THE EMERGENCE OF SUSTAINABILITY:
CULTURE SHIFT AND THE TRANSFORMATION OF
WORLDVIEWS THROUGH SOCIAL LEARNING

by

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ABSTRACT

There is an abundant literature describing the sustainability problems our planet is facing, ranging from the loss of biodiversity and ecosystems that are necessary to support healthy communities to the ever-expanding population, social inequality and worldwide increase of poverty. Many of the existing sustainability initiatives attempt to address these issues by creating new technologies, increasing efficiency, and modifying systems of governance. While many of these approaches are promising, their success fundamentally depends on their acceptance by society. I argue that this aspect is frequently overlooked and more attention should be paid to the human dimensions of sustainability development.

The approach presented in this thesis uses a more comprehensive approach and highlights the importance that consciousness, culture, and values play in shaping our views of reality and therefore our understanding of sustainability. I explore the all-quadrant, all-level approach of integral theory (Wilber, 1996b) as an overarching framework to discuss these ideas. The all-quadrants concept of internal and external, individual and collective realities is used to outline the multiple dimensions of sustainability. I apply the all-levels concept of human development to explain the multitude of conceptions, behaviours and attitudes that individual mindsets and collective worldviews have towards sustainability.

One of the main challenges for sustainability is overcoming the values crisis in modern society and it is argued that in order to achieve this, a cultural shift is required if we hope to address today’s pressing socio-ecological problems. To this effect a framework of social learning has been developed based on the synthesis of the literature that serves to guide this cultural shift. To illustrate the potential of this framework a case study was conducted in a natural resource conservation and forestry course at the University of British Columbia. The results are encouraging and demonstrate the potential of social learning for shifting individual mindsets towards ones that are more inclined towards cultivating sustainable livelihoods.
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DEDICATION

This thesis is dedicated to the marvellous journey of life...

To my companions in this journey...

And to their friendship and love...
Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for that the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads on to way,
I doubted if I should ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

Robert Frost - The Road Not Taken
1 Introduction

"... we continue to believe in the sciences, but instead of taking in their objectivity, their truth, their coldness, their extraterritoriality ... we retain what has always been most interesting about them: their daring, their experimentation, their uncertainty, their warmth, their incongruous blend of hybrids, their crazy ability to reconstitute the social bond. We take away from them only the mystery of their birth and the danger their clandestineness posed to democracy" (Latour, 1993)

This thesis is an exploration of a number of fields of inquiry, from developmental psychology to systems theory and complexity. I have taken a broad perspective: trying to see the big picture, bringing insights from diverse fields and aligning them under the common theme of sustainability, seeking out disciplines that can add to the puzzle and discovering where synergies can be found.

This thesis leans more to the side of values, cultures and educational aspects of sustainability. My original training is in the field of engineering, as well as much of my experience as a professional. I began my graduate studies with the intention to undertake a thesis that addressed sustainability issues through the application of my expertise in engineering and systems optimization. After a year of exploring, reading, and researching, I began to realize more and more that engineering, or any other discipline that only looks outside of oneself taking a third person perspective (the observer detached from the observed) of the problem of sustainability, will never be able to create the radical shift needed towards a more sustainable society.

I was finally inspired to move away from the concept of sustainability 'management', per se, after reading Ludwig's et al. (1993) Science article describing the failure of science to adequately 'manage' natural resources. The resources addressed in the article seem very easy to manage compared to today's issues of climate warming, growing inequality and so forth. Ludwig points out very clearly that we can "rely on scientists to recognize problems, but not to remedy them" (p.36). This line really caught my attention and luckily, the author points out that we need to "include human motivation and responses as part of the systems to be studied and managed. The shortsightedness and greed of humans underlie difficulties in management of resources" (p.36). This was the turning point where I decided to direct my line of inquiry inwards, to theories of science and art that address the inferiority of humans.

Being a total stranger to this realm of knowledge, I devoted a lot of my time to reading and catching up with the current lines of thought in these disciplines. This thesis is about exploring contextual, philosophical and values-based approaches to sustainability while placing it in context of the growing literature on planning based on general systems theory (e.g. adaptive management, Panarchy theory, and The Natural Step framework). I believe that the co-evolution of approaches that address the exterior dimensions of sustainability with approaches that address our internal models of reality and values will be the leading edge 'science' in the years to follow. This will be a science that transcends the limitations of the deep-seated seventeenth-century mechanistic view of the world, for one that is more in line with Goethe's view of science, which is a science that "is as much an inner path of spiritual development as it is a discipline aimed at accumulating knowledge of the physical world. It involves not only a rigorous
training of our faculties of observation and thinking, but also of other human faculties that can attune us to the spiritual dimension that underlies and interpenetrates the physical: faculties such as feeling, imagination and intuition. Science, as Goethe conceived and practiced it, has as its highest goal the arousal of the feeling of wonder through contemplative looking (Anschauung), in which the scientist would come to see God in nature and nature in God" (cited in Max-Neef, 2005; Naydler, 1997)

The chapters that follow require an open mind and the willingness to see a problem from a different perspective. Chapter 2 and 3 serve as an introduction to the chapter 4, where most of our thoughts on sustainability are described. Chapter 2 gives some perspective and historical understanding to why we took a certain approach to the topic of sustainability. Chapter 3 is a brief literature review on the integral theory and adult development theories that provide background understanding for the discussion that follows in chapter four. Chapter 4 brings together the theories presented in chapter 3 with general systems theory, and presents a broader more encompassing view of sustainability by going in depth into the role and influence that different worldviews have on sustainability. With the understanding of chapter 4, chapter 5 lays down a framework for social learning that is proposed as a way of addressing interior models of reality and values. The chapter also outlines and develops a process to put in practice the social learning framework within a multi-stakeholder process context. Chapter 6 is a case study of applying, in a natural resource conservation and forestry course, some of the concept developed throughout the chapters. The last chapter concludes with a brief wrap-up of my view of what is needed to move towards a more sustainable society.

The thesis is written in second and third person language; the ideas presented here are written by me, but reflect endless hours reading and conversations with fellow colleagues, professors and friends. Though I may have put in the bulk of work in writing, I feel this thesis is a collaboration between many; hence, I could not write it in a first person language as it would not reflect the truth.

Each chapter will be preceded by a poem. The reason for this is my limited capacity to transmit my ideas into words. The poems give the readers a chance to see something that goes beyond words; they capture a glimpse of what I am trying to transmit through these pages. I also believe that it is through art that we will have an opportunity to experience the fullness of life, and the poems are a door to this.
Living in the earth-deposits of our history

Today a backhoe divulged out of a crumbling flank of earth
one bottle amber perfect a hundred-year-old cure for fever or melancholy a tonic for living on this earth in the winters of this climate.

Today I was reading about Marie Curie:
she must have known she suffered from radiation sickness
her body bombarded for years by the element she had purified
It seems she denied to the end the source of the cataracts on her eyes the cracked and suppurating skin of her finger-ends till she could no longer hold a test-tube or a pencil

She died a famous woman denying her wounds denying her wounds came from the same source as her power.

Adrienne Rich - Power
2 Brief historical analysis of Western Civilization

To understand where we are heading, we first need to understand where we are coming from. Many of our sustainability related problems are issues deeply engrained in the way western society sees and makes sense of the world. We will begin this chapter by looking at the history of western philosophy in order to understand the origins of the lenses that shape our view of life. The notion of awareness or consciousness will be briefly discussed, as it is an important, yet overlooked aspect of ourselves and the approach we take in life. We will end the first chapter by describing the role that values play in shaping how different societies progress.

2.1 The three cultural value spheres

Understanding how the dominant western society or western paradigm sees and makes sense of the world around it is crucial to moving ahead and breaking away from the invisible barriers that keep the society gridlocked in an abusive and depleting relationship with the natural environment. Being able to ‘see’ and becoming aware of the underlying motives and values that drive our everyday actions as individuals and as a society will take us one step forward in understanding not only our own motives and relationship with other individuals, but also our relationship to the greater other, the natural environment of which we are all part.

Western society has its roots in both the Greco-Roman and Judeo-Christian traditions; each tradition contributed important and distinct aspects to the evolution of western civilization. For example, ancient Greece was the birthplace of western scientific philosophy, the functional basis for current western society, from its legal codes to the amazing advances in technology. On the other hand, the Judeo-Christian tradition provided most of the moral values that have guided western cultures for close to 2,000 years.

The Greco-Roman tradition, starting with Pythagoras, Socrates, Plato and Aristotle (6th century BC onwards) focused mainly on understanding exterior phenomena. From Platonic realism to Aristotle’s senses, they valued knowledge attained from reason and inquiry that would illuminate the true nature of the world around them, using rational argument to advance their views to others. They invented the denomination of nature as the physis, an object that is not subject to the divine laws, only to natural, observable laws. There was an emphasis on separating object from subject, the exterior from the interior world, rejecting traditional mythological explanations for the phenomena they saw around them in favour of more rational explanations. Plato’s efforts were more focused at gaining insight from rational contemplation of the observed phenomena, while Aristotle placed more value on knowledge gained from the senses. These Greek philosophers developed the first tools western civilization used for inquiry into the exterior objective world, whereas the knowledge of the interior subjective world was captured and transmitted by the Judeo-Christian traditions. To gain insights into the subjective interior world, the
Judeo-Christian tradition emphasised the need to look outside oneself, to God, to understand any interior phenomena (Wallace, 2002).

As the Judeo-Christian tradition grew stronger (3rd century onwards), it started to influence western society by building on the idea that humans are separate from the rest of living and non-living organisms on the planet. Humans are said to be external to the world and have been provided the earth by God, to manage and rule over it. This message is strongly transmitted in the book of Genesis, which describes the history of creation for both the Jewish and Christian traditions. We can read from Genesis\textsuperscript{1} 1:28: “God blessed them and said to them, ‘Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground.’”

Descola (2005) suggests that both the influence of the Greco-Roman and Judeo-Christian traditions have shaped today's western societies cosmology, which is based on the belief that only humans possess interior life, while everything else – plants, rocks, animals – does not. Descola explains that apart from naturalism, today's western cosmology, there exist many other cosmologies, such as totemic, animic, and analogistic. Animism would be the opposite of naturalism, where everything not human also has interior life and exhibits a social and cultural life. Descola (2005) argues that today's environmental problems are mainly due to the dominant naturalist cosmology, where humans can manage as they please over everything that is not human because it poses no 'real' life.

To better understand how we have developed this cosmology over time, we need to recognize another important transition for western society, the Enlightenment period (16th to the 18th century). This period sought to free itself from the restrictions imposed by the belief system of the time and advocated rational thought as a means to separate aesthetics, ethics and knowledge. Max Weber and Jurgen Habermas termed the phrase 'differentiation of cultural value spheres' (Habermas, 1985b, p.186) to describe the separation of: science and technology (knowledge), art and literature (aesthetics), and law and morality (ethics). These elements of culture were differentiated out from the traditional religious belief systems of the Judeo-Christian society and gave place to the rise of modernity. The modern times pushed Europe out of a history of tradition, superstition and tyranny and gave place to many great intellectual revolutions. At the same time, nature finally became totally independent and observable to the hands of the scientists.

These intellectual revolutions were possible because of the freedom each cultural value sphere acquired. The cultural value sphere of knowledge could now pursue its interests without the heavy cloth of the church dictating what was appropriate and what was not. This allowed science, as we know it today, to emerge and have the search for knowledge of the external world as a main objective. From Descartes to Galileo to Newton, all sought general laws to explain the observable natural phenomena. As we know,

\textsuperscript{1} All biblical quotations from NASB
these gave birth to incredible advances in technology which have to some degree improved the well-being of humanity.

On the other hand, the cultural value spheres of aesthetics and ethics focused on the search for understanding of the internal world, within our self and our society. Hence, the three value spheres, arts, morals and science, are separate from the dominance of the church and are also separate from each other. It was science especially that evolved to play a major role in contemporary society and differentiated itself from the other two value spheres to a greater degree than arts and morals did. Science has become the dominant paradigm in the last 300 years, whereas arts and morals have played a lesser role in the evolution of our society to date. This has provided many benefits but it has also carried many negative consequences for our society and the planet.

From the Greco-Roman philosophers, to the rise of the Judeo-Christian tradition, to the Enlightenment epoch, all three have marked where western society stands today and have shaped the naturalist cosmology that Descola describes. This dominant cosmology represents a disconnection of humans from nature, where lives of non-human forms are of less importance in our scale of values; where killing a man is morally unacceptable, but wiping out million of hectares of forest and animals and displacing hundreds of indigenous communities from their native lands, in the name of development and profit, is not only morally acceptable, but encouraged by society.

The Chilean economist, Max-Neef, describes our society's era in the following manner; "If I were asked to define our times, in few words, I would say that we have reached a point in our evolution as human beings, in which we know very much, but understand very little" (Max-Neef, 2005). Max-Neef is basically pointing out the disconnection between the cultural value sphere of knowledge and that of arts and morals. Max-Neef is referring to a science and technology that has been “beheaded” (p.9), where our behaviours are not guided by the cultural values sphere of ethics and morals, but instead by the sole driver of our society, science.

Now, if we believed that the value of the life of a tree was as intrinsic as other forms of life, like the animic cosmology, then our acts would be of a very different nature. If we look back in history, our society's value system has no doubt evolved. From the way we treat each other: abolition of slavery, declaration of the rights of man, women's rights, and the civil rights movement; to how we treat nature: animal rights

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2 To clarify: science as it is defined in this paper and making reference to Habermas analysis is utilized in a broader context than it is normally referred to. Disciplines such as economics that are traditional defined as arts fall under the category of science because they deal with external systems. This will become clearer as the thesis progresses.

3 The Slavery Abolition Act (1833) outlawed slavery in the British colonies and was the beginning of the end of slavery. Slavery today still exist in many forms (child slavery, sex trade, etc) but what we are arguing for is the evolution of societies values over time, slavery might still exist but it is not accepted by society at large.

4 The earliest documents can be argued to be found in the ancient city of Ur in southern Mesopotamia (2000BC) and the latest the signing of the Universal Declaration of Human Rights (1948).
movement and environmental movement\(^5\). This evolution of societal values is of prime importance to achieving some form of solution to the many problems we are faced with in the coming future. What we are describing here is the evolution over time of one of the three cultural value spheres, ethics and morality. As we continue, we will see and understand how the three values spheres are connected to each other, and the importance of fostering equal growth in all of them. It is important to understand that we are not calling for an animic cosmology and its set of values. This is just an analogy used to lead the reader to imagine what the world could look like if we had a different set of values and priorities.

2.2 The role of consciousness

"A human being is a part of a whole, called by us 'universe', a part limited in time and space. He experiences himself, his thoughts and feelings as something separated from the rest... a kind of optical delusion of his consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest to us. Our task must be to free ourselves from this prison by widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty" - Albert Einstein

Going back to the time before the Enlightenment era, we can recall that the understanding of both the exterior and interior phenomena of the world was heavily influenced by the Judeo-Christian belief system. Individuals were burned or hanged if any of their scientific discoveries, such as the shape of the world or its place in the solar system, contradicted what the belief system said to be true or real. The same can be said about the interior phenomena, which from the beginning, were mostly left out of the scientific inquiry. These phenomena were, until very recently, unexplored by the scientific philosophy of the West because this domain pertained only to the Church. Anyone who portrayed a different understanding of the interior world was believed to be a witch and burned at the stake (Wallace, 2002). As Wallace (2002) describes:

"the trajectory of Western science from the time of Copernicus to the modern day seems to have been influenced by medieval Christian cosmology. Just as hell was symbolized as being in the center of the earth, and heaven was in the outermost reaches of space, the inner, subjective world of humankind was depicted as being the locus of evil, while the objective world was free of such moral contamination. It hardly seems an accident that the science that initiated the Scientific Revolution was astronomy, and it took a full three hundred years for the scientific discipline of psychology to begin. And it was only in the closing years of the twentieth century that the scientific community began to regard consciousness as a legitimate subject of scientific inquiry".

This strong belief system, until very recently, put the interior world and the understanding of the mind out of the radar for western civilization.

The importance of understanding the mind is ephemeral for most of western civilization. The paradox is that western civilization’s desire to better understand the exterior phenomena seems oblivious to the fact that the core instrument it uses to understand the phenomena under investigation is the mind. The mind,

\(^5\) Karel Vasak (1982) categorized the human rights movement into three generations. First generation deals mainly with freedom, second generation deals with equality and the third generation is about solidarity and also goes beyond the human needs and addresses also the environmental rights.
with its mental representations, is the number one tool used to piece together all the scientific theories that we develop (Wallace, 2002). Western civilization has looked into and improved every single instrument it uses to gauge reality, to evermore have a better representation of what is actually out there. But what about the mind: the tool that is used around the clock to gauge reality? Is there any way to improve its performance? When we plan on running a marathon, it is obvious that we need to train; starting on a 5km run, then 10km and building on to it until we can run 42km. The same is true when we learn an instrument. Practice of the instrument leads to perfection. So, what about the mind? Can we engage with it, practice with it, in any form or activity that would lead it to be more clear, sharper, more focused? Can we achieve a mind that has the ability to see beyond the boundaries that both society and ourselves put up? Can we realize a mind that can remove the lenses with which we make sense of the world around us?

Practices of reflection or contemplation, known to both eastern and western religious or spiritual traditions, are practices that seek to tame the mind, clear it from its constant clutter and make it aware of itself, the self that possesses assumptions and values that are deeply ingrained in the mind. It is a practice of awareness and questioning of the truth: truth in a sense of seeking inside, working through barriers that cloud how we see and experience reality of the outside world. Coming to terms with the idea that reality is always clouded by the lenses that we hold in our minds opens a space to train the mind as we do with any other parts of our body, so we can perfect the lens with which we gauge reality to lessen its distortions. The ultimate objective is to remove the lens and awaken to what is.

The techniques for working with the mind are not the same to both eastern and western societies. Eastern techniques have been refined through the centuries and posses a greater understanding of how to train the mind. This can easily be seen in the development and preciseness of the language around the activities that pertain to the mind and contemplation. The language of a culture both gives shape to and limits its citizens’ perspectives and views of what exist. The language we use shapes the lens with which we see reality. For example, in Tibetan language there are more than five words to make reference to the “mind.” Each one describes a different aspect, capacity and quality of the mind, but in English, they are all translated to ‘mind.” The same is true for the word “meditation.” In the Tibetan language, there are more than six words that describe different aspects and qualities of a state of meditation. In English, all words that describe subtleties of a state of mind are grossly reduced to one or two words. This is because the English culture does not know more than that, and the language both reflects what it knows and limits the ability to know. So, words are a starting point, as Capra (2002) suggests: “The uniqueness of being human lies in or ability to continually weave the linguistic network in

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6 Western practices are: centering, contemplative prayer, The Jesus Prayer, contemplation, and Shabbat. Eastern practices: meditation, mindfulness, Qi Gong, Tai Chi, Yoga, and others.
7 Words in Tibetan that translate to “mind”: sel, sems, shing, rikpa, dgongs
8 Words in Tibetan that translate to “meditation”: gom, kom, samadhi, samten, tingdzin, nymshak, sgom
which we are embedded. To be human is to exist in language. In language we coordinate our behaviour, and together in language we bring forth our world" (p.282).

The understanding of the mind and the role it plays in everyday life is extremely limited in western society. As it has been described earlier, this is no surprise, given western civilization’s history. Here, again, we see an imbalance between the cultural value spheres, where the understanding of consciousness, which constitutes an interior phenomenon, is very limited or unknown to the vast majority of western society. We will be arguing throughout the thesis for the need of the two forgotten values spheres of arts and morals to start playing a greater role in our society and hence bring balance back to the three cultural value spheres of society.

2.3 Values and development

Most of the literature that tries to explain why some countries have developed more that others normally focus on differences in geography or environment (Gallup et al., 1999; Henderson et al., 2001; Krugman, 1995; Sachs, 2003), political or economic systems (Balcerowicz, 1995; Weingast, 1995), or histories of exploitation (Cardoso & Faletto, 1979). Until recently, few have seriously dealt with the roles that value, culture and religion have played in the development of a society. Lawrence Harrison (1985, 1992) is one of the scholars who has researched and analyzed the deepest into this realm. In his latest inquiry, the culture matters research project (Harrison, 2006), one of the main tasks was to identify values and attitudes that influence the political, economic and social evolution of societies. This research has developed a set of 25 indicators, arranged in a typology of progress-prone and progress-resistant cultures, to depict which aspects or values of a society keep it moving along or constantly struggling to stay aloft.

The focus of Harrison’s research can be narrowed down to an explanation of why there are such dramatic differences between the Global North and South. The values that make up the different cultures allow some to progress more easily than others. As an example, Herrera Amighetti (2006) points out that the Hispanic culture lacks the word ‘accountability’ and its concept. Lacking a word that fully captures the idea of accountability makes the concept hard to transmit within the culture, which is reflected in everyday behaviour of many individuals of the society. Herrera Amighetti explains that, “the rule of law in Latin America is a rare phenomenon. Children are taught many contradictory standards of behaviour: they are supposed to abide by the rules, but if they break them, the important thing is to get away with it. Not being caught is an achievement. Parents often comment with pride on how their small children were able to take a shortcut, lie cleverly, or cheat successfully. This sends a powerful message that being shrewd is better that being truthful” (2006).

9 The increase importance of arts and morals in guiding our society had already begun to happen, probably since the end of WWII. But we argue that it is still not sufficient and that there is yet no clear way of how to bring the cultural value spheres closer together and making them of equal importance in guiding society.
The point that Harrison makes is that even if progress-resistant societies receive help from the outside, such as aid, and if the progress-prone aspects are not in place in a given culture/society/nation, all the help will be in vain. The idea that culture is a key determinant in the evolution of a society is not new: it is an insight that goes back to Tocqueville (1835) and Weber (1930). With time, these insights were replaced by more tangible and simpler explanations, mainly focused on topics related to integration into the market economy. Harrison's work has brought new attention to the cultural dimension of development, and the typology outlined in his latest book helps to gauge how progress-prone a culture is and to understand how different values affect the outcomes of a society.

Harrison focuses mainly on the concept of development, as outlined by the 1948 United Nations Universal Declaration of Human Rights. This target for development has many disadvantages since the sole focus is human rights, with no attention paid to the environmental rights. Not only are environmental concerns overlooked, but so are social ones. Landes (2000) describes how young men in Thailand used to spend years in monasteries undergoing Buddhist training that ripened the spirit and the soul. Today, they just spend a few weeks in training and are soon back to the "real, material world" (p.3). In this case, the progress-prone values of economic wealth outweigh the values of spiritual development. How good this change is, is questionable.

Not withstanding the limits of what Harrison defines as a progress-prone society, the argument that culture and values are main drivers of the shape a society takes is still valid. The different religions, ethical codes, and beliefs spread out through the world have played a major role in the shape of today's societies. Historically, religion could probably be the main variable explaining the differences between nations, as Max Weber illustrates, but today many nations are extremely multi-cultural and the role that religion plays in western societies has lessened. Other value factors, as described in Harrison's typology, have become more prominent and better understanding the influence they have on development, not just economic, but also environmental and social, would be of great benefit.

In the next chapter, we will introduce a theory that can help make more sense out of the three cultural value spheres as well as give some insights into how values develop in individuals and cultures. In chapter 4, we will explore how this theory is relevant to sustainability.

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10 The central liberal truth (Harrison, 2006)
It was six men of Indostan
To learning much inclined,
Who went to see the Elephant
(Though all of them were blind),
That each by observation
Might satisfy his mind

The First approached the Elephant,
And happening to fall
Against his broad and sturdy side,
At once began to bawl:
"God bless me! but the Elephant
Is very like a wall!"

The Second, feeling of the tusk,
Cried, "Ho! what have we here
So very round and smooth and sharp?
To me 'tis mighty clear
This wonder of an Elephant
Is very like a spear!"

The Third approached the animal,
And happening to take
The squirming trunk within his hands,
Thus boldly up and spake:
"I see," quoth he, "the Elephant
Is very like a snake!"

The Fourth reached out an eager hand,
And felt about the knee.
"What most this wondrous beast is like
Is mighty plain," quoth he;
"'Tis clear enough the Elephant
Is very like a tree!"

The Fifth, who chanced to touch the ear,
Said: "E'en the blindest man
Can tell what this resembles most;
Deny the fact who can
This marvel of an Elephant
Is very like a fan!

The Sixth no sooner had begun
About the beast to grope,
Than, seizing on the swinging tail
That fell within his scope,
"I see," quoth he, "the Elephant
Is very like a rope!"

And so these men of Indostan
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right,
And all were in the wrong!

Moral:
So oft in theologic wars,
The disputants, I ween,
Rail on in utter ignorance
Of what each other mean,
And prate about an Elephant
Not one of them has seen!

Old fable from India
3 Integral Theory

The Integral theory was born out of the work of philosopher Ken Wilber. His framework has been used in a range of disciplines such as: ecology, education, medicine, nursing, psychology, business, future studies, social action, criminology, music therapy, gender, politics, art, near death experiences, Christianity, religion and sustainable development (Esbjörn-Hargens, 2005). Wilber has written extensively\(^{11}\) on the integral theory and this section will only be a brief introduction to the theory.

In the previous chapter, we highlighted some downfalls of the historical legacy of the West regarding the importance given to each cultural value sphere (knowledge, aesthetics and ethics). We also pinpointed the western lack of understanding and awareness of consciousness as well as the importance that values and culture play in the overall development of a society, not just in its ecological aspect, but also its social and economic one. In this chapter, we will introduce integral theory and other developmental theories closely related to the integral framework that will help us throughout the rest of the thesis to: first, understand how and why we are where we are at; then, guide us to how to continue to move forward and work through many of the ecological, social and economic challenges with which the future presents us.

3.1 The four quadrants\(^ {12}\)

The first element of the theory is that of the four quadrants (Figure 3.1 and Figure 3.2), which include the domains of subjective experience, i.e. individual interiors (Upper-Left quadrant: UL), behaviour, i.e. individuals exteriors (Upper-Right quadrant: UR), culture, i.e. collective interiors (Lower-Left quadrant: LL), and systems including social, economic, and ecological systems, i.e. collective exteriors (Lower-Right quadrant: LR). The quadrants express the simple recognition that everything has an inside and an outside and is both singular and plural. Subject and object are understood as mutually dependent and integral theory argues that you cannot understand one of these realities (any of the quadrants) through the understanding (lens) of any of the others. In the same manner, each quadrant is intimately related and dependent upon all the others and none can be reduced to the others. Hence, the theory values multiple methodologies and ways of knowing that disclose qualitative and quantitative knowledge. These different methodologies highlight different parts of the whole, which we are trying to understand. Just focusing on one methodology might allow us to gain great insights into a specific part of the whole, but without a doubt will leave other pieces out. A good analogy is a flashlight in the dark. We have many flashlights (methodologies) to help us better see a given phenomena and increasing the power of one flashlight only (greater insight through one methodology only) will never permit us to see with detail the other sides of the phenomena. We need to hold another flashlight from the back of the phenomena to see this side, which will provide us with a greater understanding of the whole phenomena. Like the


\(^{12}\) Section 3.1 and 3.2 are a summary of Wilber’s work on integral theory and I will be drawing freely from his works and Esbjörn-Hargens (2005) condensed summary of integral theory
moon, it does not matter how strong the sun is: we can never see its backside unless we can view and shine some light on it from a different angle. Acquiring knowledge through an all-quadrant approach will permit us to better understand a given reality.

