interpersonal** line (how I relate socially)
- **Needs** line (such as Maslow's needs hierarchy)
- **Self-identity** line ('who am I')
- **Aesthetic** line (the line of self-expression, beauty, art and felt meaning)
- **Psychosexual** line (in the broadest sense – the whole spectrum of Eros)
- **Spiritual** line (where 'spirit' is viewed through its own line of unfolding)
- **Values** line (what a person considers most important)

Most people excel in one or two of these lines, but do poorly in others. According to Wilber (2005: 10), "this is not necessarily or even usually a bad thing; part of the Integral wisdom is finding where one excels and thus where one can best offer the world one's deepest gifts. But this does mean that we need to be aware of our strengths (or the intelligences which make us shine) as well as our weaknesses (where we do poorly or even pathologically)".

From Wilber's (2000a: 25) perspective this model, "sheds considerable light on the fact that, for example, some individuals – including spiritual teachers – may be highly evolved in certain capacities (such as meditative awareness or cognitive brilliance), and yet demonstrate poor (or even pathological) development in other streams, such as psychosexual or interpersonal".

The following figure shows a typical psychograph depicting the relative development of six lines against eight Spiral Dynamics meme code levels.

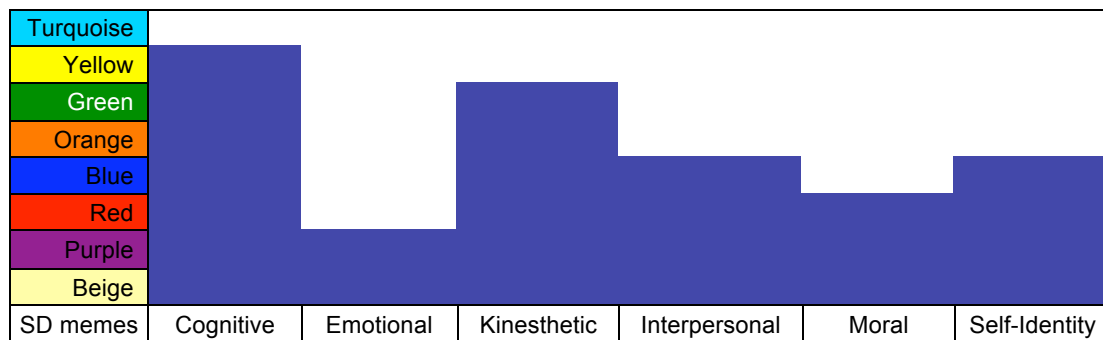


Figure 5: Typical Psychograph showing Lines of Development at differing levels (adapted from Wilber, 2005: 12)

D. States

Where stages of consciousness are permanent and represent actual milestones of growth, states of consciousness are temporary (Wilber, 2005). They can provide insights to wider and deeper possibilities for consciousness and development beyond a present stage or perspective. Major states are waking, dreaming and deep sleep. There are also many different states including meditative states, altered states and peak experiences, which together with the major states contain a treasure trove of spiritual wisdom. States can often provide profound motivation and drives in individuals and collectives and no integral approach can afford to ignore them (Wilber, 2005).

2.3.3 Concluding note on Integral Framework

This concludes my description of four of the main elements of the Integral or AQAL framework. **Quadrants**, referring to the four non-reducible interrelated perspectives of any occurrence of holon; **levels** to the unfolding stages of complexity in development processes; **lines** to the various streams along which development finds direction and **states**, referring to those aspects of consciousness that are temporal, passing, experiential, and phenomenal.

Figure six on the following page depicts a comprehensive summary of the AQAL framework. This composite diagram portrays a full spectrum of development levels along one line in each quadrant for a human holon.

In the following example, Wilber (2000a: 71) shows how the integral framework is used to articulate a comprehensive view, or slice through a human holon in this particular context, "the complex neocortex of the human being can be described in exterior, objective terms as a series of material fissures in the outer layer of the brain consisting of various neuronal tissues, neurotransmitters, and organic pathways (upper right quadrant). But when humans first evolved a complex neocortex, which separated them from the great apes, they moved from an interior meme of beige (instinctual) to an interior meme of purple (magic) – a change not just in objective brain structure, but also in subjective consciousness, as the old archaic worldview gave rise to the magical worldview (upper left quadrant). Finally the collective group of early humans, when described in their exterior (material or social) forms, went from a Beige survival clan to a Purple ethnic tribe (lower right quadrant). And the interior culture shifted from archaic to animistic-magical (lower left quadrant)"

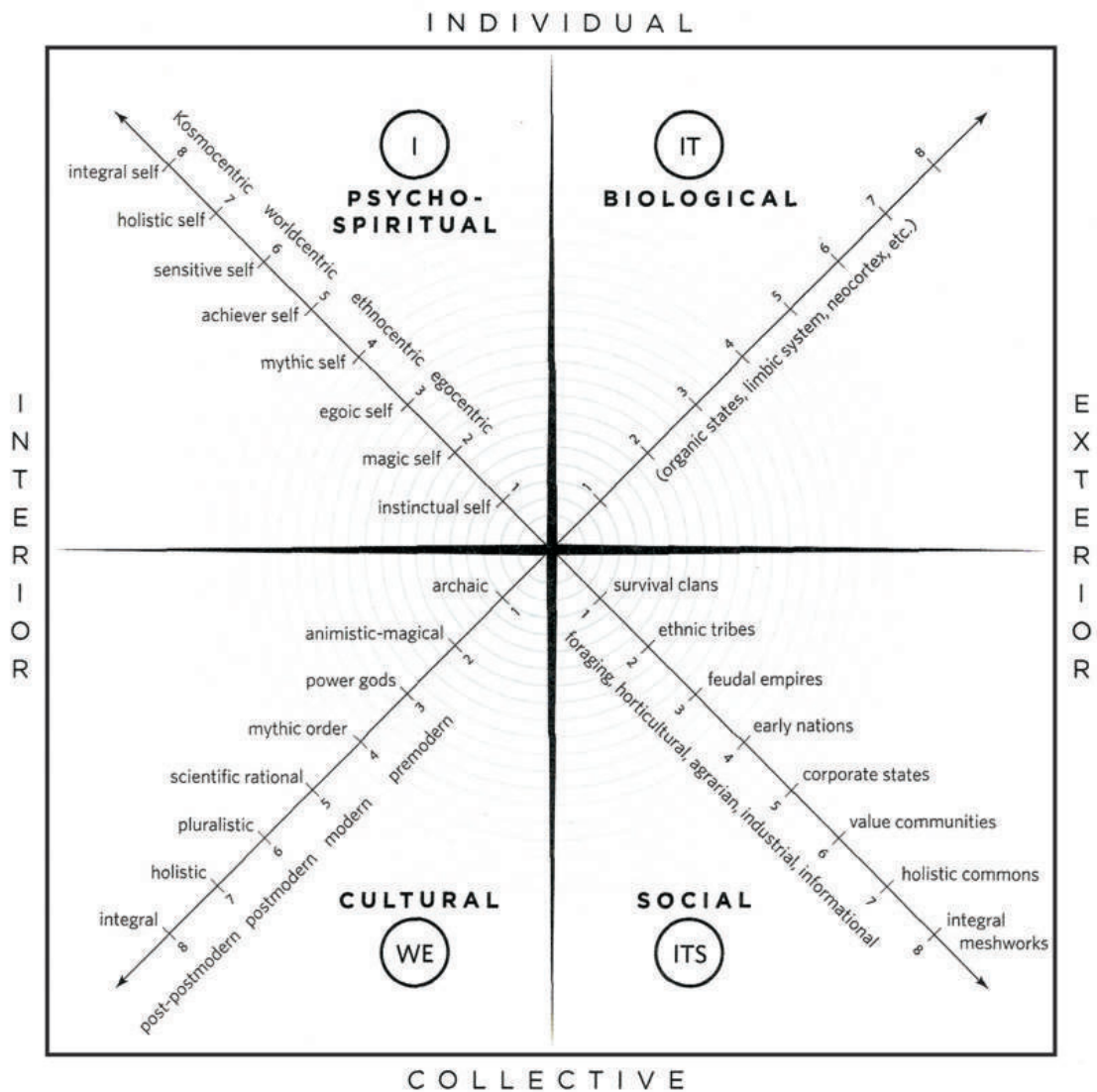


Figure 6: A Simplification of the Integral Framework for Humans - showing one line and eight levels or structures of development in each quadrant (Cohen & Wilber, 2007: 60).

The AQAL framework described above provides the intellectual scaffold and language that I will use to support the discussions that follow relating to the remaining four knowledge themes. Additionally the AQAL framework forms the lens through which I have viewed and reflected on the case study that follows in Chapters Three and Four. When applying this framework later on I will focus more specifically on the values line using Spiral Dynamics.

2.4 Sustainable Development

Sustainable development covers a vast area of knowledge. In this section, I will discuss its evolution and then talk in the context of development and quality of life, and of the importance both material and non-material components contribute to realising these goals. I have included a practical example of human scale development as articulated by Max-Neef (1991) and conclude by reflecting on the practice of sustainable development from an Integral perspective.

The terms 'sustainable' and 'development' have not been easy bedfellows. As Gallopin (2003: 7) has observed, "The concept of sustainability and particularly of sustainable development figure among the most ambiguous and controversial in the literature".

Although sustainable development is a meeting point for environmentalists and developers, according to Nitin Desai the difficulty in defining sustainable development is that people do not necessarily agree on what they mean by 'development'. Is development about improving people's lives through better education and health, or is it about expanding material consumption through economic growth (in Dresner, 2002: 68)?

In 1987 the Brundtland Commission defined sustainable development as 'development that meets the needs of the present without sacrificing the ability of future generations to meet their needs'. This definition is often criticised as hopelessly vague or, in the language of experts, non-operationalisable (Dresner 2002).

What seems to have happened post Brundtland, as Sneddon (2005) points out, is that the cooperative global environmental governance regime envisioned at the 1992 Earth Summit in Rio remains in an institutional incubator while neo-liberal economic globalisation has become fully operational. Furthermore inequalities in accessing economic opportunities have dramatically increased

within and between most societies, making progress toward social and environmental goals increasingly difficult.

This was clearly in evidence 10 years later at the 2002 World Summit on Sustainable Development (WSSD) held in Johannesburg, as one of the notable aspects was the presence of transnational corporations promoting their own interests in sustainable development (Sneddon, 2005). Dr Vandana Shiva (2002) summed up the WSSD as being falsely presented, being about poverty and not about the environment. Globalisation was then promoted as the solution to poverty, and decisions that actually have a negative impact on the quality of life of the poor, such as the privatisation of water, patenting of seeds and alienation of land, were then being presented as measures for 'poverty alleviation'.

Significant 'state of the world' studies¹⁹ continue to show that equity and environmental quality has declined over the 20 years since the Brundtland report. This is linked, as Sneddon (2005) points out to ineffective institutions and a lack of political will on the part of governments and citizens at many different levels. However, he argues that the notion and practice of sustainable development as a guiding principle, policy goal, and a focus of political struggle remains most important in confronting the multiple challenges of our new global context.

Sneddon (2005: 262) and his colleagues argue that in the interests of reconstructing the conceptual landscape of sustainable development²⁰, "some politically savvy and ethically defensible semblance of development is salvageable". In this regard they cite the work of Amartya Sen as offering a workable perspective.

¹⁹ International Panel on Climate Change: IPCC WGII Fourth Assessment Report; The Worldwatch Institute: State of the World Reports 2005, 2006, 2007; United Nations Population Fund: State of the World Population 2007; WWF: Living Planet Report 2006.

²⁰ "This would be possible provided that, in addition to resurrecting an ethically viable semblance of our understanding of the concept of 'development', also a sufficient number of scholars, practitioners and political actors embrace a plurality of approaches to and perspectives on sustainability, accept multiple interpretations and practices associated with an evolving concept of development, and support a further opening up of local-to-global public spaces to debate and enact a politics of sustainability" (Sneddon, 2005: 254).

Sen (in Sneddon, 2005) uses freedom as a lens to question the traditional focus of development studies such as poverty, food production, women in development, market versus state institutions and welfare. He makes the general claim that development in the end is about political rights and responsibilities, and transparency in social interactions - freedoms that are quite the opposite to the narrowly defined yet widely used recognition of development to about amassed economic growth.

I support the idea that Gallopin (2003) has argued strongly for, which is to distinguish clearly between development as a qualitative process of realisation of potentialities that may or may not involve economic growth (a quantitative increase in material wealth). From this perspective, development is not synonymous with economic growth; the latter is only a particular way of achieving the former. This too is one of the most important distinctions made by Meadows *et al.* (1992) in *Beyond the Limits*.

For Gallopin (2003: 36) development is about improvements in the quality of life. Quality of life, from his viewpoint, "embodies the satisfaction of material and non-material human needs (resulting in the level of health reached) and the fulfillment of human desires and aspirations (resulting in the level of subjective satisfaction obtained). Human needs, desires and aspirations can be met through a variety of alternative material and non-material satisfiers".

Taking his argument a step further, Gallopin (2003) describes underdevelopment as occurring when neither quality of life increases nor economic growth takes place. This situation affected many Latin American countries during the 1980s and continues to plague many countries today, mostly in the global South. The situation where there is material economic growth, but quality of life does not increase, can be defined as maldevelopment; which occurs both in the global North and South. This realisation is consistent with many current studies, particularly in the West, where societies have become much wealthier in material terms, yet people are no happier than they were 50 years ago (Dresner, 2002; Lane, 2000; Frey & Stutzer, 2002; Bruni & Porta, 2007).

The combination of increasing quality of life with material economic growth is what is usually viewed as development. It currently occurs mostly in the North, but also in some countries in the South. However, as Gallopin (2003: 26) concludes, "in the long-term this situation is environmentally unsustainable, and in some instances (i.e., global climate change) critical environmental thresholds may have already been surpassed".

In the very long-term, there are two basic types of truly sustainable development situations: increasing quality of life with non-material economic growth and zero-growth economies. A zero-growth material economy with a positively growing non-material economy is the logical implication of sustainable development. While material economic growth must eventually stabilise, cultural, psychological and spiritual growth is not constrained by physical limits (Gallopin, 2003).

However, on our finite planet, Gallopin (2003: 27) concludes: "Even allowing for rapid technological change, a basic sustainable level of per capita material consumption will have to be reached. A reasonable way to do this will involve both increasing the material consumption of the billions of people living now in poverty and reducing material over-consumption by the rich minority. Similarly, the global population will have to stabilise eventually".

Considering the ethics of global equality, Gallopin's conclusions seem quite correct. However, how do they become operational in a world where sustainability meets enormous resistance from many people and vested interests (Dresner, 2002)? While Gallopin's perspective is important in understanding models for economic growth and development that would work in a sustainable world, conventional economics and the 'growth'²¹ imperative is the dominant intellectual rationalisation of today's world order (Homer-Dixon, 2006).

²¹ The meaning of 'growth' in this context is in terms of unsustainable growth and aligned to what Gallopin (2003) refers to as maldevelopment or conventional development.

Conventional economics has been highly successful at matter/energy throughput and economic growth remains at the forefront of most nations' political agenda (Wackernagel & Rees, 1996). Corporations now dominate this economic landscape and have emerged as arguably the most influential institutions of modern society (Ghoshal *et al.*, 2000). Their economic wealth and influence throughout the world has grown astronomically in the last few decades. Of the 100 largest economies in the world today, 51 are corporations (Zadek, 2001). Eight of the world's largest companies earn between them more than half the world's population, while twenty percent of the world's population lives on 1US\$ per day (McIntosh, 2003).

At the same time this growing inequality is analogous to global warming. Its effects are spread widely and over the long term (Homer-Dixon, 2006). In fact, one of the main lessons to be learned from the collapse of past societies, as well as the relatively recent collapse of the Soviet Union, as Diamond, (2006: 509) points out, is that, "a society's steep decline may begin only a decade or two after the society reaches peak numbers, wealth and power".

Furthermore, Diamond (2006) has shown that in the current political climate, it is disadvantageous for first world leaders to propose to their citizens that they lower their living standards by reducing their resource consumption and waste production rates. He asks the important question, "what will happen when it eventually dawns on all those living in Third World countries that current First World standards are unreachable for them, while at the same time the First World refuses to abandon those standards for itself"? Perhaps the materially rich will finally realise, that in the long term, they do not secure their own interests and those of their children by controlling power in a collapsing society and simply buying themselves the privilege of being the last to starve or die (Diamond, 2006: 496).

These tensions arising from sustaining global inequalities and conventional economic growth, represent serious 'fault lines' observable as a deteriorating human landscape and unsustainable world. And as Diamond (2006: 521) emphasises, "if we don't make a determined effort to solve [these problems],

and if we don't succeed at that effort, the world as a whole within the next few decades will face a declining standard of living, or perhaps something worse".

In searching for solutions, Sneddon et al (2005) argue that by embracing pluralism, we can move beyond certain ideas and knowledge systems that prevent more cohesive and politically effective perception of sustainable development. They propose that ecological economics²², as an explicitly transdisciplinary enterprise, together with political ecology²³, freedom-oriented development²⁴ and deliberative democracy²⁵, offer important insights for advancing our understanding of the local and global politics of sustainability.

As a practical alternative to the dominant global economic system and as a way to rethink development, I include at this point a description of the theory of Human Scale Development, as articulated by Chilean ecological economist Manfred Max-Neef. Based on many decades of field research, this work provides a comprehensive perspective of human needs and their relationship to society's capacity, or its lack thereof, to satisfy these needs. What is also included is a far deeper conception of the notion of poverty that goes beyond the common definition where a person or community is deprived of or lacks the essentials for a minimum standard living²⁶.

²² "Ecological economics is the union of economics and ecology, with the economy conceived as a subsystem of the earth ecosystem that is sustained by a metabolic flow or 'throughput' from and back to the larger system" (Daly & Farley, 2004: 431).

²³ Political ecology is the study of how political, economic, and social factors affect environmental issues, (http://www.google.co.za/search?hl=en&defl=en&q=define:Political+ecology&ei=D-YQS4HMKoWIMs2W9TM&sa=X&oi=glossary_definition&ct=title&ved=0CAcQkAE, 28 November 2009).

²⁴ Freedom orientated development, as apposed to conventional growth orientated development, as discussed by Sen (in Sneddon, 2005).

²⁵ In contrast to the traditional theory of democracy, in which voting is central, deliberative democracy theorists argue that legitimate lawmaking can arise only through public deliberation by the people, (http://en.wikipedia.org/wiki/Deliberative_democracy, 28 November 2009).

²⁶ The World Bank defines extreme poverty as living on less than US \$1 per person per day, and moderate poverty as less than \$2 a day. It estimates that in 2001, 1.1 billion people had consumption levels below \$1 a day and 2.7 billion lived on less than \$2 a day (<http://en.wikipedia.org/wiki/Poverty>, 26 November 2009).

2.4.1 Human Scale Development

Max-Neef's (1991) central tenet is that all human beings have certain fundamental needs which are finite, few and classifiable. What changes over time and through cultures, is the way or the means by which these needs are satisfied. Satisfiers are different from the obtainable economic goods. They are linked instead to everything, which, "by virtue of representing forms of Being, Having, Doing and Interacting, contributes to the actualisation of human needs" (Max-Neef, 1991: 24).

Additionally human needs must also be understood as a system: that is, all human needs are interrelated and interactive. The needs matrix that Max-Neef (1991) has developed (see Figure 7 on page 49) portrays these fundamental needs as subsistence, protection, affection, understanding, participation, idleness, creation, identity and freedom.

This analysis leads to a classification of the different kinds of satisfiers our society has for meeting these fundamental needs. The following examples are adapted from Max-Neef (1991) and Peet & Peet (2000):

- **Violators or Destroyers** are satisfiers that address one need but end up destroying that need and others as well. As examples, the arms race, bureaucracy and authoritarianism promise protection, but stifle subsistence, affection, participation and freedom, and increase insecurity.
- **Pseudo-Satisfiers** are appealing, but they only promise to fill needs; they don't actually do so. Examples include consumer product advertising, household security in large cities, prostitution, charity and aggregate economic indicators such as GDP.
- **Inhibitors** satisfy one need but inhibit another. For example, an overprotective family provides protection but inhibits affection, understanding, participation, identity and freedom. Economic competitiveness provides a form of freedom, but stifles subsistence, protection, affection, participation and idleness. Commercial television, while

used to satisfy the need for recreation, interferes with understanding, creativity and identity.

- **Singular Satisfiers** satisfy one need while steadfastly ignoring others. Examples are insurance, guided tours, professional armies and curative medicine.
- **Synergic Satisfiers** however meet several different needs simultaneously. Breast-feeding, popular education, barefoot doctors, democratic community organisations, preventative medicine, music, art, cooking and educational games are examples.

Of particular value here is the idea that this perspective provides for a reinterpretation of the concept of poverty. As Max-Neef (1991) points out, the traditional concept of poverty is limited and restricted, and refers exclusively to the predicaments of people who may be classified as living below a certain income threshold. It is a strictly econometric measure. Max-Neef suggests we should not speak of poverty but of poverties, as any fundamental need that is not adequately satisfied reveals a human poverty, and if exacerbated leads to pathology. For example, the poverty of subsistence is due to insufficient income, food and shelter; a poverty of protection is due to bad health systems and violence; a poverty of affection is due to authoritarianism and oppression, of understanding is due to poor quality of education; of participation is due to the marginalisation of woman, children and minorities; and of identity is due to the imposition of alien values upon local and regional cultures.

However, Max-Neef (1991) points out that a development strategy geared to meeting human needs will require a new approach to understanding reality that cannot be founded on reductionist disciplines. "Only a transdisciplinary approach can understand, for example, how politics, economics and health have converged. If we do not devote considerably more energy and imagination to designing significant and consistent transdisciplinary approaches, our societies will continue to disintegrate. We live in a period of transition, which

means that paradigm shifts are not only necessary but indispensable” Max-Neef (1991: 15).

Max-Neef’s (1991) **Matrix of Needs and Satisfiers** as articulated in his Human Scale Development theory provides a table that is not fixed, and adapts and evolves as new needs are identified. At this stage, 36 points are identified that highlight the satisfaction or deprivation of human needs. The matrix may serve, at a preliminary stage, as a participative process of self-diagnosis for groups located within a local space. It makes it possible for any community to identify a strategy for development aimed at the actualisation of human needs and as an educational tool that brings about critical awareness (Max-Neef, 1991).

From this vantage point it is not surprising to see how our current economic systems, complete with its pseudo-satisfiers and destroyers, fares so poorly in generating economic health and wellness at local, regional and global levels.