Each quadrant can be studied from a first or third person perspective (Figure 3.3 and Figure 3.4). We can look and analyze the UL quadrant from an experience, from a first person perspective. I can experience my own 'I' from the inside, as a subject of my present experience and felt qualities. Methodologies to do so are summarized as phenomenology, things such as introspection, meditation, and contemplation. Now, the same UL quadrant can be examined from an objective, third person, 'scientific' perspective. I can try and map out how others are experiencing their 'I's' from an external, observer perspective. The most well known of these methodologies is structuralism.

To illustrate the dynamics between the four quadrants, we can use a simple example that just refers to each individual quadrant. Let us imagine an individual who cuts down a tree: this individual has to first think of cutting the tree, the individual thought and how he experiences it (e.g. the individual needs the tree for a house, and at the same time feels gratitude towards the tree that will provide the material for the house). This is represented by the psychological structures of the individual and is best understood by disciplines, such as psychology and others that study the interior of the individual from both first and third person perspectives (upper left quadrant - UL). At the same time, the individual is performing the physical action of cutting the tree; this is a behaviour (upper right quadrant - UR) that he is capable of because he has a strong body and has the skills for it. The UR quadrant is also represented by various activities of the complex neocortex and physiological activity of the body (e.g. neuronal activity, brain chemistry, physical health, skills, etc). The individual is acting within a given culture or worldview that
gives meaning to his actions (e.g. trees are a valued commodity in society because they are used for cooking, construction, etc). These cultural aspects (lower left quadrant - LL) are best understood by disciplines such as cultural anthropology or sociology. At the same time, the individual exists and acts within a number of exterior systems: ecological, social, political (e.g. the ecology determines the dynamics of the tree in the forest where and how fast they grow, the social systems determines the price of the tree, etc). These systems (lower right quadrant - LR) are best understood by disciplines such as ecology, law, political sciences, economics and so forth.

Again, the theory insists that every event or object happens simultaneously in all four quadrants, and to fully understand what is occurring one must use the insight or methodology that stems from all quadrants. However, it may not be practical to study a phenomenon from all four quadrants and eight perspectives in every circumstance. Normally one quadrant dominates the others. It is important to bring into our awareness the understanding that the phenomenon is affected by many other dynamics, and maybe our narrow focus on only one perspective is missing the forest for the tree.

Each methodology will disclose unique knowledge about a given phenomena. It is in the skill of the practitioner or researcher to decide which perspectives or lenses will reveal greater insight into the issue at hand. Many times, to resolve or gain insight into a problem, we must inquire using multiple methodologies, each one complementing and adding to the overall understanding of the problem. Given the complexity of both development and sustainability problems, it is imperative that we look at the problem and engage with it from as many perspectives as is possible and practical. We need to move away from the silver bullet idea, where one innovation, stemming from one methodology, is thought to be the solution to the problem. What we probably need is a silver shotgun shell where multiple methodologies and initiatives are used to address the problems at hand.
3.2 Levels, stages or holarchies

The second element of the integral theory is the idea of levels or stages. The levels approach draws from the holarchy principle, which sees reality as nested levels of encompassing forms of organisation that transcend and include. Holarchies are composed by holons, where a holon is simultaneously a part and a whole. For example, the person cutting the tree can be observed as an individual who can think and do whatever s/he wants, and hence can be regarded as a whole. At the same time, the individual has functions within a group of people (family), and hence is a part of the group. The group can also be described in a given manner and can be regarded as a whole. This continues into ever growing holarchies (individual, family, community, society, nation, world, etc), and what we notice is that, with each ascending level within the holarchy, the overall complexity increases. Each additional level of the holarchy describes an extra level of complexity, but this does not mean that one level is better than the other (in contraposition to hierarchies); it just describes an additional level of complexity. Holarchies describe encompassing levels of organisation (increased complexity), whereas hierarchies connote a centralized command and control systems (top-down, the top decides what the lower parts will do). Each holon can be considered an integral entity; it connects upwards towards bigger wholes and downwards towards smaller parts. Hence, a holon is simultaneously a part and a whole. Through the eyes of the quadrants, we can also say that a holon has experiential, cultural, behavioural, and systemic dimensions, and that these dimensions are in complex, mutually evolving holarchies.

Each quadrant can be seen as a holarchy, with ever-growing levels of complexity. For example, if we look at how society has evolved over time, we can see a beginning with survival clans, then ethnic tribes, feudal empires, early nations, and corporate states. This will continue to evolve into the future. So, society can be defined as having stages of development, where each stage is fundamental and necessary for the next one to evolve. We cannot have a corporate state without first having an early nation (see Figure 3.5 for examples of hierarchies in each quadrant). The stages of development can be categorized into as coarse or as detailed a manner as we want. The simplest categorization divides the holarchy into three stages: preconventional (also called egocentric), conventional (also called ethnocentric) and postconventional (also known as worldcentric). We can also expand the categorization into a greater number of stages, as we will see in the next section.

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13 See also the Panarchy theory (Gunderson & Holling, 2002) for an applied use of holarchies in social and natural systems.
14 The elements we presented of the integral theory are also known by the acronym AQAL (all quadrant, all level approach) and can be represented by the following statement: “consciousness (UL) is embodied in corporeality (UR), embedded in culture (LL), and enmeshed in eco-social systems (LR) at all levels of organization and complexity” (Esbjørn-Hargens, 2005)
3.3 **Lines**

Within each quadrant, there are many holarchies co-existing. Each holarchy within the quadrant is termed a 'line' or a 'dimension', which is the third element of the integral theory.\(^\text{15}\) Howard Gardner's classic work, *Frames of Mind* (1993) describes the notion of multiple lines quite clearly: "nowadays an increasing number of researchers believe... that there exists a multitude of intelligences, quite independent of each other; that each intelligence has its own strengths and constraints" (p. xxiii). Each line describes a given characteristics that shows holarchic properties. A number of scholars have inquired into the development of individuals and society. Some of the more important lines and scholars

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\(^{15}\) The integral theory has more elements to it, such as: states, types, and bodies, but we will limit our application of the theory only to the quadrants, levels, and lines.
describing the development of the individuals interior (UL) are listed in Table 3.1. Here, we will focus mainly on the development of the individual interior quadrant (UL), since we believe that a better understanding of this realm of research will shed light on and help explain many of the shortcomings seen both in our quest for sustainability and human well-being. It is important to keep in mind that a multitude of development lines can also be found in the other three quadrants.

Table 3.1 - Major lines of individual development (UL)

<table>
<thead>
<tr>
<th>Line</th>
<th>Life's Question or Main focus</th>
<th>Major Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Values</td>
<td>What is significant to me?</td>
<td>Graves (1970), Beck &amp; Cowan (1996)</td>
</tr>
<tr>
<td>Awareness</td>
<td>How do we make meaning of the world around us?</td>
<td>Kegan (1994)</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>How should we interact?</td>
<td>Selman (1980), Sullivan et al. (1953)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>What is of ultimate concern?</td>
<td>Fowler (1981)</td>
</tr>
<tr>
<td>Kinaesthetic</td>
<td>How should I physically do this?</td>
<td>Gardner (1993)</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>What is attractive to me?</td>
<td>Housen (1983)</td>
</tr>
</tbody>
</table>

Adapted from Wilber (2006)

The authors, in (Table 3.1), describe the individual developing through stages. Some authors focus on a single line of development, while others embrace the individual as a whole and address multiple lines. For example, both Cook-Greuter’s and Beck & Cowan’s work describe the individual as a whole by embracing multiple characteristics. Cook-Greuter, building on Loevinger’s Ego Development Theory, uses three dimensions to describe an individual; a behavioural dimension, an affective dimension and a cognitive dimension. We can see similarities of the cognitive dimension with Piaget’s and Commons & Richards work, as well as similarities of the affective dimension with Gardner, Goleman and Housen’s work. The same can be said of the behavioural dimension that is in line with Kegan and Sullivan et al. work. At the same time, Cook-Greuter’s work is unique in how it elaborates on each of these dimensions and the roles they play in the functioning of an individual. Hence, the ‘lines’ are a concept that is useful for understanding and describing different characteristics of an individual, but it must not be seen to have defined borders. An individual per se is extremely complex and the role that each of these conceptual lines plays in the overall development and functioning of an individual is not easily parsed out.

In the next section, we will briefly summarize the two development theories we find the most useful. These two theories are Cook-Greuter’s post-autonomous ego development and Beck & Cowan’s spiral dynamics. Both theories are currently being used and applied, especially in the business world. (For

Before we continue to describe each theory, it is important to clarify a couple of points. First, the stages of development are not binary (from one stage we jump to another) but are more like waves, with many shades of colours unfolding between stages. Second, ascending through the holarchy in the UL quadrant as a whole describes expansiveness in thinking and conceptualization. This permits individuals to broaden their perspectives and increase their options to act appropriately in a given situation. It is not a describer of the worth or decency of the person. Finally, the progression through the holarchy is not linear, but rather bounces back and forth through the stages. An individual or culture can be described as hovering above a given stage but can, at any given moment, access higher and lower levels of development.

3.3.1 Spiral Dynamics (3rd person perspective)

Spiral Dynamics, which is based on the work of psychologist Graves (1970, 1974), and was later developed by Beck and Cowan (1996), is rooted in systems theory and developmental psychology and can be used to explain the development of individuals (UL) and cultures (LL) value systems. Beck and Cowan use the word ‘spiral’ to describe the unfolding levels of the holarchy, where each level builds on top of each other to form greater levels of complexity that incorporate the lower levels. Spiral dynamics categorizes the holarchy into stages of core values; each stage describes a given level of psychological existence\textsuperscript{16}. The stages are represented by arbitrary colors\textsuperscript{17} (Table 3.2). An individual’s needs and values (UL) can be understood simplistically as going from Beige (instinct driven, seeking survival); to Purple (safety driven, seeking harmony); to Red (power driven, seeking gratification of impulses); to Blue (order driven, seeking purpose, truth, and order); to Orange (success driven, seeking analysis, prosperity, and achievement); to Green (people driven, seeking equality, justice, and self-expression); to Yellow

\textsuperscript{16} We are utilizing SD here to describe value systems; it can also be used to describe complexity of thinking or better said in Graves words: “the psychology of the mature human being is an unfolding, emergent, oscillating, spiralling process marked by progressive subordination of older, lower-order behaviour systems to newer, higher-order systems as man’s existential problems change. These systems alternate between focus upon the external world, and attempts to change it, and focus upon the inner world, and attempts to come to peace with it, with the means to each end changing in each alternatively prognostic system. Thus, man tends, normally, to change his psychology as the conditions of his existence change. Each successive state, or level of existence, is a state through which people pass on the way to other states of equilibrium. When a person is centralized in one state of existence, he has a total psychology which is particular to that state. His feelings, motivations, ethics and values, biochemistry, degree of neurological activation, learning systems, belief systems, conception of mental health, ideas as to what mental illness is and how it should be treated, preferences for and conceptions of management, education, economic and political theory and practice, etc., are all appropriate to that state” (1974).

\textsuperscript{17} Colors were introduced by Spiral Dynamics to simplify Graves’s pair letters description of the spiral (or helix, in Graves' words).
(process oriented, seeking to integrate and align various systems); to Turquoise (synthesis oriented, seeking synergy and macro-management).

Table 3.2 - Gravesian theory and Spiral Dynamics

<table>
<thead>
<tr>
<th>Stage / Color</th>
<th>Drive</th>
<th>Nature of existence and beliefs</th>
<th>Problem of existence</th>
<th>Cultural manifestations and personal displays</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-N Beige</td>
<td>Instinct</td>
<td>A natural milieu where humans rely on instinct to survive. Do what you must to stay alive. Food, warmth, sex, and safety have priority.</td>
<td>Maintaining physiological stability</td>
<td>Food, water, protection, procreation, stays alive.</td>
</tr>
<tr>
<td>B-O Purple</td>
<td>Safety</td>
<td>A magical place alive with spirit beings and mystical signs. Keep the tribe's nest safe and warm; observe tribal customs, seasonal cycles.</td>
<td>Achievement of relative safety</td>
<td>Rites, rituals, superstitions, folklore, looks to the past.</td>
</tr>
<tr>
<td>C-P Red</td>
<td>Power</td>
<td>A jungle where the strongest and most cunning survive. Avoid shame, get respect, and do what you want.</td>
<td>Living with self-awareness</td>
<td>Gratification, action, impulse, conquest, lives for now.</td>
</tr>
<tr>
<td>D-Q Blue</td>
<td>Order</td>
<td>An ordered existence under the control of the ultimate truth. Life has meaning, direction, and purpose, enforce principles of rightful living.</td>
<td>Achieving everlasting peace of mind</td>
<td>Discipline, rules, morality, traditions, lives for later.</td>
</tr>
<tr>
<td>E-R Orange</td>
<td>Success</td>
<td>A marketplace full of possibilities and opportunities. Play the game to win; risk-taking self-reliance.</td>
<td>Conquering the physical universe so as to overcome want</td>
<td>Materialist, success, image, status, takes calculated risks for the future.</td>
</tr>
<tr>
<td>F-S Green</td>
<td>People</td>
<td>A human habitat in which we share life's experiences, freed from dogma. Seek peace in the inner self and explore the caring dimensions of community.</td>
<td>Living with the human element</td>
<td>Sharing, caring, feelings, sensitivity, community.</td>
</tr>
<tr>
<td>G-T Yellow</td>
<td>Process</td>
<td>The world is a chaotic organism forged by differences and change. Flexibility, functionality, responsibility, and spontaneity have highest priority.</td>
<td>Restoring viability to a disordered world</td>
<td>Knowledge, self-principled, natural systems, flexible.</td>
</tr>
<tr>
<td>H-U Turquoise</td>
<td>Synthesis</td>
<td>An elegantly balanced system of interlocking forces. Experience the wholeness of existence through mind and spirit.</td>
<td>Accepting existential dichotomies</td>
<td>Collective individuals, cosmic spirituality, cooperative.</td>
</tr>
</tbody>
</table>

Source: Graves (1970); Beck (1996); Barker (2000)

Graves' theory embraces more than just human values. The theory describes how humans as a whole, not just their values, develop over time. In Graves' words:
"at each stage of human existence the adult man is off on his quest of his holy grail, the way of life he seeks by which to live. At his first level he is on a quest for automatic physiological satisfaction. At the second level he seeks a safe mode of living, and this is followed in turn, by a search for heroic status, for power and glory, by a search for ultimate peace; a search for material pleasure, a search for affectionate relations, a search for respect of self, and a search for peace in an incomprehensible world. And, when he finds he will not find that peace, he will be off on his ninth level quest. As he sets off on each quest, he believes he will find the answer to his existence. Yet, much to his surprise and much to his dismay, he finds at every stage that the solution to existence is not the solution he has come to find. Every stage he reaches leaves him disconcerted and perplexed. It is simply that as he solves one set of human problems he finds a new set in their place. The quest he finds is never ending" (Beck & Cowan, 1996).

Though Graves' theory embraces more than values, its core descriptors are related to human values, and hence throughout this paper we will refer to Graves' theory and Spiral Dynamics as the values line within integral theory.

In the same manner that we described the development of 'individual values,' we can describe the development of 'cultural value system' of the society (LL): the society develops and emerges from Purple (tribal values), to Red (colonial values), to Blue (traditional values), to Orange (modern values), to Green (post-modern values), and to Yellow/Turquoise (emerging values). It is important to point out that the quadrants, at each stage of development, are correlated with each other. For example, we could say that in a corporate state (LR), we will probably find a scientific–rational culture (LL), and this culture will most likely have many success driven executives (UL) who, at the same time, show signs of high blood pressure (UR) (Esbjörn-Hargens, 2005).

3.3.2 Cook-Greuter (3rd person perspectives)

Cook-Greuter's work builds on Loevinger's (1966) theory of ego-development, where the focus of study is understanding how adults develop from a baby's narrow, simplistic and self-centered view of the world to a mature individual whose wisdom and powerful actions are exemplary (Cook-Greuter, 2004). Cook-Greuter (1999) explains that human development can be seen as a progression of stages, where each stage has a different way of making sense of reality. As an individual grows, s/he alternates between stages that emphasize differentiation over integration and those favoring integration over differentiation. In the integrative stages, individuals have a sense of belongingness; whereas when in a differentiation stage there is a feeling of independence. Table 3.3 illustrates all the developmental stages that individual can be situated in throughout her/his life. The stages that have a single number are stages of integration and the ones that have a slashed number are stages of differentiation.

Cook-Greuter distinguishes between two fundamentally different forms of development, lateral and vertical.

"Lateral growth and expansion happens through many channels, such as schooling, training, self-directed and life-long learning as well as simply through exposure to life. Vertical development in adults is much rarer. It refers to how we learn to see the world through new eyes, how we change our interpretations of experience and how we
transform our views of reality. It describes increases in what we are aware of, or what we can pay attention to, and therefore what we can influence and integrate. In general, transformations of human consciousness or changes in our view of reality are more powerful than any amount of horizontal growth and learning. Most learning, training and development is geared towards expanding, deepening, and enriching a person’s current way of meaning making. It’s like filling a container to its maximal capacity. We develop people by teaching them new skills, behaviors and knowledge and to apply their new competencies to widening circles of influence. Vertical development, on the other hand, refers to supporting people to transform their current way of making sense towards broader perspectives. Development in its deepest meaning refers to transformations of consciousness. Because acquisition of knowledge is part of horizontal growth, learning about developmental theories is not sufficient to help people to transform. Only specific long-term practices, self-reflection, action inquiry, and dialogue as well as living in the company of others further along on the developmental path has been shown to be effective” (Cook-Greuter, 2004).

The two different types of development are depicted in Figure 3.6.

**Horizontal** = expansion at same stage (developing new skills, adding information & knowledge, transfer from one area to another).

**Up** = transformation, vertical development, new more integrated perspective, higher center of gravity.

**Down** = temporary or permanent regression due to life circumstances, environment, stress and illness.

Figure 3.6 - Lateral or horizontal growth and vertical transformation
Source: Cook-Greuter (2004)
Table 3.3 - Ego-development and leadership development framework

<table>
<thead>
<tr>
<th>Stage / Action Logic</th>
<th>% of adult population</th>
<th>Cognition&lt;sup&gt;19&lt;/sup&gt;</th>
<th>Central Focus of awareness</th>
<th>Truth</th>
<th>Characteristics of the leader</th>
<th>Strengths of the leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/3 Self-protective / Opportunisit</td>
<td>5%</td>
<td>2b preoperational actions</td>
<td>Own immediate needs, opportunities, self-interested, self-protective</td>
<td>Sees the world only from the perspective of their own needs and wants.</td>
<td>Wins any way possible. Self-oriented; manipulative; &quot;might makes right.&quot;</td>
<td>Good in emergencies and in sales opportunities.</td>
</tr>
<tr>
<td>3 Conformist / Diplomat</td>
<td>12%</td>
<td>3b concrete operations</td>
<td>Socially desirable behavior, belonging, approval. Suppress their own needs for sake of being approved.</td>
<td>Life is governed by rules and norms of what can be and cannot be done as acknowledged by the group.</td>
<td>Avoids overt conflict. Wants to belong; obeys group norms; rarely rocks the boat.</td>
<td>Good as supportive glue within an office; helps bring people together.</td>
</tr>
<tr>
<td>3/4 Self-conscious / Expert</td>
<td>38%</td>
<td>4a abstract operations</td>
<td>Craft logic, consistency and efficiency, rationality. They are concerned with fulfilling their responsibilities and duties.</td>
<td>They know all the answers. They know what to believe. Individuals reflect high moral standards and a strong sense of what should be.</td>
<td>Rules by logic and expertise. Seeks rational efficiency.</td>
<td>Good as an individual contributor.</td>
</tr>
<tr>
<td>4 Conscientious / Achiever</td>
<td>30%</td>
<td>4b, formal operations; clear separation of subject and object, knower and known</td>
<td>Results, effectiveness, goals and plans, objective reality, success within the system.</td>
<td>Can be found through appropriate scientific methods if not now later. Can be interested in the truth about themselves through feedback and introspection.</td>
<td>Meets strategic goals. Effectively achieves goals through teams; juggles managerial duties and market demands</td>
<td>Well suited to managerial roles; action and goal oriented.</td>
</tr>
</tbody>
</table>

<sup>18</sup> From Rooke (2005).

<sup>19</sup> see Commons and Richards (1984) for explanation of cognitive development terms.
<table>
<thead>
<tr>
<th>Stage / Action Logic</th>
<th>% of adult population</th>
<th>Cognition</th>
<th>Central Focus of awareness</th>
<th>Truth</th>
<th>Characteristics of the leader</th>
<th>Strengths of the leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/5 Individualist / Individualist</td>
<td>10%</td>
<td>5a, systems theory concepts perceived</td>
<td>Own ability to have impact, multiple perspectives. Self in relation to the system and in interaction with the system. There is a shift from 'doing' to focusing on 'being and feeling'.</td>
<td>Can never be found. Everything is relative; there is no place to stand or judge from deconstructive postmodernism.</td>
<td>Interweaves competing personal and company action logics. Creates unique structures to resolve gaps between strategy and performance.</td>
<td>Effective in venture and consulting roles.</td>
</tr>
<tr>
<td>5 Autonomously / Strategist</td>
<td>4%</td>
<td>5b, metasystematic operations; General systems thinker</td>
<td>Development over time, system thinking. Linking theory and principles with practice. Main focus is Personal growth, self-actualization and self-fulfillment; as well as helping others grow.</td>
<td>Can be approximated; higher development is better since more complex arguments carry more weight than feeble ones. Higher is more adequate for functioning in an ever more complex global theatre. There are qualitative differences!</td>
<td>Generates organizational and personal transformations. Exercises the power of mutual inquiry, vigilance, and vulnerability for both the short and long term.</td>
<td>Effective as a transformational leader.</td>
</tr>
<tr>
<td>5/6 Construct-aware / Alchemist</td>
<td>1%</td>
<td>6a, unitive concepts perceived; crossparadigmatic</td>
<td>Transforming self and others, interplay of awareness, action, thought, and effect. Want to unlearn their automatic, conditioned responses based on memory and continuous, everyday cultural reinforcement.</td>
<td>No matter what level of abstraction and what level of cognitive insight one gains, one is always separated from the underlying nondual reality.</td>
<td>Generates social transformations. Integrates material, spiritual, and societal transformation.</td>
<td>Good at leading society-wide transformations.</td>
</tr>
<tr>
<td>6 Unitive / Ironist</td>
<td></td>
<td>Unitive concepts embraced</td>
<td>Individuals feel interconnected with others as all sentient beings struggle to survive and make sense of their existence. Persons at the Unitive stage feel tolerance, compassion and an affiliation with all manifestations of life.</td>
<td>Immanent; experiential truth of interconnectedness and nonseparateness, existence as changing states of awareness in within timeless spirit.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Cook-Greuter (1990, 1999) and Rooke (2005)
In Table 3.3, we can see that most of the adult population (85%) is at stage four, the ‘achiever’ or below. In modern Western culture, a fully functioning and developed individual is one who has reached the conscientious stage. The education systems and institutions as well as the greater society reward this stage as the ultimate process in an individual’s growth to becoming a full adult. Cook-Greuter explains that,

"by most modern Western expectations, fully functional adults see and treat reality as something preexistent and external to themselves made up of permanent, well-defined objects that can be analyzed, investigated, and controlled for our benefit. This view is based on a maximal separation between subject and object, thinker and thought. It epitomizes the traditional scientific frame of mind that is concerned with control, measurement, and prediction. It also represents the goal of much of Western socialization... They operate under the assumption that subject and object are distinct, and that by analyzing the parts one can figure out the whole. From the conventional Western perspective, the acquisition of this scientific, rational mindset (or formal operations in Piaget’s model) is seen as the goal of socialization and defines what it means to be a fully grown adult" (2002).

This social fabrication limits what an individual strives for in her/his life. Figure 3.7 depicts the spiral of human development as understood by the theory of ego-development, illustrating clearly that the ceiling of our potential as human beings is mainly socially determined. Mental growth past the conventional tier is not likely because it is not supported or encouraged by society. As we grow up and look up at our parents and/or mentors, our development is bounded to the prevailing mindset and practices of not only them but also of the institutions at large, like our schooling and university systems.
3.3.3 Relationship between lines

The different levels of each line of individual development (Table 3.1) cannot be compared between each other. Each theory of development describes different phenomena of the individual and comparing the development of values (Graves (1970), Beck & Cowan (1996)) with the development of cognition (Piaget (1983), Commons & Richards (1984)) is not directly possible. However, all the lines grow in one particular direction. Wilber (2006) describes this direction as increasing levels of complexity, or increasing levels of consciousness *per se*, and maps them out on an integral psychograph (Figure 3.8). In the psychograph, each line of development is lined side by side. The vertical axis represents increasing levels of complexity or consciousness and is represented by the colours of the rainbow, starting in infrared all the way to clear light.
### 3.4 Value spheres and integral theory

"After a certain high level of technical skill is achieved, science and art tend to coalesce in esthetics, plasticity, and form. The greatest scientists are always artists as well" Albert Einstein

Reflecting on Chapter 2, where we described Habermas' three cultural value spheres, knowledge (science and technology), aesthetics (art and literature), and ethics (law and morality), we can now form an analogy with the integral theory. From an integral theory perspective, we could say that the right-hand quadrant (it/s) represents the knowledge-cultural value sphere. The upper left-hand quadrant (I) describes the aesthetics-cultural value sphere, and the lower left-hand quadrant (we) represents the ethics-cultural value sphere. By looking at the cultural value spheres from this perspective and drawing from what we discussed in Chapter 2, we can see that today's dominant paradigm keeps us focused only
on the right-hand side of the quadrant. Modernity has allowed great expanses and development of the right-hand quadrant, but unfortunately, the left-hand side, with its individual and collective aspects, has been greatly ignored. The left hand side represents our individual and society's values, beliefs and worldviews. As Meining (1979) said: 'Environment sustains us as creatures, landscapes display us as cultures', which hints at the need to look at our cultural and individual values when trying to address many of the environmental problems we are facing. A balance of the quadrants represents a balance of the cultural values spheres. Development in the external world has to be accompanied by development in the internal world, both in the individuals and society.

A person with an orange mindset will probably be convinced that through better management, control, and technological improvements, societies will reach their crest. This mindset reflects the cusp of differentiation between the three value spheres of knowledge, aesthetics and ethics. Not only are the three value spheres totally differentiated in an orange mindset, the value sphere of knowledge and understanding of the external world overrides the more internal value spheres of aesthetics and ethics. To move forward, we need to allow the three value spheres to start playing a balanced role in society and in our inquires into the nature of phenomena such as sustainability. Maybe someday we will realize, as Einstein hints at, that it is time to start integrating between the three cultural value spheres.

3.5 Final remarks

The idea that an individual develops in a stage-like structure has being criticized by many (Eder, 1998; Lourenço & Machado, 1996; McCarthy, 1982; Strydom, 1992). From Piaget's (1983) original thesis to Wilber's (1996b) work, all give place to questioning the stage-like or spiral path-like nature of human development. Are we fixed to a unidirectional way of developing? Some authors agree with Jean Piaget that development proceeds from a linear succession of specific stages (Commons et al., 1984).

However, other authors (Ford & Lerner, 1992) deny the existence of any stage at all. Another view is emerging from the combination of complexity theory and developmental psychology, as illustrated by "Thelen and Smith (1998) that human development is like a mountain stream that 'shows shape and form and dynamic changes over time' (p.587). In this conceptualization, human development is an ecological system consisting of many different subsystems. Some will oscillate, others reach stable asymptotes, and other appear to jump about randomly, but are deterministically chaotic (van Geert, 1991, 1993, 1994)" (Stevens-Long & Michaud, 2003). Adopting a similar view, Wilber often stresses that a person never only experiences one stage of development but many at the same time, however the "center of gravity" of a person is associated with one stage in particular (Wilber, 1997).

It is beyond the objective of this thesis to argue for or against any of these perspectives on adult development. We find that the theories we have presented so far are a useful and vivid description of the different mindsets and worldviews, and what the values, motivations, and dominant way of thinking are for each of these mindsets. We do believe and propose in this thesis that we have the potential to develop through time. Just as a child continually develops to an adolescent and then to an adult, so does
an adult have the potential to keep on developing. Whether or not an adults development is fostered depends on both the individual and society. For the purpose of this thesis the question of whether the development of an adult proceeds in a stage like fashion or in an emergent unpredictable manner is not of prime concern. Though, if the theories of development have some truth in them, they can give us an incredible map to aid us in the quest of developing our whole human potential. Throughout the thesis we will use the terms mindset, worldview, developmental stage, and existential levels all interchangeably to refer to the same concept of different views, understandings, beliefs, and value that shape how a person constructs reality.
I can give you nothing that has not already its origins within yourself

I can throw open no picture gallery but your own

I can help make your own world visible— that is all.

Hermann Hesse
4 Shifting our views on sustainability

This chapter will begin by briefly reviewing the main literature on the topic of sustainability. We will broaden the definition of sustainability by bringing in some insights from Chapters 2 and 3. The linkages between different mindsets and sustainability will be explored and we will present our ideas related to culture shifts that reflects what we envision as the most effective long-term way to address sustainability. The concept of culture shift also leads to the next two chapters, where we dig a bit deeper into how this might be done. In this chapter we will also discuss issues of environmental behaviour and approaches to influencing and changing behaviour. The last section of the chapter will address three possible forms of management and how they can facilitate or inhibit sustainability.

4.1 The roots of sustainability

Rachel Carson’s best-seller book *Silent Spring*, published in 1962, can be credited as one of the first books that helped launch the environmentalism movement in the West. As a result, the awareness of human impacts on the environment kept mounting and in 1972 the United Nations Conference on the Human Environment was held in Stockholm, Sweden. This was the first international gathering that attempted to find links between environmental concerns and economic issues. A result of the conference was the establishment of the United Nations Environment Programme (UNEP). At the same time, a number of books, such as *Limits to Growth* (Meadows et al., 1972) commissioned by the Club of Rome, *How to Save the World* (Allen, 1980), and *Building a Sustainable Society* (L. Brown, 1981) gave sustainability wider public attention.

In 1983, the United Nations created The World Commission on the Environment and Development (WCED) headed by Gro Harlem Brundtland, publisher of the 1987 Brundtland Report titled *Our Common Future*. This report gave birth to our current notion of sustainability, which can be summarized by the well known phrase of the report defining sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (1987). The report articulated the three key aspects that we currently understand as being fundamental for sustainability: environmental protection, economic growth and social equity.

Starting in 1989, the United Nations began drafting what is today known as Agenda 21. The report was finished and subsequently voted on in the 1992 United Nations Conference on Environment and Development (UNCED) that took place in Rio de Janeiro, Brazil. This conference is commonly known as the Earth Summit and was attended by 172 governments, and thousands of international organizations, nongovernmental organizations and world media. Agenda 21 is a comprehensive plan of action which proposes a path towards a sustainable future. Its mandate is to be implemented globally, nationally and locally by government organizations, business groups, and nongovernmental agencies. The Earth Summit also generated the: Rio Declaration on Environment and Development; Convention on Biological Diversity; Forest Principles; and the Framework Convention on Climate Change. The Commission on
Sustainable Development (CSD) was created in December 1992 to ensure effective follow-up of UNCED, to monitor and report on implementation of the agreements at the local, national, regional and international levels. The full implementation of Agenda 21, the Programme for Further Implementation of Agenda 21 and the Commitments to the Rio principles, were reaffirmed at the World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa in 2002.

Sustainability is a work in progress, since the Brundtland report was published 20 years ago, a great variety of initiatives, studies, and disciplines regarding sustainability have appeared, some have fade way and some have become stronger. In the next section we will introduce one area of study that continues to grow and we believe has greatly contributed to our understanding of what sustainability means and will continue to do so. However, we will also point out some of its limitations to addressing sustainability problems and we will outline what we believe is needed to complement this area of study to truly address sustainability dilemmas.

4.2 Sustainability as a complex phenomena

Sustainability and sustainable development are generally understood today as practices that seek to balance the social, economic and ecological dimension of a society in such a manner that the needs of today’s citizens are satisfied in a way that does not deplete the possibility of satisfying the needs of tomorrow’s citizens. If we draw on the quadrants analysis from the previous chapter, we can observe that this definition mainly focuses on achieving balance in the lower right quadrant. There is a growing sense that the ecological system is being depleted past a point where it can maintain a healthy balance between the other two systems. The focus of sustainability as it is mainly understood today is on achieving a healthy balance between the interacting systems at a number of scales, such as a city, a region, a nation, or the world as a whole.

Given this definition of sustainability, it is of no surprise that the focus of study has been on trying to understand each system and, in some aspects the interrelationships between them, at various scales. For example, understanding the interrelationship between society and environment focuses on analysing the benefits that the environment provides us, known as environmental services. The analysis of the interrelationship between environment and economy seeks to quantify the amount and availability of the environmental services, in such a way that they are priced and the relationship between the two systems can become stronger and more transparent. In another example, we can look at the field of energy studies, which spans interests from energy use (homes, cars, etc) to energy production (coal, solar, etc). The main objective of this field of study is to design systems that lessen the impact that the societal system has on the environmental system, while keeping a healthy balance with the economic system.

Understanding the connections and the intersections between the three systems has left many overwhelmed by the size and complexity of the issue. This has led to the inclusion of complexity science to the field of sustainability. Complexity science or complex adaptive systems is a term that describes a
number of fields (system dynamics, soft system analysis, critical systems inquiry, integrated assessment, chaordic organizations, panarchy, etc.), which embrace the complexity and uncertainty ingrained in certain systems and have developed different theories or frameworks to address and/or better understand these systems. Complexity science is based on chaos theory and von Bertalanffy's (1969) general systems theory, which describes the behaviour of certain systems as nonlinear, hierarchical, self-organizing, dynamically stable, with positive and negative feedback loops, and possessing multiple attractors. The main idea is that a complete understanding of the system is not possible, nor is the ability to predict the future, given that surprises are the norm. A good example of a complex system is the weather, where it does not matter how much information or computational power we have forecasting or predicting the weather more than 5 or 10 days in advance is almost impossible. In this example, we are only trying to understand one system, the environment, and not the interaction with the other two, as that would add another layer of complexity. Hence, the idea that decision makers can carefully manage the dynamics between the societal, economic and environmental systems is being challenged.

In the next subsections, we will briefly describe three of the most distinguished academic fields that use complexity science to address sustainability issues. These fields are system dynamics and systems thinking, integrated assessment, and panarchy theory. All of these fields have contributed to a more integrated, interdependent and holistic understanding of what sustainability means, as well as indicating how to move closer to it.

4.2.1 System dynamics and systems thinking

System dynamics was founded in the late 1950s by Jay Forrester, MIT Sloan School of Management. Forrester began by using advances in the data processing industry, military research and information-feedback systems and applied them to management concepts in business (Forrester, 1958). Forrester argued for the use of simulations as a method for better understanding the structure of a system, in contrast to just looking at the individual components that make up the system. He argued that many business systems are circular, interlocking and with time-delayed relationship among its components which require simulations to better understand them. In the early 1970s, Forrester (1971), was commissioned by the Club of Rome to created a global socio-economic simulation that was later improved by Meadows et al. (1972) and led to the book Limits to Growth, mentioned earlier.

Today, there are many software programs (Stella, iThink, Vensim, Consideo, AnyLogic, Simile, Powersim, and more) that easily allow a user to create models to simulate the functioning of a system. Stella was one of the first software programs in the mid 1980s to use object-orientated modelling to facilitate the creation of dynamic models. Barry Richmond (1994), the creator of Stella, contrasts the difference between systems thinking and system dynamics. Richmond emphasises that at its core, system dynamics is not about the creation of models or simulation, but about a new way of thinking and viewing the world. Richmond defines systems thinking as "the art and science of making reliable inferences about behaviour by developing an increasingly deep understanding of underlying structure"
On the other hand, Forester states that systems thinking will get you "less than 5 percent of the way towards a genuine understanding of systems. The other 95 percent lies in the rigorous System Dynamics-driven structuring of models and in the simulations based on these models" (Keough & Doman, 1992; cited in Richmond, 1994). Therefore, system dynamics, as outlined by Forrester, has an emphasis on constructing formal models while systems thinking, as outlined by Richmond, has an emphasis on a thinking skill that has to be fostered. Richmond terms this as 'operational thinking', which basically is creating models, using stock and flows, of a problem without ever getting into the simulation part of them.

Focusing on sustainability, system dynamics and systems thinking help shift away from the linear cause and effect mindset of analysing and understanding a complex problem and towards one looking at the interaction of the parts. Once we start understanding how the different parts relate to each other we can analyze what are the best places to intervene in the system to create the changes that we want.

Meadows' (1997) outlines nine possible places for such interventions, where number nine is the least influential intervention for creating change and number one the most:

8. Material stocks and flows.
7. Regulating negative feedback loops.
6. Driving positive feedback loops.
5. Information flows.
4. The rules of the system (incentives, punishment, constraints).
3. The power of self-organization.
2. The goals of the system.
1. The mindset or paradigm out of which the goals, rules, feedback structure arise.

Meadows gives a few examples of what she means by 'numbers': "The amount of land we set aside for conservation. The minimum wage. How much we spend on AIDS research or Stealth bombers... Numbers are last on my list of leverage points. Diddling with details, arranging the deck chairs on the Titanic. Probably ninety-five percent of our attention goes to numbers, but there's not a lot of power in them". This is an important point that Meadows makes: in a complex system focusing on the 'numbers' as a place for intervention tends to be the least influential in creating widespread change in the system. However, most of our attention goes into diddling with these details. We can observe from the list that the most powerful point to create change is by addressing the mindset or paradigm of the individual, group, or society from where the structure arose. We will return and develop this important point later in the chapter.

System dynamics and systems thinking have influenced many fields that are relevant to sustainability. For example, Peter Senge's (1990) book *The Fifth Discipline* has greatly influenced the field of organizational development, which seeks to understand and improve individual and organizational behaviour. One of its three core pillars for developing learning organizations is understanding complexity by utilizing systems thinking. *The Natural Step* (2000) is another framework that tackles complexity with systems thinking and it is a methodology that is used for organizational planning. The framework mixes
strategic management tools, such as backcasting, with systems thinking to find common ground in the sustainability planning of an organization.

4.2.2 Integrated Assessment

Integrated Assessment is a new field of study that seeks to combine different strands of knowledge to better understand and more accurately represent real world problems. The field is focused on influencing policy and therefore it works closely with stakeholders and decision-makers in an interdisciplinary manner to analyze these complex problems. Some of the issues the field is trying to tackle are global climate change, land use and land cover change, water use, transportation, and health care (Dowlatabadi et al., 2000). The use of participatory methods for engaging with the stakeholders is common in Integrated Assessments and therefore sometimes the field is referred to as Participatory Integrated Assessments (PIA).

Integrated assessment draws from systems dynamics and utilizes a series of models to examine trade-offs involved in sustainable use of a resource or a sustainable development initiative. By using system dynamics, the complex links among the environment, economy and society at various levels and over the short and long term can be explored and assessed. What distinguishes integrated assessment from system dynamics is the explicit motive to influence policy. However, at its core, integrated assessment encompasses a number of models that can be summarized by the following tasks and tools:

1. analyzes the dynamics of sustainable development, using Integrated Assessment models;
2. forecasts (un)sustainable trends and developments, using Integrated Assessment-models and scenarios of the future;
3. assesses the sustainability impact of policy options, using model-based cost-benefit and cost-effectiveness analyses;
4. monitors the long-term process of sustainable development, using model based indicators;
5. designs the process underlying Integrated Sustainability Assessment, using participatory methods. (Rotmans, 2006)

Francis (2006) points out that although the models are created to help the general public, decision-makers and/or other stakeholders to understand better the complex problems, the models themselves can easily become the primary focus of interest or criticism instead of the problem being addressed. This is a pitfall that the more sophisticated models tend to fall into, where the models start taking a life of their own.

This brings us back to Forrester and Richmond’s contrasts between systems thinking and system dynamics that were discussed in the previous subsection. Again, system dynamics, as outlined by Forrester, has an emphasis on constructing formal models, while systems thinking, as outlined by Richmond, has an emphasis on a thinking skill that has to be fostered. The field of Integrated Assessments seems to have followed the system dynamics road of constructing formal models and less
emphasis has been placed on the notion that Richmond emphasises about creating a new way of thinking and viewing the world.

4.2.3 Panarchy

Panarchy theory (Gunderson & Holling, 2002; Holling, 2001) is a heuristic explanatory model that views the development of human ecosystems as holistic, self-organizing, complex and adaptive systems. The central notion is that human and natural systems go through cycles of creative destruction and renewal. Panarchy theory views the complex interactions between humans and their environment as adaptive responses that result in self-organized, hierarchical systems. The theory is an extension of hierarchy theory (Pattee, 1973), which includes cycles of adaptation in ecological and cultural processes. It is different from traditional hierarchical ones in two manners: firstly, the importance of the adaptive cycle in each level of the hierarchy (Figure 4.1) and secondly, that each level is connected to its adjacent levels. Figure 4.2 is a representation of an adaptive cycle displaying two of its three properties: wealth or potential, controllability or connectedness, and adaptive capacity or resilience. The cycle alternates between periods of slow accumulation and transformation of resources (from exploitation to conservation, or r to K), with periods that create opportunities for innovation (from release to reorganization, or Ω to α). The speed of the cycle from r to K is slow, as depicted by the short, closely spaced arrows, in contrast to the fast changing Ω to α cycle.

These cycles are part of a nested set of adaptive cycles, where the slower and larger levels set the conditions in which faster and smaller ones operate. Therefore, the top levels conserve and stabilize the system while the lower ones generate and test innovations. These innovations in the lower adaptive cycles can create a critical change in higher levels of the panarchy; this is known as a revolt. At the same time, after a change has happened in a lower cycle, the more stable top level can facilitate renewal back into the previous state by drawing on the potential that has been accumulated and stored in the larger, slower cycle (Figure 4.3Error! Reference source not found.). An example of a full social cycle in the
Panarchy is the former Soviet Union. In the early years (r to K), social and human capital accumulated and gave growth to the Soviet Union (post WWI). As it progressed to the K phase the system became increasingly rigid and it led to a sudden collapse (Ω). The phase from Ω to α allowed the country to re-organize itself and for a novel recombination to emerge (democracy).

Figure 4.4 depicts a hierarchy of a social system, built from numbers of individuals involved, as well as along a temporal scale. We can see that a group of individuals can change ideas and make decisions very quickly, in even less than a month. However, if we want to see change in the constitution or the culture, it is going to take a much longer time. The authors talk of the possibility of extreme events, where maybe an idea born in an individual can rapidly change the constitution or culture. These extreme events are rare, like an alignment of the stars; they happen, but maybe not in our lifetime.

Figure 4.5 displays different levels of people's emergent structures (Archer, 1995, 2000) through the viewpoint of a panarchy. The basic assumption of the panarchy theory is that within the chaos and complexity there is an underlying order or rules as to how the systems work and interact; the main recommendation is to improve the adaptive management capacities of a society. Adaptive management refers to a style of action inquiry that is based on learning and adjusting as we go. Where thinking is not separate from doing, where doing is emphasized as an opportunity for thinking, reflecting and learning.
Figure 4.5 - Separate adaptive cycles are used to depict phases of issues as interpreted in four systems: political, organizational, interorganizational and individual. Source: Gunderson (2002)

Panarchy theory differentiates between ecological and human systems, stating that there are at least three features that are unique to human systems (Holling, 2001). These three features are technology, communication and foresight. Technology amplifies the actions of humans in a range of scales, reaching a point where it intersects and can dominate other panarchies of nature. Communication allows for quick ways to transfer, test and store ideas or experience, which can then become incorporated into slower parts of the panarchy, thus transforming its functioning. Human foresight has the potential to mitigate the boom and bust character of some cycles and is reflected by three different kinds of learning: (a) incremental (r to K, Figure 4.2), (b) lurching, (Ω to α, Figure 4.2), and (c) transforming. These features are of importance to the concept of resilience, which is the capacity to buffer change, learn and develop (Folke et al., 2002). Folke suggests that two useful tools for understanding how to sustain and enhance adaptive capacity are structure scenarios and active adaptive management.

These last ideas of panarchy theory leave the doors open to possibility for change and renewal through the untapped human potential. However, panarchy theory does not give insight into the interior realm of human potential, nor do system dynamics, systems thinking or integrated assessments. What characteristics within human systems exist that allow for renewal and transformation to occur? Panarchy talks about communication and its ability to transform culture, beliefs and politics; transform to what? Do we have some type of guidelines for how and in what general direction we want transformation to occur? What happens in the structured scenario process or in active adaptive management that helps build resilience? What types of interactions, development, shifts and transformations are we looking for?

We believe that the application of complexity science to issues surrounding sustainability is like lighting a torch in the darkness of the cave. Shedding light were no other methodology has and promoting a new way of looking at and understanding contemporary problems. However, we propose that we must take an additional step to better understand and address these problems. We need to step out of the cave by
realizing how our personal mindsets and societal paradigms keep us locked in our current situation. The remainder of this chapter outlines and elucidates how different mindsets and paradigms that we possess as individuals and society's give shape to our understanding of sustainability, as well as to our behaviours. In the next chapter, we expand on these topics and argue that to correctly address contemporary problems we need to foster the ability to see beyond our current mindsets, developing collective skills of awareness and dialogue that would help us break free from our old habits and ways of being.

4.3 Broadening sustainability

Before we begin answering the questions outlined above, we need to look at how we define and understand what sustainability is from a more integral perspective. Using the integral theory as a guiding framework to investigate sustainability, there are a number of questions that arise. What sustainability is and what needs to be done to achieve it will yield different answers depending on what lens or quadrant we are focusing on. The different methodologies or lines of inquiry highlighted in the previous chapter will elicit a different perspective on the issue. It is important to point this out because, often, insights that stem from different forms of knowing are ignored or looked down on because they are not in line with the current paradigm or status quo of what defines sustainability.

It is important to broaden our perspective because our current understanding of sustainability is too narrow. As we pointed out in the previous section, most of the work done in sustainability tries to figure out the function of different systems and to some degree the interactions between them. However, this is only one part of the puzzle and represents a focus on the lower right quadrant. Different sustainability disciplines, initiatives and interventions will focus on one or more quadrants. However, most emphasis on achieving sustainability is from a systems perspective, proposing to change the exterior structures and processes of the society and hence steer it on a more ecologically and socially benign path. Brown (2006a) analyzed seven sustainability books from a four-quadrant perspective and found that, on average, 79% (a maximum of 94% to a minimum of 63%) of the books focused their attention on the lower right quadrant, the systems. We could argue that the emphasis on the lower right quadrant in current western culture is due to a long history of western philosophy starting in ancient Greece through to the European Age of Enlightenment and the Industrial Revolution, as described in Chapter 2. What is important for us is to realize is how single-minded our society is when addressing sustainability related issues.

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Brown found that, on average, the other 21% of books were distributed as follows: 11% addressing lower left quadrant aspects and 10% divide evenly between left and right upper quadrants. On the other hand, Avastone Consulting (2006), while doing a study regarding business sustainability\(^\text{21}\), found that 60% of the success factors regarding the sustainability of organizations were attributed to the people dimensions (I, we, and it quadrants) and 40% attributed to the systems dimensions (its quadrant) (Figure 4.6). They point out that the overall success of business sustainability is built upon a unique set of levers across all the quadrants, highlighting the importance of people and noting that systems are necessary, but not sufficient to move along the sustainability path.

\[\text{Figure 4.6 - Quadrants view of sustainability} \]
\[\text{Source: Avastone Consulting (Avastone Consulting, 2006)}\]

Looking at these two studies, we can draw some interesting insights, primarily that the mass-media literature that Brown analyzed underestimates the people dimension in sustainability. We find that business organizations point out that in order to make sustainability work you need to put most of the emphasis on the people dimensions (60% of the time), versus what the leading books on sustainability are calling for, which is a change in structures (79% of the time). An integral approach does not mean that the sustainability initiative has to be balanced throughout the quadrants; rather it aids us in finding where the best leverage points are for influencing change. The question to ask would be, is better understanding the systems and finding better processes and structure (‘its’) more important than the individuals and societal mindsets, assumptions, values and motivations (‘I’ and ‘we’) regarding sustainability?

\(^{21}\) The overall intent of the study was “Deepen the look at realities of progress in business sustainability, Explore the interplay of technical and human dimensions at work, Identify key factors for success and attention going forward”. The study involved a “diverse set of global companies, sized from $1B to $100+B; range of industries; legacy and younger organizational histories” (2006, p.2).
One can easily argue that Brown's book choices were biased and that he deliberately chose books that only focus on the systems perspective of sustainability. However, how many books advertised as being about sustainability fall out of this trend? To be able to find concepts of sustainability that touch on the other quadrants, one must look into books that mainly advertise themselves in the scope of education, psychology, sociology or anthropology and have an environmental slant. One could argue that these books are perceived as the alternative view of addressing sustainability and are not within the current trend, tending to be classified as the soft, indirect and questionable way of achieving sustainability. In all likelihood it will behove us to better understand the other perspectives of sustainability and find synergies that exist between the quadrants in order to move more effectively through the path of sustainability.

4.3.1 Multiple perspectives of Sustainability

An integral inquiry would inform us that sustainability depends on and can be addressed from multiple perspectives. We can focus on an individual's mindset, assumptions, commitments and motivations (I); and/or and individuals behaviour, capacities and skills, as well as the physical structures (it); and/or the culture with its shared values and meaning making (we); and/or the supporting systems structures and processes (its) (Figure 4.6). An integral approach recommends that all aspects are acknowledged and possibly integrated into a sustainability initiative (Esbjörn-Hargens & Brown, 2004).

Expanding on the upper left quadrant, we could say that sustainability is defined differently in terms of an individual's personal mindsets, motivations and beliefs. How an individual makes sense of the world and what is of importance and value will likely influence the perspective taken by the individual. In fact, emotions, values and beliefs have the power to not only colour our perceptions, but to make us blind to that which we would otherwise see clearly. In the next sections, we will see how sustainability is an emerging concept, motivating people for very different and diverse reasons as well as meaning different things to different people. From an 'I' perspective, we must understand that sustainability is not a fixed concept; it is values based. Sustainability means something different for every individual.

From an 'it' perspective, sustainability can be gauged by an individual's behaviour as well as their skills and knowledge at addressing sustainability problems. The realm of environmental behaviour has been studied for some time and, not surprisingly, it links to the other quadrants. The behaviour of an individual is dictated by specifics and interrelations of the quadrants. In the next sections, we will explore this topic further. The upper right quadrant also addresses the physical aspects of sustainability, such as pollution and toxicity in the air and rivers, city density and population growth indicators; all the quantitative measurements of traditional science. The tendency toward the exterior, the right hand side of the quadrant, is apparent in the expression of criterion and indicators (C&I) systems for monitoring sustainable management where individual and cultural C&I are notoriously underdeveloped in favour of more economic or ecological indicators (external).
As a culture, we frame reality in a certain way. This defines the outlook and expectations that individuals within the culture possess. Once we are born, our conditioning begins. We see and understand things as we are taught to see and understand them. We do what others do. Regarding sustainability, the predominant worldview of the given culture will greatly influence how individuals see and value nature, what environmental ethics they develop, as well as the community process that they use to co-create meaning. These represent the collective interior dynamics that shape sustainability.

Finally, the collective exterior systems, that have developed and emerge through time frame how things function in a society. We briefly described this area of study in the previous section. Some examples of sustainability initiatives in this quadrant are green energy, carbon credits and taxes, efforts to restructure the economy, environmental management systems, institutional and legal changes to support sustainability and so on.

Using the knowledge and insights that each quadrant has to offer would greatly improve a sustainability initiative, allowing for a more complete understanding of the issue. Furthermore, we suggest that the interconnections or the relationships between the quadrants would add another layer of understanding to the issue. What are the dynamics between them and how do they affect each other? Throughout this chapter, we will highlight some of these dynamics and we will start by looking at the role that mindsets or worldviews have on sustainability.

### 4.4 Consciousness (I) and sustainability

In this section we will explore how different mindsets ('I' quadrant) affect our understanding of sustainability. We will first outline the notion of fundamental human needs as developed by Max-Neef (1991, 1989) and how different mindsets interpret these basic needs. This is important from a sustainability point of view, since the motivation that drives our everyday actions stems from a necessity to satisfy a given need. Understanding the needs and different ways of satisfying them can help us shed some light on the fundamental drivers of our sustainable or unsustainable actions. We will then look more closely at the relationship between a given worldview and how sustainability is understood differently for each one. A number of sustainability issues and their relationship to worldviews will be presented, ranging from: what is to be sustained; how is sustainability achieved; generational time frame for sustainability; and others. We will end this section with a discussion of the culture shift that we envision as a manner of moving towards a more sustainable society.