HUMAN SCALE DEVELOPMENT – MATRIX OF NEEDS AND SATISFIERS					
Needs according to axiological categories	Needs according to existential categories	BEING (qualities)	HAVING (things)	DOING (actions)	INTERACTING (settings)
SUBSISTENCE	1/ physical health, mental health, sense of humour, adaptability	2/ food, shelter, work	3/ feed, procreate, rest, work	4/ living, environment, social setting	
PROTECTION	5/ care, adaptability, autonomy, equilibrium, solidarity	6/ insurance systems, savings, social security, health systems, family work	7/ cooperate, prevent, plan, take care of, cure, help	8/ living space, social environment, dwelling	
AFFECTION	9/ self-esteem, respect, tolerance, generosity, receptiveness, passion	10/ friendships, family, partnerships, relationships with nature	11/ make love, caress express emotions, share, take care of, cultivate, appreciate	12/ privacy, intimacy, Home, space of togetherness	
UNDERSTANDING	13/ receptiveness, curiosity, astonishment, discipline, intuition, rationality	14/ literature, teachers, method, educational policies, communication	15/ investigate, study, analyze, experiment, educate, meditate	16/ settings of formative interaction, schools, universities, academies, groups, communities, family	
PARTICIPATION	17/ adaptability, receptiveness, solidarity, willingness, determination, dedication, respect, passion	18/ rights, responsibilities, duties, privileges, work	19/ become affiliated, share, cooperate, propose, interact, obey, agree on, express opinion	20/ settings of participative interaction, parties, associations, churches, communities, family	
IDLENESS	21/ curiosity, receptiveness, imagination, recklessness, sense of humour, tranquillity, sensuality	22/ games, parties, clubs, spectacles, peace of mind	23/ daydream, brood, dream, recall old times, remember, relax, have fun, play	24/ privacy, intimacy, spaces of closeness, free time, surroundings, landscapes	
CREATION	25/ passion, curiosity, determination, intuition, imagination, boldness, rationality, inventiveness	26/ abilities, skills, method, work	27/ work, invent, build, design, compose, interpret	28/ productive and feedback settings, workshops, cultural groups, audiences, spaces for expression, temporal freedom	
IDENTITY	29/ sense of belonging, consistency, differentiation, self-esteem, assertiveness	30/ symbols, habits, customs, values, language, work, reference groups, sexuality, norms, historical memory	31/ commit oneself, integrate, confront, decide on, get to know oneself, recognize oneself, actualize oneself	32/ social rhythms, everyday settings, settings which one belongs to, maturation stages	
FREEDOM	33/ autonomy, self-esteem, determination, passion, assertiveness, openmindedness	34/ equal rights	35/ dissent, choose, be different from, run risks, develop awareness, commit oneself, disobey	36/ temporal / spatial plasticity	

Figure 7. Matrix of Needs and Satisfiers (adapted from Max-Neef, 1991: 32-33)

2.4.2 Conscious Evolution

While Max-Neef's work in Human Scale Development and transdisciplinarity is surely an important and necessary step forward, revolutionary change-makers such as Don Beck and Andrew Cohen, working at the leading edge of human development, believe that what this world needs more than anything else is the evolution of consciousness. They provide powerful leadership tools designed to help each of us take responsibility for changing the course of our collective future, and making the 'radical shift' within ourselves they believe is absolutely necessary to save our planet and ourselves (Beck & Cohen, 2004). One of the major obstacles preventing 'a significant minority' making such a momentous leap, Beck and Cohen point out, is the current culture of narcissism. Many other leaders in their fields, including renowned Stanford biologist Paul Ehrlich, have similarly called for, "a process of 'conscious evolution' that must entail interdisciplinary scholarship ... [so that] those who choose to tackle problems that cross boundaries of the moment should not be punished" (in Swilling 2004a: 13).

More recently we have seen Hollywood Stars voicing a similar perspective. In his new documentary *The 11th Hour*, Leonardo DiCaprio, talking about the unsustainable condition of humanity, is referred to as saying that our action depends on the conscious evolution of our species, and that this action could very well save this unique blue planet for future generations (Kanegis, 2007).

In reality this may be the case: humanity inevitably must consciously evolve in order to survive. In practice achieving such a crucial objective on a species-wide scale is surely an extraordinary task. One in which an Integral perspective may prove helpful.

2.4.3 An Integral Perspective of Sustainable Development

Within the fields of sustainability and sustainable development there are clearly wide-ranging understandings of the multiple problems and potential solutions underlying these notions in the world today. What is not that evident, although it is slowly emerging (Hardin Tibbs in Brown, B. 2005b) is a single worldwide

model that would integrate the current fragmented perspectives, approaches, methodologies and theories.

According to Wilber (1995: 514), "Gaia's primary problem and threats are not pollution, industrialisation, over-cultivation, soil despoliation, overpopulation, ozone depletion or whatnot. Gaia's major problem is lack of mutual understanding and mutual agreement in the noosphere"²⁷. He goes on to argue:

"The problem is not how to demonstrate, in monological terms and with scientific proofs that Gaia is in desperate trouble. The general evidence of this serious trouble is already, and simply and absolutely overwhelming. ... In other words the real problem is not exterior. The real problem is interior. The real problem is how to get people to internally transform from egocentric to sociocentric to worldcentric consciousness, which is the only stance that can grasp the global dimensions of the problem in the first place, and thus the only stance that can freely, even eagerly, embrace global solutions" (Wilber, 1995: 514).

However as Brown, B. (2005b: 9) points out, "changing someone's values – achieving this shift in consciousness – is normally very difficult" Harvard's Robert Kegan notes that it takes about five years for an adult to shift to a completely new way of seeing the world, if a number of supportive conditions are present. Normally what happens in fact is that people become arrested in their development and continue seeing the world with the same core values for decades.

Relating these findings to our model of spiral dynamics, what then becomes evident, is that for an individual at an animistic/egocentric value meme of Purple/Red, it would take 15 to 20 years to develop to a worldcentric interior value meme capable of perceiving the complexity of global sustainability issues

²⁷ A theoretical stage of evolutionary development, associated with consciousness, the mind, and personal relationships (<http://en.wiktionary.org/wiki/noosphere>, 30 July 2007).

in the first place. There are also no guarantees, and such transformational processes are only possible provided all the conditions to support such a process are in place. This is evidently not the case for most people alive in our world today.

While vertical 'transformation' through value memes can occur under the proper conditions and thus lead to different behaviour, there is the 'translation' approach that, according to Brown, B. (2005b: 11) can be used effectively anytime. "Communication that appeals directly to someone's values – that resonates with who they see themselves to be – has proven to be far more effective in creating lasting changes in people's behaviour".

Cowan (in Brown, B. 2005b: 12) has stated that, "the question is not 'how do you motivate people', but how do you relate what you are doing to their natural motivational flows?" Brown, B. (2005b: 12) continues: "Translating into the appropriate worldview, or set of values, makes a crucial difference in the ultimate effectiveness of any project".

The Integral sustainable development practitioner therefore would need to understand different value structures and be able to tailor all aspects of a sustainable development project accordingly. Components of assessment, design, implementation, evaluation, and all communications can be adjusted so that they 'fit' the values of all stakeholders – even if multiple value structures are present (Brown, B. 2005b).

The Integral framework therefore does not privilege certain aspects of reality – like systems, economics, rationality, psychology, science or culture. It enables a leveraging of not only all of the exterior sustainability techniques and technologies available, but also all of the interior methodologies and truths, offering a chance to synergistically integrate towards a tailored 'natural design' (Esbjorn-Hargens in Brown, B. 2005b).

This innovative leadership – the ability to communicate to differing value systems in people – requires conceivably difficult personal growth work and

commitment to the evolution of one's own consciousness; a shift to second-tier thinking in the Spiral Dynamics memes of Yellow and higher (Brown, B. 2005a). It is my understanding that while currently only a small percentage of sustainable development practitioners operate at this leading edge, these numbers are growing as more people begin to recognize and experience the progress that is possible from a more complete and integrated approach.

Following are a few key examples where the Integral approach to sustainable development is being applied in practice (Brown, B. 2005b):

- Washington State, USA, has developed a sustainable development plan to achieve 'a fully sustainable Washington within one generation'. This will be achieved by developing the interiors and exteriors of individuals and collectives in their state, and by incorporating all three development levels – traditional, modern and postmodern.
- The United Nations Development Programme (UNDP) has several senior staff and departments which are using Integral approaches for international development initiatives. Two projects stand out. One is the UNDP's HIV/AIDS Group led by Sharma who has developed a 'leadership for results' programme in response to the HIV/AIDS crisis and to assist nations to achieve the Millennium Development Goal number six – reversing HIV/AIDS by 2015. A second instance is the programme developed by Robertson Work (in Brown, B. 2005b: 48), principal advisor in the bureau for Development policy at the UNDP, called 'Decentralizing the Millennium Development Goals through Innovative Leadership.' He argues that "the use of the Integral framework will only grow. It's the future of international development. We need to be doing development differently, where we bring in all the dimensions of being human".
- iShaik Development Associates have been working in international development with an Integral framework since 1995. In their work with UNICEF they have commented as follows: "In order to deepen our understanding of the complex and interrelated nature of our world, a

mapping of consciousness development in social and cultural evolution is crucial. This must also have an Integral approach to ensure that evolution, and thus the state of children, humanity, culture and society, returns to a state of sustainable process. This requires a framework that allows us to go deeper than the understanding of the mere objective/surface systems or web, and wider than a cultural understanding of diversity" (in Wilber, 2000a: 100).

The key point I have made in this sustainable development section is that appropriate development is fundamental to the continued existence of our species and all that we are inextricably linked to. Ultimately this will require transforming our economic systems, concepts of development, notions of progress and understanding of change itself. Achieving such a task will also require that human beings learn how to consciously evolve. Those taking on leadership roles will further have to grow their individual integral perspective and capacity, and learn how to translate this knowledge and experience into the languages and thinking systems of the people involved in any particular project.

2.5 Globalisation / Localisation

In this section I discuss some positive and negative aspects of globalization. I have situated localization as a key strategy in addressing many of the negative impacts of globalization. Additionally I point to collaborative living arrangements such as ecovillages as significant examples of local sustainable communities with potential to influence how societies could do localization and globalization for the better.

Globalisation, says Thomas Friedman (2005), is the new international system that has succeeded the Cold War world era. This phenomenon of globalisation has at the same time been the subject of much vilification and praise (Stiglitz, 2002).

Globalisation has resulted in closer integration of countries and people of the world, brought about by enormous reductions in the costs of transportation and

communication. In this regard globalisation has been accompanied by the creation of new institutions to work across borders. These include the United Nations (UN), which attempts to maintain peace, the International Labour Organization (ILO), working under its slogan of 'decent work' and the World Health Organization (WHO), which has been especially concerned with improving health conditions in the developing world (Stiglitz, 2002).

According to evolutionary biologist Elisabet Sahtouris (1998), the globalisation of humanity is a natural, biological, evolutionary process. At the same time we face an enormous crisis because the most central and important aspect of globalisation – its economy – is currently being organised in a manner that is in serious contravention to the principles of healthy living systems. So much so that the collapse of our whole civilization is at risk.

As futurist Hazel Henderson (in Sahtouris, 1998) points out, the UN's most powerful nations, together with corporations and financial institutions, have influenced the World Bank, the International Monetary Fund (IMF), and the General Agreement on Tariffs and Trade (GATT) discussions to set up the World Trade Organization (WTO). This means that some seventy nations including the United States, have voted away the independence of their nations by agreeing to uphold the provisions of the WTO, which can meet secretly and challenge any laws made at any level in member nations (including their provinces, states, counties or cities) if they are deemed to clash with its interests.

For example, under present WTO practices, Thailand has been told it cannot refuse to import US cigarettes for health reasons, and Indonesia may not keep the rattan it needs for domestic use. Neither children nor adults are protected from exploitative and unhealthy conditions of labor, and no member country may make any effort to protect its local industry and employment against erosion by unfair competition in the world market. Self-sufficient organic farming is literally outlawed, while poisonous chemicals are forced on countries, destroying the health of people, crops, land, air and water for the sake of short-term profits in high places (Sahtouris, 1998).

While globalisation in a broad sense may be strategic to our survival as a species, it is techno-economic globalisation which is resulting in a growing divide between the haves and have-nots and has left increasing numbers in the Third World in dire poverty, living on less than a dollar a day. Despite repeated promises of poverty reduction made over the last decade, the actual number of people living in poverty has increased by almost 100 million (Stiglitz, 2002).

As Paul Hawken (in Sahtouris, 1998) has pointed out, one percent of American society now owns nearly 60 percent of corporate equities and about 40 percent of the total wealth of that nation. These are the big shots who wield the power and control of the world's largest economy and who try to convince the other 99 percent of its citizenry that the system works in their best interests too. It is not surprising therefore that "virtually every major meeting of the International Monetary Fund, the World Bank, and the World Trade Organization is now the scene of conflict and turmoil" (Stiglitz, 2002: 3).

Brown (2006) of the Earth Policy Institute provides a very clear account of how environmental factors are currently playing themselves out on the global scale.

"Our situation today is far more challenging because in addition to shrinking forests and eroding soils, we must deal with falling water tables, more frequent crop-withering heat waves, collapsing fisheries, expanding deserts, deteriorating rangelands, drying coral reefs, melting glaciers, rising seas, more powerful storms, disappearing species, and soon, shrinking oil supplies. Although these ecologically destructive trends have been evident for some time, and some have been reversed at the national level, not one has been reversed at the global scale. The bottom line is that the world is in what ecologists call an overshoot-and-collapse mode. Demand has exceeded sustainable yield of natural systems at the local level countless times in the past. Now, for the first time, it is doing so at the global level" (Brown, L. 2006: 5).

We know from earlier civilizations that the lead indicators of economic decline were environmental, not economic. Therefore as Brown (2006: 4) points out, "if economic progress is to be maintained and humanity is to succeed rather than collapse, we will need to replace the fossil fuel-based, automobile-centred, throwaway economy with a new economic model". In *Plan B 2.0*, Brown has dedicated an entire book to outlining a global strategy for how this new economy could be brought about.

However, global policy and agreements alone will do us little good in turning the tide towards a life sustaining society. Helena Norberg-Hodge (2000: 5) indicates that, "if globalisation is now at the root of so many problems, localisation – a shift away from the global and towards the local – is an obvious part of the solution".

And therefore as Sahtouris (1998) has indicated, the appropriate response to the world of global corporate interests, is clearly the strengthening of self-sufficient local economies, as David Korten, Herman Daly, Edward Goldsmith and other members of the International Forum on Globalization (IFG)²⁸ have explained. Sahtouris is equally clear of the importance to launch a sufficiently strong movement to demand change in our global institutions such as GATT, WTO, UN, World Bank and the IMF.

In shifting and speeding up the change from an industrial growth society toward a life sustaining society, which Joanna Macy (1998: 19) calls 'The Great Turning' there are already numerous signs of positive action currently being undertaken by groups and individuals around the world, one dimension being studying structural causes and creating structural alternatives. "In countless localities, like green shoots pushing up through the rubble, new social and economic arrangements are sprouting... Not waiting for our national or state politicians to catch up with us, we are banding together, taking action in our own communities. The actions that burgeon from our hands and minds may look marginal, but they hold the seeds for the future" Macy (1998: 19).

²⁸ <http://www.ifg.org/index.htm>

One structural alternative Macy (1998: 20) suggests is “collaborative living arrangements like co-housing and ecovillages, which in a broad variety of legal forms, allow singles, families, and generations to care for each other and the land, while respecting their distinctive needs”. Norberg-Hodge (2000) has also pointed to the importance of ecovillages as a key strategy in establishing more co-operative local economies. Therefore sustainable communities are not only important solutions to local challenges but also to the global problems.

2.6 Quantifying Sustainability and Sustainable Development

In this section I have introduced the sustainability concepts of the ecological footprint, environmental space and one planet living, each of which provide insights into how we may quantify sustainable development in more tangible terms and act appropriately both globally and locally.

2.6.1 Ecological Footprint

The Ecological Footprint (EF) is a method for estimating the biologically productive area necessary to support current consumption patterns, given prevailing technical and economic processes. By comparing human impact with the planet’s available bioproductive area, this method tests a basic ecological condition for sustainability (Holmberg, 1999). Ecological footprint is defined by Wackernagel and Rees (1996: 9) as basically an “accounting tool that enables us to estimate the resource consumption and waste assimilation requirement of a defined human population or economy in terms of a corresponding productive land area”.

Put another way, a country’s ecological footprint is the total area required to produce the food and fibre that it consumes, absorb the waste from its energy consumption, and provide the space for its infrastructure. Since people consume resources and ecological services from all over the world, their footprint is the sum of these areas, wherever they are on the planet (Living Planet Report, 2004).

Ecological footprint figures vary slightly depending on the source, and the methodology itself is continuously being refined. Generally, however, these figures provide a concrete indication of humanity's requirement for ecological services both locally and globally versus the available ecological supply at any given time.

For example, the global ecological productive land (biocapacity) 'available' to each person has decreased steadily from five hectares per person at the beginning of the nineteenth century to less than 1,5 hectares per person in 1995 (Wackernagel and Rees, 1996). In contrast the land 'appropriated' by humanity as a whole in 2001 amounted to 2.2 global hectares per person (Living Planet Report, 2004). What these figures tell us is that the human ecological footprint now exceeds global biocapacity by a factor of roughly 30%. According to the Living Planet Report "this global overshoot began in the 1980s and has been growing ever since" (2004: 10). In other words we now need an earth 30% bigger or more productive to accommodate present consumption without depleting corresponding ecosystems (Wackernagel and Rees, 1996).

To look at this data in a more telling way, UN statistics show that the 20% of the world's population that live in the wealthy countries consume up to 80% of the world's resources. This translates into the developed world alone occupying an ecological footprint that is greater than the total global carrying capacity. This means that there is nothing left into which the rest of the world can grow without further eroding global life-support systems (Wackernagel and Rees, 1996).

The ecological footprint analysis thus challenges conventional economic wisdom that assumes there are no serious constraints on economic expansion, and that poverty can be alleviated most easily by increasing economic production. As Wackernagel and Rees (1996: 100) point out, "this perspective is attractive because it implies that people already enjoying high consumption levels do not have to compromise their lifestyles so that those in need can improve their material standards. In fact, many analysts even argue that more consumption

by the rich benefits the poor since it accelerates growth and creates jobs by expanding the export market of developing countries”.

One of the core objectives of international development is to raise the developing world to present First World material standards. The Brundland Commission argued for “more rapid economic growth in both industrial and developing countries” and suggested “a five- to ten-fold increase in world industrial output can be anticipated by the time world population stabilises some time this century” (in Wackernagel and Rees, 1996: 91). To accommodate sustainably the anticipated increase in population and economic output over the next four decades we would need six to 12 additional planets. According to Wackernagel and Rees (1996), the only alternative, if we continue to insist on economic growth as our major instrument of social policy, is to develop technologies that can provide the same levels of service with six to twelve times less energy and material.

Harvard Business School Professor Michael Porter (in Holliday, 2002) argues that well-framed environmental regulations can encourage innovation and thus make businesses and nations more competitive. Taking eco-efficiency and the environment seriously can, and should, lead to strategic corporate innovation. Many economists and environmentalists believe that advances in technological efficiency are a potential panacea for the sustainability crisis, following Buckminster Fuller’s ‘doing more with less’ reasoning, the hidden assumption being that efficiency gains automatically lead to resource savings and reduced consumption. This is not necessarily the case.

For example, industrialist Stefan Schmidheiny lauds the 50% energy efficiency gains by the chemical industry in recent decades, forgetting that chemical production has doubled in the same period. Even *Our Common Future* was devoted to what Wolfgang Sachs calls ‘the gospel of global efficiency’ (Wackernagel and Rees, 1996: 128). However, as effective as these efficiency strategies might seem on the micro-scale, decreasing the ratio between input and output does not necessarily lead to lower resource use. On the contrary, technological efficiency may actually lead to increased net consumption of

resources. As Brown observes “continuing growth in material consumption – the number of cars and air conditioners, the amount of paper used, and the like – will eventually overwhelm gains from efficiency, causing total resource use (and the corresponding environmental damage) to rise” (in Wackernagel and Rees, 1996: 128). Even the shift toward the knowledge economy, which many thought would lead to significant dematerialisation, has led to an increased environmental footprint for the world’s largest economy, the United States (McIntosh, 2003).

This argument does not lessen the importance of full-cost pricing and eco-efficiency design in restructuring the global economy in order to sustain progress. We need however to remain aware that technical efficiency does not simply translate into less overall consumption and resource use.

2.6.2 Environmental Space

The concept of environmental space is to some extent related to that of ecological footprint analysis, in that both recognize that there are very real ecological limits to the extent that the global environment can support conventional forms of economic growth. While ecological footprint analysis quantifies the land needed for a particular lifestyle, environmental space is more about the required limits to consumption if we are to share fairly with other parts of the world (Hille, 1997).

This approach, as McLaren (1998) points out, begins from two basic principles. Firstly, in order to achieve sustainable development, humankind must live within the environmental limits of the planet, and secondly, in a limited world, equitable access to the resources is the only practical and ethically acceptable basis for distribution of resources.

Dresner (2002) agrees that in order to deal successfully with environmental problems, the participation of Third World countries is essential. It is also no surprise that these countries have little interest in introducing a rigorous environmental policy, since the rich countries keep consuming the largest piece

of the cake. From this perspective, equitable access to natural resources is a tough political condition for the realisation of sustainable development.

To determine whether a country's production and consumption is aligned with sustainable development, the use of resources in that country can be compared to the environmental space of that country. This analysis clearly shows how far the rich countries live beyond their means (Dresner, 2002).

As an example, with 1% of the world's population, the United Kingdom currently uses 5% of the planet's capacity for carbon dioxide absorption, over 2% of its sustainable timber yield, and almost 5% of its sustainable steel and aluminum production. Therefore recognising environmental limits and the need for more equitable distribution of the world's resources will mean that the United Kingdom needs to cut its use of resources by around 80% (McLaren, 1998).

As Gro Harlem Brundtland pointed out during a keynote address to the Norwegian government in 1994, "An average person in North America consumes almost 20 times as much as a person in India or China, and 60 to 70 times more than a person in Bangladesh. It is simply impossible for the world as a whole to sustain a Western level of consumption for all. In fact, if 7 billion people were to consume as much energy and resources as we do in the West today we would need 10 worlds, not one, to satisfy our needs" (in Dresner, 2002: 88).

The theme of Brundtland's address was that perpetuating this kind of economic development was neither necessary for employment nor environmentally possible, and that economic growth had to be decoupled from the consumption of resources (in Dresner, 2002).

Environmental space is a powerful concept because it expresses the idea of sustainability in a concrete way (Dresner, 2002). It provides a basis for seeing the extent to which the distribution of wealth and income, at the national and global level, is based on the consumption of natural resources, now and

in the past (Bührs, 2007). And as Hans Opschoor (in Dresner, 2002) concludes, the implicit notion of environmental space antagonises a lot of people, particularly in the northern countries, who will be most affected by the need to dematerialise²⁹.

Opportunely perhaps for these countries, as McLaren (1998) points out, in a world in which sustainability issues demands reduced resource use, the countries which dematerialise their economies fastest will create the greatest competitive advantage. On the other hand, if the space for utilising resources within ecologically acceptable limits is shrinking, there is a strong case for arguing that 'environmental justice' requires that the remaining available space be evenly distributed on a *per capita* basis, or even that more is given to those who have not used, or been able to use, this space in the past (Bührs, 2007).

2.6.3 One Planet Living

The basis of this position can be stated as follows: As long as humanity's ecological footprint exceeds our planet's biocapacity our global ecological debt will continue to grow. Therefore the resulting risks for humanity can ultimately only resolve by living within the biocapacity of one planet (Living Planet Report, 2004).

While many of the stronger approaches to sustainability aim to reduce their ecological footprint as a central component of their development strategies, a new partnership between the BioRegional Development Group and the World Wide Fund for Nature (WWF), called One Planet Living³⁰, is pioneering one planet living in mainstream development today. One Planet Living, the development company promoting this concept, aims to demonstrate how it is possible to make the challenge of living on one planet achievable, affordable and attractive.

²⁹ Reduce, reengineer or eliminate the usage materials in the production of goods and services within an economy.

³⁰ For more information see www.bioregional.com

One Planet Living is based on the experience of the Beddington Zero Fossil Energy Development (BedZED), a sustainable housing and workspace project in London. In this development, the homes and offices consume 90% less heating energy than the average UK housing and less than half the water, and the design enables all the energy to be renewably generated. Residents of BedZED find the place desirable as a living space, contradicting the common assumption that a smaller ecological footprint means a lower quality of life (Living Planet Report, 2004).

To succeed, such one planet living must work for people of divergent cultural backgrounds living in different parts of the world. The company has established guidelines for how communities can work towards living on a one planet ecological footprint by 2020. These guidelines impact on all human activities, from natural resource management to sustainable agriculture, sustainable forestry or fishing, carbon-free industrial production, protected areas and urban development. Their goal is to establish One Planet Living communities on every continent by 2009 (Living Planet Report, 2004).

2.7 Ecological Design

The concluding points in the sections above on sustainable development, globalisation, ecological footprint analysis and environmental space all point to the need for alternative ways of living that are more sustainable. This implies that a different set of design principles consistent with the workings of the natural world must be developed and applied. Hence, we now have the growing field of ecological design.

The environmental crisis of today can be thought of as a crisis of design – a consequence of how things are made, how buildings are constructed, and how landscapes are used. Many leading ecological and environmental designers have made this point. Key interventions include Sim Van Der Ryn and Stuart Cowan in *Ecological Design* (1996); John and Nancy Todd in *From Eco-Cities to Living Machines: Principles of Ecological Design* (1993); Bill Mollison in *Permaculture: A Practical Guide for a Sustainable Future* (1990); Janine Benyus

in *Biomimicry: Innovation Inspired by Nature* (1997); and William McDonough & Michael Braungart in *Cradle to Cradle*.

According to Van Der Ryn and Cowan (1996: 9), "design manifests culture, and culture rests firmly on the foundation of what we believe to be true about the world. Our present forms of agriculture, architecture, engineering and industry are derived from design epistemologies incompatible with nature's own". Ecological design would by contrast emerge from the premise that "if we build a rich enough set of ecological concerns into the very epistemology of design, we may create a coherent response to the environmental crisis" (Van Der Ryn and Cowan, 1996: 10). Such design, according to ecologist David Orr, involves attending carefully to scale, community self-reliance, traditional knowledge, and the wisdoms of nature's own design (in Van Der Ryn and Cowan, 1996).

In our modern era, city planners, engineers and other design professionals are trapped in standardised solutions that require an enormous expenditure of energy and resources to implement (Van Der Ryn and Cowan, 1996). Standard templates, off the shelf recipes, are easy to adopt and are being replicated on a vast scale. This poverty of the industrial imagination, according to Van Der Ryn and Cowan (1996: 9-10), is now manifesting around the world as "strip malls, mini-malls, regional malls, industrial parks, edge cities, detached single-family homes town-houses and sealed highrises, all hooked up with an environmentally devastating infrastructure of roads, highways, storm and sanitary sewers, power lines and the rest".

The same outcomes become manifest when conventional design considerations are extended into the realm of agriculture where the underlying assumptions include maximum productivity, minimum workers per acre and the dominant metaphor is that of the machine. Inevitably grain fields stretch like fairways and cattle pens resemble high-rise apartments while jet-powered helicopters spray insecticides (Van Der Ryn and Cowan, 1996).

To emphasise this point, one-fifth of the world's topsoil has been eroded away and nearly one-third of croplands have been lost to land degradation in just the

past 40 years, leading to a net decline in croplands per person. Cropland is projected to fall from today's meagre 0.27 hectares per person to only half as much within 30 years (Myers, 2000). Additionally, according to the Food and Agriculture Organization of the United Nations, approximately 75 percent of the world's agricultural diversity has been lost in the last century (Norberg-Hodge et al, 2000).

Perhaps most telling of all, as hybrid seeds have flooded India under globalisation, farmers have had to borrow money to buy seeds and pesticides. They have had to dig tube wells to irrigate the hybrid crops. Pesticide use has gone up by 2 000 percent since hybrid cottonseeds entered India. Within a year or two, farmers are deep in debt. They are committing suicide by drinking the same pesticides that got them into debt. A technological miracle has led to a human disaster. Across India one estimate is that 200 000 farmers have committed suicide in this way (Shiva, 2001).

At the same time between 60% and 90% of all wheat, maize and rice is now marketed by just six transnational companies. By the late 1990s, the top ten agrochemical companies accounted for 80% of world sales (Pretty, 2001).

Ecological design therefore, as a response to unsustainable design practice, is simply the effective adaptation to and integration with nature's processes. It is not a new idea. Van Der Ryn and Cowan (1996) point to two generations of ecological design that have emerged since the environmental movement began nearly fifty years ago. The first generation was based on small-scale experiments focused on living lightly and locally. This is well (but not exclusively) illustrated by the thousands of Permaculture and ecovillage initiatives that have spread throughout the world since the mid 1980s. (Permaculture and ecovillage systems will be discussed later in this section and in more detail in the case study that follows).

We now stand on the threshold of a second generation of ecological design. Leading proponents Van Der Ryn and Cowan (1996: 31) argue that this, "is not

an alternative to dominant technology and design, [but] is the best path for their necessary evolution”.

Second generation ecological design has made its mark as mainstream designers and developers have needed to respond to the growing unsustainability of communities and cities globally. Thirty years ago when first generation ecological designers were experimenting and advocating for change, peak oil, global climate change, environmental collapse, population size, urbanisation, water scarcity and the like were not issues firmly on the radar screens of mainstream society. Today these issues still lag behind the drive for economic growth as the central priority of most governments and multinational corporations. However, as social and environmental pressures increase, so too are the principles of ecological design being applied to a greater number of large-scale developments in cities and elsewhere.

One notable example is in China, where half of all the global construction takes place; where three new coal-fired power stations are being commissioned every week, and where 400 million people are expected to move from the countryside to the cities in the next 25 years (Funk, 2007). In response to the pressures on this environment, the new eco-city of Dongtan is presently under construction on the margins of Shanghai. It will be the largest green community ever built, accommodating up to 500 000 new residents when complete. Dongtan is considered as not just a city but also an ecosystem by the global design firm Arup, who are responsible for the development. This new eco-city will be made up of separate villages, bisected by waterways and walking and biking paths. The only vehicles allowed inside the city limits will run on electricity or hydrogen. No residents will be further than three minutes by foot to a park, and seven minutes from public transport and eight minutes from a village centre. Amongst many other innovative ecological design features, Dongtan will run on 100% renewable energy and it is expected that its ecological footprint will be just 2.58 hectares per person, far better than London or Shanghai where the ecological footprint is 5.86 hectares per person and Houston where the ecological footprint is 12.14 hectares per person (Funk, 2007).

Ecological design will be crucial to the survival of cities in Africa and Asia where the service infrastructure needs of the three billion more recently urbanised people will have to be met in the coming decades. For Swilling (2004b), there is a strong argument for linking the brown (poverty) and green (ecology) agendas through more efficient ecological design. Assuming that funds for development are limited, it follows that increasing the eco-efficiency of the urban system and reducing dependence on excessive consumption of natural resources will release more funds for extending services to poorer areas. If this process of implementation is geared along a path of shared learning to build partnerships and capacity, but also to harness the relational capital³¹ inherent in poorer communities, this could be a recipe for reshaping and revising the informal landscape of developing cities in a more pragmatic and effective manner.

In South Africa specifically, Swilling (2004b) lists a range of issues that urban theory has to address in formulating sustainable urban development policy that wanted to marry equity, urban economic growth and sustainability. These include water, sanitation, land and space, transport, energy, food, solid waste, building materials and design, air pollution and carbon dioxide emissions, health, biodiversity, recreational space and child-centred development and learning. Whenever sustainability has influenced urban development policies, planning processes and/or project design throughout the world, one or more of these criteria have been integrated into the wider socio-economic framework

On a global scale, I believe the integration of these sustainability measures into city planning is well developed and understood, especially in the green cities of the developed northern countries. However, there still remain significant obstacles to integrating such measures in the developing cities of the south. In this context, Swilling (2004b) refers to the 'politics of sustainability', a new political game where the tradeoffs are now between growth, equity and sustainability. Quite often, growth strategies to achieve equity come into conflict with sustainability issues.

³¹ In this context, I refer to relational capital as the cumulative trust, experience, and knowledge (culture in Integral terms) that form the core of the relationships between stakeholders in a community, business or larger social system.

As a practical example of ecological design and because Permaculture has played such a fundamental part in the development of the Tlholego Village, I have provided a brief overview at this point.

Permaculture can be thought of as a global concept and a creative design response to a world of declining energy and resource availability³², with many similarities with Lovins's emphasis on design processes drawn from nature (Holmgren, 2002). Mollison (in Holmgren, 2002) has described Permaculture as 'positivistic', and being about what we want to do and can do, rather than what we oppose – an approach that is ethical, pragmatic, philosophical and technical.

The original vision of Permaculture as conceived by Holmgren and Mollison in the mid-1970s can be seen as, "consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs" (Holmgren, 2002: xix). Because people, their buildings and the ways they organise themselves are central to Permaculture, the vision of permanent (sustainable) agriculture has evolved into one of permanent (sustainable) culture (Holmgren, 2002).

Permaculture therefore aims to connect the various elements in human systems to the surrounding environment, mainly at household levels, but also within broader landscape design. The objective therefore is to increase self-reliance, reduce energy consumption, and generally provide design insights that assist individuals and communities in adapting to unsustainable and changing life conditions.

- In practice, Permaculture teaches from two interlocking fundamentals, these being ethics and ecological design principles. The founders of Permaculture, on researching community ethics to seek universal standards to guide their actions, observed that the following three ethical principles included most of those previously adopted by older religious and co-operative groups (Mollison, 1990).

³² The conceptual underpinnings of these assumptions are recognised by Holmgren (2002: xvi) to be in large part attributable to the published work of the American ecologist Howard Odum (1971).

- **Care for the Earth** – provision for all life systems to continue and multiply.
- **Care for people** – provision for people to access those resources necessary for their existence.
- **Setting limits to population and consumption** – by governing our own needs, we can set resources aside to further the above principles.

From a design perspective, the scientific foundation for Permaculture lies broadly within the modern science of ecology, and more particularly within a branch of ecology called systems ecology. Other intellectual disciplines, most particularly landscape geography and ethno-biology, have contributed principles that have been adapted into the design principles of Permaculture (Holmgren, 2002). In Box 1 on the following page, I highlight the main Permaculture design principles (adapted from Holmgren, 2002).

Principles of Permaculture Design

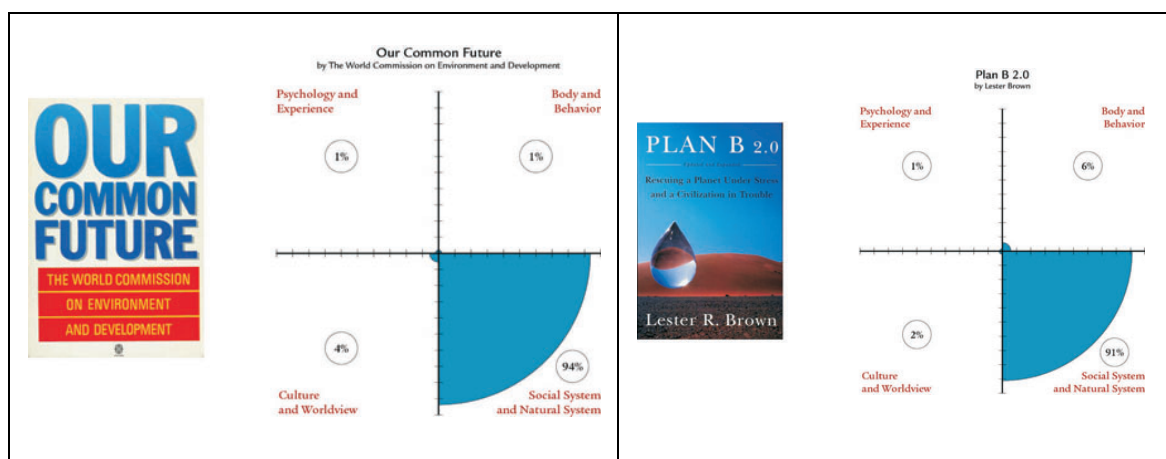
- **Principle 1:** Observe and interact (beauty is in the eye of the beholder). Good design depends on a free and harmonious relationship to nature and people, in which careful observation and thoughtful interaction provide the design inspiration, repertoire and patterns.
- **Principle 2:** Catch and store energy (make hay while the sun shines). Inappropriate concepts of wealth have led us to ignore opportunities to capture local flows of both renewable and non-renewable forms of energy.
- **Principle 3:** Obtain a yield (you can't work on an empty stomach). Design any system to provide for self-reliance at all levels (including ourselves) by using captured and stored energy effectively to maintain the system and capture more energy.
- **Principle 4:** Apply self-regulation and accept feedback (the sins of the fathers are visited on the children unto the seventh generation). This principle deals with self-regulatory aspects of permaculture design that limit or discourage inappropriate growth or behaviour.
- **Principle 5:** Use and value renewable resources and services (let nature take its course). Permaculture design should aim to make best use of renewable natural resources to manage and maintain yields, even if some use of non-renewable resources is needed in establishing the system.
- **Principle 6:** Produce no waste (waste not, want not). This principle brings together traditional values of frugality and care for material goods, the mainstream concern about pollution, and the more radical perspective that sees waste as resources and opportunities.
- **Principle 7:** Design from patterns to details (can't see the wood for the trees). The commonality of patterns observable in nature and society allows us to not only make sense of what we see but to use a pattern from one context and scale to design in another.
- **Principle 8:** Integrate rather than segregate (many hands make light work). In every aspect of nature, from the internal workings of organisms to whole ecosystems, we find the connections between things are as important as the things themselves.
- **Principle 9:** Use small and slow solutions (slow and steady wins the race). Systems should be designed to perform functions at the smallest scale that is practical and energy-efficient for that function. Human scale and capacity should be the yardstick for a humane, democratic and sustainable society.
- **Principle 10:** Use and value diversity (don't put all your eggs in one basket). The great diversity of forms, functions and interactions in nature and humanity are the source for evolved systemic complexity.
- **Principle 11:** Use edges and value the marginal (don't think you are on the right track just because it is a well-beaten path). Maintain awareness of, and make use of, edges and margins at all scales in all systems.
- **Principle 12:** Creatively use and respond to change (vision is not seeing things as they are but as they will be). This principle has two threads: designing to make use of change in a deliberate and co-operative way, and creatively responding or adapting to large-scale system change which is beyond our control or influence.

Box 1: Principles of Permaculture Design (Holmgren, 2002)

2.8 Concluding Points for Sustainable Communities

In concluding this chapter I have reflected, from an Integral perspective (quadrants), on the main components relating to the design of sustainable communities, as discussed above. Before continuing, however, it is useful to reiterate the argument at the heart of this thesis. That is, given the complexities and dilemmas humanity faces in a context of potential social and environmental collapse, it is the design of sustainable communities, at all levels of our social system, that must be achieved to limit such an outcome, while simultaneously inspiring humanity towards new possibilities and futures. Attaining such a goal requires humanity to 'consciously evolve'. Because Integral theory is grounded in the evolution of consciousness from the big bang through the biosphere, the noosphere, and beyond, it provides an important map to help navigate this journey.

Below I make use of a four-quadrant analysis from the Integral framework as a reference point for comparing the theoretical positions described in the sections above. Figure 8 below provide a visual perspective of the extent to which key texts in the sustainability literature correlate with the Integral framework.



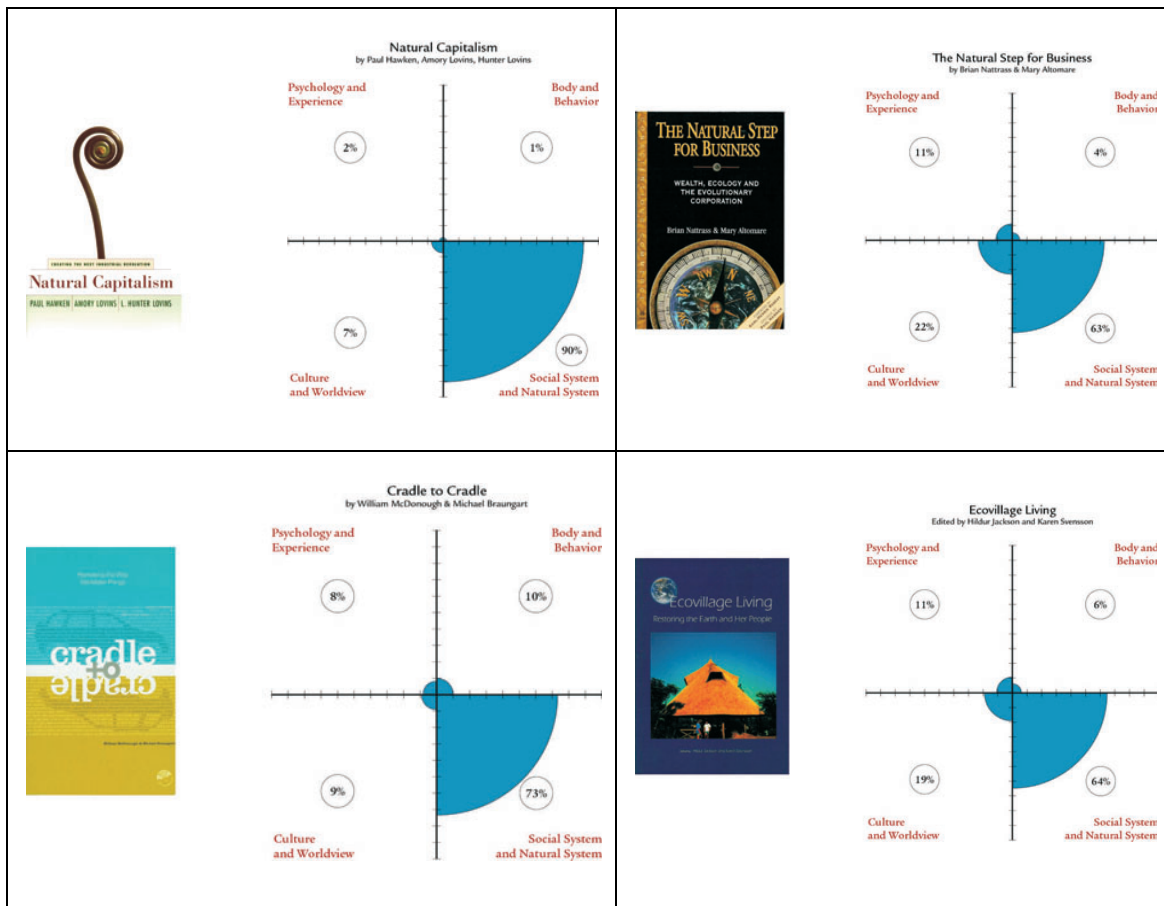


Figure 8: Four Quadrant Analysis of Key Sustainability Texts (adapted from Brown³³)

What is immediately evident from the figure is that the primary sustainability focus articulated in these texts is one of influencing design and processes in the lower right quadrant (the collective exterior of the four-quadrant model). As I argued earlier from an Integral perspective, if any of the quadrants is left out or only partially considered, the system as a whole or sustainable strategy or intervention will likely fail in achieving the intended outcome. From this perspective, it is simply inadequate to believe that we can focus on human social systems alone. Even applying advanced ecological thinking to the design of economic systems, agriculture, our institutions and the built environment, will not result in lasting and changed behaviour and awareness within individuals and collectives.

Evolution in this sense tetra-evolves – in other words all four quadrants interact and evolve together. As these quadrants represent self, culture and nature,

³³ The following graphics have been sourced from presentations made by Barrett Brown at an Integral Sustainability seminar held in Boulder Colorado, USA, in September 2006.

each must be incorporated as equally important and valid if the design of human systems is to align with inherent evolutionary processes. As Wilber (2005: 24) has concluded, "If you leave out science, or leave out art, or leave out morals, something is going to be missing, something will get broken. Self and culture and nature are liberated together or not at all". From this perspective and from the depictions in Figure 8, it is fairly straightforward to understand why so many sustainability initiatives do not end up having the intended effect.

By focusing on exterior monological paradigms, interior dynamics and development are left out. Even the 'web of life' ontology (two quadrants, no levels), at the core of much thinking in ecological design is 'always biocentric', according to Wilber (1995), and therefore does not include for the most part the interior and vertical dimensions of the human evolutionary system. An adequate conception for sustainable development would include all quadrants and all levels (Wilber, 2000a). A partial approach may indeed be what is undermining much needed progress in this field.

In the following two chapters, as I discuss the case study of the Tlholego Village, I intend to illustrate some practical implications of Integral thinking.

2.9 Key Ideas to be carried forward

After exploring all the concepts and knowledge covered in this chapter concerning the complexities of designing and building sustainable communities, I have identified several key ideas that I feel should be carried forward. These ideas, which relate to both the design of sustainable communities in general and to the specific interpretation of the Tlholego case that follows in the next chapter, are listed below.

1. The evolution of our consciousness, from egocentric to ethnocentric to worldcentric awareness, is a longer term imperative for our societies to adapt to ecological and economic constraints of living on one planet. While such transformation is most often very difficult, translating worldcentric

thinking to the level of awareness people have right now, is a constructive approach for working with global challenges locally and in the shorter term.

2. Community level development, both rural and urban, is essential for a society like ours that lives beyond its means. Achieving quality of life through such development is as much about subjective qualitative fundamentals as it is about objective quantitative ones.
3. The new economies at the heart of future sustainable communities must satisfy fundamental human needs from an integrated and synergistic perspective. This approach is also important in understanding and reducing existing poverties within individuals and collectives.
4. While quantifying sustainability in terms of carrying capacity and equality is important to measure progress, there are also real constraints to a technicist approach that must be considered.
5. Ecological design is rapidly developing as a vital discipline for connecting human systems to the natural world. Permaculture is one effective approach for doing this, particularly with regard to the design of 'exterior' social structures. There are limits, however, to the extent to which ecological design practices can be applied to the 'interior' cultural spaces within human systems.
6. In designing more sustainable communities in the future, Integral theory provides the most complete framework to date, for including the psychological, cultural, behavioural and social complexities inherent in such projects. The integral framework deals elegantly with the deeply intermeshing relationships existing between the subjective interior and objective exterior of both individuals and collectives. Similarly this framework provides space for the fact that people evolve through different stages of awareness at different times of their lives, as well as along different lines or directions. By presenting a mental model in which to locate these differences, the Integral framework provides us with the tools to map

the terrain of evolving consciousness within humanity as a whole. From this position, the practitioner is able to include often disparate and conflicting views held by individuals and collectives, into a wider and deeper meta-perspective.