#### 4.4.1 Human development and fundamental human needs

The topic of human development and needs within a sustainability context is extensively explored in the international development literature (i.e. World Development Journal). The idea of fostering human development is normally understood as what is needed for “human flourishing in its fullest sense—in matters public and private, economic and social and political and spiritual” (Alkire, 2002). Alkire builds on
Sen’s (1990) capability approach and sees development “not defined as an increase in GNP per capita, or in consumption, health, and education measures alone, but as an expansion of capability. Capability refers to a person’s or group’s freedom to promote or achieve valuable functionings” (Alkire, 2002). From this definition of human development, we can see that the concept is not only limited to the international development initiatives, but can be used in any concept that aims at understanding human valuable functionings. Alkire surveyed a major list of dimensions of human development that have been published in poverty studies, cross-cultural psychology, moral philosophy, quality of life indicators, participatory development and basic needs. From this list, we found Max-Neef’s (1991, 1989) description of fundamental human needs was the more illuminating framework for the purpose of understanding behaviour in general.

Max-Neef theorizes that humans have a few, finite and classifiable number of fundamental human needs. These needs have not changed throughout history and are the same for all cultures. All are present at the same time, in contrast to Maslow’s theory were one need emerges once a lower one is satisfied. What marks the difference between cultures and history is how these fundamental human needs get satisfied. We will expand on the concept of satisfiers in a moment, but first, the nine fundamental human needs, as described by Max-Neef, are: subsistence, protection, affection, understanding, participation idleness, creation, identity and freedom.

We can theorize that these fundamental human needs will be influenced by the mindset or worldview of the individual. While all individuals have the same fundamental human needs through cultures and history, the focus, driver or motivation to meet them will change at each level of development (Table 4.1). Somebody centered in a red mindset (as described in last chapter and in more detail in Table 4.1) will probably be more concerned with a control expression of these needs, while someone stemming out of an orange mindset will probably focus on the individual’s expression of these needs.

Expanding on the idea of needs and satisfiers, Max-Neef identifies five types of satisfiers used to meet our fundamental human needs.

"Destroyers are those satisfiers that are of a paradoxical nature, while their initial objective was to satisfy a given need, not only do they annihilate the possibility of its satisfaction over time, but they also impair the adequate satisfaction of other needs. The special attribute of these destroyers is that they are invariably imposed on people. Pseudo-Satisfiers are those that generate a false sense of satisfaction of a given need. Their main attribute is that they are generally induced through propaganda, advertising or other means of persuasion. Inhibiting Satisfiers are those that generally over satisfy a given need therefore seriously curtailing the possibility of satisfying other needs. With some exceptions, they share the attribute of originating in deep-rooted customs, habits and rituals. Singular Satisfiers are those that satisfy one particular need. They are characteristic of plans and programs of assistance, cooperation and development. These satisfiers are similar in that they are institutionalized; that is, their origins are in the institutions of the state, of the private sector or of voluntary or non-governmental sector. Synergic Satisfiers are those that satisfy a given need, simultaneously stimulating and contributing to the fulfillment of other needs. They share the attribute of being anti-
authoritarian in the sense that they constitute a reversal of predominant values, such as competition and coerciveness” (1991).

As an example of the different satisfiers, we could compare the difference between indirect and direct democracy. The first one seems to satisfy the need for participation, though in many ways it annihilates it by leaving the citizens out of voice and control over the decision taken by the government. This is in contrast to direct democracy, which not only satisfies the need for participation, but also stimulates the needs of protection, understanding, identity and freedom (Prugh et al., 2000). Indirect democracy can be seen as a singular-satisfier or in some countries as a pseudo-satisfier, whereas direct democracy is a synergistic satisfier (Max-Neef, 1991).

If we now focus on sustainability, we would argue that today’s western mindset, or driver, to meet these fundamental human needs is centered at an orange developmental level. For example, the constant urge for ‘productivity’ as it is actualized by an orange mindset, overemphasizes the need for subsistence and inhibits other needs from being actualized, not only from orange individuals, but from all individuals living under the same system, no matter what worldview they have. Therefore, the subsistence need is interpreted through an orange lens and is coupled with an inhibiting satisfier, where the never-ending production of goods and their acquisition have become ends in themselves, creating a dependence and obsession on a system that only satisfies and over satisfies one need and prevents the others from being actualized.

If we use our imagination, what would it look like if a society would be centered at a teal or turquoise developmental level? We would argue that as the levels of consciousness of an individual increase the needs in themselves become less powerful over the ego (the individual). There is more distance between the need and the ego, which allows an individual to be more aware of the underlying needs and their influence on the self. This awareness brings increasing levels of freedom to the individual to make a conscious decision if to act or not upon the need that arises. This would reflect on individuals that are more flexible on their decisions and actions, and who are more aware of the underlying values and beliefs that drive their actions.

Going back to the concept of satisfiers, Max-Neef expands the notion of what it means to be poor. “The traditional concept of poverty is limited and restricted, since it refers exclusively to the predicaments of people who may be classified below a certain income threshold. This concept is strictly economistic. It is suggested here that we should speak not of poverty but of poverties. In fact, any fundamental human need that is not adequately satisfied reveals a human poverty” (1991). Here we can see that poverty, as it is broadly defined, exists at many levels in society and at different scales, and is not necessarily more predominant in the Global South than the North. The recent development of a well-being of nations index moves more along these lines, in comparison to the gross domestic product (GDP) index that focuses exclusively on the economic capital production (an orange’s view of satisfying the subsistence need).
Linking back to sustainability we can see how each fundamental human need can be a driver or a motive behind a behaviour. The want to satisfy a given need will result in some sort of action. What is important to understand is the idea of multiple satisfiers to a given need. Some satisfiers will be more sustainable than others are, first, by their ability to healthy satisfy a need (only the singular and synergic satisfiers), and secondly, by their ability to sustain it over time without eroding away other satisfiers. So, from the list of healthy satisfiers, we would distinguish between the ones that can erode or undermine other satisfiers over time (unsustainable in the long term) and the ones that do not (sustainable).

Another point to make is that a healthy satisfier for one given mindset will not necessarily satisfy it for another mindset. For example, subsistence for someone with a green mindset is satisfied with a minimalist living style allowing for time to be dedicated to other activities such as affection, participation or leisure. Someone at amber will satisfy their need of existence by finding meaning and purpose to their lives. While someone with an orange mindset will feel incredibly insecure with a minimalist living style or with any meaning and purpose in life that do not lead to an acquisition of material wealth.

Understanding fundamental human needs and the different satisfiers adds one more piece to the puzzle of the interior human realm that we started discussing at the beginning of this chapter. As complexity theory tries to highlight the basic mechanisms that influence a socio-ecological system, what we have been describing in this section tries to elucidate some basic aspects of the interior human realm and how these aspects influence our daily actions. The next subsection expands on this idea by depicting how each mindset sees and understands sustainability.
Table 4.1 - Fundamental human needs and how they are interpreted at different mindsets

<table>
<thead>
<tr>
<th>Needs/Mindsets</th>
<th>Subsistence</th>
<th>Protection</th>
<th>Affection</th>
<th>Understanding</th>
<th>Participation</th>
<th>Leisure</th>
<th>Creation</th>
<th>Identity</th>
<th>Freedom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turquoise</td>
<td>Resolve inner conflict regarding existential paradoxes</td>
<td>Focus on the good of all living entities as integrated systems</td>
<td>Become witnesses of their feelings and emotions without trying to control them</td>
<td>Uses intuition and instinct as well as mind and knowledge</td>
<td>Participate to co-create meaning and foster synergy</td>
<td>As an experience of simply being</td>
<td>Expanded use of human brain/mind tools and competencies</td>
<td>Self is part of larger, conscious, spiritual whole that also serves self</td>
<td>Trying to achieve freedom from the ego's constant efforts at control and self-affirmation</td>
</tr>
<tr>
<td>Teal</td>
<td>Continuing to develop along a natural pathway is more highly valued than striving to have or do</td>
<td>Senses that successful human living has put everything in jeopardy</td>
<td>Measures self against self rather than others</td>
<td>Seeks to integrate multiple perspectives.</td>
<td>Participate as a tool for growth and as a way to help others grow</td>
<td>Seeks after a variety of interests whether or not it is trendy, popular, or valued by others</td>
<td>Focus on functionality, competence, flexibility and spontaneity</td>
<td>Thinks and acts from inner-directed core</td>
<td>Discovering personal freedom without harm to others or excesses of self-interest</td>
</tr>
<tr>
<td>Green</td>
<td>Wants enough. Minimalist living</td>
<td>Share societies resources among all</td>
<td>Being liked is more important than winning or material gain</td>
<td>Searching for what it is to be human</td>
<td>Participate to promote a sense of community and unity.</td>
<td>Seeks an inner life, a connection body/mind, an awakening</td>
<td>More holistic, organismic focus where feelings and context are more important than rational analysis</td>
<td>Communitarian, egalitarian, consensual</td>
<td>Refresh spirituality and bring harmony</td>
</tr>
<tr>
<td>Needs/Mindsets</td>
<td>Subsistence</td>
<td>Protection</td>
<td>Affection</td>
<td>Understanding</td>
<td>Participation</td>
<td>Leisure</td>
<td>Creation</td>
<td>Identity</td>
<td>Freedom</td>
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<tr>
<td>Orange</td>
<td>Grow, improve and progress to be the best; also materialistic and acquisitive</td>
<td>Sorts resources vertically according to socio-economics and their status</td>
<td>Joins a group in order to accomplish certain goals</td>
<td>Searching for best solutions</td>
<td>Participates to win, enjoys competition, and wants to show status/success</td>
<td>Seek out the good life, prosperous and exuberant</td>
<td>Centered around science, technology and efficiency</td>
<td>Autonomy, independent, control, Success</td>
<td>Liberty, rights and personal freedom</td>
</tr>
<tr>
<td>Amber</td>
<td>Find meaning and purpose in living</td>
<td>Sort resources into groups by ethnicity, age, gender, language, religion, etc</td>
<td>Sacrifice-self for the common good</td>
<td>Order and regimentation, everything in its proper place</td>
<td>Participate to feel part of the group and create a sense of identity</td>
<td>Pleasure in life comes from serving the right cause or belief</td>
<td>Likes creating order and tidiness. Doing what is right</td>
<td>Individual identifies with the system or outside authority</td>
<td>Is experienced when chaos and turbulence are stabilized and everything is running in an orderly fashion</td>
</tr>
<tr>
<td>Red</td>
<td>Survival in the jungle. The weak will lose. It is a world of eaters and eaten</td>
<td>Sort resources to meet only their own needs and wants</td>
<td>Controlling others, being respected</td>
<td>Conquer life, immediate gratification</td>
<td>Participate to make sure they are not being left out, and that know one is taking advantage over them</td>
<td>Seeks to satisfy the bodily aspects</td>
<td>Breaks away from the system.</td>
<td>Individual is a fighter and not a coward.</td>
<td>Is experienced by getting what they want and not being controlled or constrained by anyone</td>
</tr>
</tbody>
</table>
4.4.2 Evolving views of sustainability

If we look back in time, we can see that humans have learned and adapted to their ever-changing life conditions, evolving in their way of thinking as well as creating new structures to support their growth. Graves (Beck & Cowan, 1996) describes this journey as the never-ending quest, where we are always solving a set of existential problems as new higher-order existential problems arise. This quest to create adequate responses to life conditions results in a variety of survival strategies (Marrewijk, 2003). Each strategy is normally founded on an unquestioned set of values, visions of reality and differing awareness, understanding and definitions of truth. Each value system will come up with different and probably opposing strategies of how to deal with and interpret the situation (Varey, 2004).

Over the last few decades, the sustainability of our planet and species, at least as we know it today, has been questioned. The challenge of sustainability, in all its forms, is a new life condition that has emerged. Questions like, what it is, how to address it and who is responsible do not have one clear answer. On the contrary, there is a myriad of responses to them. Varey (2004) points that:

"To begin to understand sustainability is to acknowledge one simple premise: Sustainability is not a defined technical term, but a moral concept capable of individual definition within a social and physical environment (i.e. a biopsychosocial construct). Sustainability is to be seen as a values-based term, making it an ethical construct, and not just an objective fact. It is distinct from the engineering processes, community actions or governance procedures, which are the visible indications of the application of that construct. In accepting sustainability as a values based concept like love, justice, goodness, beauty or truth - we are provided with a way through the maze enabling us to see sustainability with clarity" (p.5).

Varey's sustainability maze refers to the hundreds or thousands of paths presented to us as the way to achieve sustainability or move on the path toward sustainability. Understanding that sustainability is not a thing, but a social construct that is determined by an individual's and society's mindset, is fundamental to acquire a balcony view of the sustainability maze.

These social constructs have evolved through time and are reflected in the number of worldviews that we have been describing throughout the chapter. Unique to our modern times and important to understand is that it is probably the first time in history that so many different worldviews co-exist simultaneously in the world. Analyzing sustainability through the lenses of these multiple mindsets or worldviews can provide us with a deeper understanding of what sustainability as a whole might mean, and can help us understand why people have such different views on sustainability.

Table 4.2 lays out a comparison between the different mindsets and lists some common topics that underlie how we see and understand sustainability. From the table, we can observe how different each

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22 If the reader is familiar with Dryzek's (1997) or Colby's (1991) work they will probably appreciate many similarities on the description of various views of sustainability of these authors and the mindsets description of Table 4.2.
view of sustainability is, from what we want to sustain, to why it needs to be sustained, to how should we achieve sustainability. Is any one of these particular views right? Is there a best way for all of us to move forward and achieve sustainability?

As Albert Einstein is quoted: “No problem can be solved from the same consciousness that created it”, we would argue that to address the challenges that we are facing today we need to think differently than the mindsets that created the pressing problems of today (i.e. climate warming, loss of biodiversity, global income inequality23). The mindset that we are referring to is the orange worldview that emerged in the Enlightenment period and became widespread throughout the Global North by the 20th century. This is the mindset that has allowed incredible advances in science and human rights equality. However, while advancements have been made, numerous problems have arisen as well. The complication begins when we apply the same way of thinking and seeing the world to problems that need a completely new perspective. As Einstein suggests, our consciousness needs to expand to a new level if we want to correctly address the problems of our time.

While the specifics of what this new level is may be elusive, as discussed in chapter 3, we can look at it from both the notion that the next stage in human development is a teal and turquoise one, or that the next stage is emergent and unpredictable.

If we take the perspective from developmental psychology that mindsets follow a developmental path as successive stages along a spiral of human potential, then we could say that each of these views stems from a given level of human existence, which is an adequate response to sustainability if the present life conditions call for that given mindset. However, we argue that, today, we are still applying amber, orange and sometimes green ways of thinking (but mainly orange) to sustainability problems that need at least a teal mindset of conceptualizing reality to be able to correctly address these problems.

If the theories of developmental psychology are not correct and, actually, a new mindset with an expanded level of consciousness is something emergent that we cannot predict, then we should be pushing the boundaries of our consciousness to co-create a new understanding of what it means to be human and the relationship we have with the whole. It is evident that our current responses to our sustainability problems are not producing the changes needed.

23 We purposely left out growing population, because we do not think that this is a problem that was created by a given mindset.
### Table 4.2 - Sustainability and worldviews

<table>
<thead>
<tr>
<th>How is reality seen</th>
<th>Red</th>
<th>Amber</th>
<th>Orange</th>
<th>Green</th>
<th>Teal</th>
<th>Turquoise</th>
</tr>
</thead>
<tbody>
<tr>
<td>They see reality only from the perspective of their own needs and wants. The strongest and the bravest will succeed</td>
<td>They see reality from the perspective of a group. One needs to belong. Capable of a 2nd person's perspective to see the world.</td>
<td>They have a linear view of reality: causality is seen as linear and variables treated as independent. Can take a 3rd person perspective.</td>
<td>Reality depends on one's relative position in regard to them, that is, on one's personal perspective and the interpretation of them. Reality always depends on the position of the observer. Can take a 4th person perspective.</td>
<td>Have a general systems view of reality, that is, multiple interconnected systems of relationships and processes. 4th person perspective expanded</td>
<td>Reality is now understood as the undifferentiated phenomenological continuum or chaos, the creative ground, &quot;das All,&quot; or whatever other terms human beings have created to express this awareness of an underlying unity. 5th to nth person perspective.</td>
<td></td>
</tr>
<tr>
<td>What is to be sustained</td>
<td>Control over resources</td>
<td>Order and stability in the world</td>
<td>The quality and way of life</td>
<td>Community values and harmony between societies</td>
<td>The future of humanity</td>
<td>The future of the global biosphere</td>
</tr>
<tr>
<td>How is sustainability achieved</td>
<td>Sustainability is achieved by exerting power and controlling wrong doers.</td>
<td>Sustainability is achieved by creating laws, rules and regulations that everyone has to abide to. Form strong institutions to maintain law and order</td>
<td>Sustainability is a problem that can be fixed, through rational expert analysis and use of modern tools such as technology and market forces</td>
<td>Individuals abandon purely rational analysis in favour of a more organismic approach in which feelings and context are taken into account. To achieve sustainability we need to liberate all humans and life from greed and domination</td>
<td>Sustainability is seen as a synergy between dynamic systems that overlap in any given situation. There is a search for well balanced, functional, and win-win solutions that create value in the economic, social and ecological realms</td>
<td>Sustainability is achieved by transcending the dualistic mind.</td>
</tr>
</tbody>
</table>

24 The term perspective refers to the cognitive capacity to take an N perspective on a situation. This refers to Commons and Richards (1984) work on adult cognitive development.
<table>
<thead>
<tr>
<th>Causes of the environmental degradation (Red to Green from Clapp (2005))</th>
<th>Red</th>
<th>Amber</th>
<th>Orange</th>
<th>Green</th>
<th>Teal</th>
<th>Turquoise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human instinct to overfill ecological space, as seen by overpopulation, excessive economic growth, and over consumption.</td>
<td>Weak institutions that fail to correct environmental failures, underdevelopment, and perverse effects of state sovereignty.</td>
<td>Poverty and weak economic growth. Market failures and poor government policy (i.e. market distortions such as subsidies as well as unclear property rights) are also partly to blame.</td>
<td>Large-scale industrial life (some say global capitalism) which feed exploitation (of labour, women, indigenous peoples, the poor, and the environment) and grossly unequal patterns of consumption.</td>
<td>A combination of red, amber, orange, and green. Dependent on context.</td>
<td>The always limited and partial view and understanding of humans dualistic minds.</td>
<td></td>
</tr>
</tbody>
</table>

| The way forward | Reject industrialism (and/or capitalism) and reverse economic globalization. Restore local community autonomy and empower those whose voice have been marginalized | Harness globalization and promote strong global institutions, norms, and regimes that manage the global environment and distribute technology and funds more effectively to developing countries. | Promote growth, alleviate poverty, and enhance efficiency, best pursued with globalization. Correct market and policy failures, and use market-based incentives to encourage clean technologies. Promote voluntary corporate greening | Create a new global economy within limits to growth. Limit population growth and reduce consumption. Agree to collective coercion (e.g. some advocate world government) to control greed, exploitation, and reproduction. | Re-define growth. Build state capacity. Employ precautionary principle. Internalize the value of nonhuman life into institutions and policies. Promote other knowledge systems (e.g. indigenous). Applying appropriate expertise to introduce local improvements | Proactive policies for introducing better institutions world wide that foster individual and collective growth and transcendence |

<table>
<thead>
<tr>
<th>Generational time frame for sustainability</th>
<th>1-3 years</th>
<th>3-10 years</th>
<th>10-40 years</th>
<th>30-80 years</th>
<th>100-300 years</th>
<th>300-1000+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>The term of rule of the present leader</td>
<td>The continuation of the present government</td>
<td>The end of the fossil fuel based economy</td>
<td>The lifetime of our children</td>
<td>The emergence in inter-generational equity</td>
<td>Transition to the next planetary epoch</td>
<td></td>
</tr>
<tr>
<td>Internal drivers - motivations behind sustainable behaviour (UL)</td>
<td>Red</td>
<td>Amber</td>
<td>Orange</td>
<td>Green</td>
<td>Teal</td>
<td>Turquoise</td>
</tr>
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</tr>
<tr>
<td>Heroic actions, sustainable behaviour is seen as a bold, brave action</td>
<td>A sense of moral duty, sustainability is perceived as a duty or correct behaviour</td>
<td>As a way of achieving personal success and/or increasing the financial bottom line</td>
<td>Personal values and beliefs that social and sometimes environmental care are important</td>
<td>Same as Orange, with a higher focus on the environment and sees the inevitability of addressing environmental &amp; social issues for the long term viability of the planet and us. There is a search for survival of the human race</td>
<td>Conviction that sustainability on a worldwide scale is the only alternative, since all beings and phenomena are mutually interdependent. Each person or organization therefore has a universal responsibility towards all other beings, both in the present and of future generations</td>
<td></td>
</tr>
</tbody>
</table>

| Criteria for decision making | The impact on the decision on personal power | Should contribute to making the world more orderly, organized and well structured | Should improve efficiency and financial performance | Well being of people and planet. Should include all viewpoints, nobody should be left out. | Balance, functional, taking into account all available expertise and considerations with long term view perspectives | In line with and in favour of holistic interests for survival of life on the planet |

| Decision making process preferred | Power driven | Structured and hierarchical | Strategic and expert informed | Consensus | Deliberation | Higher awareness and intuition brought into the decision making process |

| Where does change happen from | Bottom -> Up | Top->Down | Top->Down | Bottom -> Up | Situational relativism | Both Bottom-up and Top-down approaches needed |

| Preferred role for the government | Government implementing traditional public tasks | Clear legislation and subsequent enforcement that is effective and visible (law and order). Also clear division of tasks and responsibilities | Creating and maintaining a level playing field | Creating financial stimuli to engage in sustainable initiatives | Stimulating the formation of participative sustainability discussion groups. | Stimulating a network of experts to further develop the expertise-base to implement sustainability in a most effective way |

| Ethics | Monarch rule | Common truth | Right way | Tolerance | Integrative | Universals |

|  |  |  |  |  |  |  |
Whether or not the mindset that can adequately address today’s problems is teal or one that is still emerging does not really matter. In both cases, we need to shift our worldviews. This new worldview should be flexible and have the capability to bring together multiple perspectives and values, as well as allow people to see beyond their own frame of reference and integrate with other worldviews. We must bring out and utilize what each mindset has to offer; not just one, but all of the perspectives that are currently available to us. This new mindset should be able to take a balcony perspective, seeing how the different dynamics interact and be able to align them to fit what is best for the whole.

We do not need a whole society who is at teal or beyond, but we do need to move in that direction. Ultimately, it is having leaders and systems that can manage a society in such a way that the multiple perspectives are integrated and used to their best capabilities. For example, using orange’s free market initiatives when it is adequate to do so, and not using it when it fails to address the problems we are trying to fix. Move from a position of the system above the people to one where the people are above the system, utilize the free market only when it accomplishes the task it is supposed to do and use a different system when it fails to do so. A dogmatic, single minded approach stating that the free market will solve all our problems has been blind to a reality that only an orange mindset can be blind to. Now, wanting to get rid of globalization and the free market is like throwing the baby out with the bath water. This a perspective taken by red and sometimes green mindsets who do not acknowledge the great power the free market has and that it can be used to move forward the sustainability and social justice movement.

Again, it is important to stress that each mindset is not better or worse than any other. Each mindset has some strong positive characteristics that other ones do not have. At the same time, each worldview has a limited and partial view of reality and, given the circumstance, its response to a situation will not be as appropriate as another worldview. The idea is that at each level there is a set of limiting values that block the path to sustainability. At the same time, each level has strength that other levels do not have. Therefore, it is important to understand that each mindset has healthy and unhealthy aspects (Table 4.3), which will need to be addressed in any sustainability initiative.

<table>
<thead>
<tr>
<th>Healthy/Positive Expression or High Functioning</th>
<th>Unhealthy/Negative Expression or Low Functioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teal</td>
<td>Big picture view of life systems. Values what is natural - less can mean more. Focusses on competency, responsibility, and freedom of choice; emphasis on functionality. Rejects status, conformity, authoritarian structures. Information and knowledge-based decision making. Capable of fearless, creative problem solving. Flexible and accepting of adverse experiences. Primarily concerned with quality of &quot;being&quot;.</td>
</tr>
<tr>
<td>Healthy/Positive Expression or High Functioning</td>
<td>Unhealthy/Negative Expression or Low Functioning</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><strong>Orange</strong></td>
<td>Entrepreneurialism, ambition. Desire to improve, to be the best. Constructively ambitious. High energy levels are used in the pursuit of organizational and societal goals. Actions reflect a concern for others' welfare, as well as one's own. Attitude of thrive and help thrive. Expand economic cake. Produce the middle class.</td>
</tr>
<tr>
<td><strong>Amber</strong></td>
<td>Truth, honour, justice, discipline, work ethic, sacrifice for the greater good. Stability and responsibility. Strong sense of law and justice; healthy commitment to systems and procedures, order and tradition; systematic and well organized</td>
</tr>
<tr>
<td><strong>Red</strong></td>
<td>Strong self image. Expressiveness in sport, music, the arts. Breaking free from barriers. Spontaneous, colourful, energetic; assertive and willing to break from tradition; innovative and autonomous.</td>
</tr>
</tbody>
</table>

From Beck (1996) and Wilber’s writings. Adapted by Brown (2006b)

For example, at orange, there is an incredible urge for entrepreneurship. People at that existential level get things done; they are efficient and sometimes effective. At the same time, they can be short-sighted and excessively materialistic, which creates the consume-anything-and-all society without questioning the ethics behind the product that is being bought (how it was made, what was depleted, how much I gain vs. the loss the product creates). For amber, there is incredible strength in stewardship and community responsibility. People at this existential level work hard for the things they believe are true or right. The downside or limiting factors could be when they are unhelpfully dogmatic, uncritical and reactionary to anyone questioning their beliefs or values. Green is great at taking multiple perspectives, at emphasizing diversity, justice and equality. However, they move slowly because of the inability to make judgments, a consensus imperative that can create paralysis. At green and red, you can also find a culture of not wanting to work with the system.

If the concern of a sustainability strategy is to create awareness and expand consciousness, the focus does not necessarily have to be explicitly encouraging people to move up the spiral, as it can aim to foster healthy values at all levels of the spiral. In this sense, we would argue that as the mindsets...
become healthy and complete, a new mindset will emerge, be it one further up the spiral or an emergent one.

4.4.3 Culture Shift

"The release of atom power has changed everything except our way of thinking...the solution to this problem lies in the heart of mankind." Albert Einstein

With climate change hitting the mainstream media, the topic of environment and sustainability seems to be at the highest it ever has been. However, the framing of the news seems to place the environment and development as two opposites. Development is always surrounded by words like 'economic prosperity' and 'human well-being', while the word environment seems to always be followed by the word 'problem'. We see the environment as a problem that needs fixing. We try and create systems and technologies to address the 'externalities' that need to be solved, cleaned up or managed, rather than as evidence of a faulty system of logic or values by which society makes its choices.

Using climate change as an example, in the latest 2007 Intergovernmental Panel on Climate Change (IPCC) report, they stated that it was "very likely" (at least 90% certain) that human emissions of greenhouse gases are warming up the planet (Black, 2007). This is a change from the 2001 IPCC report that stated that it is "likely" (between 66% and 90% probability) that human activity is changing the climate. This report will probably be the least contested of the three reports due this year. The other two reports, due in April, will try to attribute what impacts climate change will have in the future and lay out strategies for mitigation. We will have to wait and see what the recommendations of the IPCC are on how to address climate change. There will probably be a mix of adaptation and mitigation strategies with a focus on taxation and technology. Taxation strategies will focus on the best ways of influencing behaviour to reduce carbon output, while technology will focus on existing, developing and future technologies that would replace current technologies for ones that produce less CO2.

Our current paradigm sees technology as a way of making things more efficient, getting more out of what is available to us. This is, basically, the continuation of the green revolution. When we ask a technocrat, how will we address all our current problems? They would probably say: we will feed the starving with genetically modified (GM) foods, address deforestation by creating highly productive GM monoculture stands and address climate change by more efficient use of fuels and new eco-ways of generating energy. Some bet on radical new discoveries (i.e. nuclear fusion power) that will deliver unlimited power. Technology is seen as the saviour, the place where we should put most of our efforts. Taxation is seen as a tool to foster the use of 'better' technologies and to help develop new ones. Our current paradigm is about moving forward, fostering productivity, growth and economic development within a reductionist command and control mindset.

"I believe that the horrifying deterioration in the ethical conduct of people today stems from the mechanization and dehumanization of our lives - the disastrous by-product of the scientific and technical mentality. Nostra culpa." Albert Einstein
For many economists, sustainability is about accounting for all the externalities, the social and environmental costs and taking into account the intergenerational concerns that are involved in providing a product or service to the marketplace. Products that do not reflect the loss of biodiversity and human suffering lead to overconsumption and misdistribution of resources. If the price of the products would reflect all these externalities, then consumers would make choices that would at least decrease harm to the environment and society and possibly move to a more sustainable society. However, we would argue that to make the changes that are necessary to bring this type of full accounting into prices, where environmental services and social well-being are accounted for, requires a very different set of values than is currently present in our leaders and most of society. What will make these changes in economics possible will be a climate of new values that will create a social mandate to account for unsustainability. The same is true for the use and development of new technologies. Although economics and technologies have an important role to play in sustainability, our point is they will be the tools and not the drivers of change.

We argue that unsustainability is not an environmental or social crisis, but rather the symptom of a values crisis in our societies that is engrained in a mechanistic mindset. We are trapped in one way of seeing and understanding the world that began 300 years ago. With Newton and Descartes came a mechanistic view and understanding of the world. The world functions as a great machine, and we see it as our job to better understand this machine and improve it. Our beliefs and attitudes have not evolved much past our forefathers' ideas of the enlightened epoch. We have not been able to complete the ideal they had of reaching an enlightened society. Western society has been intoxicated by the accomplishments and sheer power of science and technology, and we have forgotten the other two cultural value spheres, aesthetics and ethics. Maybe the challenges that we are facing today will allow us to mature into a “whole” culture, integrating and balancing the other cultural values spheres, and transcending the mechanistic mindset. This is in contrast with the contradictory, the unbalanced and fragmented culture of the last century. A deep shift of how society perceives reality, makes sense of it and goes about living it could trigger far reaching changes in values in almost every area of life. As one of the biggest surprises of the last 25 years was the collapse of communism, the next biggest one might be the collapse of materialism and reductionism of western society.

"Human beings can attain a worthy and harmonious life only if they are able to rid themselves, within the limits of human nature, of the striving for the wish fulfillment of material kinds. The goal is to raise the spiritual values of society." Albert Einstein

Today’s western systems are working under amber/orange/green values and we are proposing the need to explicitly encourage a self-development revolution that would shift the cultural values and way of thinking towards something beyond, be it teal and turquoise or whatever the next emergent system will be. As systems theory suggests, small changes in the right place can push a system out of one equilibrium and into another. In social networks, this occurs by the connections that exist between individuals and society (Gladwell, 2000). For a change to happen, we need to reach a tipping point where there are a critical mass of people who envision and live the new system or idea. These are the leaders...
of change. All changes face resistance and tension since the systems in place are in equilibrium and do not want to move to a new state of equilibrium. However, resistance and tension have characterized many of our cultural revolutions. Christianity endured many persecutions by the Roman Empire until finally, in the 4th century, it acquired legal recognition and, not long after, became the only legal and official religion in the Empire. The Enlightenment period, as we have seen, created and pushed for a new culture with a new and more complex set of values. This incredible time in history had visionaries who encouraged people to be conscious and aware of the ties and limitations of traditional values, encouraged change that led to enhancement of our well-being and development our human potential. We argue that this project has not been completed; we were able to differentiate between the cultural values spheres. Now, it is time to assimilate them, to find a balance between all our needs and motivations. Only then will we know what it is like to have a truly enlightened society.

Explicit planning of a cultural shift is not new. It has been proposed and done since the 1990's in business organizations. We can learn from the substantial work that has been done in studying the linkages of organizational culture and long-term performance of business enterprises. Many scholars (Collins & Porras, 1994; Hofstede, 1991; Kotter & Heskett, 1992; Schein, 1992) have found that the best indicator for an organization's adaptability, financial success and long-term performance was their cultural development. Barrett (2006) has built on this work and developed what he calls a 'whole-system change' approach to organizational cultural transformation. Barrett explains:

"Whole-system change begins with a shift in the personal consciousness of individuals and ends with a shift in the group’s actions and behaviours. Organizations don’t transform. People do! This means that if we can define a map of the territory we call consciousness; we can make the evolution of consciousness, conscious. We can intentionally engineer a shift from one level of consciousness to the next by managing the values of an organization. This is a major new idea pregnant with possibilities for improving the way we grow and develop our organizations." (p.5).

From a broader perspective focused on environmental and worldly issues, Wilber (Wilber, 1996b) highlights the same point: "...before we can even attempt an ecological healing, we must first reach mutual understanding and mutual agreement among ourselves as to the best way to collectively proceed. In other words, the healing impulse comes not from championing functional fit (Lower Right) but mutual understanding (Lower Left). And that depends first and foremost...on individual growth and transformation (Upper Left)" (p.148). To create the cultural shift, we need to develop the awareness and capacity to address left hand side issues. We need to elucidate the hidden aspects (shadows) of our self's and society's.

"The outward freedom that we shall attain will only be in exact proportion to the inward freedom to which we may have grown at a given moment. And if this is a correct view of freedom, our chief energy must be concentrated on achieving reform from within" – Gandhi

The question that arises is determining where such processes of management of values and self-development should occur and how. For the culture shift to be effective, there has to be a commitment from the interested parties. Therefore, the process has to fit into other ongoing activities within
organizations, where an organization is any formal group of people who have one or more shared goals. This could range from private corporations, to government institutions, NGOs, education institutions, and so on. This can also include a group of people working in a specific goal within an organization, like multi-stakeholder planning (MSP) initiatives. The cultural shift process needs to become part of the social structure of the organization (lower right and left), and has to fit in to the existing practices. For example, in an MSP, the cultural shift initiative has to be integrated into the dialogue process in such a way that the individual values and their expressed concerns can be aligned to the objectives of the MSP.

In the next chapter, we will explore how a framework of social learning can be engaged within an MSP and how it can produce the necessary shifts that we have been discussing. Before we move onto the next chapter we will explore how behaviour ('it' quadrant) can be understood from an integral perspective and different possible options for influencing a behavioural change.

4.5 Behaviour (it) from and integral perspective

If we shift our focus to the upper-right quadrant, the behavioural aspect of integral theory, we find that there are two prominent theories related to sustainability that address the external aspect of this quadrant. The two main theories or models used in explaining sustainability behaviour are the Theory of Planned Behaviour (Ajzen, 1991) and the Value-Belief-Norm Theory (Stern, 2000). While the former focuses on self-interest-based and rational, choice-based deliberation, the latter is grounded in values and moral norms.

The theory of planned behaviour states that there are three independent variables that determine intention, which is the driver of behaviour (Figure 4.7). The first variable is the “attitude toward the behaviour”, which refers to the degree to which an individual has a favourable or unfavourable appraisal of the behaviour in question. This is understood as an individual’s rational, choice-based evaluation of consequences of the behaviour. The second variable is the “subjective norm”, which refers to the social normative beliefs to perform or not to perform the given behaviour. The third variable is the “perceived behavioural control”, which refers to the individual’s perception of the ability or ease to perform the behaviour. The overall idea is that as the three variables become more favourable, the intention to perform the behaviour should become stronger (Ajzen, 1991).
If we analyse the theory of planned behaviour through the integral theory, we can group Ajzen variables into one of the four quadrants. The “attitude toward the behaviour” refers to the individual's values and belief that the behavioural action would be something favourable to oneself; hence, it refers to the upper left quadrant. The “subjective norms” refers to the societal and cultural belief structure, as well as its norms of what is and is not adequate behaviour, relating to the lower left quadrant. The “perceived behavioural control” refers to the individual's judgement of how well s/he can act upon and deals with a prospective situation. This last variable refers to two quadrants and can be understood as follows: an individual's perception of effectiveness in dealing with a situation will depend on his skills and knowledge (upper right quadrant) and the degree to which the physical and human structures surrounding the behaviour are favourable or not (lower right quadrant).

The value-belief-norm theory states that an individual's behaviour depends on a causal chain that links values, ecological worldviews, beliefs and personal norms (Figure 4.8). The personal moral norms are described as being the main basis for an individual's general predisposition to pro-environmental behaviour. These are activated when a person believes that violating her/his norms would have a negative effect on things that they value (referred to as an awareness of "adverse consequences" - AC), as well as the beliefs that her/his actions would influence the things that they value (referred to as an "ascription of responsibility" - AR). A person's worldview (new environmental paradigm) and values would influence personal norms. The theory suggests that as contextual factors become less prominent, the beliefs (AC and AR) become stronger at influencing behaviour. On the other hand, as contextual factors and personal capabilities become more limiting, a person's behaviour is less determined by their personal norms (Stern, 2000).
Looking at the value-belief-norm theory from a four-quadrant perspective, we can see that the values, worldviews and personal norms variables all stem from the upper-left quadrant. Whereas the AC refers to an individual's capacity to be aware of the effects the exterior quadrants (UR and LR) has on an individual's personal norms, AR refers to an individual's belief of her/his ability to influence the exterior quadrants.

From an integral theory perspective, behaviour is seen as the external manifestation of the upper right quadrant, in contrast to the skills and abilities that refer to the internal manifestations of the upper right quadrant. Adding the insights learned from both behavioural theories to the integral theory framework, we can outline the main variables influencing behaviour (Table 4.4).

Table 4.4 - Variables influencing behaviour

| Upper right quadrant: Personal capabilities | • Skills and abilities  
|                                           | • Literacy  
|                                           | • Financial resources  
| Lower right quadrant: Contextual factors | • Technology  
|                                           | • Regulations  
|                                           | • Laws  
|                                           | • Infrastructure  
| Lower left quadrant: Social and cultural factors | • Social beliefs and values  
|                                           | • Social status  
|                                           | • Social or interpersonal norms  
| Upper left quadrant: Intentional factors | • Personal beliefs and values  
|                                           | • Personal norms  
|                                           | • Mindset or ego-development  

We can use the topic of driving one's car versus taking public transport to illustrate how the different variables in the four quadrants influence behaviour. From the personal capabilities quadrant, we could say that the skills to drive a car are indispensable to the action, as well as the financial resources to acquire the vehicle. The existence, proximity, cost and travel times of the public transport would fall under the contextual factors, or lower right quadrant, as would the laws and regulations that prohibit driving a car with a certain license plate a given day of the week. A CEO of a large financial corporation
is unlikely to take the bus since her/his social status, added to the social belief that taking the bus is a poor man's option, would sway her/his behaviour and highlights the influence of the social and cultural quadrant. What an individual values and the way s/he makes sense of the world around them reflects the intentional factors of the upper left quadrant. All these factors are interrelated and very difficult to separate. Limiting contextual factors depends heavily on intentional factors, what is, for one individual, an acceptable walking distance, for another one is not.

We could argue that an individual who bases self-esteem on wealth and material acquisitions, which is more prominent at the orange developmental stage or mindset, will more likely see a car as an opportunity to demonstrate wealth and will buy and drive an expensive, high-status model regardless of its environmental impacts. On the other hand, an individual who bases self-esteem on environmentalism and community, which is more prominent at the green developmental stage, will more likely take the bus, as the behaviour is more inline with her/his way of seeing and making sense of the world. We can see that personal values and beliefs are greatly influenced by a given construct of reality or mindset.

The question to ask now is a one of causality. Which quadrants and variables are the most important in determining behaviour? One could theorize such as Stern (2000) does, that as the contextual factors become more limiting, they would overrule all other quadrants, and as they become less important, the other quadrants would better predict behaviour. For example, if public transport does not exist where the individual lives (contextual factor), then the only effective way to travel the 40 km to work is by driving. From this perspective, the contextual factor overrides the other quadrants, even if the individual preferred not to drive because it was a better environmental decision the contextual factor limits her/his options. At the same time, one could argue that the individual has a choice of organizing carpools or even moving closer to work or public transport and to a degree counteract the contextual factors. From this example, we could also see that even with restricting contextual factors, given the right personal values and norms, the individual has the possibility to shape her/his behaviour in a more environmentally friendly manner.

In general, we could say that there is no rule of thumb to depict which quadrants are more important in influencing behaviour. Hence, when designing a strategy to influence behaviour, one has to be aware of the interactions of the four quadrants and start by gauging which ones are of more importance. Understanding the possible mindsets, as discussed earlier, which are at work in a given area would be important to help depict what strategy to use to communicate and influence behaviour.

4.5.1 Influencing behaviour

Any initiative (sustainability, sustainable development, poverty reduction, international development, etc) that tries to influence or change behaviour can be approached from at least three perspectives (Figure 4.9). One possible way to influence behaviour is through changes in the contextual factors or systems quadrant (option 1). We can change policies, develop new infrastructure, new technologies, create new laws, all with the objective of influencing behaviour. These changes can also create a change in personal
values and beliefs and if enough individuals change, there will be a change in the culture. Another option is to influence the intentional factors or individual interior quadrant (option 2). In this option, we can work personally with individuals in any type of organization or we can target individuals through mass media and advertising. Changes in personal norms and beliefs can modify the individual’s behaviour, which can lead to influencing a greater number of people creating a change in social norms. This change in social norms can drive a change in the systems quadrant, which will then reinforce the change since option 1 will be activated\textsuperscript{25}. A third option is developing extended peer communities (Funtowicz & Ravetz., 1993; Healy, 1999) or communities of practice (Capra, 2002) where collectively, through communication, both thoughts and meaning get created. By co-creating meaning of our experience and surroundings we are constantly producing a shared system of explanations, belief and values. This can infuse change in an individual’s belief and behaviour, as well as affecting the overarching systems that regulate the group, community or society.

Marx’s (1965) and Engels (1972) work on the evolution of societies elucidates an option 1 type of change\textsuperscript{26}. Marx’s explanation of the development of the industrial society was based on the notion that advances in technology (i.e. steam engine) drive a change in the functioning and organizing of a society (from feudalism to industrial). Basically, the techno-economic base of a society (‘its’ quadrant), determines the society’s socio-economic formations or superstructures (‘we’ quadrant). This option of change can be seen in the international development initiatives of the post WWII era, where the main commitment was to economic growth, industrialisation and modernisation. This option of driving change is still the most prominent in our society, as discussed earlier.

\textsuperscript{25} In a sense, this view of change is similar to the panarchy idea of influencing higher and lower cycles. The upper half of the four quadrants, representing the individual, can be seen as a panarchy cycle depicted in Figure 4.4 as a ‘small group or individual decisions’, and the bottom half, representing the collective, is depicted by the panarchy cycles such as ‘culture’ or ‘constitution’. The dynamics that happen between the individual and collective halves of the quadrants are also well depicted by Figure 4.3 and reflect the panarchy’s theory of change and stability. However, we believe that the integral theory adds and enhances our understanding of the complex dynamics that occur between the different cycles and scales (panarchy) or quadrants (integral).

\textsuperscript{26} The way we are presenting Marx’s work here has been criticized as techno-economic determinism (Wilk, 1976) and we are aware that there are other interpretations to Marx’s work (Llobera, 1979).
If we are trying to create a change of behaviour from option 2, it is important to understand the limiting or facilitating factors that might exist between the interrelations of the quadrants (Table 4.4). In many cases, as in a large city or region, the interrelationships and relative weight that each quadrant influences the overall behaviour is extremely difficult to determine and varies among each citizen. In these cases, the best strategy would be a shotgun approach, where we use multiple intervention methodologies to address behaviour change. A good example of this approach is the framework called system-wide collaborative action for livelihoods and the environment (SCALE), used extensively in Latin America, and developed by GreenCOM (2004) for the United States Agency for International Development (USAID). SCALE deploys multiple social change methodologies utilizing option 2 engagements, such as civil society participation and mobilization, advocacy, social marketing, organization development, mass communication, education and conflict resolution techniques as an approach to create change in complex social-ecological systems.

We would argue that the first step in any sustainability initiative would be to understand better the dynamics of each quadrant as well as the interrelations between quadrants. This permits for a better analysis of the situation, leading to a more informed decision on what is the best option for engaging with the citizens, and revealing the more appropriate methodologies to use in a given situation. We would also need to identify the predominant mindsets of the population being addressed. As we will illustrate, each mindset needs to be approached differently because the way that reality is constructed for each is fundamentally different. What can be a very successful sustainability initiative in Canada might be a total failure in Mexico, or what might be successful in Vancouver, BC might not work in Squamish, BC.

If we are trying to create change through option 2, influencing individuals directly, we will need to communicate to the public we are trying to address. Table 4.5 illustrates the best sources of communication for each mindset, as well as the best and worse ways of addressing each worldview. From the table, we can observe how radically different two communication approaches might be. The problem arises when a mix of mindsets composes an area, which is very likely in a cosmopolitan city like Vancouver. In a case like Vancouver, we will need to be very creative in our communication strategy by hitting as many hot buttons as possible throughout the worldview spectrum and avoid pressing any cold buttons. It is important to avoid using demotivation since it can easily undermine any initiative by putting a group of people against the purpose of the initiative.
<table>
<thead>
<tr>
<th><strong>Table 4.5 - Communicating to different mindsets</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best sources of communication:</strong></td>
</tr>
<tr>
<td><strong>Turquoise</strong></td>
</tr>
<tr>
<td><strong>Teal</strong></td>
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<tr>
<td><strong>Green</strong></td>
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<tr>
<td><strong>Orange</strong></td>
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<tr>
<td>Amber</td>
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<tr>
<td>Amber</td>
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<td>Red</td>
</tr>
</tbody>
</table>


Drawing from Habermas’ *theory of communicative action* (1979), option 3 of engaging change highlights the functioning of communication as the flow of information that gives meaning to our lives. Every individual in this world is embedded in a number of increasingly complex and diverse communities. We are continually trying to make sense of our outer and inner worlds. Habermas argues that it is through our communicative efforts that culture and social structures are created and transformed. It is through dialogue that we can inquire, question, and possibly reshape our internal models of reality. Creating communities of practice where trust is prevalent and dialogue fostered can allow a shift of mindset to occur. These ideas will be further developed in the next chapter.

We have outlined three ways of influencing behaviour from a four quadrants perspective. All the options that we have outlined have no strict boundaries between them, they are co-dependent and feed off of each other. A sustainability planning initiative might engage with only one of the three options outlined, but it is in the capacity to arise (purposely or not) out of the other two options for synergies to occur and where the greatest potential resides to create shift in mindsets. It is the different capabilities of ‘managing’ that we will describe in the next section, which enable the engagement of all options of change and allow for the four quadrants to tetra-arise.
4.6 Prescriptive, emergent, and reactive management

We have been discussing a variety of ideas surrounding change regarding sustainability. We have focused on the human dimension of change, since much of the sustainability literature focuses on the systems aspects of it. In this section, we will focus on the very concept of change that is applicable to all quadrants and dimensions of reality.

We argue that basically there are three ways of engaging or managing a system. Let us begin by looking at the idea of prescriptive management. With a focus on the systems quadrant, the idea that we can understand a system sufficiently well, that we are able to determine what steps need to be taken to move from A to B, is still very common in society. This view of reality as linear, with clear cause and effects, and its simple feedbacks would argue that if you know where you want to go, it is just a matter of analyzing and understanding sufficiently well the dynamics of the systems to take the needed management decisions (orange mindset). However, as history has shown, many of these decisions did not really understand the systems sufficiently well since they have led to the collapse of the whole social-ecological system (i.e. collapse of the Atlantic cod fishery). We have already argued before that this is the predominant mindset of western society that stems from a 300 year old Cartesian belief and understanding of the essence of life.

Complexity theory has created another line of thought, where it is argued that our knowledge of the dynamics of the systems will always be incomplete and hence, we will never be able to fully understand or control the system. Within complexity science, one line of thought (Roe, 1998), describes the systems as extremely complex with large numbers of interacting elements that escape our understanding. These systems are devoid of any type of underlying order, governed by uncertainty, non-linearity, chaos and surprise - systems that evolve without any given direction. From this perspective, change is seen as unpredictable and happening without our control. All we can do is have adequate management that is able to react to the changes as they arise. There is no possibility of prescribing change since surprises are the norm.

On the other hand, another line of thought (panarchy, system dynamics, and others) suggests that there is an underlying order to the systems in play: that through observation and historical analysis we can find the small number of variables that govern the large number of interactions of a complex system. With this perspective, we are moving towards a more emergent view and understanding of what changes are needed to move toward a more sustainable path.

Juggling these views and possibilities becomes a paradox in itself. We would argue that there exists a continuum, starting with easily understood systems and simple interactions, where prescribing change from one state to another is easily manageable, and extending to extremely complex systems, where the norm is surprise and directing change in a given direction is not possible, where the only thing we can do is adapt as it comes. In the extremely complex systems, management seems impossible and becomes
reactive instead of proactive. Moreover, we do not know what the systems are capable of, nor do we understand what a given change in one or a set of variables will do to the rest of the system. A change in one variable or cycle might not do anything to the overall systems, or it may shift them in a desirable or undesirable direction.

Between these two extremes is a place where outcomes cannot be predicted, but certain interactions and changes are more likely to result in favourable transformation than are others. This is a place where individuals and society meet the systems, where we have a sense of the direction that the system needs to move in, though we do not know what it is going to be like once it transforms. It is a place where the importance lies in the interactions between the four quadrants and within the quadrants, where the focus of management is in constant flux, from managing the systems, to influencing behaviours, to fostering values, to working with conflicting worldviews. Each sustainability initiative is unique and unrepeatable. The whole process of assessing, designing, implementing, monitoring, evaluating and communicating is context dependant and needs to be tailored to the specifics of the situation. It is a place where the observer is no longer detached from the observed, but an active participant in the events that are co-arising. Our intent, values and mental models determine the outcome of our initiatives. It is a place of transformation, where the engaged individual is changing as s/he seeks to change external systems and where change is emergent and not prescriptive.

The mid section on the continuum of complexity is where we would place many of the sustainability problems we are currently facing. These challenges are pushing science, as we know it today, from looking at parts to looking at connections and beyond disciplines. In the next chapter we will present a social learning framework that explores how, through dialogue, we constantly create meaning of our surroundings, of others and ourselves. How the way that we organize and communicate can enable or impede an individuals growth and transformation of their lenses of reality. This has the potential to fundamentally unlock the innate capacity within us to live and grow in harmony with other fellow human beings and nature as a whole. What we have presented in this chapter is an attempt to develop a map, an understanding of the human landscape and a guide to help us see deeper into the nature of our surroundings and ourselves. It is an attempt to look at the problem of sustainability from a different perspective and a call to start looking inside for the solutions to our problems, a call for increasing levels of consciousness.
I do not know if you have ever examined how you listen, it doesn't matter to what, whether to a bird, to the wind in the leaves, to the rushing waters, or how you listen in a dialogue with yourself, to your conversation in various relationships with your intimate friends, your wife or husband...

If we try to listen we find it extraordinarily difficult, because we are always projecting our opinions and ideas, our prejudices, our background, our inclinations, our impulses; when they dominate we hardly listen to what is being said...

In that state there is no value at all. One listens and therefore learns, only in a state of attention, a state of silence, in which this whole background is in abeyance, is quiet; then, it seems to me, it is possible to communicate.

Krishnamurti - Talks and Dialogues
5 Social learning and multi-stakeholder approaches to natural resources management

"What we all need at this point in human evolution is to learn what it takes to learn what we should learn—and learn it." Aurelio Peccei (1979)

In this chapter, we will continue to build on some of the concepts presented before, as well as add some new ones. The objective of this chapter is twofold: first, we will present the notion of social learning as we envision it; second, we will ground the ideas of social learning as well as others that we have presented in the previous chapter into the context of natural resource management (NRM). We will begin by explaining why we need a different approach to NRM and how social learning fosters this different approach. We will then use these concepts to propose changes to multi-stakeholder process, which is one way of materializing some of the concepts that we have been laying out throughout the chapters.

5.1 Why a different approach is needed to natural resource management

There is an abundant amount of literature describing the problems our planet is facing, ranging from the loss of biodiversity and ecosystems that are necessary to support healthy communities to the ever-expanding population, social inequality and worldwide increase of poverty. Focusing in natural resources, Geist and Lambin (2002) concluded that agricultural expansion is the main proximate cause of land-use change associated with tropical deforestation. Yet, while the proximate or immediate cause is easy to identify, the underlying forces are explained by multiple factors and drivers acting synergistically rather than by single-factor causation and are difficult to identify. The external economic, institutional, technological variables, and the internal cultural and demographic characteristics interplay in public and individual land use decisions, which leads to a fair bit of complexity in even defining the problem to be addressed in concrete terminology. In this sense, land use allocation can be construed as a classical example of a complex system or a wicked problem (Rittel & Webber, 1973, 1984). One of the fundamental aspects of a wicked problem is that finding an optimal solution is impossible due to the fact that wicked problems have no clear stopping rules, have an enumerable set of possible solutions and can only be evaluated as better or worse (not right or wrong), as that evaluation is a heavily value laden process. Not only is the problem embedded in a socio-cultural context full of beliefs and values, but also the underlying systems, both social and physical, behave in a complex fashion as described in the previous chapter.