In the case that follows, I have applied only the rudiments of the Integral framework in order to provide a general orientation and perspective. As a result, much of the detail that depicts the Tlholego community and its environment has been excluded from this analysis.

For example, I have mainly used Spiral Dynamics to talk about altitude or levels of development in individuals and collectives, because it has been convenient to do so. In other words, I am looking at levels of development along one particular line, in this case the values line or 'what is significant to me'. To develop a more complete understanding of levels, several additional lines would need to be looked at in more detail (see Figure four on page 36).

In using Spiral Dynamics to gain insight into the interior landscape of individuals and culture at Tlholego, there is the danger of fitting people into certain fixed meme structures (Purple, Red or Green for example). So while this approach has been useful in obtaining a rough picture of 'interiors', in reality this tool alone is not able to grapple comprehensively with the more complex intermeshing and dynamic nature of people's consciousness.

Chapter 3: Tlholego - Vision and Early Years



In this chapter I present the Tlholego Ecovillage, as a case study that I believe is relevant to the design of sustainable communities. The story of Tlholego is a journey into the life of one of the first experimental and pioneering ecovillage and Permaculture developments in South Africa.

I have been intimately involved in this project from the formation of its vision in the late 1980s through all its development phases and processes up until today (2009/2010) when we once again stand on the threshold of new beginnings. The story of Tlholego therefore, while reflecting a rich tapestry of people, relationships, processes and events, is also, in part, a story of my personal journey of discovery and learning, about consciously engaging the drive within me to build sustainable communities.

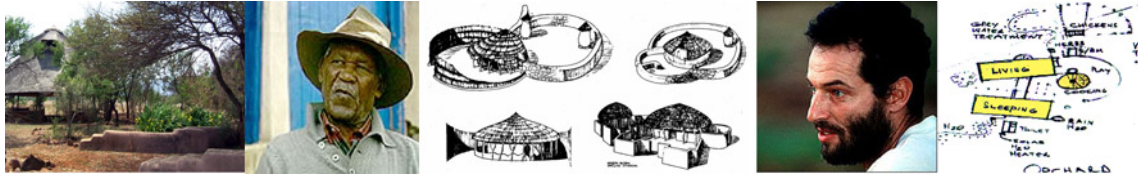
For the most part I have endeavoured to be as objective as possible while presenting the Tlholego case. However, I have also shared my personal understanding and perspective, which appears as a sub-narrative throughout.

Where appropriate, all relevant primary data sources have been referenced in the footnotes. I have also included several photographs to provide a pictorial view of Tlholego as it has unfolded over the years.

This case study is covered in two parts comprising Chapters Three and Four. Chapter Three is descriptive, a historical story that provides a context to the people, place and processes that make Tlholego what it is today. Chapter Four

is reflective and looks at the key learning experiences that may be relevant to the design and development of sustainable communities in general.

3.1 Forming a Personal Vision (1985 -1991)



Visions: what are they and where do they come from? Perhaps, as Andy Stanley has stated in his excellent book on the subject, "Visions are born in the soul of a man or woman who is consumed with the tension between what is and what could be... Visions form in the hearts of those who are dissatisfied with the status quo" (1999: 17).

In many ways this rings true for me. Before I became driven by a vision to build sustainable communities, I was dissatisfied with the status quo. My discontent was initially personal and psychological, later opening up to include a wider social/cultural dimension.

As a young engineering graduate in the mid-1980s, I became aware of certain problems emerging within my self-system that I could not really understand at that time. As I entered my mid-twenties, my worldview was failing me and I was struggling to make sense of life experiences.

As awareness grew I was connecting to deeper 'poverties' and 'pathologies'³⁴, both within myself and in society, which would drive my need for understanding for many years to come. These pathologies, as Max-Neef has indicated, were to some degree the very forces within me that led me to establish the Tlholego Ecovillage at this time.

In a postmodern sense, as I began to search for ways to heal myself, I connected with leading centres in human potential such as the Esalen

³⁴ Here I have used language from Max-Neef (1991) relating to unsatisfied human needs.

Institute³⁵ in Big Sur, California. What was immediately evident and enlightening about places like Esalen, was that this environment and its programmes connected for me a wide range of differing human experiences, knowledge systems and worldviews.

This was a liberating experience, as I had grown up under apartheid, in constricted and discriminatory times. Now, for the first time, I felt a far deeper freedom and was able to enjoy and appreciate a diversity of culture and spirituality in what was essentially a postmodern environment. Through these experiences I began to connect beyond my personal vision, to the social and ecological problems in society and the world in general.

For five years I traveled and studied at centres like the Findhorn Foundation³⁶ in Scotland, the California Institute for Earth Art and Architecture³⁷ and New Alchemy Institute in the USA.³⁸ While the initial problems I experienced were still there, I was beginning to sense that there were solutions around, and indeed powerful and exciting ways to work with what could otherwise easily seem to be quite intractable problems.

I was inspired by the writings of people such as theoretical physicist Fritjof Capra (1988, 1989, 1991), economists EF Schumacher (1974) and Hazel Henderson (1991), atmospheric chemist James Lovelock (1991), the late futurist Willis Harmen (1988), and others who were writing about new ways of seeing the world. At this time I became interested in the emerging field of 'sustainable development'. I found these emerging ideas best articulated in the edited work by Norman Myers, *The Gaia Atlas of Planet Management* (1987), which at that time presented me with much hope for humanity. These ideas began to shape a new postmodern worldview for me, based on ecological design and sustainable community development.

³⁵ www.esalen.org Esalen can best be described as a centre for alternative education, a forum for transformational practices dedicated to exploring work in the humanities and sciences that further the full realization of the human potential, a centre designed to foster personal and social transformation where people have the chance to explore more deeply the world and themselves.

³⁶ <http://www.findhorn.org> (25 January, 2010)

³⁷ <http://www.calearth.org/> (25 January, 2010)

³⁸ http://en.wikipedia.org/wiki/New_Alchemy_Institute (25 January, 2010)

In the late 1980s, when I came across books on Permaculture, I was excited by what I understood to be a brilliant design system for sustainability. The work of Permaculture 'pioneers' such as Bill Mollison and David Holmgren inspired me to put these ideas into practice.

Throughout this learning period, I returned several times to South Africa and traveled across the country visiting tribal villages and connecting with people in the cities and rural areas. South Africa was beginning to unbind from apartheid, Nelson Mandela was about to walk free and many promising signs of a new South Africa were emerging.

At this time a powerful vision was developing in me to establish a centre in South Africa with similar values and potential to that of the Esalen Institute. I was motivated by the idea that South Africa could 'leapfrog' to a more sustainable society. I believed it was possible to inspire people and capture their imagination (Bauman, 1992), across the wide spectrum of society and encourage investment into sustainable development models rooted in ecological design.

This growing passion of mine, in a sense to "build the seeds of tomorrow from the soil of today",³⁹ I believe, led me fortuitously in 1990 to a run-down cattle farm near Rustenburg in the Northwest province. Situated on this farm was a school for farm-worker children, which was to be closed down. The farmer, who was keen to sell his farm, did not feel that having a farm school with nearly 300 children would be an encouraging factor for any prospective buyer.

The imminent closure of the school became a catalyst for my connecting to a small group of people interested in saving the school and supporting my ideas around sustainability. Soon after this we formed the Rural Educational Development Corporation (Rucore)⁴⁰, a Section 21 company to promote sustainable development in southern Africa. At the same time the 146-hectare

³⁹ Professor Cilliers shared this idea at a lecture he gave on complexity at the Sustainability Institute in Stellenbosch on 3rd February 2003.

⁴⁰ The official date on Rucore's Certificate of Incorporation is 18 February 1991. (Registration Number: 9100811/08)

farm was purchased by Rucore for an amount of R420 000⁴¹, and the Tlholego Learning Centre, Rucore's first pilot project, was established (now known as the Tlholego Village). The name Tlholego is a Setswana word meaning 'creation from nature'.

In Rucore's Formation Report,⁴² the company's first official document written in 1991, the mission statement is as follows:

"The Rucore mission is to promote sustainable development in rural southern Africa. Rucore will pursue this mission through a whole-system approach to community development. It is Rucore's intention to develop a model community, through which the principles and processes of sustainable development can be learned, lived, fostered and replicated elsewhere."

In the same document, Rucore articulated its notion of sustainable development in terms of the broad principles laid down in the Brundtland Report (1987). Furthermore, at this time sustainable development for Rucore was conceived as being designed, created and managed by the people it served; ecologically sound (that is, guarding the environment and productivity of the land); and structurally transforming, involving changes in the culture away from oppression and violence.

At this formative stage, Rucore's conceptual framework for achieving sustainable development was designed around six functionally interdependent facets. Five of these facets were intended to fulfill the specific functions of business and industry, education, cultural development, health promotion and Permaculture. The sixth facet, management and community development, was intended to play a central and integrating function, coordinating and guiding the development of the community as a whole.

In 1991, as operations began, Rucore appointed two full-time directors: Mike Matsobane, a community leader and long-term Robben Island political prisoner, who was to be responsible for developments at the Tshedimosong Farm

⁴¹ Deed of Sale

⁴² Rucore Formation Report dated 26th February 1991, by P A Cohen.

School⁴³, and myself, a graduate engineer and sustainability visionary, responsible for the development of the Tlholego Learning Centre (TLC).

3.2 Early Beginnings (1991–1994)



3.2.1 Initial Conditions

The Rucore property is located on the western slopes of the ancient Magaliesburg Mountains, 15 km from Rustenburg in the Northwest Province of South Africa⁴⁴. This land has been noticeably transformed since the time great herds of wildlife roamed these grasslands and early African Iron Age hunter-gatherer agro-pastoralists occupied this area.

At the time Tlholego commenced, cattle had overgrazed the veld, and large patches of bare ground were common. It was also a time of drought, biodiversity loss and generally stressed conditions. According to the available records, the climate was hot and dry, with an average rainfall for the period 1991-1992 of around 350mm per annum⁴⁵.

The prevailing geology of this region is predominately decomposing volcanic rock, and the lands are mostly made of red clay soils. The vegetation consists of veld grasses with sparsely dispersed thorny Acacia and Rhus trees, more prevalent in the riparian zone and higher water catchment areas. Large sections

⁴³ Tshedimosong in Setswana means ‘Place of enlightenment’.

⁴⁴ Listed on Google Earth as Tlholego Ecovillage (Lat: 25°41'2.78"S, Long: 27° 5'56.71"E).

⁴⁵ From rainfall records - refer to excel spreadsheet ‘Annual Rainfall 2000’.

of the flat lands had been ploughed for many years and planted with tobacco, corn, sorghum and sunflower.

The existing infrastructure on the farm comprised of one medium-sized farmhouse, two poorly constructed outbuildings, and five sub-standard farm-worker dwellings with no water, electricity or sanitation in place. There was an electricity supply to the main house, two equipped boreholes and a 'party line' telephone. The property's fencing was in a poor state of repair.

The Tshedimosong School, originally established in 1982, was administered by what was then the Department of Education and Training. A two-hectare portion of land in the northeastern corner of the property had been previously cleared of all vegetation, with hardly a single tree standing in the vicinity of a few small classrooms erected there to form a school. No water or suitable ablution facilities existed and the situation required immediate attention.

This foundation phase in the early 1990s was a time of political transition, with growing support for new ideas and greater tolerance of different racial groups working together. Material poverty was also rife and people were hungry for food and jobs.



3.2.2 Tlholego Community

Prior to 1991, there was no 'community' to speak of. What social system existed comprised of the school teachers and nearly 300 school children and their parents from the surrounding farms, spread out on a radius of 21km; the farm-worker residents, consisting of a few family clans living on the existing farm; as well as the white farming families who owned lands in this area.









When Rucore purchased this land and Tlholego came into being, it was useful to speak of a 'community' when referring to the participants in the new project and their direct beneficiaries. The 'community' in broad terms then consisted of the Tshedimosong School members, farm residents, management and a few Permaculture activists who became involved full-time.

During the mid-1990s when development activity was at a high point, Tlholego employed 25 full-time people and community numbers were around 45 people, including children, older members and three families connected to the Tshedimosong School. Today numbers have decreased to a core group of around 20 people in total.

Below is a brief introduction to the current members of the Tlholego community⁴⁶.

Tlholego Community Members	
	Kentse Mokgokolo comes from Tlhabane, a township outside Rustenburg in the Northwest. She was married to Fanki, a long time community member, who passed away at the end of 2007. They have a daughter Basadi and two grandchildren. Kentse is a Board member of Rucore, and has been a key public relations person and office manager for Tlholego.
	Tampoki Dinloane was born in 1963, and is from Zeerust, a township outside of Mafikeng. He arrived at Tlholego in 1994. He has specialised in mudbrick making and building with earth. Tampoki is quiet in nature and has an inner strength and endurance that shows up on the building site. When working close by to Tampoki, one most likely will hear his joyful singing.
	Karabo Dinloane is Tampoki's son who has lived in this area all his life. His grandfather lived and worked on this land prior to Tlholego being established. Karabo had difficulty in learning at school when he was young due to hearing problems. He has chosen to work and to further his learning in a practical way. He loves to play soccer.
	Stephne Fain was born in Johannesburg in 1964. Her Tswana name is 'Mamoosa', which translated into English means 'woman who guides us'. Stephne has a flexible nature. She can be placed in many situations and feels comfortable and present. She enjoys adventure and likes to participate in diverse social and cultural environments.
	Paul Cohen was born in 1959 and grew up in Johannesburg. He is passionate about the idea of sustainable communities and ecological design. His ability to recognise what will be important for the future has driven him to set up Tlholego.

⁴⁶ This table was compiled from information available on the Tlholego website. For additional member information see <http://www.sustainable-futures.com/invest/ourteam.htm>

	<p>David Cohen moved to Tlholego a month after he was born. He has grown up with Karabo and Masego and has maintained a close friendship with them. David has grown up within a diversity of global cultures. He relates to both rural and urban lifestyles. His close relationship with Karabo and Masego has enabled him to learn some Setswana phrases and songs.</p>
	<p>Mating Njana was born in the Free State in 1954 and was one of the first people to live and work at Tlholego. She is married to Sethanye, and has two children and four grandchildren who have grown up at Tlholego. Before moving to Tlholego in 1994, she did not know how to grow vegetables but is now in charge of planning the planting of the food gardens.</p>
	<p>Sethanye Nakedi grew up in the village of Siega in the North West. His father taught him to care for goats and cattle and grow food. He has extensive knowledge of traditional methods of building using natural materials and tactics for survival that rely on understanding the natural environment. He is a community elder and is described by his family and friends as a quiet, gentle man who has a lot of knowledge.</p>
	<p>Nene Nakedi was born in 1974 at Magatlashoek, which is situated close to Tlholego. Nene lives in a mudbrick house in the village with her partner and has three children, Thabang, Kamogelo and Phantsi. She likes to stay close to home and only goes to town when she needs to shop for Tlholego. She likes to manage money and is in charge of the centre during workshops.</p>
	<p>Modiegi Nakedi was born in 1986 in Magatlashoek. She came to Tlholego with her parents at the age of seven. Modiegi has matriculated and now works in catering and waitressing at a conference centre close by. She lives with her parents and has a one-year-old child who was born at Tlholego. She loves all the different cultures that pass through Tlholego.</p>
	<p>Thabang Nakedi was born in 1990 in Magatlashoek. Thabang's family have described her as 'a sangoma'⁴⁷. Her character is quiet and reserved and she is sometimes difficult to get to know. Thabang left school when she was 15 and now works at a conference centre close to Tlholego. She enjoys meeting international visitors at Tlholego.</p>
	<p>Mmamiki Nakedi was born in 1973 in Rietfontein Swartruggens in the Northwest. She came to Tlholego in 1995 with her daughter Masego. Mmamiki enjoys going to church on weekends. She loves to cook traditional meals from food grown at Tlholego. She is interested in the relationship between food and nutrition.</p>
	<p>Masego Nakedi was born in 1994 in Magatlashoek. She has lived at Tlholego since she was 6 months old. Her teachers say she is an enthusiastic student and has an advanced understanding of the English language. She loves to meet interesting people from around the world who come to teach and learn at Tlholego. One day she hopes to visit an ecovillage outside South Africa.</p>

⁴⁷ African traditional healer.

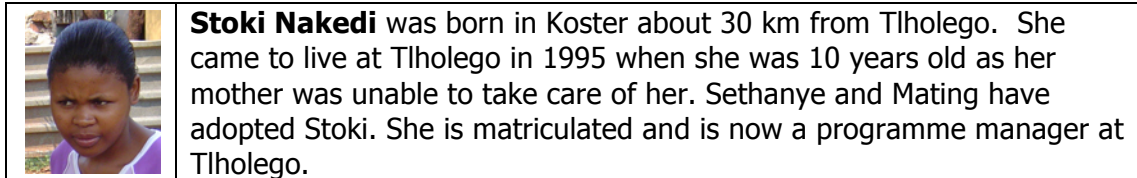


Figure 9: Members of Tlholego Community

3.2.3 Vision to Practice

Rucore’s principal strategy for realising its mission was Permaculture. However, in the early 1990s, there were very few people living in South Africa who had any previous knowledge or practical experience in this area. My own experience was limited to having read Bill Mollison’s books and visited a few pioneer projects during my travels.

My first objective was to create opportunities for members in the ‘community’ to experience Permaculture in practice with the hope that this would build an initial understanding of the technology central to this development process. Fortunately there were two centres in southern Africa that had already been working with Permaculture systems since the mid 1980s – the Fambidzanai Learning Centre in Zimbabwe and the Permaculture Trust of Botswana (PTB).

During 1991 the following Permaculture learning experiences were organised for the Tlholego community:

- In March, Mike and myself made a ten-day trip to Zimbabwe⁴⁸ to look at various co-operative farming projects established since independence and to visit the Fambidzanai Permaculture Training Centre north of Harare.
- In June, community elders Ishmael Segloane and Joseph Ntlou visited Robert Mazibuko⁴⁹ the ‘Tree Man’ at the Africa Tree Centre in Edendale, KwaZulu-Natal. This was one of the best examples in South Africa at that time of organic gardening techniques that could be used to feed and sustain an entire family on a single acre of ground. This short visit resulted in the establishment of the first organic gardens at Tlholego.

⁴⁸ Rucore Minutes 27 March 1991.

⁴⁹ <http://audi.co.za/experience/terranova/1994.php> (11 September, 2007)

- In September, I met with Jeunesse Park, from Trees for Africa (now Food and Trees for Africa), who had arranged for Bill Mollison's first visit to South Africa. A one-day field trip was arranged at Tlholego. This inaugural event brought many interested Permaculture people together. The Tlholego 'community' hosted this celebration, with Kentse Mokgokolo, a voluntary teacher at the Tshedimosong School, directing the children in song and dance.
- Mollison's visit resulted in the first two South African Permaculture Design Courses being arranged for December that year. The first course, held at Tlholego, was taught by Sue Buchanan from New Mexico, USA and the second, held in Johannesburg, was taught by Sue Buchanan and John Wilson of Fambidzanai.
- In December, it was arranged for four teachers and eight pupils from Tshedimosong School to attend a week at Fambidzanai in Zimbabwe.
- In December, a comprehensive training programme was set up between the Tlholego Learning Centre and the Permaculture Trust of Botswana⁵⁰, who could deliver Permaculture training in the local Setswana language. This resulted in 47 people from the local community being trained in the period March to May 1992. Relationships were established with PTB for ongoing cooperation and capacity building.

In March of 1992, I needed to take leave for personal reasons and to further my research. My future wife, Stephne Fain, was living in the USA and I wanted to spend time with her. During this time I attended advanced training courses in Permaculture design, natural building technology and ecovillage development. I participated in the International Permaculture Conference in Copenhagen where I met with leading global practitioners who would later contribute significantly to the development of Tlholego.

⁵⁰ Report prepared by Russell Clark of the Permaculture Trust of Botswana (1992)

The Rucore Board appointed a new project manager. The Permaculture Trust of Botswana (PTB) continued to train the community in Permaculture implementation and land design through May 1992.

At this time, conflicts of interest and power struggles were beginning to emerge between the Tshedimosong School and the Tlholego Learning Centre. At the end of 1992, the school project was separated from that of the learning centre for practical management reasons⁵¹.

Permaculture consultants Avice and Ron Hindmarch were hired to manage the development of the centre. In June 1993 partial funding for the learning centre was secured from the Development Bank of Southern Africa (DBSA)⁵² and the Kagiso Trust. This enabled movement into the next phase of the Tlholego Learning Centre (TLC). An evaluative workshop was held to ensure that the project was both relevant and viable in the South African context⁵³.

In July 1993, construction began on the training centre and continued through to September 1993. One of the outbuildings was converted into dormitory accommodation with solar water heating technology. Weekly staff training and gardening workshops were held, and the second Permaculture design course was run in October 1993.

At the end of October 1993, for various reasons, management and consultant contracts were not renewed and the project faced certain closure halfway into the funding cycle with the Development Bank of Southern Africa (DBSA). This was due mostly to factors arising from the difficulty of the work itself. The project location was out of easy daily commute from Johannesburg (130km) where most people lived, and the effort required for pioneering this work was much greater than the remuneration the project could afford. At the same time, Tlholego's longer-term vision was not the central motivating factor for this group's involvement.

⁵¹ *Ibid.*

⁵² Development Bank of Southern Africa (<http://www.dbsa.org/Pages/default.aspx>, 25 January, 2010).

⁵³ Strategic Plan for Tlholego Learning Centre. Prepared by Tegan Brophy, September 1993.

Hearing of this, I decided to return to Tlholego in order to take up the challenge of leading this development process for a second time. I arrived back from my travels with new knowledge, practical experience and renewed energy.

My focus was now to create an inspirational training centre for rural livelihoods based on ecologically sustainable design. To further assist in this next phase I contracted the services of several international consultants who were interested in working in the South African context. It was at this time that my wife Stephne returned to South Africa to join me at Tlholego.

The year of 1994 was a highly concentrated time for design, implementation and practical learning. A professional team consisting of Thomas Mack (permaculture designer), Joseph Kennedy (architect and natural builder), James Wynn (horticulturist and permaculture plant specialist) and Tom Ward (Quaker elder and Permaculture educator) took up residence at Tlholego for periods of three to nine months.

This stage of development created new work opportunities for people from the local area and attracted interest from the nearby township of Tlhabane and the village of Phokeng. For those involved, this was a powerful time of living and learning together as a diverse group of global cultures.

During this period, work was focused on aspects of Permaculture design and implementation appropriate for setting up a training centre on the site. This included construction of training buildings, water tanks and sanitation technology, as well as sourcing useful local plant material, planting trees, harvesting water, growing food and seed saving.

The documentation⁵⁴ from this period reflects a time that was invigorating and exciting, but also intensely challenging. On the one hand, Tshedimosong School was one of the official polling stations for the first democratic elections in April 1994 and Tlholego was a place of much integration, inspiration and hope. And

⁵⁴ Tlholego Learning Centre Progress Summary, June 1994

equally stressing were the multiple impacts resulting from historical conditions of poverty, which most of the local farm worker families were experiencing.

Financial pressures made it difficult to focus and to consistently build local capacity. While funds had been raised to purchase the land, capital was not available for the actual development work. The DBSA had provided a combination of loan and grant finance to set up a training centre for teaching Permaculture. However, the majority of participants who were interested in these courses could not afford the fees, which required additional efforts to raise funds for this purpose.

Grant writing was a core activity and while sizeable funds⁵⁵ were raised from the corporate sector, institutions, international sources and private individuals, fundraising efforts generally required more resources than they sustained⁵⁶. Loans⁵⁷ were secured to keep the project afloat during lean periods. In addition to ongoing financial difficulty there was a lack of human resources and leadership experience to guide and manage a complex process of this nature.

Subsequently, in January 1995, after struggling with the hot climate, long work hours, lack of basic comforts and security concerns, members of the professional team decided to return home three months short of completing their contracts. This left Stephne and myself with a significantly reduced capacity to complete several major projects and plan our way forward. It was a time for us to put our heads down and take up new challenges.

⁵⁵ Tlholego's *Interim Phase Business Plan (April to September 1996)* shows that direct investment as of March 1996 amounted to R 1.9 Million. This included an initial amount R420 000 for land purchase.

⁵⁶ A computer record of funding sources is contained in the file named *Funding Sources.doc*

⁵⁷ Details of these loans are available from the archive document, *Phase 2 - Five Year Business Plan*, January 1996 and the 2007 Annual Financial Statements for Rucore.

3.3 Learning in Development (1995-2000)



By 1995, a certain momentum had been created. The concepts of Permaculture were not new to us any longer and there was a basic master plan in place towards which everybody was working. With some experience under our belts, this phase brought about a period of personal growth, infrastructure development, training, networking and recognition for our work. A day in the life of Tlholego is described in Box two on page 93.

In January 1996 Tlholego had completed its first phase of infrastructure development, which demonstrated various technologies for sustainable construction, sanitation and water management; as well as key Permaculture strategies for self-reliance. This culminated in an open day event where over 200 people from all sectors of South African society attended a launch⁵⁸ of the proposed second phase of the project. Permaculture educators from the United Kingdom and New Zealand, Robina McCurdy and Joanne Tippet and USA architect Brian (Buddy) Williams, who were living on site for several months at this time, contributed significantly to the preparation and running of this event.

Even so, the ongoing development challenges on a personal and collective level were always present. My understanding at that time was that we would solve these challenges through applying the ethical and design principles of Permaculture to the various aspects of the project.

⁵⁸ *TDP Phase 2 Prospectus Portfolio* containing all the projects work to date as well as future plans was compiled for this event.

For me, this involved learning in a practical day-to-day way through a cyclical process or Grok Cycle⁵⁹. In essence: apply the principles to a situation, observe, learn, self-organise, update experience and then re-apply principles, and so on.

⁵⁹ *The Grok Cycle*: The word grok ... is a translation of the technical term Verstehen, meaning, “to understand”. We grok something (an archaeological find, artifact, artwork, text, poem, letter, natural process, and so on) by a cycle of observing, thinking, poking, and once again observing. This is not the same as explaining it, representing it or translating it (Abraham, 1994: 18).

One day in the life of ...

It's summer time; the sky lightens up by five in the morning. House doors are opening up and there is a chatter of children and parents from within the village. Children are preparing the fire to make morning tea, breakfast for the family and hot water for a warm bath before dressing for school. Cocks are crowing, chickens clucking, goats are roaming around and the new piglets are suckling.

By seven o'clock all the children have eaten, dressed and are walking to school, only five minutes away. There are constant sounds of various greetings coming from all directions as people are making their way along the pathways from the village to the learning centre.

Some of the Tlholego staff are checking in with each other over a cup of tea at the community kitchen in the administration office. There is a workshop taking place at Tlholego for a few days so the catering team are making sure all participants are comfortable and their needs taken care of. The garden team has already been watering the gardens and discussing what vegetables and herbs can be harvested for the workshop menu that day. Freshly picked chamomile and lemongrass go into the teapot, and into the sun stove to brew up for morning tea.

It is only nine in the morning. By this stage there is a hive of activity. A large truck is travelling up the driveway with sand for the building team. Kentse shouts across the centre to attract attention for someone to direct the truck. We have a deadline for making mudbricks, as next week a new structure will be built during a building workshop.

Today there is a trip into town and much to coordinate. Stephne is collecting the shopping list for the workshop and gathering a few members of the community who need to visit the hospital. As she gets into the car, Sethanye rushes over with an empty diesel can for refilling and a list of maintenance items to pick up.

By one in the afternoon workshop participants are sitting around the outdoor cooking area enjoying a traditional Tlholego chicken potjie with morog (cooked greens), beetroot and pap for lunch. The workshop co-ordinator is planning a nature walk down to the river and a visit to the kraal for their afternoon session.

The children are returning home from school. Some join in with the activities at Tlholego, visit their parents in the garden and play with the smaller kids, looking after them for the rest of the day. Others have been tasked with collecting water from the rain tank as earlier on a pipe connecting the borehole to the water tank had burst. Paul is taking visitors for a tour of the centre.

It is now four in the afternoon and the workday for some is coming to a close. The builders pack up their tools and head off to the workshop where tools are cleaned and laid out for the next day. The catering team however will be busy until late, and with the members of their families they coordinate how to manage the evenings between them.

Between five and ten in the evening the cookhouse is bustling. Music is playing in the background, participants are making plans to walk and watch the sunset before dinner. Around the fire everyone enjoys late night dialogue sessions. Sometimes drumming and story telling will be the theme of the night or slide presentations, videos and discussion groups take place in the classroom.

The day ends on a positive note. Energy well invested in fullness of activities. Tomorrow is another day to look forward to.

Box 2: One Day in the Life of the Tlholego Village

3.3.1 Education and Training



In 1995, Robina McCurdy, an experienced Permaculture educator from New Zealand, agreed to spend two years living at Tlholego, and thus making a significant contribution to the development of the learning centre. It was at this time that Whole School Development programmes were set up with the Northwest Department of Education and weekly training programmes were run at the Tshedimosong School⁶⁰ and the Tlholego community.

The majority of the training programs held at Tlholego were run between 1994 and 2000. Over this period more than 500 people were certified in Permaculture design, natural building technology and ecovillage development⁶¹. The centre attracted leading Permaculture trainers from around the world who passed on their skills and knowledge to up-and-coming trainers from South Africa.

3.3.2 Building and Construction



Two people who contributed significantly to transferring skills and technology at Tlholego were natural builder Joseph Kennedy from the USA and mudbrick architect Brian Woodward from Australia.

⁶⁰ Tlholego document on Farm School Development in the Northwest Province, produced in October 1996 by Robina McCurdy

⁶¹ Annual Narrative NPO Report to the Department of Social Welfare, 2006.

Joseph Kennedy, as a member of the original professional team who worked at Tlholego during 1994, was involved in the master planning of the site and designed the first building for the learning centre. He returned to run training programmes during 1999 and 2003 in natural building technology⁶² and continues to remain involved in an advisory capacity.

Brian Woodward spent six months in residence at Tlholego with his family in 1996. During this time, with financial support from the Kagiso Trust, the Tlholego Building System (TBS)⁶³ was developed as a flexible, owner-built, low-cost, high quality housing system for South Africa. This housing system was designed to modern standards using natural materials available on site. This building system minimises negative impact on the environment⁶⁴ through reduced greenhouse gas emissions in the construction process as well as the lifetime operation of these structures. Over the next two years four prototype houses were constructed and a team of builders were trained.

3.3.3 Networking and Outreach

Towards the end of the 1990s, Tlholego had become known as one of the leading Permaculture centres in South Africa, with over 3000 people having visited by this time. The centre's visitor's books showed that people came from all sectors of society, including universities, government, NGO's, funding agencies, community organisations and many individuals, all with a general interest in sustainability ideas⁶⁵.

Tlholego engaged in projects with leading organisations in various aspects of sustainability. These included building projects with the Council for Scientific and Industrial Research (CSIR)⁶⁶ and the Midrand Eco-city⁶⁷, participatory land

⁶² *Ibid.*

⁶³ Woodward, B. (1996). *The Tlholego Building System – A low cost high quality building system for South Africa*. Published by Earthways South Africa.

⁶⁴ Of Mud and Men, published in *SA Country Life*. March/April 1997.

⁶⁵ Tlholego application to the *Mail and Guardian* – Greening the Future Awards 2003

⁶⁶ http://www.csir.co.za/Built_environment/index.html (18 September, 2007)

⁶⁷ <http://www.ecocity.org.za/> (18 September, 2007)

use planning with Pelum⁶⁸, and ecovillage development with the Global Ecovillage Network (GEN)⁶⁹.

3.3.4 Recognition and Endorsements



By this time Tlholego had grown into a demonstration site and small living and learning centre of around 35 full-time members. Tlholego was a place where visitors could experience a range of technologies applicable to ecovillage settlements. Over this time, Tlholego has received many endorsements and recognition for its work. A select few of these endorsements are listed below.

- Northwest government: "This government recognises the important work Tlholego is doing in the development of rural learning infrastructure, and its capacity to translate the objectives of RDP⁷⁰ into practical on the ground programs". (Letter from Peter Verrijdt, special envoy of the premier, June 1996)
- The Global Ecovillage Network: "I am pleased to recommend Tlholego as a good example of people-centered, sustainable community development". (Letter from Hamish Stewart, Secretary of the Global Ecovillage Network (GEN) International, November 1997)
- Ashoka Southern Africa: In 1997, Tlholego director Paul Cohen was awarded an Ashoka fellowship in recognition of his innovative work in establishing the Tlholego sustainable homestead model⁷¹.
- George Roberts: "It was personally a wonderful experience to be back at the originating home of Permaculture in our country. Eleven years from

⁶⁸ <http://peopleandplants.org/whatweproduce/Handbooks/handbook4/ngos.htm> (18 September, 2007)

⁶⁹ <http://gen.ecovillage.org/> (18 September, 2007)

⁷⁰ Reconstruction and Development Programme

⁷¹ <http://www.ashoka.org> (18 September, 2007)

December 1991 is not really a long time. Yet the impact of your vision and courage has affected the lives of many thousands of people already. When the time is ripe your dedicated attention to researching alternative housing and establishing ecovillages will give southern Africa a head start in the African Renaissance,”. (Educationalist and participant in first permaculture design course at Tlholego)

- Sustainability Institute: “Tlholego’s layout and architecture provides a unique space for dialogue and reflection. Whereas most other attempts at so-called ‘African design’ either lack authenticity and/or are just for the effect, Tlholego is what it is without having to try too hard. The sense of connectedness to its local context via the school and the local community, and the continuity it achieves to an ancient past, makes for a special place that needs to be protected and preserved”. (Mark Swilling, October 2002)

3.4 Difficult Times (2001–2005)



While Tlholego received much encouragement for its work throughout the 1990s, the difficulties in sustaining the project and realising its vision were by this time quite evident.

The ‘business model’ itself was difficult to define as this included the whole notion of researching and developing a ‘sustainable community’, an idea for which general funding was difficult to obtain. One reason for this was a lack of funding for holistic projects, those that consider the environment in systemic ways. Income generated was insufficient to cover project overheads at that time, which were in the region of R20 000 per month. This did not include salaries for those of us who were in a management role, and who had been working in this way for several years.

Ongoing funding was required for project development, for infrastructure, training programs, capacity building, and technical assistance. Proposals had to be tailored to suit the needs of funders, which were often changing. At this time, the understanding of sustainability in practice was unfamiliar amongst many donors and we pursued numerous small grants to keep ourselves alive. Capital budgets for infrastructure and programme development were only marginally realised. This resulted in cycles of imminent closure followed by spurts of activity, making it difficult to sustain a consistent process of organic growth in both the material and human systems.

As most community members were not directly involved in management or the process of raising funds, they lacked an understanding of the challenges involved at this level, and began to genuinely doubt how they would ever personally benefit from this process. Trust became an issue, and while it was the longer-term vision that kept our small leadership team engaged, this vision became less attractive to the majority of community members who measured the project's success on the basis of shorter-term tangible results.

Additionally, Tlholego did not have a permanent and skilled staff in place to run its own training programmes or manage the tasks required to sustain the project's daily operations. These challenging life conditions forced many people to focus on their own survival with one member even establishing his own shebeen⁷². I felt my own leadership capacities were insufficient and Tlholego's sustainability depended on my unrelenting pursuit of this vision, which was driving me and my family in and out of exhaustion.

At this same time, Stephne's mother was suffering from a long illness. We decided to take 2001 as a sabbatical year and to spend time closer to her family in Australia. We chose to live at Crystal Waters⁷³, as this was an opportunity to experience living in a first world Permaculture village developed by world renowned ecovillage designer Max Lindegger in 1986. After Stephne's mother passed on towards the end of 2001, we returned to South Africa. Our primary

⁷² An illicit bar or club where excisable alcoholic beverages are sold.

⁷³ <http://www.ecologicalsolutions.com.au/crystalwaters/> (19 September 2007)

focus was the World Summit on Sustainable Development (WSSD) due to be held in Johannesburg in September 2002. We felt encouraged to pursue further work at Tlholego in the hope that this significant global event would result in new partnerships and the investment we required.

For Tlholego, this was a time of optimism as we hosted several international events including the Global Ecovillage Network and Ashoka environmental initiative⁷⁴. Participation in the World Summit on Sustainable Development (WSSD) did not however translate into any significant investment in our work, and no sooner was the conference over and we were back to our familiar cyclical path of on-and-off development.

Stephne and myself needed to find a balance between our personal and family needs as well as realising Tlholego's long-term goals. This led us to appoint a project manager to work on the ground as we relocated to Cape Town. This allowed both of us to continue working on a strategic level. I joined the newly formed masters programme in sustainable development that was starting at Stellenbosch University⁷⁵. This was an important opportunity for me to reflect on the past decades development work and to search for new understanding and perspective with which to move forward.

This decision worked for a few years and we were able to keep Tlholego operating by running various training programs and educational activities. Eventually and not unsurprisingly, fragmentation and power struggles arose within the community that led to a total breakdown in the day-to-day functioning of the centre.

In 2004 we employed project managers who were responsible for developing new programmes. In 2005, a programme was initiated with the Global Environment Facility's Small Grants Program (GEF SGP)⁷⁶, under a climate change focus, for the construction of a new eco-homestead demonstration project. This included the retrofitting of existing substandard housing and a

⁷⁴ The Ashoka Green Paper for the WSSD, produced by the Environmental Innovations Initiative.

⁷⁵ http://www.sopmp.sun.ac.za/content/view/?page_id=21 (24 September 2008)

⁷⁶ The Global Environment Facility's Small Grants Program (<http://sgp.undp.org/>, 25 January, 2010)

sustainable livelihoods focus, based on the lessons learnt from ecologically designed homes constructed at Tlholego in 1998.

Three months into this programme, it was clear that we were unable to complete the project as planned. The reasons were to do with personal interests being placed ahead of the programme objectives, and the alleged mismanagement of funds. This process became unpleasant, resulting in the eventual dismissal of our project managers. However, the Global Environment Facility's Small Grants Program (GEF SGP) project was salvaged and, with amendments, has resulted in several positive outcomes.

While this was a deeply painful process to work through, the community finally advanced through a process of self-organisation whereby certain members chose to leave. This resulted in the emergence of a new community group, consisting of the remaining long-term members and my family who once again began to look forward to new beginnings.

3.5 New Beginnings (2006–2007)



The opportunity to study and research at this time provided a great opportunity for me to deepen my understanding of the complex skills and capacities required for leading the design and development of sustainable communities. This expanded perspective has been invaluable in interpreting and understanding Tlholego's past experience and for planning the future.

Over 2006-2007, through a grant from the Wallace Global Fund (WGF)⁷⁷, we have engaged in a strategic review process to clarify our plans for the next phase of development. Whereas our early vision was one of community development rooted in ecological design, our thinking today is more towards

⁷⁷ Wallace Global Fund (<http://www.wgf.org/>, 25 January, 2010).

enterprise rooted in community development. Our overall mission is essentially the same, being focused on a holistic approach to sustainable community development.

During the past two years (2007/2008) we have reduced Tlholego's budget to R15 000 per month, enough to pay minimum wages for five key staff and cover basic operating costs. We have been able to generate R12 000 of this amount through regular courses, run by Tree of Life, an organisation that delivers a wellness/healing programme for victims of organised violence, mainly from Zimbabwe. We have relied on donations from a few long-term supporters to cover this shortfall. While not sustainable in the long term, this approach has allowed us to continue and to develop a new business model as well as engage with potential investors.

Building on our experience and using the assets we have created, our current strategy is to further develop three core areas of the project. These include sustainability training, organic farming and a residential development (See Figure 10 on page 103). We are now building appropriate partnerships in all three areas. While we do not yet have budgets in place for this next phase of development, there is growing interest from local foundations and mining houses, sustainability organisations and practitioners, government, global funders and certain private individuals.

With existing and new training partners, we plan to extend the healing and wellness programmes run by Tree of Life to include self-reliance programmes for construction, sanitation, energy, water and food security. These programmes will be geared for communities within the region affected by rising poverty and economic hardship, and for those people who may be displaced by climate change factors in the future.

Our project with Global Environment Facility is now complete, and generated a new set of designs for the residential village, which uses the Tlholego Building System. Through this process the Tlholego Building System has been further adapted for South African conditions to include security and more durable

exterior surface finishing. The first cluster, consisting of seven family units for existing members, is now ready for construction. The zoning plan for the first phase of the village allows for 22 sites, a cemetery, communal worship space, community hall, children's playground and extensive food security landscaping (see Figure 11 on page 103).

Over the years Tlholego has built infrastructure to support food security programmes. This includes nursery facilities, a propagation area, seed store, food gardens and a collection of useful plants adapted to our dry and hot conditions. In 1997, with assistance from a Wallace Global Fund (WGF) grant, we constructed an 800 square metre shade structure for controlled environment farming. This has proved very successful for production in our increasingly harsh conditions. In addition to strengthening our food security capacity for both production and training, we plan to expand into the commercial growing of local food and health care plants.

As a community we are growing through our teenage years, we are still tenuous but have gained important experience. Young children have been born, some into families of those who were themselves young when Tlholego started nearly 20 years ago, and this is good reason for hope. There is much to learn and accomplish before Tlholego can call itself a 'sustainable community'. Nevertheless, with sustainability issues now entering the mainstream in society today, this vision holds strong with increasing promise for its evolution and realisation in coming years.

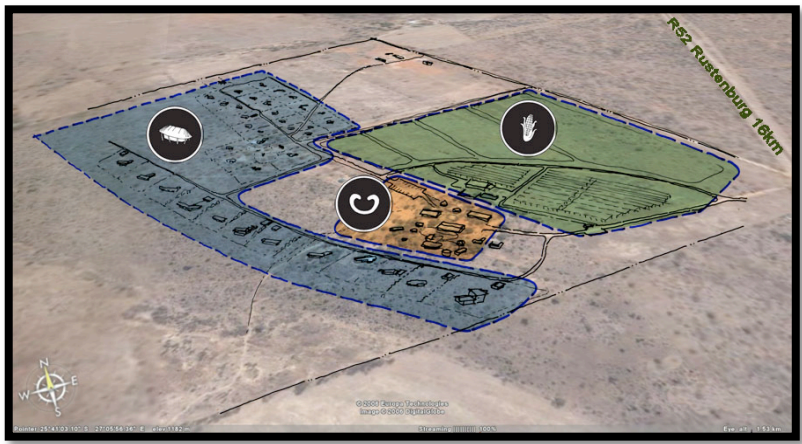


Figure 10: Tlholego Development Areas, Training (orange), Residential (blue) and Agriculture (green).

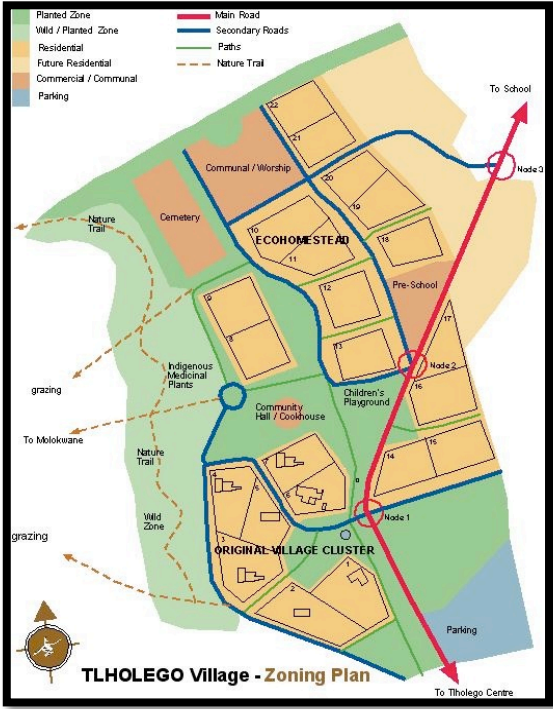


Figure 11: Tlholego Village Zoning Plan.

Chapter 4: Tlholego - Praxis and Experience

In this chapter I reflect on several of the key learning experiences that have emerged while engaged in the Tlholego development process over the past 20 years. This section is intimately connected to the experiential living and learning process at Tlholego, as well as to my personal experiences and communications with the many hundreds of people who have visited during this time.

Additionally my perspective is influenced by my academic work at the University of Stellenbosch and the Sustainability Institute over the past five years. This includes courses covering the theoretical themes discussed in Chapter Two as well as courses in complexity science⁷⁸ and integral sustainability⁷⁹. References to the theoretical models mentioned above are cross-cutting and run throughout the chapter, with a more detailed focus where appropriate.

The structure of this chapter is organised into five sections. The first section looks at the Tlholego community in the light of Integral theory and includes discussions on the history, community culture, creativity, learning and sustainable technologies. In the next section I reflect on the epistemological limits of Permaculture from an Integral perspective. In section 4.3 I discuss the main institutional and funding issues, including a perspective on local economy using Max-Neef's theory of human scale development. Finally I discuss the most significant leadership challenges and end with a section highlighting the important lessons learned.

⁷⁸ Complexity module at the Sustainability Institute run by Professor Paul Cilliers 3-8 February 2003.

⁷⁹ Course in Integral Sustainability, sponsored by Integral Institute, run from the 11-15 September 2006 in Boulder Colorado USA.

4.1 Tlholego Community in the light of Integral Theory

In this section I firstly describe the cultural space of the Tlholego community (shared meaning and understanding) using Spiral Dynamics. I then highlight certain challenging psychological and behavioural dynamics that I observed using this lens and suggest how such thwarting conditions may be minimized in the initial forming stages of such a project. Following on from there, I reflect on the fundamental value that creativity has played in the learning process at Tlholego and lastly, using the Integral lens, I discuss the most important sustainability technologies deployed at Tlholego.

4.1.1 History and Context

When I began work on the Tlholego project in 1990, I had negligible practical experience in this field. While I had gained some prior exposure to the human potential movement and certain alternative social systems, I lacked any real skills for leading a process of conscious design and evolution towards sustainable community development. My entry point was to dive straight in. It was only in 2003, when I returned to university studies, that I began to reflect seriously on more than a decade of sustainable development work.

Initially the theoretical framework that resonated with my experience, and which I found philosophically congruent with Permaculture, was the science of complexity⁸⁰. This was for me a powerful way of thinking and understanding the world. Furthermore, it was useful to think of Permaculture as a system of applied complexity⁸¹, with strong linkages to the ideas of resilience thinking⁸².