Faced with these complex issues, natural resource scientists have to move away from the idea of finding the optimal solution to a problem; solutions that seem good in the short term, but are not necessarily good in the long term (Giampetro & Pastore, 1999). This is due to the fact that solving a particularly defined aspect of a wicked problem invariably leads to the discovery of an even more wicked underlying problem. This is certainly problematic since, as scientists, one of our roles is to aid in the management of complex social-ecological systems that are characterized by multiple scales of interaction and response, multiple objectives and actors, non-linear trajectories, uncertainties and time lags. In light of this, the idea of
producing best solutions or “silver bullets” must be discarded. The solutions that are classically used to address issues (solvable components of a wicked problem) in this complex system normally do not solve the larger problem. These solutions might be successful in camouflaging the problem, at least for a while, but the “reductionist treatment of natural variability is the short-term success that leads to long-term failure” (Ashby, 2001). We need to start by recognizing that all we propose, from theories, to technologies, to methods, have limitations, and that the application of any of these can do more harm than good if carried beyond their limits. A change in approach is needed when addressing complex environmental problems; we are all part of one complex social-ecological system, there are no experts in this system, nor can there be (Ludwig, 2001).

Land and resource management tend to focus on the right-hand quadrants, on exterior problems and their solutions. This can be seen by the frequent placement of priorities on the improvement of our economic, political and technological worlds. Also, in most planning processes, the focus is similarly placed on the exterior, with the lion’s share of effort initially placed on the collection and quantification of environmental data to support this process. Tools and techniques are then applied to address observable problems, with emphasis on those that are easily solvable and currently in vogue. Tools from the right-hand quadrants are of limited use if we do not develop the left-hand quadrants at the same time, the soft issues, which are qualitative and represent the subjective and inter-subjective perspectives and experiences of humans; as individuals and collectively as cultures. In natural resource management, the end goal is to improve our collective lives and the environment by utilizing the knowledge and tools developed on the right half. However, if our understanding of exterior processes has developed faster than our abilities to understand interior processes, there will be an imbalance and the knowledge and tools developed for the right half will more often than not fall short of achieving there desired outcome. Hence, the frustration of many development agencies worldwide is that their top-down approaches are implementing highly developed right-hand theories and tools, spending billions and ultimately realizing little or no improvement in the human condition they ultimately seek to change (Hochachka, 2005).

Particular attention should be paid to the challenges being presented to science, as they seek to explicitly deal with the human dimensions of natural resources management. To accomplish this task there has to be a softening of the barrier between scientists and local managers. Researchers have to become part of the system under investigation (action-research) and move away from the idea that resource managers are the ‘insiders’ and the researchers are the ‘outsiders’ (Douthwaite et al., 2001; Hagmann et al., 2002). Integrated natural resource management has to focus on the "interactions of humans with each other and with their natural environment, and the decisions they make about using and managing resources" (Lal et al., 2001).

Funtowicz and Ravetz (1993) suggest that, to address the complex environmental challenges of (post)modern societies, people who are affected by management decisions and people involved in making those decisions must come together to build platforms for shared learning, explore multiple
perspectives on the problem or system, and negotiate a collective path forward toward more sustainable outcomes. In fact, creativity (both introspectively derived and as emergent from the collective) is the single most important aspect of coming to terms with wicked problems. Because of this, we are compelled to move away from puzzle-solving science and reliance on experts, towards a form of innovation management that utilizes a multi-actor learn-and-select approach (Douthwaite, 2002). In particular, scientists and politicians have to start taking the role of education more seriously, creating and utilizing methods that foster learning between citizens; as effective and insightful solutions are far more likely to be born of well informed constituents. In this way, capacity can be built into the social-ecological system, thus allowing local, regional, and national managers to more appropriately address the complexity of the problems that they face.

Attaining a sustainable future depends on numerous factors that work at multiple scales. We believe that if there is any possibility of moving in this direction, an important initiative will be to place our efforts on large-scale planning processes and adequately evolving adaptive management processes that involve the local citizens. In this case, large-scale planning refers to region-based theories such as, ecoregion, bioregion, and watershed theories. Implementing these theories is not enough; the planning process has to be based on methods that are integral in nature, addressing both the external aspects of the situation and the internal human characteristics. This goes back to the problem that not enough work is being done to understand and improve the internal characteristics of how we as humans manage and plan environments. In order to move away from more traditional compartmentalized and solely external approaches towards integrated planning and management of our landscapes, we are going to have to bring people together from very diverse backgrounds and address conjunctionally both the interior and exterior aspects of the problem. We need to realize that, when faced with the task of managing our world in a sustainable manner, nobody is an expert, yet everybody has some expertise and communally we all shape our landscapes. It is therefore of paramount importance to develop methods that include as many people as possible in the creation of innovative paths towards scale-dependant visions of sustainability.

The interactions that happen within and between the external systems (economic, ecological and social) can be better understood, as we have described in the previous chapter, by theories that are based on complexity science. Theories and frameworks like panarchy theory and The Natural Step can help us frame more adequately the problems and the responses to them. However, we believe that the importance of the process and the interactions that occur between people as they are discussing these issues has not been adequately addressed. In other words, we argue that if the planning process is build right there is a potential for creating a shift in people's worldviews. Not only does the planning process help us plan our actions for addressing a given issue, more importantly it has the potential for planting the seed of a culture shift. However, this capacity needs to be fostered and the environment for change has to be created. In the next section we will describe a framework for social learning that attempts to create this potential.
5.2 Social learning as an emergent process

Social learning has multiple meanings across academic disciplines. It is important to emphasize here that the term social learning, as it is used in the context of this thesis, has a particular meaning which is distinct and builds from the more common general theory of social learning that has been studied extensively in psychology. The main psychological rubrics of study regarding social learning are: the social context within which individuals learn (Bandura, 1977), the understanding of aggression (Bandura, 1973), language learning in children (Vygotsky, 1962), behaviour modification (Bandura, 1969), situated learning (Lave & Wenger, 1990), developmental psychology (Piaget, 1983), and general learning frameworks such as: constructivism (main authors: Dewey and Rousseau) and instructivism (main authors: Bereiter and Rosenshine). These works focus on the different social dynamics that occur in student-centered or teacher-centered approaches that foster or hinder the learning environment.

In this chapter, we will expand on these ideas and place social learning in a context that refers to the way different groups in society, whether community-based, universities, business or government, can work and learn together to enhance their well-being and at the same time improve the environment, the economy and the community. Social learning for us refers to the mechanism that facilitates social change based on an individual and collective learning processes, democratic participation, communication, and empowerment.

In general, social theories of learning embrace the notion that learning occurs both inside the human mind and in social interaction. Salomon and Perkins (1998) point out that collective entities have the capacity to learn and also, that it is possible to educate them to become better learners. A number of scholars (Argyris, 1993; Argyris & Schön, 1996; Easterby-Smith & Araujo, 1999; Levitt & March, 1988; Senge, 1990) speak of a collective agency (teams, organizations, cultures or other collectives) that, as a group, acquires more knowledge, understanding or skill. Building on this idea, we could picture learning as occurring at many scales within a holarchy (Figure 5.1). Social learning could be described as a part of the nested holarchy (individual, organizational and social); each part transcends and includes its predecessors.
The central notion that we are trying to put forth is that learning is a property which is emergent in both individuals and collectives. The process of learning takes place simultaneously at multiple levels within the holarchy and the major elements in an individual's learning and personality formation are associated with her/his social environment. People learn by sharing in a range of acquired information through communication and social system participation. Individuals are born and grow up in a society with a given worldview or paradigm, and this primes them to experience the world through a single window of what is possible. At the same time, individuals are constantly learning and have the possibility to expand and change their window of reality through direct experiences in the world and group interactions. The learning that occurs is both through individual and social experiences and has been termed a 'reciprocal spiral relationship' (Salomon & Perkins, 1998). Individual and social learning are influenced by one another, can be strengthened by each other and sometimes even defined by the other (Bronfenbrenner, 1977; Weick, 1969). This notion suggests that individual and social conceptions of learning are woven tightly together and must be considered mutually for any purposeful meaning. Thus, individual learning and behaviour are shaped by the nature of the group activities in which the individual participates and through which they are moulded, which in turn, are frequently moulded by the participant.

The learning interactions that occur between the individuals give rise to both organizational and social learning. This can be understood as an emergent property of learning, where the 'interactions' between the components of a system give rise to something greater than just the sum of its parts. By interactions, we refer to 'communications' between individuals, and by parts, we refer to, depending of what level of the holarchy one looks at, individuals, groups, organizations, or society. Figure 5.2 illustrates the framework that we have developed to depict the dynamics of social learning that give rise to emergence. This framework brings a number of concepts together. The learning platforms are places that hold the space for partnerships and communication to grow between the parts. Fluid communications are an essential part of learning that connects the parts. Learning and transforming holons refers to the developmental shifts that can happen at different scales of the holarchy. We will expand each of these aspects of social learning in the next sections.
5.2.1 Learning and transforming holons

The first aspect of learning is to understand that there are two realms of learning. As we saw in chapter 3, Cook-Greuter (2004) explains that most learning is geared towards expanding and enriching an individual's current way of meaning-making. This type of learning, which is described as horizontal learning, aims at adding knowledge, skills and understanding to a person so they can better face the challenges of everyday life. On the other hand, Cook-Greuter describes vertical learning as a transformation process where an individual sees and understands everyday life differently, where consciousness is transformed (Figure 3.6). The same concept is described by Mezirow's (1991) transformation theory of adult development. Mezirow distinguishes between instrumental learning and communicative learning, where instrumental learning helps the individual to cope with the external world by increasing the task-orientated skills, reflective problem solving and problem posing. Communicative learning, on the other hand, fosters the ability to question and negotiate the purpose, values and meanings of what is occurring at the time. Transformative learning fosters "to some extent an epistemological change, rather than merely a change in behavioural repertoire or increase in the quantity or fund of knowledge" (Kegan, 2000). These two types of learning are complementary; both are needed in our education and lifetime to help foster the full potential of our humanity.

Kegan's (1994) theory of adult development describes how individuals construct reality through subject-object relationships, where the 'object' is those aspects of an individual's experience that are differentiated from the self, are easily observable, reflected upon and controlled. The 'subject' is what an individual experiences as the self, who s/he is, embedded in a way of being, experiencing and seeing the world that is not distinct from whom that individual is. The individual is the subject and the subject-object relationship is the shape of the window through which the individual looks at life. This window is a similar concept to the mindsets or worldviews that were described in the previous chapters.

Figure 5.2 - Enabling parts of social learning for emergence
Kegan explains that individuals live through a system of knowing (epistemology), and that system is the window through which they experience life. Unless this is changed, individuals continue to increase their knowledge, skills and abilities, but all within the terms and bounds of that system. Transformational learning occurs when the individual is able to gradually shift what was subject to object. It is an expansion of the window, where an individual is no longer identified with something that is now seen as an object. This shift can also be seen as a process of differentiation, where new experiences that do not fit in the individual’s current system of knowing create a contradiction that may trigger the shift. In the shift, the contradictions that did not fit into the previous window are assimilated into a frame of reference that is larger and more complex. This is a process of integration, where the new system of knowing transcends the previous contradictions.

There are other models of adult developmental learning which we will not address in detail, such as: Perry’s (1970) intellectual and ethical development, Belenky et al. (1986) women’s way of knowing, and Baxter Magolda’s (1992) epistemological reflection that have largely been interested in how individuals interpret their education experiences (Hofer & Pintrich, 1997). Then, there are King and Kitchener’s (1994) reflective judgment and Kuhn’s (2000) argumentative reasoning models, which have looked at the epistemological assumptions that influence thinking and reasoning processes. Table 5.1 illustrates these models compared to Kegan’s (1994) orders of consciousness, using Wilber’s (2006) psychograph.

Table 5.1 - Theories of adult developmental learning

<table>
<thead>
<tr>
<th>Levels of development (Wilber)</th>
<th>Orders of consciousness (Kegan)</th>
<th>Intellectual and ethical development (Perry)</th>
<th>Women’s ways of knowing (Belenky et al)</th>
<th>Epistemological reflection (Baxter Magolda)</th>
<th>Reflective judgment (King and Kitchener)</th>
<th>Argumentative reasoning (Kuhn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Subject-object relationship</td>
<td>Positions</td>
<td>Epistemological perspectives</td>
<td>Ways of knowing</td>
<td>Reflective judgment stages</td>
<td>Epistemological views</td>
</tr>
<tr>
<td>Amber</td>
<td>Dualism</td>
<td>Silence</td>
<td>Received knowledge</td>
<td>Absolute knowing</td>
<td>Realist</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>Self-consciousness 3rd order</td>
<td>Multiplicity</td>
<td>Subjective knowledge</td>
<td>Transitional knowing</td>
<td>Quasi-reflective thinking</td>
<td>Absolutists</td>
</tr>
<tr>
<td>Green</td>
<td>Self-authoring mind 4th order</td>
<td>Relativism</td>
<td>Procedural knowledge connected knowing separate knowing</td>
<td>Independent knowing</td>
<td>Multiplist</td>
<td></td>
</tr>
<tr>
<td>Teal</td>
<td>Self-transforming 5th order</td>
<td>Commitment within relativism</td>
<td>Constructed knowledge</td>
<td>Contextual knowing</td>
<td>Reflective thinking</td>
<td>Evaluatist</td>
</tr>
</tbody>
</table>

Adapted from Hofer (1997)
It is important to note how different this concept of transformation learning is from the traditional idea of learning as an endpoint that is culturally established. From a transformative perspective of learning, subject-object relationships can always be shifted and expanded, opening an enormous realm of human potential. Understanding that our views are always constructed, and hence limited can permit us to embark in a journey of continuous expansion of awareness and deeper understanding of the self.

5.2.1.1 Applied theories of adult developmental learning

A well known theory of individual learning is Kolb's (1984) experiential learning, which suggests that learning is the creation of knowledge through the transformation of experience. Kolb puts forward the notion that the process of learning occurs as a result of our need to reconcile two dialectic tensions we feel as a result of the two different ways through which we see reality (through concrete experience or through abstract conceptualization) and the two ways through which we transform what we have grasped (through reflective observation or through active experimentation). He expresses these two dialectics as polar positions on a matrix, which he then converts into a cycle to illustrate the dynamics of the dialectic resolution (Figure 5.3). Knowledge is created through a combination of grasping experiences and a process of transforming it, while grasping an individual takes in information either by actively experiencing the activity or by conceptualizing what is observed. The process of transforming happens when an individual reflects back on the experience (introversion) or by physically acting the experience (extraversion).
Kolb sees the process of learning as affecting four development dimensions of an individual: affective, perceptual, symbolic, and behavioural. Kolb explains that through the learning process individual's can grow in all four dimensions, expanding their range of emotions, increasing their awareness, developing more sophisticated mental schemas and using greater amplitude of behaviours. Kolb emphasises the need to foster learning in all four dimensions of an individual, stressing that the current scientific inquiry approach only focuses on the symbolic or conceptualization aspect of knowing, while "the affective expression of the arts, the metaphysical reflection of philosophy and religion, and the integrative ideals of liberal education [are] all atrophied" (p. 140). Kolb's view resonates with the concept of cultural value spheres presented in chapter 2, where modern society is fixated with a unilinear view on reality, forgoing and ignoring the other two cultural value spheres of knowing.

On the subject of development or vertical learning, Kolb theorizes that the growth of an individual is marked by progressive and increasing differentiation followed by higher orders of integration. Differentiating an individual decreases the interdependence of different aspects of an experience, while integrating individuals increases the complexity of these categories of experience. Different abilities to differentiate and integrate mark how individuals translate their experience into meaning and action.

Figure 5.3 - Theories of adult developmental learning
Source Kolb (1984)
Building on Kolb's experiential learning theory, Kitchener (1983) expands the different learning possibilities by adding 'higher order' modes of learning. Kitchener describes a learning system hierarchy (Figure 5.4), where meta-learning refers to learning to learn about learning and, the higher order epistemic learning refers to the dimension of learning about the worldviews which contextualizes what is being learned. At the epistemic level, we learn to appreciate the worldviews and paradigms that frame and guide our society. At this level we also learn how to both challenge and, if necessary, change them.

A similar concept resonated in the organizational learning literature (Argyris & Schön, 1978; Flood & Romm, 1996; Senge, 1990; Snell & Chak, 1998), where they describe zero, single loop, double loop and triple loop learning (Table 5.2), which are in line with Bateson's (1981) levels of learning: zero, one, two, and deuteron-learning. Zero learning refers to a situation where a problem arises and individuals fail to take corrective action (Bateson, 1981; Snell & Chak, 1998). Single loop learning happens when individuals adapt and take corrective actions, while double loop learning refers to reframing the assumptions that limited taking better actions (Argyris & Schön, 1978). Triple loop learning was introduced by Flood (1996), stating that individuals and organizations need to work and question perceptions, inconsistencies and incongruencies in order to go beyond the current paradigm. Along these lines, Senge (1990) speaks of 'metanoia', the Greek word for fundamental change or transcendence (meta, meaning above or beyond, and noia from nous, mind). According to Senge, the only way for there to be real organizational learning is through a change in the underlying mental models of the individuals. Bateson (1981) discussed something similar to this in his notion that an individual could not only learn things, but also better ways to learn things, and better ways to learn ways to learn things. All of these authors agree that single loop learning is the predominant source of learning, whereas double and triple loop learning are very rare.

Figure 5.4 - Learning systems hierarchy
Source: Kitchener (1983)
Table 5.2 - The four levels of learning in individuals and organizations

<table>
<thead>
<tr>
<th>Level of learning</th>
<th>Manifestation for individuals</th>
<th>Manifestation for organizations</th>
<th>Leads to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not learning</td>
<td>Isolation – failure to receive feedback on actions, failure to take in any new information.</td>
<td>Fragmentation – no linkage between individuals' mental models and shared mental models. Loss of the individual means loss of that person's expertise.</td>
<td>Inaction or not appropriate action</td>
</tr>
<tr>
<td>Single loop learning</td>
<td>Adapting – becoming more skilled; registering that one's actions are not achieving their goal, adjusting one's actions to increase the possibility of achieving the goal.</td>
<td>Consolidating – adding to the firm's knowledge and competency base without altering present policies, present objectives, present mental maps or basic activities.</td>
<td>Appropriate action</td>
</tr>
<tr>
<td>Double loop learning</td>
<td>Developing – choosing to learn different kinds of skill; understanding why one's prior meaning-making or goal-seeking systems were inadequate and led to incongruities and omissions. Reframing problems from a position of deeper insight.</td>
<td>Transforming – changing the firm's knowledge and competency base by collectively reframing problems, developing new shared paradigms or mental maps, modifying governing norms, policies and objectives.</td>
<td>Questioning and changing governing assumptions</td>
</tr>
<tr>
<td>Deuteron or triple loop learning</td>
<td>Inventing – becoming aware of the limitations of all grand frameworks; creating ways of coming up with new structures of thought and action suitable for particular occasions and monitoring the effects of these frames.</td>
<td>Co-inventing – collective mindfulness. Members discover how they and their predecessors have facilitated or inhibited learning, and produce new structures and strategies for learning.</td>
<td>Questioning and changing governing values</td>
</tr>
</tbody>
</table>


Table 5.2 portrays the idea of learning and transforming entities within the holarchies, where different levels, from the individual to collectives, can access different modes of learning. This leads us to the next enabling part of social learning for emergence, which is the relationship between the individuals that creates the possibility of the different types of learning.

5.2.2 Fluid relations and communications

The first part of this section is a summary of a number of theories and techniques for dialogue. The purpose for describing these theories is firstly to illustrate what we mean by genuine dialogue. Secondly, to lay down some basic concepts that would facilitate the emergence of dialogue in a group. Engaging in genuine dialogue is not something that can be learned by reading a number of theories or by listening somebody lecture on it. These concepts serve as a starting place that point to the direction of genuine conversations. However, only practice will ground these concepts and make them resonate within an individual and a group. The second part of this section deals with power relations and dynamics that need to be adequately addressed for fluid relations and communications to flourish.
5.2.2.1 Dialogue

Postmodernist thought has pointed to the constructed nature of our views of reality, as well as to the idea that knowledge and information are embedded in language. Habermas (1985b) developed the notion of communicative action, which grounds human understanding and learning in the medium of communication. The communicative learning dimension of Mezirow's (1996) transformation theory also points out the importance of communication to build understanding. The concept of using communication to build knowledge and understanding is known as a dialectic or dialogic approach to learning. As we will see, there is a fundamental difference between using dialectic and dialogical approaches to communication.

Given a situation where a discussion arises between two or more individuals, the form of social discourse that arises tends to be one of a dogmatic or argumentative manner of speaking. By dogmatic, we refer to the use of some form of power, be it subtle or gross, to dictate or impose a thought or idea on others. Argumentative style of speaking uses logic and evidence to assert the rightness of one's idea over the others. Argumentative speaking may also use power, such as claims of authority, fallacies in evidence or logic and forces of personality, to twist the discussion in a given direction. What these forms of speech have in common is that they tend to reinforce the individuals mindsets and tend to polarize the issue being discussed into black and white, right and wrong. Consensus approaches have been used to move away from these types of conversations or debates. Isaacs (1993) argues that while consensus might foster some form of shared position or meaning, it lacks the power to engage in the root causes that led people to disagree in the first place; "Consensus approaches generally do not have the ambition of exploring or altering underlying patterns of meaning" (p. 26). In contrast, dialogue is seen as a manner of communicating where the focus shifts from certainties to uncertainties, and uncovering the worldviews that frame an issue. The concept of dialogue has been explored by many individuals, but we will focus mainly on the ideas of Freire (1972, 1974), Habermas (1979, 1985b), Bohm (1980, 1987, 1996), Isaacs (1993, 1999a, 1999b), and Gadamer (1976, 1982).

Gadamer's (1976) work on hermeneutics argues that knowledge is not a fixed thing or a commodity to be grasped, rather, it arises out of the interaction between individuals, where each individual poses a horizon of understanding that is a result of a 'historically affected consciousness'. Gadamer (1982) talks of a fusion of horizons where two individuals meet and, through conversation, try to understand each others horizon. Individual prejudices have to be dropped and the individuals have to be fully open to what the other is saying to understand their horizon. This process allows the other's ideas to be understood without necessarily having to agree to them, allowing for the horizons to be enriched and expanded.

Habermas and Freire both see dialogue as a form of empowerment or emancipation. Habermas' (1979) notion of 'ideal speech situation' and 'communicative competence' tries to create the circumstances so that every person is allowed the same opportunity to participate in discourse, aiming to eradicate the
prejudices which limit marginalized groups from fully attaining their rights in democracy. He also states “that a humane collective life depends on the vulnerable forms of innovation-bearing, reciprocal and unforcedly egalitarian everyday communication” (Habermas, 1985a). Freire (1972) sees dialogue as a practice for freedom, as an opportunity to awaken critical consciousness, and as instrument of liberation. His notion of ‘conscientização’ (1974) aims at the humanisation of social, political, and economic structures by awakening people to reality, where the process of action-reflection-action develops consciousness and has the power to transform reality.

Bohm (1996) sees dialogue as the only form of communication that can access the ‘tacit level’, which refers to “that which is unspoken, which cannot be described... It is the actual knowledge, and it may be coherent or not” (p. 14). Thought, for Bohm, emerges out of the tacit ground, and if we communicate at this level then we have the opportunity to change thought. “The tacit process is common. It is shared. The sharing is not merely the explicit communication and the body language and all that, which are part of it, but there is also a deeper tacit process which is common. I think the whole human race knew this for a million years; and then in five thousand years of civilization we have lost it, because our societies go too big to carry it out. But now we have to get started again, because it has become urgent that we communicate. We have to share our consciousness and to be able to think together, in order to do intelligently whatever is necessary. If we begin to confront what’s going on in a dialogue group, we sort of have the nucleus of what’s going on in all society” (p. 14-15).

To think intelligently, as Bohm describes it, we have to be free from the concept of truth or unique truth, which tend to divide people and groups rather than connect them. Truth creates fragmentation, where one person or group usually holds a relatively fixed position and discusses or argues their views to try and convince the others to change. “At best this may produce agreement or compromise, but it does not give rise to anything creative” (Bohm & Peat, 1987). In Bohm’s view27, science and religion are equally dogmatic at claming truths and inhibiting true dialogue and learning to occur: “Science is predicated on the concept that science is arriving at truth – at a unique truth. The idea of dialogue is thereby in some way foreign to the current structure of science, as it is with religion. In a way, science has become the religion of the modern age. It plays the role which religion used to play of giving us truth; hence different scientist cannot come together any more that different religions can, once they have different notions of truth” (1996).

Bohm saw reality as involving unbroken wholeness in flowing movement. “That is, there is a universal flux that cannot be defined explicitly but which can be known only implicitly... In this flow, mind and matter are not separate substances. Rather, they are different aspects of one whole and unbroken movement” (Bohm, 1980). Bohm’s concept of reality resembles more the view that spiritual wisdom traditions have

27 It is important to note who David Bohm was to legitimazices his claims on science and though. Bohm (1917-1992) was a distinguished theoretical physicist, known for his work on quantum theory and relativity theory and their implications for other fields such as neuropsychology. Bohm contributed to the Manhattan Project, and developed a number of theories that broke away from the orthodox approach to quantum theory. As well as developing the holonomic model of the functioning of the brain. Bohm was elected Fellow of the Royal Society in 1990 (Wikipedia, 2007).
than with the view science has of reality. He sees dialogue as a door for working with the phenomena of human consciousness: "[t]hus far we have only begun to explore the possibilities of dialogue in the sense indicated here, but going further along these lines would open up the possibility of transforming not only the relationship between people, but even more, the very nature of consciousness in which these relationships arise" (Bohm, 1980). Schein (2003) also argues that "if we become more conscious of how our thought process works, we will think better collectively and communicate better. An important goal of dialogue is to enable the group to reach a higher level of consciousness and creativity through the gradual creation of a shared set of meanings and a 'common' thinking process" (p. 30).

Bohm (1996, 2001) outlined a set of basic conditions for dialogue: he talked about physical space, arrangement, time, and group size, as well as purpose and vision of how to engage in genuine dialogue. Bohm noted that people should be seated in a circular fashion and that the group size should be between 20 and 40 individuals. He highlighted the need for a trained facilitator who can hold the space or context of dialogue, but pointing out that the job of the facilitator is to work herself out of a job. The group, after some time, should be able to function without a facilitator. For genuine dialogue to emerge, it is important for the group to start without the assumption that something is going to be solved or fixed, otherwise the group is not free. Bohm (1996) quotes Krishnamurti as saying "The cup has to be empty to hold something". If there is to be a purpose to dialogue, it should be to "communicate coherently in truth" (p. 17). For this to happen, participants must suspend their assumptions. "What is essential here is the presence of the spirit of dialogue, which is in short, the ability to hold many points of view in suspension, along with a primary interest in the creation of common meaning" (Bohm & Peat, 1987).