⁸⁰ The study of complex systems as a unified framework has become recognised in recent years as a new scientific discipline. Complex systems are the result of the interaction and transfer of information between large numbers of elements in a system. Understanding complexity therefore is important as many of the systems that surround us are complex and do not simply yield to deterministic analysis. Some examples of such systems are the human brain, cells, language, food webs and the economy (see Cilliers, 2002: 2-6).

⁸¹ I became aware of this connection through my conversations on complexity with Professor Mark Swilling of the University of Stellenbosch in 2003.

⁸² Resilience thinking stems from multidisciplinary research that explores the dynamics of complex adaptive systems as well as resilience in social-ecological systems, as a basis for sustainability. The most important work in this field takes place within the Resilience Alliance, <http://www.resalliance.org/1.php> (24 September, 2008).

From this perspective the Tlholego Village and community can be thought of as a social-ecological system or complex adaptive system.

One important characteristic of complex systems such as the Tlholego community is their deep distributed memory and therefore their history and context is of cardinal importance to the behaviour of such systems. As Degenaar (1993: 54) points out, "events from the past have to be interpreted in a meaningful way". Considering the Tlholego process from this perspective, I have presented the most relevant historical and contextual aspects that define the initial conditions of the project.

In the last chapter I described some of the social infrastructure that existed when the project commenced. In what follows I have focused more on the cultural, psychological and behavioral aspects on both personal and collective levels.

The Tlholego community evolved out of a diversity of cultural groupings. No particular selection criteria were used for approving or organising initial membership. In some respects circumstances at the time dictated how this process unfolded. Quite simply it was those people present at the beginning who became involved, mostly farm workers from the area. I trusted that the Permaculture principles applied to designing sustainable culture would be sufficient to manage, mentor and guide the evolution of the interior human dimensions of this community process.

By far the largest group originated from the farm-worker families who had been working on farms in these areas for many years. For the most part farm-worker families represent some of the most marginalised and deprived communities in South Africa. The historical background to the deplorable conditions endured by these farm-worker families lies generally in South Africa's history of colonial conquest and dispossession of indigenous people. A substantial portion of the farm-worker community is comprised of the descendants of people who may have occupied and farmed white-owned land in a relatively independent manner prior to the 1913 Natives Land Act. There is also a large rural

proletariat comprised of impoverished and landless people from the former Bantustans and an increasing number of illegal foreign workers from South Africa's neighbouring states⁸³.

Two of the smaller cultural units that made up the core group of the early Tlholego community were from urban backgrounds – one black family from the township of Tlhabane near Rustenburg and one white family (my own) who came from the suburbs of Johannesburg. In addition, the teaching staff from Tshedimosong School brought their own cultural values into the community mix on a day-to-day basis.

While the actual numbers of people involved were relatively small, the cultural diversity of the Tlholego community nevertheless represented a wide range of differing values, individual mindsets and behaviours. In this context I present a generalised 'feel' for this diversity, without going into a detailed psychographic analysis⁸⁴. I have used Spiral Dynamics theory and the value memes introduced in Chapter Two as a means to exemplify this cultural stratum within the evolving Tlholego community. The intention of using this system is not to create judgments about different types of people, but rather to encourage a sense of appreciation for the different value types within people. In the interests of simplicity, I refer to the Spiral Dynamics 'value memes' simply as 'memes'.

The following diagram (Figure 12 on page 108) shows how memes are distributed across several regions of the world. What is of particular relevance is the wide range of meme distribution in South Africa. Here all six first-tier memes are represented, first to third world, with the majority of people falling into the tribal animistic (Purple), impulsive egocentric (Red) range and to a lesser degree the authoritarian (Blue) and entrepreneurial (Orange) range, with a small egalitarian representation at (Green).

⁸³ South Africa: report reveals dire conditions facing farm workers, 2003, <http://www.wsws.org/articles/2003/oct2003/farm-o02.shtml> (29 September 2007).

⁸⁴ For those interested, the following website provides analysis tools for a deeper understanding of interior individual and collective dynamics, <http://www.theleadershipcircle.com/tlccommunity/index.htm> (29 September 2007).

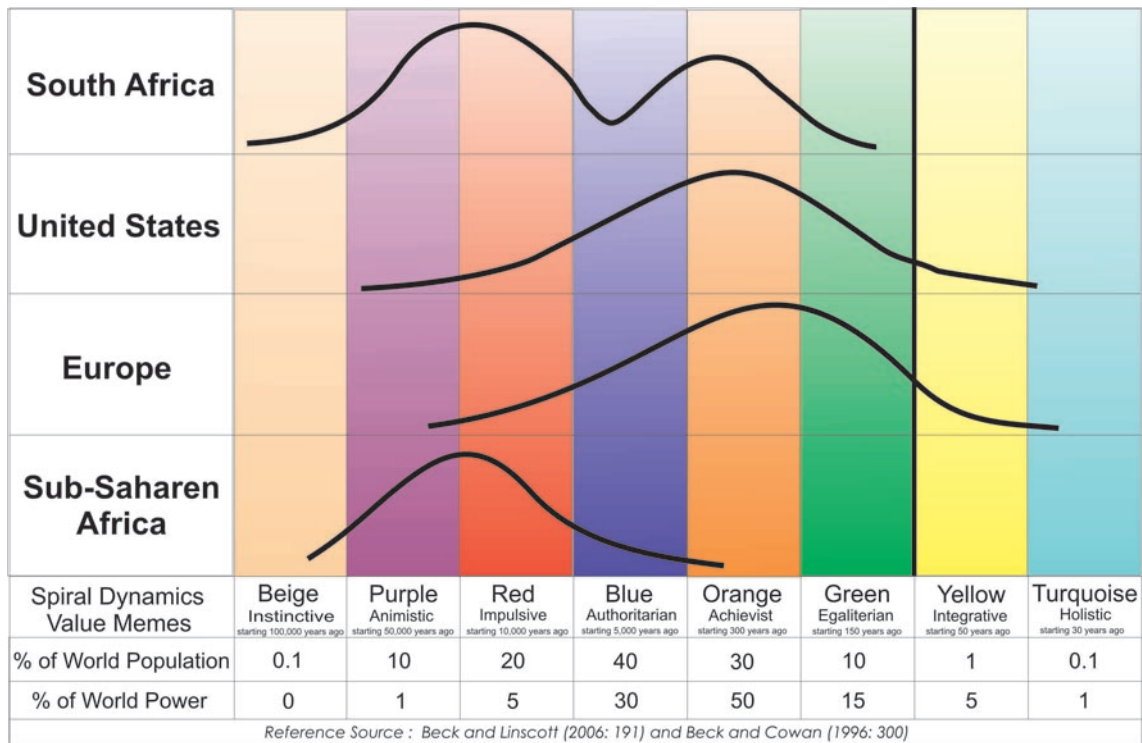


Figure 12: Value Meme Mosaic, showing the distribution of value memes in different cultures. (Beck & Linscott, 2006: 191; Beck & Cowan, 1996: 300; Wilber, 2000a: 119)

From this perspective, the meme distribution within the emerging Tlholego community followed a similar pattern to that of South Africa in general. While I recognize that there are limitations to fitting people into these categories, I am aware too that there are benefits from seeing, even in rough terms, the range of different value systems (interiors) that do exist. From this perspective, I observed the following three general memes within the farm worker group: tribal animistic (Purple), egocentric impulsive (Red) and absolutistic authoritarian/mythic (Blue). At certain times the survivalist (Beige) meme was also present. This meme usually emerged in an unhealthy or negative form when life conditions for certain individuals were such that even the most basic survival was a struggle, often as a consequence of alcohol abuse, but also as a result of severe material and other poverties.

Similarly, I experienced the family who came from the township of Tlhabane as reflecting the memes of egocentric (Red) and authoritarian (Blue). From my own family, I believe, came the suggestion of authoritarian (Blue) and archivist (Orange) thinking, but also a fairly strong centre of egalitarian (Green) values.

It is important to note that these memes have positive and negative forms of expression. According to Spiral Dynamics theory, memes or adaptive intelligences emerge in response to life conditions that individuals or groups experience at a particular time and place. Life conditions certainly changed at Tlholego, often for the worse, which would force earlier or negative expressions of these memes to the fore.

Furthermore, life conditions in the early Tlholego community differed widely. The farm-worker families were for the most part still living in abject poverty and my family represented the privileged middle-class, with adequate supplies of food, refrigeration, electricity, health care and transport.

What connected us all in the beginning, was the hope for a better future and the desire to work together towards a common goal. In the emerging new South Africa, we could begin to embrace the possibility of a common identity, but we knew very little of what was really required of us to achieve this vision in practice.

Within the Tlholego community, interior values, mindsets and vision about possible new futures were miles (memes) apart. While securing a job was most important for many of the farm workers, Permaculture was also a strong common denominator that kept us working together. The Permaculture practice of improving life conditions was a source of hope for creating a better life in the new South Africa and a way for connecting our differences within a wider understanding of (eco) diversity.

As shown above the full range of first-tier spiral dynamics value memes (Beige to Green) were present in one context as we worked towards the notion of a sustainable community that was defined and led through a communitarian, humanistic, worldcentric 'web of life' ontological perspective (Green meme). The emphasis was on ecologically designing the exteriors of systems and mentoring through warm interpersonal relations that helped close the gap between our differing cultural positions.

What was not clearly understood or emphasised at the time, were the interior and vertical depth perspectives, individually and collectively. Therefore the map that was being used to guide us towards a sustainable community was partially accurate, but insufficient to chart this process. Viewing the terrain and steering the process from the heights of the egalitarian (Green) meme limited us from perceiving and interpreting hidden individual and collective pathologies and shadow issues⁸⁵ that impacted on relationship dynamics between individuals within the community.

The Tlholego community initially embodied many unhealthy elements that required extra support psychologically, emotionally, domestically and behaviourally. These were difficult to sustain on an ongoing basis. While I believe that having the resources available to pay people fair wages and also to facilitate a continuous community building process would have improved circumstances considerably, I also understand that without the corresponding individual interior development, progress would inevitably have been thwarted.

Additionally, I was also in the key position of power within this experimental community. Even though our conversations and strategies centered on issues such as land tenure, housing and ownership, in reality the farm worker families involved were not yet co-owners and therefore their power positions were different from mine. The community was also quite vulnerable, which meant they tailored the truth to suit what they thought I wanted to hear. My thinking at that time, coming from a (Green) meme, limited me from seeing this underlying process, allowing certain individuals to use the situation to their personal advantage and establish their own power base within the community.

In hindsight it may have worked in our favour to develop clear selection criteria from the start, in order to increase the profile of people in the community with the interior values more aligned with this task. In practice this would have

⁸⁵ I have referred here to pathologies and shadow issues in a psychological context. Pathologies refer to deviations from normal behaviours resulting from excessive individualisation, and shadow issues referring to unconscious behaviour arising from failure to include into the compound individual some aspects of organic life, emotional-sexual life, reproductive life, sensuous life, libidinal life and biospheric life (Wilber, 1995).

meant applying the Integral framework together with other suitable tools to understand the psychological/emotional/behavioural/cultural makeup of the community. Using this knowledge we would have been able to identify, early on, those people with the greatest personal growth and leadership potential. These individuals could then have been nurtured into positions of responsibility regardless of their initial level of development. Similarly this knowledge would have been useful to identify those people with gaps in their development, and who posed threats to the longer-term establishment of human resources and sustainability within the community.

Additionally, while the Rural Education Development Corporation (Rucore) was formed to provide an organisational structure to promote sustainable development, as well as for starting the Tlholego Learning Centre, its chief experimental project and to support the Tshedimosong School, as mentioned in the previous chapter, the circumstances prevailing at the time Tlholego was established were far from ideal.

The crisis around preventing a farm school from closing was the main impetus that brought the founding members together. While on the surface members were enthusiastic about the ideas of sustainable development, this notion meant quite dissimilar things to the people involved. Certainly while there may be advantages to picking up the metaphorical ball and running when the opportunity presents itself, on reflection however my experience tells me that building a long-term project from a short-term calamity is not the preferred way to engage in such a process.

4.1.2 Creativity and Learning

One of Tlholego's principal development strategies was to establish a learning centre where the idea of sustainable development could be experienced and fostered within the wider community. In this way and also because at this time so little was understood of the practical realities of sustainable development, 'learning' became the main activity at Tlholego. This process took place at two

levels: the day-to-day living and learning within the community, and through the many organised training programmes that were offered to the public.

From the outset, the Tlholego leadership pursued the understanding that learning for sustainability would best take place through an experiential, creative, engaging and practical process. This was also the methodology most often encouraged and practiced by Permaculture teachers from around the world⁸⁶.

The value of the Permaculture system came to the fore most often during intensive design and training courses. These courses always included their share of creativity, interactive games, theatre and art to clarify and enrich what was for the most part an interdisciplinary and culturally diverse learning experience. This important idea is portrayed in the following passage by philosopher Paul Cilliers (2000: 32): "An engagement with the arts should not be a luxury in which we indulge after 'work', it should be intertwined with our work. Faced with the complexities of life, we all have to be artists in some sense of the word. It is to be hoped that this will not only help us to a better understanding of our organizations, it will also make us better human beings".

In this way learning at Tlholego unfolded in an environment of mentoring⁸⁷ relationships. Teachers and learners shared their skills and knowledge, often exchanging places such that learners became teachers and teachers became learners. This rich dialectic inspired the Tlholego community to remain together in what is a very challenging development environment.

It was through this type of process that the infrastructure at Tlholego was designed and built. I can remember spending hundreds of hours of design time with architect/builder Joseph Kennedy, in 1993 and 1994, walking every step of the site, taking it all in: stories from the ancient past and present, practical considerations for a sustainability learning space, materials, available resources,

⁸⁶ Permaculture teachers Robin Clayfield (Australia), Robena McCurdy (New Zealand) and Joanne Tippet (UK) all taught at Tlholego in this way. Robin Clayfield has produced one of the most comprehensive workbooks for teaching permaculture using interactive and creative processes (see Clayfield 1995).

⁸⁷ I refer to mentorship here as the 'giving and receiving wisdom' best articulated in the excellent book on the subject by Huang & Lynch (1995).

cultural and individual considerations, aesthetics. We always tried to give enough time for clarity and position to emerge. For Tlholego this was a gratifying time of participation, understanding, and freedom.

From this process, an infrastructure materialised that imbued an epistemology of integrative sustainable learning. The physical place was designed to encourage easy movement of pedestrians with the main teaching spaces planned around ancient Tswana architectural layout and forms, which became a source of inspiration for many people over the years. In this way, the Tlholego environment supported a tactile integration between people and the environment, between traditional knowledge and modern technology, and made pragmatic use of local resources and materials.

Tlholego has often been acknowledged for the richness of human interaction and relationships that could be experienced in one place⁸⁸. For the most part, training programmes attracted people from quite different cultural and ethnic backgrounds – from rural villages, farm-worker families and townships as well as urban suburbs. Professional interest groups would often include architectural students, district councillors, schoolteachers, community leaders and development workers as well as volunteers, students and teachers from the international community.

Often the true value of learning from each other emerged during the building and construction process. There was something unique and human scale about a building site where people engage creatively in meaningful work. During these processes we found that working with sustainable technologies, sharing practical skills and good conversation, encouraged people to willingly engage in understanding more deeply their personal and cultural differences. This process often produced a space of compassion, and accelerated learning that led to remarkable efficiencies.

⁸⁸ Such acknowledgements are documented in our visitor's book, in course participant feedback sheets, in letters of support and in various conversations – for example with Albert Bates during the Global Ecovillage Network visit in 1997, Carol Liknaitzky in 1997, Lawrence Phetoane during numerous visits to Tlholego from 1994–2007 and Biko Casini during his stay in 1999.

I cite below several comments from course participants and visitors that emphasise their personal learning experience at Tlholego.

“The teaching methods of Permaculture have enriched and strengthened my traditional approach. I have been introduced to new learning techniques, e.g. mind mapping and design procedures, at the same time learning about building a sense of self-reliance and collective leadership.” (Godfrey Moremi, Tshedimosong School, Northwest Province of South Africa)

“The facilitator was very energetic and appreciated every student’s suggestions. If I could be like her my students would enjoy every moment of instruction.” (Joseph Nketiah Kwaku, Assumption High School, Teyateyaneng, Lesotho)

“My first impression when I arrived at Tlholego was one of a bunch of do-gooders trying to do the impossible. That impression was soon dispelled when I met the people and started to understand the underlying philosophy of sustainable rural development. What you and your staff have achieved in a very short space of time is truly remarkable. Very seldom does one come across a project where physical, socio-economic and technical elements have been so well integrated.” (Lex Visser, course participant)

“The visit was a mixture of awe and amazement, learning, fun, friendship and just plain wonder at what can be achieved with effort and simple methods. We all came away inspired in many different ways. Organisations like yours do make a difference.” (The Witkoppen Community Trust)

4.1.3 Sustainable Technologies

Early on Tlholego’s sustainability priorities were focused on satisfying self-reliance needs. To a large extent this involved developing and adapting sustainable technologies to our local conditions, focusing mostly on water management, sanitation, waste recycling, food production, energy technologies, housing and construction.

Learning how to design and implement these technologies was central to establishing sustainability at Tlholego. Prior to our work in this area local solutions for such technologies did not really exist and needed to be pioneered from available traditional knowledge, from pre-industrial ideas as well as modern approaches from around the world. This process involved working with specialists from the international community as well as regional institutions and professionals to verify solutions, transfer technology and train local people.

It is important to note that while developing these technologies consumed the lion's share of our time and resources, from an Integral perspective these approaches focused mostly in the lower-right quadrant. What this means in essence is that even if we had implemented these technologies with 100% effectiveness (whatever that may mean), we would still only be touching on 25% of the factors in play. Roughly three quadrants would still be left out of the analysis and effort.

The importance of these technologies in establishing sustainability in any particular context is well known. They comprise the most important sustainability strategies for cities and mainstream communities alike⁸⁹. However, as we have now seen, from an Integral perspective⁹⁰ planning interventions in the collective exterior (lower-right quadrant) results in a significantly limited design solution.

The following subsections highlight our most useful experiences in this regard.

A. Water

Tlholego is located in a very dry region of South Africa and if the climate models are correct, this region is becoming hotter and drier in the foreseeable future. For these and other reasons harvesting and conserving water is a major priority. In this context Permaculture provides numerous excellent strategies for managing and connecting water resources to closed loop ecological systems.

⁸⁹ For example, nine of the 10 guiding principles for One Planet Living put fourth by WWF International and Bioregional focus on the collective exterior (LR) quadrant.
<http://www.oneplanetliving.org/index.html> (3 October, 2008).

⁹⁰ The quadrant analysis on page 60 an 61 of this thesis show the general dominance of sustainability approaches being focused predominately in the lower-left quadrant with no interior depth addressed.

Many of the standard Permaculture strategies for water management were tested, from rooftop catchment and grey-water usage to reducing erosion and runoff from fields and wildlife areas, resulting in significant improvements to vegetation cover and tree growth in these areas.

While various broadscale strategies can be implemented using manual labour, we found that breaking hard clay soil and moving stone by hand was not work our community was motivated by. Considering the extent of earth that needed to be moved to construct a 100-metre swale⁹¹, it was far better for us to use earthmoving equipment to achieve the hard work and for people to plant and micromanage these swales thereafter.

While water management is critical, water infrastructure is capital intensive. Storage tanks are expensive, as is the construction of earth dams and implementing strategies such as Keyline Design⁹². Even so, when considering the effects of climate change, and observing the positive effects of experiments conducted at Tlholego over the years, it would seem most prudent to redirect capital investment towards such technologies and towards building capacities for resilience and adaptability within local watersheds.

B. Sanitation

The standard sanitation used in this area prior to our arrival was either simple pit toilets or flush toilets that flowed directly into unsealed soakaways in the ground. From a Permaculture perspective it was important that all our sanitation was safe and ecologically sound. Our design specifications were for a technology that used the minimum or no water, was affordable and easily manufactured from locally available materials, and most importantly managed human waste safely without any negative environmental effects.

⁹¹ Swales are long, level excavations intended to harvest and store water (Mollison, 1990).

⁹² Keyline is a set of principles, techniques and systems that coordinate into a development plan for rural and urban landscapes. The result is a strategic master plan to develop the natural or existing landscape through regeneration and enhancement. See www.keyline.com.au (30 September, 2008).

The technology that met these specifications was the double chamber dry composting toilet⁹³. After constructing several prototypes a suitable design was established, which has been used very successfully both at Tlholego and at several other locations.

While the advantages of this technology are clear – low initial cost, safe management of waste and nutrient recovery – there were certain cultural limitations. These included the desire for a flush toilet and access problems for older (and younger) people as the floor is often over one metre above a level grade. For this reason Tlholego is currently being encouraged to work with biogas digester technology, which requires a higher initial cost, but offers flushing toilets, nutrient delivery to site, a supply of renewable energy and also the ability to provide services to a cluster of houses.

C. Waste and Recycling

In the Tlholego environment, the most straightforward recycling involved separating our organic pieces from the overall waste stream. Being in a rural area it was quite natural for community members to feed organic waste to either chickens or pigs where the benefit of local protein was quite obvious. Using organic waste to manufacture compost for improving food yields was not that obvious and generally worked best as part of a paid job.

Controlling litter was more difficult at times, ostensibly an unnatural practice especially among children. It helped to have plenty of recycling bins around and loads of encouragement, and also punitive measures at times. Awareness improved when life conditions were generally better and naturally worsened when times got tough.

D. Local Food Production

Growing of food and medicine plants at Tlholego was supported on two levels: firstly to encourage household food security and secondly for communal and

⁹³ A compost toilet is an on-site sanitation technology based on aerobic decomposition similar to a standard compost-making process. A detailed construction and management manual is available from Tlholego called *Earthways Owner Build Mudbrick Composting Toilet Manual* (1998) written by B. Woodward. For further information see <http://www.compostingtoilet.org/> (1 October, 2008).

commercial production. While certain plants were grown for their commercial potential, such as chamomile and artichoke, our main research was focused on community and household food self-reliance.

Permaculture has proved to be an excellent system for establishing food self-reliance. With the help of experienced professionals including James Wynn (USA), Joanne Tippet (UK) and Robina McCurdy (NZ), key Permaculture insights and techniques were applied to establishing extensive organic food gardens⁹⁴ covering all areas from seed to forest systems. Years of research were invested in determining which systems of plant diversity were most resilient and best adapted to the cultural and local climate patterns of the area.

From an ecological, postmodern or (Green) standpoint it seemed logical that community members, provided with sufficient knowledge and opportunity, would see the benefits of growing their own food. However, this was not so in most cases. Even though many community members understood these concepts and in certain instances practiced some form of self-reliance, in our particular context the notion of working for money mostly trumped working on one's own garden.

We understood that people could earn far more money working, even for minimum wage, than they could in their own garden. There was also no assessable local market or affordable transport system, and people needed cash to live on. South Africa's long history of oppression and lack of community resources, including land tenure, has resulted in a real fear of being pushed off the land. These factors conspired to discourage community members from investing time cultivating their 'own' gardens. Lack of security and fencing were other common limiting factors.

We have learnt from this experience that there are various thwarting factors, both interior and exterior, that undermine a seemingly obvious and beneficial process like growing food in an environment such as Tlholego's. Another factor

⁹⁴ Local food production was recognised as an area of medium to high achievement by the majority of respondents to a Tlholego Sustainability Questionnaire (August, 2008).

not to take lightly is that many people (roughly 70%)⁹⁵ in the surrounding farming community preferred short-term satisfaction from alcohol, tobacco and other substances to the longer haul of growing food for tomorrow.

E. Energy

Initially the main source of energy available at Tlholego was electricity from the national grid. This source was used to pump water and provide lights and heat for cooking in the farmhouse. In the village, where electricity was not available, farm-worker families used local fuel-wood and paraffin for cooking and warmth in winter. Candles were used for light.

The energy technologies developed during the early years included a high efficiency wood burning stove known as the rocket stove⁹⁶ and a solar plate collector⁹⁷ for heating water. Both technologies could be manufactured from available materials and worked well. However, acceptability within the community was not that good. The reasons for this were that fuel-wood was very cheap and readily available so there was no incentive to save, and maintenance of the plate collector required a level of skill that was not available at that time.

Later, when standard solar technology became available, we installed several of these units above the main bathrooms. However, from the known climate records we did not anticipate the extremely cold climate events of the past few years that were sufficient to rupture the copper tubing within these collectors.

F. Housing and Construction

As an educational centre Tlholego has experimented with many different building technologies. Generally, these have all incorporated the use of earth as a primary material. Many lessons were learned determining the most suitable way to work with the earth at Tlholego as a building material.

⁹⁵ Informal survey conducted with project manager Kentse Mokgokolo in 2003/4.

⁹⁶ http://solarcooking.wikia.com/wiki/Aprovecho_Research_Center (9 October 2007).

⁹⁷ Solar plate collector describes an inexpensive domestic solar water heater. Constructed at Tlholego from *Earthways Farm Solar Water Heater Manual* (1983), written by B. Woodward.

The most extensively developed technology has been the Tlholego Building System (TBS),⁹⁸ a high-quality low-cost sustainable housing system developed in partnership with Brian Woodward of Earthways Australia. Generally this technology has had wide acceptability primarily because of its modern architectural design.

From an integral perspective, our experience supports the understanding that people generally aspire to move up through the spiral. Therefore it was not surprising that the local community desired modern architecture forms (Blue and Orange memes) far more than round traditional structures (Purple meme). The desire to modernise traditional architecture, while resonating with those at the ecological postmodern (Green) meme, had less traction with the local community.

4.2 Permaculture Through the Lens of Integral Theory

In this section I highlight what was for me one of the most important insights gleaned from the Integral framework. This has to do with understanding the limits of the Permaculture approach as a comprehensive epistemology for designing sustainable communities.

In the late 1980s, as an engineering graduate and sustainability enthusiast, I found the ideas behind Permaculture rather compelling – that generalised principles derived from the study of both the natural world and pre-industrial societies could be universally applied to fast-tracking post-industrial development and the sustainable use of land and resources (Holmgren, 2002). This was supported by my own viewpoint at that time – that many of our global problems resulted from the negative impacts of Western industrialisation, stemming from a fundamental separation in thinking between culture and nature. As Capra (1996: 296) put it, the problem was “treating the natural environment or ‘web of life’ as if it consisted of separate parts”. It followed logically for me that sustainable solutions would involve reconnecting to the

⁹⁸ Documents supporting the development of the TBS technology are available for sale from Tlholego. These include: *Mudbrick Notes* (1996), and *The Tlholego Building System* (1996), both written by B. Woodward. More information is also available from the Tlholego website at www.tlholego.org.za.

'web of life' and that to accomplish such a task, valuable lessons could be learnt from the study of ecosystems, which are sustainable communities of plants, animals, and micro-organisms (Capra: 1996). As an approach to design, which is based on ecology, Permaculture was an obvious choice for me. It provided, as Rees (2001: 43) has put it, "the most comprehensive guide to the ecological restructuring of society".

While the vision of Permaculture as outlined above (and covered in more detail in section 2.7 on pages 69-71) has evolved to include the idea of a permanent sustainable culture, our experience at Tlholego has shown that these principles, while brilliant for designing systems of self-reliance, particularly at the household level, and for thinking ecologically about land use in a broader sense, are not simply translatable to human development, particularly with regard to the interiors of individuals and collectives.

This is one of the crucial insights that I have become more aware of in my attempts to understand the difficulties and weaknesses of the Tlholego process.

Holmgren (2002:) and many others, myself included, have viewed Permaculture as embodying the use of systems thinking and specific design principles to provide an organising framework for implementing a permanent sustainable culture, a perma-culture. The crux of the problem is that systems such as Permaculture, while comprehensive and interdisciplinary, are at the same time biocentric⁹⁹ and in this way lack certain insights that are applicable to understanding stages of human development beyond the biosphere. It follows that any attempt to design sustainable communities or achieve a permanent sustainable culture using such frameworks as the primary development tool, will

⁹⁹ In *Sex Ecology and Spirit* Wilber (1995: 514) makes the point that "Not only is the web of life ontology regressive (its end limit always biocentric feeling in divine egoism), but, more tellingly, even if the web of life ontology were absolutely true, nonetheless change in objective belief is not the primary driving force of interior development." He continues: "We have an enormous amount of information about how and why those interior psychological transformations occur (egocentric to sociocentric to worldcentric), and the Eco camps by and large display no awareness of, and no interest in, those inner dynamics, fixated as they are on describing exterior mononature in 'holistic' terms. This is outrageously naive, and belies the aggression and violence inherent in attempting to change people by altering the object instead of growing the subject" (Wilber, 1995: 515).

be thwarted when integrating human beings and the evolution of consciousness into the design of such systems.

To emphasise this point, I refer to the work of United Nations Children's Fund (UNICEF) consultants iSchaik Development Associates, as referenced in Wilber (2000a: 100). In a series of presentations relating to the bigger picture in which all the ideas and developments with which UNICEF is involved must be seen, they have commented as follows:

"In order to deepen our understanding of the complex and interrelated nature of the world, a mapping of consciousness development in social and cultural evolution is crucial. This must also have an Integral approach to ensure that evolution, and thus the state of children, humanity, culture and society, returns to a state of sustainable process. This requires a framework that allows us to go deeper than the understanding of the mere objective/surface system or web, and wider than a cultural understanding of diversity. In other words we must go beyond the 'web of life' and standard systems theory analysis (which covers only the lower right quadrant), and beyond a mere embrace of pluralism and diversity (which are confined to the egalitarian green meme)".

What needs to be added to the ecological web of life, says Wilber (2000a: 128) "is the vertical depth dimension". Any analysis that is deprived of the vertical dimension, he continues, "proceeds from the level of subjective development of the analyst". This usually means that the authoritarian (Blue), archivist (Orange) and egalitarian (Green) meme tries to understand the entire spiral or evolution through the lens of its own level, with less than satisfactory results. So while Wilber recognised the value of the 'web of life' interconnections (two quadrants, no levels) he suggests that a more adequate conception (all quadrants, all levels) would better serve sustainability (Wilber, 2000a).

This perspective has been invaluable to the professional team at Tlholego. It helped us make the conceptual shift necessary to map more accurately the

supporting and thwarting aspects of Permaculture as a meta-framework for the project. Perhaps it is useful to note that while Permaculture was conceived in the mid-1970s, the integral perspective is much newer. The earliest applications of integral theory to development work date back to the mid-1990s, though for the most part the integral framework is only emerging now, in the 2000s, nearly a decade after Tlholego was established and a quarter century since the core ideas of Permaculture were formulated.

What has precipitated out for Tlholego and certainly for the leadership team over nearly two decades, is that the interior dimension of both individuals and community is of far greater significance than can be embraced by the tenets of Permaculture. Here the meta-perspective central to Integral Theory is more useful when communicating and working coherently within a wide range of differing thinking and value systems.

From an integral perspective, we can see that all first-tier memes, tribal (Purple) to relativistic (Green) were present in one place, demographically representative of the main global value memes of first and third world countries. So while South African environments are unique in this regard and provide a powerful context to explore the deeper political, social, economic and environmental challenges of sustainability, as Beck and Linscott (2006) have discussed at length in *The Crucible*, the challenge however is having the personal and collective leadership capacities to work creatively with complex groupings of human potential.

4.3 Institutional and Funding Challenges

In this section I describe the important learning experiences related to funding and local economy. The comments I make on funding development projects are fairly general, while the discussion on local economy is presented in the light of Integral theory, Spiral Dynamics and Max-Neef's (1991) theory of human scale development.

4.3.1 Rural Development Funding

Essential to Tlholego's development strategy was the idea of rural 'livelihood thinking', whereby "the poor are the critical actors and the starting point, and the priority is meeting both their basic short-term needs and their long-term security" (Chambers in Harris, 2001: 63). Chambers has pointed out that sustainable livelihood thinking is about enabling very poor people to overcome conditions that force them to take a short-term view and 'live from hand to mouth'. Livelihood thinking in this sense aims to enable those who are impoverished to get beyond the poverty line defined in terms of income and consumption, and to reach a sustainable livelihood position that includes the ability to save and accumulate, to adapt to changes, to meet contingencies, and to enhance long-term productivity (*ibid*).

It is within this context, where the poor are understood as a vital and dynamic part in a more healthy globally interconnected society (Appadurai, 2002) that Tlholego grounded itself. The first goal was to develop practical solutions to a long history of oppression, lack of community resources and multiple poverties¹⁰⁰. Tlholego's deeper vision was focussed more widely than poverty alleviation for 'poor' rural communities. The notion of designing sustainable communities includes the understanding that within a global sustainability paradigm, the majority of communities, regardless of their material wealth, are equally affected by one form of poverty¹⁰¹ or another, and that this reality should be included in any viable strategy for future sustainability. In line with this, the idea of promoting experimentation and learning (Walker & Salt, 2006) within a wide cultural history of understanding has been central to Tlholego's approach to development.

While Tlholego has grown to understand and appreciate the underlying value of working with the most impoverished sectors of society, and where strategies of this nature may encourage new models for localised economic development

¹⁰⁰ I have followed the lead developed by Max-Neef's Human Scale Development theory (Chapter Two) in describing Tlholego's position on poverty.

¹⁰¹ *ibid*

(Shuman, 1997), our experience has shown that financing these pioneering developments is mostly a rather challenging task.

A Council for Scientific and Industrial Research (CSIR) report entitled '*Sustainability Analysis of Human Settlements in South Africa*', edited by du Plessis & Landman (2002: 83), notes that "research on the built environment and human settlements receives very little national funding support, yet this is the area where most of our national priorities are brought together, and it is where critical intervention is required if we are to achieve sustainability for South Africa".

Cilliers (1998) argues that complex systems require complex resources¹⁰², which for projects like Tlholego, are crucial to ensure future innovation, for growth and adaptation to the challenges of sustainability. At the same time, global philanthropy, as Fakir (2007) points out, rarely deals effectively with the fundamental problems underlying poverty and unemployment in the first place.

There are many reasons why funding fails to find its way into projects working with the 'bottom quarter'¹⁰³ of society, and this reality has been a limiting factor in realising the potential of the development process at Tlholego. A full description of these challenges is beyond the scope of this thesis, however I have included a few key points that are important in terms of the replicability of this experience.

The Development Bank of Southern Africa (DBSA) was the first organisation to provide funding for Tlholego to set up a training centre to teach Permaculture. This arrangement was primarily loan based but included some grant finance which forced the project to become economically viable in an unrealistically short space of time. Early on, training programmes depended on teachers from

¹⁰² Projects like Tlholego are complex systems and the resources they require are complex too. These include, amongst others, all the interior capacities of knowledge and shared cultural understanding as well as exterior resources that include the individual health and wellness to engage in such work as well as the financial capital, technology, land, water and energy components.

¹⁰³ The idea of the 'bottom quarter' refers to the 25% of the global population regarded as economically non-viable and essentially unworthy for investment by institutions such as the World Bank. I learned about this concept during a visit to Tlholego by the World Bank in 2001. I understand that this is quite some time ago. Perhaps their policies have changed by now.

outside South Africa, as little was known about Permaculture in South Africa at this time. The beneficiaries were mostly people from impoverished rural communities and could not easily afford to pay for this training. Permaculture was also 'untested', and institutional and government support hard to obtain, making it difficult for this programme to function.

The idea of connecting innovation to community development, one of the central drives of Tlholego, was also difficult to finance. This reality became clear to me during a visit I had with the Anglo American Chairman's Fund in 1997. While the trustees were clearly interested in our ideas, it was difficult for them to reconcile investing in experimentation at one centre, when the demands on their resources were for the provision of basic services to a much larger sector of the population.

Our dilemma was that financial investment for community development was available through poverty alleviation programmes or through investments into projects that could show short-term commercial viability. We did not fall easily into either of these categories. Perhaps timing was against us too, as sustainability ideas were only beginning to take hold even on a global scale, and the importance of researching and developing new approaches to sustainable communities was not seen as a priority.

I believe this situation is now changing, as sustainability issues are now more mainstream. We can see that many 'off the shelf solutions' to environmental and social problems are not working as expected. This is leading to a greater awareness of need to invest in innovation within an African context, and to develop local solutions to our sustainability challenges.

From a more positive perspective there is the growing field of social entrepreneurship and enterprise, and organisations such as Ashoka¹⁰⁴ have clearly recognised and acknowledged the innovations Tlholego has been making. These relationships have resulted in ongoing support over the years

¹⁰⁴ Ashoka promotes the field of Social Entrepreneurship globally. Social entrepreneurs are individuals with innovative solutions to society's most pressing social problems. See <http://www.Ashoka.org>.

and have played a significant role in influencing the sustainability of Tlholego's work up to the present time.

4.3.2 Local Sustainable Economy

Building a sustainable local economy was seen as the foundation on which Tlholego would support a process of constructing a viable sustainable community and livelihood model. While this thinking is clearly visible in the various literature and funding proposals¹⁰⁵ developed at Tlholego over the years, achieving this objective in practice has proved far more difficult.

Besides the inevitable challenges of building viable enterprises from a small resource base without the complex resources required for such a task, it was naive of the leadership at Tlholego to think that people, no matter what interior level of development they were at, would or could embrace egalitarian Permaculture principles before having reached the worldcentric (Green) meme themselves¹⁰⁶. For example, it makes good Permaculture sense to plan for self-reliance, by first growing food for the household, then perhaps for exchange within the local community and finally for sale in the wider market when there is surplus. Understandably in practice however, the natural mode was for members of the Tlholego community to work for wages and satisfy shorter-term (Red) needs first, in preference to investing time and energy in building longer-term assets and local self-reliance.

From an Integral perspective, what unfolded in the local economy within this fledgling community was quite interesting. While this analysis is perhaps rather crude, the general pattern is instructive.

From my perspective, while the project was driven for most part from a prevailing (Orange/Green) mode of discourse, where budgets were drawn up

¹⁰⁵ Examples include: Tlholego Development Project (TDP) Phase 2 Five-Year Business Plan (January, 1996); TDP Interim Phase Business Plan (April 1996 to September 1996); TDP Funding Proposal and Budget (April 1998 to March 2001).

¹⁰⁶ As mentioned previously it could take five years for someone to move through vertical stages of development. By this reckoning, if a particular individual at a purple/red level is provided with all possible support, it could take around 15 to 20 years for that individual to evolve to a level of ecological worldcentric permaculture (green) thinking.

and managed and finances carefully accounted for, in the wider community all the memes were in operation, often conflicting with overall economic objectives. Described below is my interpretation of the general trends that I observed within the Tlholego community, and while cognitive maps are useful for deepening our understanding, in reality things are far messier and we don't easily see these interior boundaries as they are described here.

- **Beige:** One or two members, mostly 'elders', operated from this meme, where laying traps in the wildlife reserve and harvesting roots and bulbs were quite natural. There were also ongoing occurrences of certain members resorting to a negative form of the (Beige) meme, by taking food items from the collective for pure survival.
- **Purple:** This meme was quite common where groups, mostly of women, preferred to work as a collective, earning the same pay and assuming the same level of responsibility. Individual initiative and drive were generally not forthcoming in this context.
- **Red:** The Red meme was strongest amongst mostly male members who used their intelligences to influence and establish powerbases of their own, sternly and subtly discouraging 'weaker' individuals from developing their own knowledge, skills and experience.
- **Blue:** Economically, the Blue meme was perhaps best portrayed through the ongoing training programs in Permaculture and related subjects that formed the core of our activities. These programmes in fact provided a new form of collective social ground for supporting the sustainability and long-term wellbeing of members and the community itself.
- **Orange:** Here opportunities were opened up for people with initiative to develop their own micro enterprises in a variety of areas ranging from making herbal products to mudbrick construction. This was also the level that most of our donor and funding organizations were operating from – encouraging programmes through their funding policies and financial and

sustainability strategies based on enterprise models and good business practices.

- **Green:** It was from this meme that the overall thinking and strategy for the project was formulated and set. Green business ideas were also promoted, which included growing the Tlholego Building System (TBS), establishing a nursery/resource centre for local self-reliance as well as a small publishing business promoting educational resources.

For Tlholego to sustain their day-to-day affairs, it was important for the project to operate from the Blue/Orange/Green meme levels so as to function coherently within the larger economy and also to develop and maintain relationships with important organisations. This was a genuinely difficult task. Firstly, our human capacities were limited as, in my view, it was essentially my wife and myself who operated from these levels of interior development, within an immediate community of 35 and a local community of a few hundred people, who were mostly centred within the Purple/Red meme range. Secondly, the process of supporting people's growth up through the spiral was thwarted by all manner of struggle.

A further significant factor was that the Tlholego leadership lacked an Integral awareness of the depth of interior structures driving people's behaviour. At best, this interior depth within the community was flattened to a warm, sensitive, humanistic (Green) meme of understanding, with less than optimal results. From a wider social/developmental perspective, it is useful to bear in mind that the dominant mode of discourse within the greater economy in which we all functioned was mostly materialistic (Orange), which had its own subtle flattening effect on how the community at Tlholego functioned.

While I have discussed some of the more challenging but not particularly unique factors at work in the development of a local economy at Tlholego, there were certain moments, or 'state' experiences, that were unique and extraordinary in their own right. These experiences were infrequent but seemed to emerge when a number of conditions were being met simultaneously.

One particular experience remains especially strong in my memory. I believe it was July 1996. The project was having a good run, Robina McCurdy¹⁰⁷ and a number of local and international volunteers were around, training programmes were underway and there was a rich exchange of knowledge and wisdom taking place. Our food gardens were stacked with a variety of nutritious food. People were walking tall. It was a weekday, late morning. I walked out of my office, secateurs in hand, which I loved to do during breaks from my computer screen. I noticed a distinct quality in the air. It was a warm winter's day, but there was something quite unique emanating from the collective 'we' space that I could almost taste. I continued working on pruning trees and plants, enjoying the outside, while connecting with different people who were engaged and productive. After what seemed to be only a brief time, I began to hear the most beautiful sound of Thampuki's¹⁰⁸ voice rising up in song, sharing his deep sense of joy.

In that moment and the moments that followed, in that very unique 'we' state, I believe most of us felt something deeply empowering that seemed to last for some days. I remember feeling a strong sense of hope and purpose and resolve in my work. Somehow, it made deeper sense to me why Africa has produced such great leaders like Steve Biko, Archbishop Desmond Tutu and Nelson Mandela, and I felt genuinely satisfied.

On reflection, I have identified two theoretical perspectives that may help in understanding these occurrences. Firstly, in this local context, a greater number of (Max-Neef's) fundamental needs (both interior and exterior) were being simultaneously satisfied. At this time we were doing very well in our subsistence gardens and the community was directly benefitting from a wide-reaching Permaculture implementation strategy. The Tlholego community, now beginning to take some shape, had created a new sense of identity, and on different levels there was a shared measure of collective protection and genuine affection for each other. I believe our dynamic process of learning and

¹⁰⁷ Robina McCurdy, an advanced permaculture teacher from New Zealand, taught for long periods of time at Tlholego during 1995 and 1996.

¹⁰⁸ Thampuki Dinloane is one of the long-term Tlholego community members.

mentorship provided a rich source of new understanding and creativity. Our postmodern communitarian approach together with post-apartheid reality, provided new freedoms in an African cultural context with ample time for idleness, reflection and good conversation. Everyone living, working and learning at Tlholego at this time was deeply acknowledged for exactly who they were. While the (theoretical) elegance of an Integral understanding was missing, all memes (Beige to Green) were in their own way acknowledged and accepted within this quasi-integral postmodern Permaculture perspective.

For me, these state experiences were especially powerful indicators of development progress. Without excluding the terrible poverties that existed and still do exist, these peak experiences strengthened my belief in what is possible in terms of creating new forms of sustainable community. The 'natural' productivity that emerges within these new 'we' spaces' is, I believe, inspiration for what is possible for the future of sustainable local economies (and therefore potentially for all sustainable communities), especially if they are required to include a rich meshwork of material and not-material satisfiers.

4.4 Leadership Challenges

The key leadership challenges I discuss in this section are around three main areas. The first, made noticeable through Spiral Dynamics, has to do with the concealed rejectionist paradigm (Red/Green alliance) that I observed within the growing Tlholego community. Secondly I have highlighted the importance of leadership teams, as different from individual leaders, to be strategic in working with Integral approaches to developing learning organizations¹⁰⁹. Lastly, I emphasize that working with religious groups must play a critical role in realizing the formation of sustainable communities within our wider global society today and in the future.

¹⁰⁹ The idea of 'learning organizations' comes from the work of leadership expert, Peter Senge. In *The Fifth Discipline*, Senge (2006) describes learning organizations as communities where new and expansive patterns of thinking are nurtured and where people continually learn how to learn together; where flexibility, adaptability and productiveness are critical factors to success.

Creating an ecological postmodern learning organisation¹¹⁰, as has been the intention at Tlholego, appears to assume an extremely highly skilled employment pool, with an equally well-equipped resource base from which to work (Annecke, 2001). As mentioned, the Tlholego project was driven by a strong vision and benefitted from short-term inputs to its employment pool, but was limited by a scarcity of permanent high-level skills and leadership capacity.

Not uniquely, I was required to learn about leadership on the job, adapting to the difficult challenges of introducing a new story into a community of people quite different from myself in terms of culture, resources, education and worldviews. The principles of Permaculture design were of little help where leadership was concerned, and these ideas could not simply be applied to the development of social groups (social holons) in the same way they could be applied to the design of ecosystems.¹¹¹ For example the principle of 'relative location'¹¹², which has to do with the position and relationship of an element (e.g. a plant) within an ecosystem, was often used as a way to think about people and their positions and relationships within the emerging social system, with less than satisfactory results.

The Permaculture ethic to 'care for the earth and care for people' did not simply yield to universal embrace. Our experience showed that for most people environmental ethics, while to some extent related to life conditions and 'job description', were generally contingent on the interior value systems (memes) carried by the various people within the community. So while the majority of our community operated from the Purple/Red value system, with concomitant ethical perspectives, leading from a Green value system in this context had real limitations.

A further challenge with potentially dangerous leadership consequences, which I became aware of later through Integral learning, concerned the ease with

¹¹⁰ This idea is similar to the understanding of learning organizations as described earlier (Senge, 2006), but situated in a context of worldcentric ecological thinking.