Isaacs' understanding of dialogue echoes Bohm's view, as well as Freire's and Habermas. For Isaacs, "dialogue seeks to have people learn how to think together not just in the sense of analyzing a shared problem, but in the sense of surfacing fundamental assumptions and gaining insight into why they arise. Dialogue can thus produce an environment where people are consciously participating in the creation of shared meaning. Through this they begin to discern their relationship to a larger pattern of collective experience. Only then can the shared meaning lead to new and aligned action" (Isaacs, 1993). Isaacs outlines a road map to reaching genuine dialogue (Figure 5.5), illustrating that individuals have the internal choice regarding what type of conversation they want to have.
When a conversation reaches a point of lack of understanding or disagreement, an individual or group has to take a fundamental decision of what type of conversation they want to have; one takes the road to dialogue and the other to some form of discussion. It is important to note that even if people aspire to the path of dialogue, very few reach it. In the West, we are taught to think for ourselves, which many times gets translated as think alone. Naturally, this leads to defending one’s view or opinion. Not being aware that there is another alternative, people tend to think that they can either have a controlled discussion or a skillful conversation, the notion of genuine dialogue is not on their radar. The reason for this is that the notion to suspend, or suspension as Bohm calls it, is very foreign to western culture. Bohm (1987, 1996, 2001) talks a lot about the idea of listening as a gateway to dialogue:

“Suspension of thoughts, impulses, judgments, etc., lies at the very heart of Dialogue. It is one of its most important new aspects. It is not easily grasped because the activity is both unfamiliar and subtle. Suspension involves attention, listening and looking and is essential to exploration. Speaking is necessary, of course, for without it there would be little in the Dialogue to explore, But the actual process of exploration takes place during listening -- not only to others but to oneself. Suspension involves exposing your reactions, impulses, feelings and opinions in such a way that they can be seen and felt within your own psyche and also be reflected back by others in the group. It does not mean repressing or suppressing or, even, postponing them. It means, simply, giving them your serious attention so that their structures can be noticed while they are actually taking place. If you are able to give attention to, say, the strong feelings that might accompany the expression of a particular thought – either your own or another’s – and to
sustain that attention, the activity of the thought process will tend to slow you down. This may permit you to begin to see the deeper meanings underlying your thought process and to sense the often incoherent structure of any action that you might otherwise carry out automatically. Similarly, if a group is able to suspend such feelings and give its attention to them then the overall process that flows from thought, to feeling, to acting-out within the group, can also slow down and reveal its deeper, more subtle meanings along with any of its implicit distortions, leading to what might be described as a new kind of coherent, collective intelligence" (Bohm et al., 2001).

But, suspending, as Bohm describes it, is not something that an individual can do without some form of training or awareness of the self, an awareness that allows individuals to see their habitual patterns, their uncertainties, fears, drivers, emotions, and so on. This type of training resembles the ancient traditions of contemplation or meditation. We could argue that genuine dialogue is almost like meditation dialogue. In a sense, the first step that we need to take to allow dialogue to emerge is to shift into a contemplative or meditative state, where we are aware of all that is happening within, where we can become witnesses of our habitual patterns and disengage from them and allow a space of silence to exist in our mind that is vulnerable to dialogue, that is soft and open to the unknown. In a sense, these are also the prerequisites that are needed for emergent management as discussed in the last chapter, where we are able to allow the uncertain to unfold without resistance to it.

From Bohm’s writing, one might just see dialogue as opening up all our channels of communication, putting all our feelings onto the table, actively listening to others, working together and giving feedback that improves our communication. Schein (2003) would call this type of communication sensitivity training, in contrast to dialogue, which “focuses on getting in touch with underlying assumptions (especially our own assumptions) that automatically determine when we choose to speak and what we choose to say. Dialogue is focused more on the thinking process and how our perceptions and cognitions are preformed by our past experiences... In dialogue... we explore all the complexities of thinking and language. We discover how arbitrary our basic categories of thought and perception are and thereby become conscious of imperfections or biases in our basic cognitive processes." (p. 30)

To better understand the qualitative differences in how we communicate, Isaacs (1999a, 1999b) builds on the ‘four player model’ by Kantor (1975) and illustrates what positions and actions that an individual can take in a conversation to move it towards dialogue. He describes this as dialogic leadership (Figure 5.6). Kantor suggests that conversations stem out not only of individual’s needs, but also of the unspoken needs of the group and situation. In this sense, people can be either movers, where they initiate ideas and offer direction; followers, where they help complete the idea, clarify it, and/or support what is happening; opposers, where they challenge and question the validity of what is being said; and bystanders, where they notice and provide perspective to what is happening. For a healthy conversation to occur, Kantor argues that all these players must be acting and in balance. None of them are better or worse than the other: they are all essential for a healthy conversation. A person in a conversation can take any of these stands at any moment and then shift to another at any time. The problem arises in a
conversation when there is an imbalance in these forms of interaction and Isaacs argues that a dialogic leader will have the ability to restore this balance.

Making reference to Argyris and Schön's (1978) work on the use of 'advocacy' and 'inquiry' to build conversations that promote learning, Isaacs (1999a) points out that in "the vast majority of situations, advocacy rules: People are trained to express their views as fast as possible. As it is sometimes put, 'People do not listen, they reload.' They attribute meaning and impute motives, often without inquiring into what others really meant or intended" (p. 3). This process inhibits both learning and the possibility of dialogue from happening; balancing out advocacy and inquiry, means balancing out bystanding and following, as well as moving and opposing.

Isaacs (1999a) argues that the four actions of conversation are essential and necessary, but not sufficient for dialogue to arise. These four actions need to be taken a step further, to a qualitative difference of being, to move from effective conversations to genuine dialogue. Isaacs explains,

"You can choose to move in different ways: by expressing your true voice and encouraging others to do the same, or by imposing your views on others. You can oppose with a belief that you know better than everyone else, or from a stance of respect, in which you acknowledge that your colleagues have wisdom that you may not see. Similarly, you can follow by listening selectively, imposing your interpretation of what the speaker is presenting. Or you can listen as an compassionate participant, grounding your understanding of what is said in directly observable experience. Finally, you can bystand by taking the view that only you can see things as they are, or you can suspend your certainties and accept that others may see things that you miss. In order to make conscious choices about our behavior, we need to become aware of our own intentions and of the impact of our actions on others." (p. 4)

Again, Isaacs's description of what is needed for dialogue echoes Bohm's description, wherein both call for an awareness and understanding of an individuals interior that is not common in western society.
What tools, methods, education, or training a person needs to have the capacity to engage in genuine dialogue are briefly discussed by Isaacs. He proposes four practices that need to be deliberately cultivated and developed to foster dialogic leadership. Listening refers to the capacity of immersing oneself on what the other is saying and fully understanding how they understand, and by not imposing our interpretation or understanding on top of the other. Listening "together is to learn to be part of a larger whole – the voice and meaning emerging not only from me, but from all of us" (Isaacs, 1999a). Respecting refers to the ability to shift the quality of how we oppose, truly respecting the other's view and opposing without the idea of certainty in one's thoughts. Suspending is the same concept that Bohm refers to, which is the quality of awareness of one and others. Voicing, Isaacs argues, is the most challenging of the four practices. Voicing refers to “speaking your true voice, and encouraging other to do the same” (p. 4). In a sense, an individual has to master the other three practices before s/he can speak from a place that is free from the more common constraints of the habitual mind.

The first step to training our minds, not only for dialogue, but also for the emerging new ways of managing, is to develop our capacity of 'suspending', as is illustrated in Figure 5.5. This means diving deep within us and exploring what is there, a first person perspective of the upper right quadrant. Modern science is starting to delve into this realm, and there are also the more than 2000 years of experience from contemplative traditions that one can draw from. Figure 5.7 illustrates the many practices that a person can engage in to start developing the skills needed to move forward with genuine dialogue. Understanding the qualitative shift that needs to happen in learning is non-trivial. This type of learning is not cognitive; you cannot read it and learn it. It is experiential; thereby, it needs dedication and practice. Similar to learning the piano or running a marathon, the only way to develop these skills is through practice. Reading, talks and lectures might inform and help us to develop faster and better these capabilities, but they cannot replace the individual practice.

28 Managing here not only refers to natural resource management, but also to the corporate, non-profit and governmental organizations that are evolving from conventional hierarchical, controlling ways of being to distributed, self-organizing, and enabling manners of operating. As quick example is VISA International, an organization that serves over 600 million people in 220 countries, with a volume of $1.25 trillion interactions annually. An organization that is distributed, with multiple boards of directors, where no parts know the whole, and the whole does not know all the parts. It is an emergent unfolding organization. (Hock, 2005).

29 See for example, behavioral and brain sciences journals as well as neuroscience journals treating the subject of consciousness. Good summary in the journal Science is Tononi and Edelman (1999) testings of the properties of the neural substrate of consciousness.
The Tree of Contemplative Practices

Figure 5.7 - The tree of contemplative practices
Source: Center for Contemplative Mind in Society (2007)
5.2.2.2 Power

Another dimension that influences social learning and, more specifically the relationships between the parts, is power dynamics. Relationships and communications between people have underlying power structures that affect the manner and outcome of an interaction. The role that power plays has been extensively studied in the social and political sciences: starting last century with Max Weber's work on political economy and sociology; Foucault's (1980, 1982) study of social institutions, power, and knowledge; and Blau's (1964) analysis of social structures, authority and conflict. The influence of power has also been studied in the field of international development: from Ferguson's (1990) classic work on the anti-politics machine; Escobar's (1995) analysis of the impacts of development in the global South; to Chambers (1997) work on 'whose reality counts?'. From these authors, we understand power dynamics as being everywhere, many times avoided or neglected. Yet, power is ingrained in the systems as well as in the culture: power can be empowering or disempowering, used in enabling or disenabling fashion. As Veneklasen (2002b) points out, it exists in many forms: invisible power that shapes meaning, hidden power that sets the political agenda and visible power that is observable in decision making.

For the purpose of this thesis, we will simply highlight the different types of power as analyzed by Chambers (2005). Chamber emphasizes the power of language in the development field: "[t]he power of vocabulary to change how we think and what we do is easy to underestimate. It influences the course of development in many ways: through changing the agenda; through modifying mindsets; through legitimating new actions; and through stimulating and focusing research and learning... Language is, however, about much more than rhetoric and opportunism. It shapes and interacts with the ways we think and behave" (p. 187). Chamber also talks about the influence of power in relationships, not only how it is imbedded in the language, but also the sociopolitical aspect of it. Chamber, building on Veneklasen's (2002a, 2002b) work, identifies four types of power dynamics between people (Figure 5.8). Power over is the most commonly recognized form of power. It normally has a negative association, is seen as a win-lose kind of relationship and normally implies control or domination over an individual or group (Veneklasen & Miller, 2002b). From the work of academics and practitioners, three alternative forms of power have been identified to foster more equitable relationships: power with, refers to collaboration, mutual support, and collective action that helps to "build bridges across different interests to transform or reduce social conflict and promote equitable relations" (Veneklasen & Miller, 2002b); power to, "refers to the unique potential of every person to shape his or her life and world" (p. 39); and power within, refers to "a person's sense of self-worth and self-knowledge. It includes an ability to recognise individual differences while respecting others" (p. 39).
Chamber argues that the power over of uppers (those possessing power in a classical sense) can facilitate transformation and social learning if it is turned into power to empower, where they use their power to facilitate coach and support lowers. This could create a synergy in the power to, with, and within lowers to drive change and transformation. We would add that this has also the power to transform and expand the awareness of uppers, by engaging in a cycle of social learning. The different notions of power give us another lens for understanding the dynamics that happen between people. The four player model and the transforming power dynamics can help us understand and then shift a situation that is not fostering social learning to one that is. Some aspects of the power dynamics, such as the power within, reflects a similar notion to the capacity of suspending describe in the four player model. These two models are embedded in each other and are two lenses for seeing and understanding how the relations between the parts affect social learning. The final aspects of social learning are the platforms and partnership that permit the relationships to exist in the first place.

5.2.3 Learning platforms and partnerships

The role of learning platforms and partnerships in social learning are to open up and extend the communities of inquiry into the issues of concern. Reforming institutions and regulations to allow for more participation is crucial to start engaging in social learning. We have already pointed out the inability of the modern paradigm to manage complex phenomena, where experts or specialist are the sole authorities over the decisions that should be taken to manage a situation. The modern paradigm has left a trail of institutions that place barriers to social learning, where a person is only legitimate to contribute to the system if they have some formal training or expertise in the area of study. Wynne (1996) argues that for the legitimacy of science to continue its tacit contract with society has to change. Science “requires institutional reform of its modes of organizing, control and social relations. This would involve, inter alia, recognition of new, socially extended peer groups legitimated to offer criticism of scientific bodies of knowledge from beyond the confines of the immediate exclusive specialist scientific peer group” (p. 39). Funtowicz (1993) also argues that the ‘peer communities’ need to be expanded if science is going to
meet the new challenges of global environmental problems. The need for expansion does not only to include non-scientist into the process of inquiry and management, but also other forms of knowledge.

Learning platforms are places that allow for the enhancement of relationships and communications between people and organizations involved. Fostering development in an individual and expanding the capacity for the group to act more intelligently to a given situation. Learning platforms and partnership can take the form of multi-stakeholder process where citizens, scientists and government officials can engage in social learning. Some examples are education institutions and other formal and informal places where people gather can also serve as platforms to foster social learning.

The ultimate form of learning platforms and partnerships would be a form of strong democracy as described by Barber (1984). This democratic regime removes all the barriers which other forms of democracies (i.e. representative democracy) place on the possibility of social learning. Barber lists nine functions of strong democracy. The first two are 'communicating interests and bargaining' and 'persuasion': these two functions are also present in the other regimes of democracy. What distinguishes strong democracy are the other seven functions, which are all based on the idea of some form of dialectic or dialogue between the citizens. Barber talks about 'agenda setting', deciding what is going to be talked about between the citizenship. If a topic is not on the agenda, then it is invisible, and hence who ever has control over the agenda has almost control over governance. This is probably one of the most important functions of strong democracy since it breaks the power structures of who is in control and who is not, allowing for a transformation of power as depicted in Figure 5.8. The next five functions: exploring mutuality, affiliation and affection, maintaining autonomy, witness and self-expression, and reconceptualization and reformulation are all aimed to achieving a quality of dialogue as discussed earlier. The last function, to build a civic political community, can be seen as a healthy functioning of the cycle of social learning as has been presented here.

One of the main concepts that distinguishes social learning from Barber's strong democracy is the concept of developing individuals. This is the idea that learning, dialogue and reflection can foster qualitative shifts in how people, communities and organization perceive reality is important to note. As Schommer (1998) points out, the more developed an adult's conception of knowledge is, "the more likely they were to take multiple perspectives, be willing to modify their thinking, withhold ultimate decisions until all the information is available, and to acknowledge the complex tentative nature of everyday issues" (p. 138). These characteristics of a developed adult are more conducive to genuine dialogue, to connecting to the 'tacit ground', and to individuals that are willing and capable to shift their focus from looking at the 'parts' to the 'wholes'.

5.2.4 Balancing the three cultural value spheres

Social learning as it is presented here highlights the need to acquire and develop individual and group capacity in the other two value spheres, the interior of both individuals and collectives. Again, here is a
balance, as Isaacs describes in the four player model, that we need in the three cultural value spheres. A well-rounded individual needs to be able to understand and connect not only with the realm of external knowledge and skills, but also with the relations that happen within and between people.

In the next chapter we will describe our vision of higher education and how it has the potential for creating well-rounded individuals. This will be illustrated through a case study of the social learning process. However, we believe that the capacity to develop well-rounded individuals and collectives is not only left to higher education. In the next section we will present a MSP that was designed to bridge across the three cultural value spheres. We will illustrate how a process between a number of stakeholders can be a fertile ground for not only innovative ideas to emerge, but also as a ground for all participating to re-shape the way they see and understand the world around them.

5.3 Multi-stakeholder process for fostering social learning

The term multi-stakeholder processes (MSPs) is used to describe processes which aims to bring together all major stakeholders in new ways to explore and make decisions regarding a particular issue. Agenda 21 is the first United Nations document to extensively address the role of stakeholders in the implementation of a global agreement. Over the last few years, multi-stakeholder processes have started to generate considerable interest within communities, around intergovernmental bodies and at national levels. The reason for this is that the ideological fundamentals underlying MSPs are based on the democratic principles of transparency and participation, with particular emphasis on the importance of achieving equity and accountability in communication between stakeholders. Many of today’s most difficult resource allocation problems cry out for the successful application of these principles and their recent emergence into the mainstream has been hastened by the perceived need for a more inclusive and effective manner by which to address the urgent sustainability issues of our time.

However, many MSPs are organized in an ad hoc manner and their linkages into the official decision-making process often remain unclear. Some MSPs are criticized for being opaque and non-participatory while others are seen as fulfilling a public consultation requirement with no real possibility of individuals influencing decision or change (Valderrama, 2004). Reviewing these downfalls, scholars have pointed out that MSPs have to be designed and conducted in ways that they will allow the interactions between the stakeholders to constructively contribute to improved societies (Hemmati, 2002). At the same time, one has to be aware that an MSP can serve many purposes. For example, it can be a conflict resolution and mediation process, or it might be just a process to build relationships, share information and brainstorm about a problem to be solved. The MSP framework that we outline below is designed with the idea of a formal planning and management process, though it can be easily modified to fit other purposes.

It is our contention that an effective MSP exercise must seek balance in addressing the four quadrants, with particular emphasis focused on correcting the historical imbalance between the left and right. By authentically including the interiority of individuals and groups (left-hand quadrants), the MSP seeks to
engage the interior social development, which is essential for overall success in outcomes. In short, the focus on the right half of the quadrant gives us the knowledge and tools to aid us in the quantitative aspect of decision making, while the left half focuses on the human condition itself to help us collaborate, communicate, learn, and develop as individuals and as societies. The integral MSP framework that we propose seeks to blend these two fundamental aspects to address the pressing problems of "a world gone slightly mad" (Wilber, 1997).

MSPs are normally seen as democratic forums to ‘solve’ existing problems. From a learning perspective, what is expected of these processes is a single loop type of learning, where the objective is for the group to decide together (i.e. consensus) what the right actions are to solve the problem. We believe that this is a very limited view of the potential a multi-stakeholder process. Engaging in double loop learning, where underlying assumptions are challenged and changed, is a very tangible objective of an MSP. Even more, if the process is long enough and the conditions are right, even triple loop learning could be possible, where the underlying values are questioned and changed, creating shifts in mindsets, allowing people to see the world or problem through a larger window. Double and triple loop learning are two possible personal and collective transformations outcomes of engaging in a multi-stakeholder process.

Figure 5.9 was created as a metaphor, to illustrate the concept of an eye, where social learning has the potential to change our views of the real world. MSPs can be seen as the centerpiece of the three functions needed for social learning to emerge. The arrows entering and leaving the eye represent common implementation and evaluation actions of a planning and management process that tries to better understand the real world by adapting their management to the changing circumstances. The arrows are filtered through the lenses of the people and organizations participating in the process, and the understanding of the group will always be limited by the lens of the eye. These different types of lenses and there views have been described in the previous chapter (Table 4.1 & Table 4.2). The arrows entering and leaving the eye also hint at the notion of a circular process, where the implementations of yesterday will be evaluated tomorrow. The circle of the eye is a ‘full circle’ containing the functions of social learning, yet also acts as a reminder of the possibility of the Zen concept of an 'empty circle', a nothingness that is complete in itself, where everything is a synthesis of opposites that arise from one another and where the possibilities of a self that is transcended exist.
Even though MSPs have the potential for achieving personal or group transformation, rarely would this be the primary objective driving the process. The integral MSP framework presented below is very practically orientated. All the steps and task are grounded in practical matters and if so wished can be used to accomplish some form of improved planning and management (single and double loop learning). The possibility for tapping into transformative learning (triple loop learning) depends on how the process is carried forward and not on the framework itself. The MSP framework and other theories discussed here are only guiding principles to increase the possibility of engaging in double and triple loop learning.

5.3.1 The integral MSP framework

This section describes in moderate detail an MSP framework (Figure 5.10) that builds upon the ideas of social learning, complexity science and integral theory. The steps in the process are an expansion of the soft system approach developed by Checkland (1981), modified by Wilson and Morren (1990) to include Kolb’s (1984) theory of individual learning, and expanded with theories of system thinking and learning to specifically address the left hand quadrant of Wilber's integral theory.
5.3.1.1 Assessment

The initial assessment step is essential to determine if there is any potential for collaboration in the area before an MSP begins. Pretty (2003) argues that some type of social capital must exist before any effort is made towards sustainable management and development of natural resources. This implies a need to
ensure that the different stakeholders involved have adequate capacity to participate in the process. This goes back to emphasizing the left side, especially the “We” quadrant of Wilber’s theory. In other words, collaboration and learning will only happen at a societal level if they are supported by mechanisms of trust, shared understanding, and strong vertical and horizontal networks between agencies and stakeholder groups (Pretty & Ward, 2001). We have to understand the nature of the situation and stakeholders before beginning any course of action, to determine what process is most applicable to a given situation. This is especially important when faced with complex problems, as each is characteristically unique and, as previously mentioned, it is a common mistake to blindly apply methodologies without fully comprehending the fit of methodology to situation. An integral MSP must tailor methodologies to the level of social system (the ‘Its’ quadrant of the integral approach), such that emphasis can be placed on the less developed areas that lead to the further development of social capital. In areas in which the social system is broken down (i.e. high conflict areas, highly corrupt governments, authoritarian government systems, etc.), other initiatives have to precede the MSP to build some form of social capital. The first stage of the integral MSP can be used to build this initial trust and vision within a divided group, if the conflict is not too extreme.

5.3.1.2 Setting the Stage (Exploring)

‘Setting the stage’ contains two steps, identifying the situation and creating a shared vision. This phase is in line with Barber’s (1984) agenda setting function in a strong democracy, where all stakeholders have a say on what is important to them. The objective of this phase is to find common ground and explicitly state what the overall MSP mission is, as well as to state the individual stakeholders’ expectations about what they hope to achieve through this process. This is the stage where the process of dialogue should be sought at all costs. When the conversation reaches a point of deliberation (Figure 5.5), a fundamental choice point emerges where the conversation can turn into dialogue or into the more common dialectic or debate styles of conversation that do not offer the same potential for transformation as dialogue does. The time to complete this first stage should be very loosely defined, removing the sense of urgency of moving along the cycle. Time to build dialogue is a fundamental asset for a transformative multi-stakeholder process.

A useful concept to introduce here is outlining the difference between generative and strategic dialogue as described by Banathy (1996). Generative dialogue is in line with the concepts that have been described earlier in the chapter, where its purpose is to establish a common ground of shared understanding and values, build trust, create bonds, and strengthen the sense of community among participants. However, generative dialogue is not a tool to address specific issues. Once a collective worldview and a shared consciousness has been created by generative dialogue the concept of strategic dialogue can be fostered. Strategic dialogue is the communication mode that is task and action orientated, yet at the same time is able to hold the container of collective consciousness. As the strategic
dialogue unfolds, there are always elements of generative dialogue that continue to infuse and hold the process.

The essential task in stage 1 is to identify problems in a given context through the eyes of all the stakeholders. The idea is not to focus on a specific view; on the contrary, this is the time to gather as many opinions on the situation as possible. We want to be aware of the perceived roles of the stakeholders, as well as their understanding of the technical issues of the problem. This stage is characterized by what Kolb (1984) refers to as reflective observation; we are interacting among the stakeholders to elicit multiple worldviews, but we are not trying to understand or explain the problem. Wilson and Morren (1990) state very clearly that the objective of this first stage is not to identify the problem, but instead to look 'at problematic situations rather than for a problem'. The reason for this is that most situations are characterized by a complex mesh of problems; 'a situation is comprised of people as individuals and in groups, themes of concern, a historical context that bears on the present, key human activities, decision-making structures, physical and biological environmental factors, the political-economic and social context, and relational climates' (Wilson & Morren, 1990). From an integral theory viewpoint, this stage provides an opportunity and safe space for each individual stakeholder to express their perspectives on the issue at hand, which is to say, creating a process that allows for the subjective expression of the "I" quadrant to emerge. To conclude, this stage should provide us with rich and alternative ways of looking at the issue.

The second stage consists of co-creating a shared vision. This stage is fundamental for addressing the 'We' quadrant that explicitly deals with the cultural aspect of the MSP, the shared meaning. Establishing a vision helps to determine the direction in which the actors wish to go and to develop strategies to accomplish a set of goals. Collins and Porras (1996) suggest that enduring success comes from maintaining a core ideology which remains fixed in an ever-changing world, while simultaneously adapting strategies and practices. They propose a vision that consists of defining a 'Core Ideology' and an 'Envisioned Future' that will guide the group's future actions. The core ideology defines what the group stands for and why they exist, while the envisioned future is what the group aspires to achieve.

Collin and Porras (1996) clearly make the distinction between a vision and a strategy. The vision of a group does not change with time, while the strategies and practices to achieve the vision endlessly adapt to the new situations. In a changing world, it is vital for the community to understand their core ideology; such knowledge will assist them in creating a management plan which accurately represents their values and purpose. An essential point to remember about creating a vision is that it is just that, a creation. It is not a prediction. Therefore, there is no right or wrong vision. In the process of implementing the vision, it is vital to keep in mind that failure to achieve the goal does not mean it was an unworthy goal. Additionally, research has shown that visionary companies are often able to achieve their most audacious goals (Collins & Porras, 1996). An envisioned future has its purpose in inspiring movement and, as
Collins and Porras (1996) point out, visionary companies tend to be flexible in their strategies, using a more organic process of examining many approaches to see which works best.

This theory of developing vision integrates well with and is enhanced by some of the new philosophy of systems thinking articulated by Peter Senge (1990) and Margaret Wheatley (1992). These theories are aimed at the individual and focus on the 'I' quadrant. By strengthening the "I" quadrant, we are at the same time helping the 'We' quadrant to more vigorously emerge. Vision, according to Senge, is a vivid, specific goal. Purpose without vision lacks a sense of appropriate scale; vision without purpose lacks passion (Senge, 1990). In the process of creating vision, the individual can encounter creative tension, which is the difference between current reality and the vision. Often, the applied solution to this tension is to reduce the scale of the vision so it more closely conforms to the existing reality. A degraded vision provides an escape from creative tension, but it insidiously encourages us to abandon what we truly want (Senge, 1990) and more often than not to settle for solutions not far off of the status quo. Senge suggests that the constructive method of managing creative tension is to continuously work toward modifying reality to match the vision. Another solution to nurturing a vision and handling structural conflict is through a process of changing the underlying assumptions and values which create the tension (double and triple loop learning). Through a commitment to discovering the truth about one's self, a person can broaden their awareness, recognize patterns, and learn new ways to respond (Senge, 1990). Senge's perspective aligns with (Wheatley, 1992), in that this process arises from discovering, integrating reason and intuition, and seeing one's connectedness to the universe.