¹¹¹ In *Integral Spirituality*, Wilber (2006: 142-149) makes the important distinction between individual and social holons.

¹¹² Relative location refers to a Permaculture design principle, which states that all elements in a system are valid, and it is more the location of these elements relative to other elements that is significant.

which the egalitarian free-thinking green meme could form relations with negative forms of the red meme (Linscott, 2001). In a flattened cultural perspective, both egalitarian (Green) and impulsive (Red) thinking can often end up rejecting the authoritarian (Blue) and archivist (Orange) values systems (which remain important structures for global stability and wealth creation). This is because they are seen as the reason for unsustainability (by Green thinking), or because they are not seen to have any short-term value to opportunistic (Red) thinking. This effect had serious consequences for the health of the entire cultural space at Tlholego.

The ease with which this occurred can be understood through the idea of 'lines' of development. Certain members who were more developed cognitively, but who held an interior centre of gravity of opportunistic (Red), could easily grasp the language of the egalitarian ecological model. However, instead of applying this to the development of the 'whole', these members would use this understanding to their own personal advantage, at the same time being impervious to the often deeply caring sentiments of love, equality and sharing put forth by the (Green) egalitarian leadership discourse (Linscott, 2001).

Further discussion of Tlholego's leadership issues is beyond the scope of this work. However, I believe that creating sustainable communities in these times of great change requires a measure of visionary leadership. As Gardner (1996) has portrayed it, this is the kind of leadership able to create a new story, one not known to most individuals before, and to achieve a measure of success in conveying this story effectively to others. It is important to acknowledge that all leaders are limited in what they can accomplish, that all leaders experience failure as well as triumph, and that nearly all leaders eventually encounter obstacles that they cannot overcome themselves.

Considering our experience at Tlholego, there is a deeper significance to this last point. Given the challenge of leading for sustainability, and the sheer scale of the wider sustainability project, individual leadership is clearly less and less viable. Progress in this field requires the evolution of our consciousness, an

almighty task requiring far more than any one individual should need to tackle alone.

From an Integral standpoint too, a single individual would find it immensely difficult to bring forth and hold in awareness the many intermeshing individual, collective, interior and exterior perspectives at play in any real-life development scenario. Given this reality, the notion of working as leadership teams holds promise for far greater success in this regard.

According to leadership expert and presidential advisor Bennis (1997), many of our problems today are far too complex to be solved by one person or particular discipline. Our only chance, according to Bennis, is to bring together people from a variety of backgrounds and disciplines into what he calls 'Great Groups'. The intelligence of such groups is that remarkable individuals begin to work collectively. Equally importantly, these groups provide the spiritual support and special fellowship that is needed to generate courage and to be a sounding board for outrageous ideas, without which we are sure to hit a roadblock and lose our way. It is through these kinds of great groups that we are reminded just how much we can truly accomplish by working together (Bennis, 1997).

From my experience, religious group can also offer crucial leadership capacity for the development of sustainable communities. Initially at Tlholego, the majority (85%) of those involved were from farm-worker backgrounds. Roughly 20% of members were affiliated to local church groups and committed to attending church gatherings on weekends and investing their time and resources in family wellbeing. These minority members were however overshadowed by a much larger majority mostly centred at a (Red) level of development and orientated towards immediate satisfaction of personal needs. As already mentioned our belief that a Permaculture approach would eventually support the growth of a sustainable social/ecological system, lacked the understanding of interior cultural depth within this fledgling community. On reflection, and after experiencing the difficulties of working with negative (Red) values, we were forced to question seriously the effectiveness of our approach, and whether we would have achieved greater success by concentrating our

efforts on working more directly with religious groups and strengthening (Blue) mythic membership values, and building sustainable community in this manner.

The literature in this regard is encouraging, showing that religious organisations and environmentalists are combining efforts to effect greater success in the sustainability field. As Gary Gardner (2003: 158) commented in a recent Worldwatch Institute State of the World Report: "Religions could use their asset base – their ability to shape worldviews and their authority, numbers, material resources, and capacity to build community – to advance the work of sustainability. Religions are present throughout most societies, including the most difficult to reach rural areas. They tend to bring people together frequently, and they encourage members to help one another as well as the dispossessed".

This point is strongly emphasised by Wilber (2006) who concludes that the single greatest problem facing the world is in the interior quadrants. In *Integral Spirituality* he talks of "the grand developmental waves available to humans, the archaic, magic and mythic waves and the fact that religion alone is the institution in today's world that gives legitimacy to these earlier stages for men and women. Religion alone gives legitimacy to the myths. And religion alone deeply influences that 70% of the world's population at these stages" (Wilber, 2006: 198).

A significant example of a religious mythic/membership (Blue) context underpinning a model for sustainable communities is in Egypt, where social entrepreneur Ibrahim Abouleish founded the Sekem Group in 1977. As a practicing Muslim, Abouleish based his farm on the three pillars of worship mentioned in the Qur'an: working, learning, and dealing with one another. Sekem has a holistic vision, encompassing economic, social and cultural endeavours with the main aim being to develop people. Sekem is establishing the blueprint for the healthy corporation of the 21st century and demonstrates how a modern business model combines profitability and success in world

markets with a humane and spiritual approach to people while maintaining respect for the environment.¹¹³

Further local inspiration comes from South African theologian Gabriel Setiloane (1989: 2) who talks about the sources of knowledge in African tradition:

“I have developed over the years, a growing conviction that a journey a little deeper into this African primal forest (which Western man fears so much and has made us – its children – fear too!) could, even as it has done for the archaeologists, bring us face to face with the spiritual (religious) ancestry of all mankind and help us better to understand the forces in which we – all mankind – ‘live and move and have our being’”.

Scholars like Setiloane highlight the wisdom and power that remain within the African traditions. I do not however want to end this discussion by leaving the thought that we should necessarily revert to a pre-modern (Purple/Blue) context or that we should elevate such a traditional context to a postmodern vision for sustainability. What is important to recognise here is that each level of development (Beige to Green and beyond) represents something fundamental within our wider social/cultural structures and all contribute to the health of the ‘whole spiral’. At the same time, accessing the grounded qualities contained within the traditions is of great importance to progressing the sustainability agenda both locally and globally.

4.5 Lessons for the Future

I would like to conclude this chapter by emphasising the main lessons learned, which I believe are important to further success in this field.

1. During the initial development stages of the Tlholego Village, the lack of understanding of personal value systems (as presented in the discussion using Spiral Dynamics) and the significance of interiors as well as

¹¹³ <http://www.sekem.com>, (16 February, 2006).

exteriors was a major factor limiting the success of the project. The Integral framework, and in this case Spiral Dynamics, is a valuable tool for mapping interior structures of individuals and groups. This is especially useful in observing negative or pathological occurrences within people and including these factors within a wider and deeper conception of a growing community culture. Recognising and encouraging higher 'states' of awareness, which are independent of 'levels' of development, are an important indication and inspiration for individuals or collectives as they develop increasing complex forms of awareness.

2. Permaculture is certainly an excellent system for designing household systems of self-reliance and for the restitution and ecological management of land. However, this system has limits and cannot simply be transferred to the design of human systems. Without an adequate conception of interior depth or stratification in individuals and cultures, design can proceed from the subjective perspective of the practitioner, with less than sought-after results. This is especially true when working in diverse cultures such as in South Africa.
3. When endeavoring to establish an ecological postmodern learning organization, it is important to understand that these communities are complex and require complex resources in terms of skills and capital. Both of these aspects are essential. However, I imagine with careful measure, either one could generate the other.
4. In realising these goals, leadership within these organizations, especially where Integral theory is to be applied, would benefit greatly from working in teams or 'Great Groups' rather than supporting individuals in such positions. These teams really need to be in place early on and remain for the long haul in order to understand and guide these complex processes forward. This brings me to a profound realization of the importance in selecting people with the greatest potential to succeed in these early stages, so as to form an effective leadership nucleus that can adapt and grow, as well as mentor those that are to follow. Practically

this continuity also deepens the understanding of how local social ecological systems are organised.

This means bringing into the system people who do see the bigger picture and letting others simply function where they feel comfortable. Relying on a programme to change individuals in the farm community who are unable and/or reluctant to participate in the wider vision thwarts the evolution of the larger system.

If I had already been exposed to the Integral perspective when the project started, I would have understood more clearly the different interior systems at play within the local community. This would also have allowed me to realise the limitations at that time, of my own (Green) perspective within this wider cultural context, and helped me to select a core group of people with values more closely aligned with the project's longer-term vision.

5. A further important lesson learned, has to do with the ease a community project, leading from a particular (Green) perspective, can think that all members in one way or another share the same global goals. In reality however, developmental problems can arise, as I discussed through the rejectionist paradigm, which can easily occur between negative (Red) values and naive (Green) values, both rejecting the (Blue/Orange) support structures they rely on, thinking they understand each other but actually (interiorly) living miles (memes) apart.
6. Finally, our experience at Tlholego shows that by working with the local religious groups, we may have made more progress in developing a centre based on experimentation and learning. This notion is strongly supported in contemporary environmental literature and by Wilber in his excellent book *Integral Spirituality* (2006). The often present (Blue) values inherent in the mythic membership structures of society generally hold concerns for 'the longer term' (a better tomorrow) and care for family members and community (including the environment), values

completely necessary in building sustainable communities today and in the future.

Chapter 5: Conclusion

In this thesis, I have investigated the following knowledge themes as discussed in Chapter Two and used them to reflect on my experience in developing the Tlholego Village. These themes include Integral theory, sustainable development, globalization/localization, quantifying sustainable development and ecological design. It is however Integral theory, supported by others such as complexity and human scale development, which ultimately informed my reflection to the greatest degree.

The main purpose of this research has been to use Integral Theory as a lens through which to understand and make sense of the experiences emerging from both the design and development of the Tlholego Village over the past 20 years. By so doing, I hope to have contributed in some way to the growing field of knowledge about the evolution of sustainable communities in general.

My approach has been to articulate the rudiments of Integral Theory and then to conduct a synthesis of key theoretical knowledge clusters that relate to sustainability and sustainable development globally. Next, I introduced the Tlholego Village as an example of a local sustainable community and applied the Integral theoretical perspective as a means to interpret and reflect on several of the main learning experiences that have emerged over these years.

I conclude this chapter with an integrated discussion that summarizes the key themes arising from the theory and the main findings from the Tlholego case. Finally I end with suggestions for future research.

5.1 Key Themes

As we have seen, numerous deeply conflicting issues thwart achieving any measure of success in addressing the current issues of sustainability and sustainable development. A central factor is that the mechanics of our global economy are fundamentally incongruous with the way the physical and

biological environment works – to the extent that we are inexorably changing the nature of this primary system upon which all life depends for its survival.

The idea of an economy with limitless material growth is inconsistent with certain fundamental laws of science, as articulated by complexity and resilience thinking. Then again, it is upon this very thinking that modern ideas and role models for wealth creation and 'a good life' are based. Paradoxically, as many studies now show, this drive does not realise greater happiness or subjective wellbeing (Daly & Farley, 2004; Lane, 2000; Frey & Stutzer, 2002; Bruni & Porta, 2007).

Equally significant are the serious implications of severe and growing inequalities that have been historically and systematically built into the fabric of our global society. We know that in order to achieve a measure of sustainable development humankind must live within the environmental limits of this planet, yet the developed world continues to consume practically all this planet's available biocapacity, leaving no room into which the developing world can expand without further depleting these sources of natural capital (Wackernagel and Rees, 1996). McLaren (1998) has stated that equitable access to resources for sustainable development may be the only practical and morally acceptable basis for the distribution of global resources. However, the dominant political-economic thinking is not based on equity principles, but on a blend of national and capitalist interests that promote competition over, rather than a sharing of, our environmental space (Bührs, 2007).

The non-sustainability of current world society is founded upon the intermeshing and simultaneous interrelationships of severe and manifold problems – some of the most obvious being to do with population growth, social inequalities, human poverties, food security, water resources, biodiversity loss, climate change and the limits to fossil energy and material economic growth. They also have to do with disparate cultural values, social structures and institutions, as well as how we think and behave. As Diamond (2006) has emphasised, unless these problems are resolved, within the next

few decades the world as a whole will face a declining standard of living, or perhaps worse.

Given this apocalypticism, it is particularly unnerving that implementing solutions to global sustainability challenges has proved as elusive as dealing with the problems themselves. As Brown, L. (2006) asserts, if progress is to be maintained we will need to redesign the global economy. Achieving a longer-term solution cannot be achieved purely technologically through an ecological or green industrial revolution, however necessary this may be in contributing to a more sustainable future.

No matter what approach is taken in redesigning our global economy and the development agenda in coming years, rethinking the nature of human needs will be crucial to understanding future options for an acceptable quality of life for the majority of humanity. Any progress in this regard will require the satisfaction of both material and non-material human needs (Gallopín, 2003).

In reimagining our industrial economy from a human scale perspective, which includes a fresh look at Needs Theory, satisfiers and the critical issues of poverty, innovative insights are provided by the work of the Chilean economist Manfred Max-Neef. Certainly his work will contribute to doing globalisation better, as Sahtouris (1998) has suggested, just as it should contribute to doing localisation better – an equally vital scale of activity in addressing sustainability challenges.

Taking the localization perspective further, Norberg-Hodge (2000), Macy (1998), and others, have pointed to the importance of collaborative living arrangements like co-housing and ecovillages, as key strategies in establishing and strengthening more co-operative self-sufficient local economies. This builds on Capra's (1996) view that creating sustainable communities is the "great challenge of our time". Yet while thousands of excellent examples of sustainable communities of differing forms have developed throughout history and certainly in recent times, many of these important ideas and approaches

(including ecovillages) have not yet crystallised to establish fully functional, integrated solutions that can be replicated on a wider scale.

Crucially, this is why it has made sense to use Wilber's Integral theory in this research. An Integral lens helps to effectively highlight gaps and partialities in approaches to sustainability. Examples of this partialness can be seen reflected in the quadrant analysis of certain important sustainable development texts (see Figure 8 on pages 72 & 73). In this instance all these methods are primarily focused on the exteriors structures of society, systems and the environment, and do not notably include the individual and collective depth dimensions that are revealed by Wilber's AQAL model.

This leads to a significant point this theoretical synthesis has brought forward: that the real problem of sustainability is one of interiors, and not simply one of exteriors – although exteriors are of course vitally important. The real problem is how to get people to consciously evolve from egocentric to sociocentric to worldcentric consciousness. According to Wilber, the latter is the only stance that can grasp the global dimensions of the problem in the first place (Wilber, 1995).

Therefore, in the face of economic and environmental collapse, sustainable development requires that humanity transform its economic systems, its concepts of development, its notions of progress and the understanding of change itself. And achieving such a task ultimately requires that human beings learn to understand the nature of this evolution or unfolding of (human) consciousness (See Ehrlich, 2000; Swilling, 2004a; Beck & Cohen, 2004).

It follows that participation from a consciousness perspective, in any sustainability project, will require the growth of interior capacities, undoubtedly carrying with it a measure of discomfort. This implies the need, particularly in the leadership sphere, to translate knowledge and experience through the languages and thinking systems that make up our stratified global culture. Because Integral Theory is grounded in the evolution of consciousness, it

provides us – perhaps until a clearer framework is developed – with an invaluable map to help navigate this awesome journey.

5.2 Conclusions from the Tlholego Case

The Tlholego Village has been about pioneering, experimenting and creating a vision for a sustainable future. It is also concerned with inspiring people to create sustainable communities that introduce a new story and capture the imagination (Zygmunt, 1992) of people across the spectrum of South African society.

Over a journey of nearly two decades, Tlholego has experienced many successes, mostly as a result of introducing and promoting sustainability thinking and technologies in South African society at a time when these approaches were quite new and mostly unknown. Many of the early Permaculture teachers who practice in South Africa today received initial training at Tlholego, and the hundreds of people who were trained and the many thousands who visited over the years have spread Tlholego's vision and ideas across South Africa. Globally too, Tlholego has had a positive influence on many people's lives.

Despite these successes, the greater potential of Tlholego has been thwarted in several important ways. Contributing factors have to do with limitations in the development methodology itself, the availability of complex resources for this task, leadership experience and institutional support, and also perhaps because of the choice of socio-cultural context, which made it more difficult to build appropriate skills from within the local area.

Permaculture, as the main methodology, while being a very successful approach to designing systems of self-reliance patterned on the designs of nature, is at the same time focused primarily on the implementation of exterior structures. So while it may be an egalitarian, ecologically inspired (Green) ideology, it lacks the depth and breadth perspectives required for understanding the development of the interiors of individuals and collectives.

At the same time the Permaculture approach has brought many important elements of creativity into the learning experience at Tlholego. This helped to deepen our understanding and forge new relationships between widely disparate groups at a time when South Africa was emerging from a long history of oppression and separate development. Through this process Tlholego has developed a tangible integration between people and the environment, between traditional knowledge and modern technology, and has made pragmatic use of local resources and materials. In this way Tlholego does embody many important characteristics of a sustainable community.

However, when we consider what is required to develop fully functional examples of sustainable communities that can adapt to longer-term environmental pressures and simultaneously meet the needs of shorter-term realities, particularly in a society suffering from significant poverties and pathologies, it is clear that Tlholego has only begun to penetrate this surface. At the same time, the Tlholego experiment has also shown what is possible, and in a small but not insignificant way has proved that when the conditions are right, South Africans can rise through their cultural schisms to form new cultural 'wholes', 'social holons', or 'we' spaces that carry the potential to consciously evolve and meet the challenges and opportunities of a changing world.

5.3 Suggestions for Future research

Through this study and from my general observations of the world today, I am convinced that to live as we do on one planet, and if our survival in the longer term is important for us, we must find alternatives to our current lifestyles. Clearly, evolving through this bottleneck as a global society is a challenge that brings all manner of difficulty. The predicament of our potential extinction, while easily overwhelming, is also a great driver for change and innovation.

Within this context, sustainable communities in all their forms must be encouraged in cities, neighbourhoods and rural villages, and at all scales of society. These new constructions will be central to building our capacities in an increasingly unpredictable and unstable future. In fact, we need to pursue this

mission to the point where such alternatives, as Swilling (2004: 19) has made clear, “are self evidently preferable to an increasingly unviable status quo”.

Suggestions for further research and experimentation from this standpoint are as follows:

Firstly, it is vital that more practical on the ground research is encouraged. It is also important that such real-life research happens at both the mean and at the leading edge. My experience has been that our efforts become focused on ‘crisis’ management within a few standard deviations of the mean. While there are many important reasons for this, experimenting at the edges and mining new approaches may be both useful in adapting to deeper changes that are consistent with the notions of resilience thinking.

Secondly, encouraging new models of localised economic development that aid the transition to a one-planet lifestyle is of great importance. This should include reframing our understanding of human needs and the satisfiers we create to meet such needs. Such constructions must incorporate both material and non-material elements and here it is helpful to take cognisance of the work of economists like Max-Neef.

To frame this approach within an Integral or AQAL perspective, local economic systems could be looked at in the light of how they relate to the interior makeup of the communities they serve. For example, in a community setting, where strong tribal values (Purple) exist, techno-economic innovations could focus initially on strengthening these important structures with systems of self-reliance. A foundation at this level may support the emergence of healthy (Red) values, perhaps through enlightened sporting activities. At the same time a new set of (Blue) values could develop around the security provided by sustainable agriculture, which would create positive conditions for entrepreneurship and enterprise to materialise (Orange values and beyond). This approach would serve the whole needs line by including all levels – which is quite different from current approaches where development can easily be flattened by strategies that knowingly or unknowingly favour one level or another.

Exploring a 'stratified' economic strategy of this nature would require real commitment and investment and may seem extravagant given current sustainability challenges, especially in the developing South. However in a country like South Africa where the whole spiral of values exists side-by-side, experimenting with development 'acupuncture points' of this nature may yield valuable insights for engineering sustainable economies and communities within the constraints of one-planet reality. Successes at local level would certainly influence the systemic replication of such systems in a much wider context.

Most of the innovation in sustainable communities is taking place in the developed North, within a sustainable cities agenda or where greater resources are available for leading-edge work. However, there are at least three reasons why it is important to experiment with these ideas in the developing South, where much of the wealth is at the 'bottom of the pyramid':

- It is here where the heart of the tensions originating from global inequalities presently exist;
- It is here where 60% of the world's population now lives on below \$3 [R30] per day and where most of the estimated three billion people who will be born in the coming decades will live (Swilling, 2005a); and
- In many (but certainly not all) instances 'poor' communities still have the paradoxical advantage of living on a low ecological footprint (less than available average global biocapacity) and at the same time do not yet access their fair share of environmental space.

In addition, research on consciousness suggests human interconnection occurs at a level that has yet to be fully recognised by Western science. The ontological stance of the universe as holarchy appears to have great promise as the basis for an extended science in which consciousness-related phenomena are no longer anomalies, but keys to a deeper understanding. In other words, a science that transcends and includes the science we have.

At the same time, Wilber (1986: 13) points out,

“... men and women are faced with a truly fundamental dilemma: above all else, each person wants true transcendence and the ultimate Whole; but above all else, each person fears the loss of the separate self, the ‘death’ of the isolated ego”. Wilber (1986: 13) continues. “Because man wants real transcendence above all else, but because he will not accept the necessary death of his separate-self sense, he goes about seeking transcendence in ways that actually prevent it and force symbolic substitutes. And these substitutes come in all varieties: sex, food, money, fame, knowledge, power – all are ultimate substitute gratifications, simple substitutes for true release in Wholeness”.

If, as Wilber (1986) suggests, it is the substitute for ultimate wholeness that most of our society is preoccupied with, rather than wholeness itself. Then from this perspective, a fairly decent society does not have to recommend massive doses of wholeness, but simply to arrange substitute wholeness projects to overlap real wholeness in mutually supportive ways. When this occurs, the satisfaction of ones individual wholeness projects benefits the entire community. For example, in certain pre-egoic hunting groups, to be a great hero, to satisfy one’s personal need for Wholeness, all one had to do was catch more game than anybody else – and give it all away. The bigger the personal need for Wholeness, the more the community benefited. This arrangement is at the core of what anthropologist Ruth Benedict called “synergistic societies – and these were precisely the societies she found most noble, likable and beneficial” (in Wilber, 1986: 335). So if we cannot yet offer real transcendent Wholeness, “let us at least look carefully at the structure of our substitutes, and ponder whether they can be more humanely and synergistically arranged” (Wilber, 1986: 335).

Finally, in guiding our collective development along healthy and ethical paths, research into leadership groups that can help facilitate an Integral development in practice would assist us to search for the new myths, images, values, worldviews and ways of being that help us make sense of what is going on,

revision who we are and who are we becoming, and give us again a sense of meaningful, creative engagement and agency in the unfolding of the larger whole to which we belong. Involving social entrepreneurs and religious groups in this process may prove equally valuable in building the societal learning and adaptive capacities we will need to grow this work towards its more significant potential. The greater task lies ahead.

“Science is not enough, religion is not enough, art is not enough, politics and economics are not enough, nor is love, nor is duty, nor is action however disinterested, nor, however sublime, is contemplation. Nothing short of everything, will really do.”

Aldous Huxley, *Island*

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