The next part of this stage, following Collins and Porras' (1996) outline, is to find a common ground between the stakeholders, with the objective of collectively building a mission for the MSP process that they are undertaking together. Each group will share their vision ('I' quadrant) with the other stakeholder groups, which helps to create a transparent multi-stakeholder process. The stakeholders will need to explore the similarities and differences of their institutions and individuals values and purpose. This exploration will help negotiate collectively the MSP's mission ('We' quadrant) and how each stakeholder fits in to this process. We have to understand that the objective here is not to influence and change other stakeholders' visions: on the contrary, the approach that we are recommending recognizes that the goals or desired end-states of the stakeholder groups are going to be different and often ambiguous, shifting and conflicting. In Wilber's (1999) words, "everybody has some important pieces of the truth, and all of those pieces need to be honoured, cherished, and included in a more gracious, spacious, and compassionate embrace". We are trying to acknowledge these different views and understand what the objectives of each group are. This transparency will help build a relationship of trust between the groups, which is one of the fundamental characteristics needed for building social capital (Pretty, 2003). By the end of the 'Setting the Stage' phase, a mission for the MSP must be established, and this helps everyone to understand what is at stake.
5.3.1.3  Fostering Creativity and Innovation (Analyzing)

This phase of the process begins with a description (conceptual model) of the current system we are trying to improve. The stakeholders then identify their main interests and concerns, which leads to various proposals for improvements. Finally, we fully develop and analyze these proposed improvements to establish their feasibility and possible impacts. At this stage, the diversity of worldviews held by the stakeholders, that we have tried so hard to preserve thus far in the process, might lead to conflict. This process seeks to minimize the detrimental effects of this conflict by recognizing that multiple worldviews exist and by allowing these multiple perspectives on the situation to co-exist within the process for as long as possible, without attempting to prematurely synthesis these views and extending the possibilities for double and triple loop learning to occur. If these differences continue past this phase they will be addressed in the ‘Decision making and Conflict resolution’ phases of the process.

Stage 3, ‘Describe the situation’, is a follow-up of the identifying the situation stage. Following Wilson and Morren’s (1990) description of the soft system framework we first want to clearly display the situation so as to reveal a range of possible and relevant choices for improvements. A good way to start addressing this step is to build a conceptual model that reflects the current local conditions and addresses the issues identified in the mission. A powerful technique to start out this stage is the construction of ‘cognitive maps’, which are a graphical representation of all the components affecting the issue being analyzed. It is a good technique to make sure that all aspects of the situation have been considered and it allows us to identify relationships and links between the natural and human structures defining the issue.

Throughout the integral MSP framework, different tools can be used to help us successfully complete the cycle. Some of these tools are represented in Figure 5.11 and are grouped together in their most appropriate location within the cycle. Some tools are focused on eliciting the qualitative aspects of a situation, while others more directly engage the quantitative aspect. Moreover, some tools focus more on the left-hand quadrants explicitly deal with the more human aspects, while others excel in dealing with the systems and processes of the right-hand quadrants. While it is beyond the scope of this thesis to deal with each of these tools in a detailed manner, we have included this figure as a summary of possible tools for each phase of the integral MSP. For a more detailed treatment of these tools, we would suggest Pretty (1995), DFID (2000), ECDPM (2003) FAO (2005), and Senge (1994).
Following the construction of cognitive maps, it is helpful to fully describe the quantitative and qualitative aspects of the structure, process and climate of the situation (Wilson & Morren, 1990). The structure of a situation is made up by the 'slow to change' components in the physical, biological and social aspects of the issue. The process describes how and by whom things are accomplished within the structure. The climate is the quality of the relationship resulting from the interactions between the structure and process (i.e. how well things work together) and the resulting emotional response (Wilson & Morren, 1990). The overall objective of stage 3 is to continue building a shared view of the issue by creating a single representation of the situation that accurately conveys the multiple worldviews of the stakeholders.
Stage 4 allows the stakeholders to voice their specific interests and concerns about the situation described in stage 3. Another way of looking at it is: stage 3 is a picture, a vivid description of what is currently going on in the system, while stage 4 is the critique of that picture. In stage 3, we are also trying to understand how the system works, what areas are easy to change and which are not as well as determining what affects what (the system’s overall degree of connectionism). When we move on to stage 4, the stakeholders voice what particular structures, processes and climates they are interested in changing or are concerned that future changes in the system will affect. The understanding of the system we gained in stage 3 should help us better analyze the likelihood of implementing the expressed interest or if the concerns of the stakeholders have a rational background.

Each of the interests expressed in stage 4 should be further developed in stage 5, 'Develop improvements', so that the following features of the improved state are described:

- What is the central element being changed?
- Who will be managing and responsible for the changes?
- Who will benefit from this change? Who might be negatively affected if such change occurs?
- Who has or could have the power to alter or block the desired changes?
- What environmental factors might constrain and assist the desired changes? What are the internal or organizational constraints?
- What makes this change meaningful? What values and assumptions are explicit or implicit in the desired changes?

During the development of the improvements, a number of different types of modeling activities could be incorporated to aid in the analysis of possible changes and work through the complexity of the system. Wilson and Morren (1990) suggest using the HAS (Human Activity System) model developed by Checkland (1981). This tool integrates the "We" quadrant into the right-hand quadrants by addressing different worldviews and the organizational environment, integrating them into the more commonly analyzed systems and procedures of the environment. Many other tools that examine the economic, ecological and social systems aspect of the future situation could also be used to assess trade-offs associated with suggested improvements. While these tools are more typically oriented towards the right-hand quadrants and provide invaluable knowledge of the situation. Even if they mostly ignore the left-hand quadrants, they often have the capacity to be used to address a wider conceptualization of the systems they seek to reduce as well as the socio-cultural assumptions that underlie them if applied as part of an integral MSP. Some possible tools are decision support systems, simulation modeling, visualizations, suitability models, cost-benefit analysis and geographical information systems.

The end result of this phase is a synthesized report documenting stages 3, 4 and 5. It should contain an overview of the situation with its current structures, process and climate. The final interests and concerns of all stakeholders should be documented as well as the various proposals for improvements that the stakeholders have suggested. Before continuing onto stage 6, the report should be approved by all the stakeholders. If during the process, there were major differences in worldviews expressed, then all of them should be included in the report. More than likely, these differences in worldviews have led to
several incommensurate proposals for improvements which should also be documented. At this stage, we are not trying to decide which of the proposals for improvement we are going to follow; instead we are trying to think creatively about all the possible future improvements that could be realized within the system.

5.3.1.4 Decision making and Conflict resolution (Deciding)

Ultimately we must decide what course of action (or inaction) to pursue and, in the decision making and conflict resolution phase, we transition from an assimilating learning style to a convergent learning style (Kolb, 1984). The aim of stages 6 and 7 is to assure that the models presented in stage 5 are anchored in the reality of the situation as seen by the people involved. Stage 6 looks back and evaluates whether or not the improvements are in line with the initial mission and situation described, while stage 7 looks forward and debates which improvements are feasible and more desirable. Finally, stage 8 is the creation of the management and monitoring plans that enable the mission of the MSP to be carried through.

As previously stated, the outputs of stage 5 are a number of possible improvements to the current situation. Each improvement reflects the interest and concerns of the stakeholders within a given worldview. The objective of stage 6 is to look back at stage 2 and 3 to verify that the suggested improvements are in accord with the mission agreed upon in stage 2 and determine the relevance of the improvements to the actual situation described in stage 3. The insights derived by these comparisons will likely yield progressively more specific proposals for change that are increasingly relevant to the situation. For these proposals to be inclusive and to correctly address the left-hand quadrants it is advisable to utilize contingence techniques such as 'what-if' and 'if-then' statements that allow all stakeholder perspectives about the future to be integrated into the proposals (Wilson & Morren, 1990). At the same time, rigorous right-hand quadrants techniques such as SWOT analysis and backcasting can aid in the analysis. Multi criteria analysis (MCA) and participatory modeling techniques can also improve the structuring and analytical capabilities of the process (Mendoza & Prabhu, 2005).

Finally, in stage 7, we arrive at the moment to debate the desirability and feasibility of the improvements. In this case, desirability is set in the context of a particular worldview and is subject to an individual group's interpretation. At the same time, participants should assess the feasibility of the proposed improvements; this implies both the natural and social aspects of the situation. Wilson and Morren (1990) define feasibility through the following two statements:

- A change can only be implemented with the resources (staff, technology, structures, capabilities, etc.) at hand.
- A change is feasible only when it is environmentally appropriate, in terms of avoiding unacceptable, especially irreversible, costs and in terms of involving factors over which people have control. (1990)

More succinctly, we are trying to answer the following questions "Is this what we actually want to do?" And 'Can we really implement the specific changes necessary to get there?' (1990).
This stage becomes the key to the entire process if conflicting views have persisted throughout. Given a group with conflicting views, this stage is the pivotal point for evolving and emerging into a functional working group that communicates, acts collaboratively and learns together. If the group fails here, they are destined to return to processes defined by persistent conflicts and a distinct lack of co-operation. Vital to the success of this stage is the skill of the facilitator, who has to dexterously manage the social environment to promote all level of social learning. There are two ways to foster conflict resolution, which are inline with double and triple loop learning. The first method, based on double loop learning, seeks that the conflicting parties understand the others point of view, ‘walk their shoes’; to try and recognize the other’s needs, views and fears and, in this manner, transform the attitudes and assumptions to each other. Kegan (1994) points out that this method of conflict resolution transforms the thinking and feelings of each other's positions, yet it does not transform the positions themselves. For this, triple loop learning is needed, where the conflict resolution does not seek win-win solutions but to transform the identification to one’s side. “It is one thing to provide mutual assurance of respect for the integrity of the other’s position. It is another thing to mutually suspect that what passes for integrity (one’s own and the other’s) is also ideology, necessarily partial, and an unworthy prize, finally, over which to risk one’s entire treasure” (p. 318-319).

As a group, if we have successfully moved on from stage 7, we then have the information needed to create the mission statement for our detailed plan of action. The task of stage 8 is to create both a management and monitoring plan that can be focused only on the resource to manage (’It/s’ quadrants), or it can also include social interventions that aim at changing behaviour (’it’ quadrant), individual mindsets (’I’ quadrant), and/or culture (’we’ quadrant). A good resource for developing a plan for natural resource management is Woodhill and Robin’s (1998) guide to ‘Participatory evaluation for landcare and catchment groups: A guide for facilitators’. In this work, they describe three main aspects of a good evaluation plan: establishing the purpose and scope of the evaluation, identifying evaluation questions and indicators and planning evaluation activities. If the purpose is also to engage with individuals and society, then the methodology of SCALE (GreenCOM, 2004) would be a good reference.

5.3.1.5 Managing and Adapting (Acting)

As we move out of the process of decision making and conflict resolution, we should have in our hands a complete project plan that consists of both management and monitoring plans. From here, we move into the action part of the cycle and hence implement our project. The implementation of a management plan is no simple feat and certainly requires a great deal of resources to be successful. At this point it is not uncommon to become overwhelmed by the task of implementing the management plan, and, as a result, many may postpone the monitoring plan due to time or financial constraints. However, we need to remember that the only way to improve future actions is by learning from both our successes and our failures, and monitoring our activities is the only way we can ascertain which is which.
This naturally leads us to the 'Learning and Adapting' phase. This phase can be divided into two parts, one dominated by flexibility and intuition and the other consisting of more formal methods of evaluation. Flexibility and intuition are needed as we carry out our project plan because these plans are never perfect and we will need to learn and adapt as we implement them. The effectiveness of formal evaluation is often limited if our plans are highly dynamic, and often we will need to employ more introspective methods to adapt to this environment. However, we should not entirely discount formal evaluation as a method of learning and adapting. Results derived from the formal analysis of management plans generate useful empirical evidence that can be used for improving future actions. An obvious advantage of this method is the direct comparability of results across multiple processes. A suite of techniques for analyzing both qualitative and quantitative data will certainly be needed as a great diversity of outcome measures are typically produced by the multitude of methods available for these purposes. These results will be used to adapt the project according to insights gained and should also be used for informing the general public. Through constant action in this iterative cycle and by paying attention to all four quadrants, it follows that we should move closer and closer to fulfilling the mission we have established at the beginning of the process; building solidarity, trust in the community, and among stakeholders; and hopefully transforming both the individual and collective.

5.4 Conclusions

Since the end of the 1980s, multi stakeholder process have been emerging, evolving and adapting to the needs of the local citizens and the problems they seek to address. Some of the MSPs have been successful in influencing positive change while others have permitted the maintenance of the status quo. This is largely due to the great variability that exists within MSPs. From the idealistic processes that are based on the democratic principles of transparency and participation, emphasizing the importance of achieving equity and accountability in communication between stakeholders; to processes that are organized in an ad hoc manner, are opaque and non-participatory, and are aimed at citizen consultation and not involvement. The unique aspect of the integral MSP that we are proposing is that it includes, integrates and extends current notions of MSPs. Within an all-quadrant framework, the integral MSP draws on elements of the more conventional quantitative, consultative techniques ('It/s' quadrants) as well as integrating the framework for social learning ('I' & 'we' quadrants) that was proposed and described at the beginning of the chapter. The integral MSP emphasizes the need for attention to be paid to the collective and individual dimensions of those people involved in the process. Including and going beyond the traditional methods of consultation or emphasis on quantitative techniques, this approach conducts planning on a collective cultural foundation of a shared vision. We must remember that what we have laid out is only a map to guide our efforts and not a true representation of reality; as such, one must always be vigilant not to rely on one-size-fits-all solutions.

In the previous chapter we brought up and highlighted the need for a culture shift, and in this chapter we laid down the frameworks and processes that have the potential for creating the needed shift. The social
learning framework outlines the process that we believe enables individuals and groups to transform their worldviews. The integral MSP bridges between the four quadrants of integral theory and creates a balance between the three cultural values spheres by illustrating how interconnected knowledge, values and individual mindsets are. The integral MSP does not only address the knowledge that stems out of each of the quadrants it also provides the medium of interaction between the quadrants that allows for individuals and collectives to transform.

What is needed to improve the integral MSP is a set of methodologies for guiding the monitoring and evaluation of the functioning of MSPs themselves. A list of indicators could be elaborated that accurately represent each aspect of the all-quadrant approach, the types of learning engaged, as well as the quality of dialogue that would help facilitators emphasize various components of the quadrants and social learning framework as the process is being carried out. In addition, the development of a methodology to correct imbalances as they are occurring would complement the indicators and give the facilitators a powerful tool to accomplish a successful multi stakeholder process that engages all levels of learning. Having a method to gauge the accurate balance of the quadrants and the type of learning happening would be of great utility for the international community working on natural resources and development, as they seek to move away from the top-down approaches and into practices that are more empowering and involve the local citizens.

MSPs are not the only places ideal for seeding a culture shift. Any type of organization where people come together for a specific purpose can become an ideal place to foster the concepts outlined in the framework for social learning. In the next chapter we will illustrate how we put in practice some of the concepts of social learning in a natural resources conservation and forestry undergraduate course.
Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure. It is our light, not our darkness that most frightens us. We ask ourselves, Who am I to be brilliant, gorgeous, talented, fabulous? Actually, who are you not to be? ... Your playing small does not serve the world. There is nothing enlightened about shrinking so that other people won’t feel insecure around you. We are all meant to shine, as children do... It’s not just in some of us; it’s in everyone. And as we let our own light shine, we unconsciously give other people permission to do the same. As we are liberated from our own fear, our presence automatically liberates others.

Marianne Williamson from A Return To Love
Education for sustainability

"As educators, we have a unique opportunity and a clear responsibility to help prepare our students to be responsible citizens of the future. The fate of our planet and all its life forms lie in their hands. The question therefore is how do we prepare the global citizen?" Professor Gillian Slater, Vice Chancellor, Bournemouth University.

Contemporary social-ecological problems are complex and involve increasingly large numbers of interacting systems. Popular examples include climate change, sustainable resource management and poverty. Trying to solve these issues requires individuals that have a high level of expert knowledge, but also the ability to think laterally and connect knowledge across multiple domains. This is especially important when it comes to breaking down our pedagogical preconceptions that content knowledge is paramount in favour of recasting learning as a means of expanding our personal capabilities to adapt to novel circumstances and to solve complex problems that we have never seen before.

Throughout the last chapters we have been describing some key concepts that are necessary for sustainability to emerge out of the collective. Yet many of these concepts need individuals who have the capacity to understand human behaviour and the capacity to deal with complex, dynamic systems as well as conflicting viewpoints. They need to be able to find creative ways to break down barriers that keep us from working together to find satisfactory solutions to the problems of sustainability. The practice of sustainability is about unblocking and allowing social learning to flow through communities and organizations. It may be a small community forestry initiative, an NGO working on livelihoods in the Global South, a large corporation or a governmental organization. Individuals in these organizations not only need to be knowledgeable, they also need to have competent 'soft skills'. Soft skills that allow them to have a deep understanding of what motivates and drives people, and how their values and the values of others are fostering or inhibiting creative change. These individuals need to have the capacity to self-engage in double and triple loop learning, as well as know how to set the conditions for the collective to embrace social learning. In a sense, we need individuals who have acquired a balanced understanding and know-how of all three cultural value spheres.

This chapter is a case study on trying to educate throughout the cultural values spheres in a course on undergraduate forestry and natural resource conservation (CONS481: Conservation Planning & Wildland Recreation). We utilized the existing course outline, but shaped the manner of teaching the course so that the skills the students acquired were broader than just those derived from the knowledge received. Our objective was to equip the students with the capacity to self-reflect and constantly question their assumptions of how they were constructing their reality. We also aimed to develop students who could actively listen in a dialogue; students who had the capacity to 'suspend', as we have described in the previous chapter. We wanted the students to leave the course with a broader value schema, as well as having practiced and further developed their social and practical skills. Finally, we also wanted the students to have gained knowledge and understanding of the dynamic systems at interplay in any socio-ecological context.
In the last chapter, we discussed the role of social learning in society-at-large and gave an example of how it could be use in a multi-stakeholder process. The same framework of social learning is used here, but within the context of higher education. The next section will begin by looking at the role higher education plays in society, bringing in new concepts as well as drawing on ideas discussed in the previous chapters. It then follows up by analyzing what the CONS 481 course contributes to the role of higher education and what we did to broaden its objectives. To gauge the effectiveness of these changes we conducted a pre and post survey, analyzed reflective papers of the students and conducted an exit interview with selected students. This is described in the methods and results section, which is followed by a discussion that informs how we used aspects of the social learning framework to promote shifts in mindsets and worldviews. We will also discuss some specifics points for improving the course and some general recommendations for broadening the conception of education for other courses.

6.1 Broadening the conception of higher education

The Association of University Teachers (1999) distinguishes between two conceptions of the role higher education plays in society. Higher education institutes can have a ‘narrow’ to ‘broad’ concept of education as illustrated in Table 6.1. In a broad conception of higher education, the focus is not only on acquiring knowledge, but also developing interpretive and participatory skills. Shifting from understanding the facts to being able to pose and contextualize the problem at hand; placing as much focus on the local as the global while understanding and appreciating both Northern and Southern contexts. The task for higher education is to foster the capacity in students to be responsible global citizens, which requires a lifelong engagement to developing the self and others.

<table>
<thead>
<tr>
<th>Product</th>
<th>Narrow conceptions</th>
<th>Broad conceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The specialized and knowledgeable individual equipped to play an economic role in society</td>
<td>The reflective and adaptive team player equipped to respond creatively to all forms of change</td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Production of a skilled workforce to attain economic goals</td>
<td>Lifelong development of &quot;responsible global citizens&quot;</td>
</tr>
<tr>
<td>Research</td>
<td>&quot;Cutting edge&quot; research to gain sectoral or national competitive advantage</td>
<td>Contributor to the international collaboration in research and information sharing</td>
</tr>
<tr>
<td>Knowledge Society</td>
<td>Higher education as an exportable commodity; a contributor towards economic goals</td>
<td>Higher education’s &quot;role of service&quot; to society; multiple partnerships to facilitate knowledge distribution</td>
</tr>
</tbody>
</table>

Source: Association of University Teachers (AUT) (1999)

The narrow and broad conceptions of education are in line with Freire’s (1972) approach to education. Freire criticizes the common ‘banking’ concept of education where students are seen as only recipients of knowledge, and the teacher’s task is to deposit, through didactic lectures, knowledge into the minds or "accounts" of students. In the banking or narrow approach to education, the teachers are the source of
knowledge and the students, the recipients of this knowledge, which then they benefit by "drawing" on that knowledge in the future. Shor (1992) explains that the purpose of the banking model is to pass on the traditional and accepted knowledge, information, values, beliefs of the functioning of the world and to prepare students for their prescribed place in the society.

Following Freire's concept of education, Shor outlines the problem-posing model to education. This model of education emphasizes the process through which teachers and students explore and create knowledge together in a variety of contexts, and generate and address critical questions about the knowledge they produce. Freire emphasizes the need to change the teacher-student contradiction. Creating an education environment where both teachers and students are students and teachers. The purpose of the problem-posing model is to both learn and question the traditional and accepted knowledge, information and values as well as to develop more democratic, diverse, critically thinking members of society. Shor explains that problem-posing education has its roots in the work of Dewey (1916, 1938, 1956) and Piaget (1970), who urged active, inquiring education through which students actively construct meaning in the natural world and the simulated natural world within the classroom.

Freire's and Shor's views of education are fairly in line with the broad conceptions of higher education outlined by the Association of University Teachers. Building on the concept of education to foster global citizenship, McKenzie (2000) develops a number of learning outcomes that should be achieved (Table 6.2). McKenzie divides these into three categories: generic themes that refer to the knowledge and understanding the students must develop; skills, which refers to the cognitive, social and practical abilities; and dispositions, which refer to the values and attitudes the students need to develop to become an effective part of the global citizenship.

<table>
<thead>
<tr>
<th>Generic themes</th>
<th>Knowledge and understanding</th>
</tr>
</thead>
</table>
| Social justice and equality | - Causes and effects of inequalities within and between societies  
- Changing perspectives on the process of social change  
- Competing views on the eradication of poverty |
| Diversity               | - Values and cultures in specific societies and across global society  
- The interaction of different values and beliefs in our lives  
- Evolving conceptions of human and planetary rights and freedoms |
| Globalisation and interdependence | - Interpretations of the process and effect of globalisation  
- Shifting patterns of local-global relationships  
- Responses to the process of globalisation |
| Sustainable development | - Local-global people-environment relationships  
- Steps to sustainable development  
- Measuring and monitoring sustainability |
<table>
<thead>
<tr>
<th>Skills</th>
<th>Cognitive</th>
<th>Reflective thinking</th>
<th>Strategic thinking</th>
<th>Communication</th>
<th>Education and public information skills</th>
<th>Participation</th>
<th>Leadership</th>
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<tbody>
<tr>
<td></td>
<td><strong>Critical thinking</strong></td>
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<td></td>
<td><strong>Analytical thinking</strong></td>
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<tr>
<td></td>
<td>• Detect bias, opinion and stereotypes</td>
<td></td>
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<td>• Collect information/data from relevant sources</td>
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<td></td>
<td>• Determine key elements in complex issues, problems and questions</td>
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<td>• Synthesise information/data from relevant sources</td>
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<tr>
<td></td>
<td>• Identify tension and consonance in complex issues, problems and questions</td>
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<td></td>
<td>• Evaluate information/data from relevant sources</td>
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<tr>
<td></td>
<td><strong>Reflective thinking</strong></td>
<td></td>
<td></td>
<td><strong>Strategic thinking</strong></td>
<td></td>
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<tr>
<td></td>
<td>• Review cycles of thought and action</td>
<td></td>
<td></td>
<td>• Advance an optimal solution to a particular problem, question or issue</td>
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<tr>
<td></td>
<td>• Critically appraise earlier cycles of thought and action</td>
<td></td>
<td></td>
<td>• Propose the means by which such a resolution may be attained</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>• Plan new cycles of thought and action based upon what has been learnt</td>
<td></td>
<td></td>
<td>• Anticipate likely problems and consider unanticipated outcomes</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Communication</strong></td>
<td></td>
<td></td>
<td><strong>Participation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Listen to and summarise an argument</td>
<td></td>
<td></td>
<td>• Participate in decision-making processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Verbally present an argument</td>
<td></td>
<td></td>
<td>• Act sensitively in decision-making processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Argue a case through essays and papers</td>
<td></td>
<td></td>
<td>• Involve different actors in the decision-making process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Education and public information skills</strong></td>
<td></td>
<td></td>
<td><strong>Leadership</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Research the needs and interests of a particular target group</td>
<td></td>
<td></td>
<td>• Manage change with a given group of actors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Develop an information/education programme relevant to a particular target group</td>
<td></td>
<td></td>
<td>• Enthuse, involve and support relevant actors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Design information/learning materials appropriate to the needs and interests of a particular target group</td>
<td></td>
<td></td>
<td>• Make difficult but reasoned decisions</td>
<td></td>
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</tr>
</tbody>
</table>
Fostering global citizens should not be a strategy of education reserved for students studying philosophy and political sciences. Approaches to education that create global citizens should be engrained in the core of any learning environment, no matter what degree a student is specializing in. The learning outcomes outlined by McKenzie can be introduced into any discipline because these learning outcomes transcend the knowledge that the students are gaining. These learning objectives aim to teach process knowledge and skills, which can be done within a curriculum of content knowledge. In the next section, we will describe our experience teaching both process and content knowledge, within an emancipatory learning paradigm (Mezirow, 1996) that aims to create future global citizens.

6.2 The CONS481 experience – methods of engagement

The course Conservation Planning & Wildland Recreation (CONS481) engaged the students in a number of ways. The course was divided into four sections: lectures, discussion, labs and a reflective essay, which aimed at addressing all learning styles as described by Kolb (1984) (see Table 6.3 for timeline of class events). The lectures of the first half of the term aimed at providing the students with the relevant ‘soft skills’ needed to engage in the land use planning exercise carried out in the labs. These soft skills included different planning approaches and principles, as well as a number of decision making

<table>
<thead>
<tr>
<th>Dispositions</th>
<th>Values and attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual self-esteem</td>
<td>Sense of identity and self-worth</td>
</tr>
<tr>
<td>Empathy and respect</td>
<td>Empathy with others' views and needs</td>
</tr>
<tr>
<td>Commitment to social justice and equity</td>
<td>Sense of fairness</td>
</tr>
<tr>
<td>Commitment to sustainable development</td>
<td>Concern for justice</td>
</tr>
<tr>
<td>Valuing and respecting diversity</td>
<td>Willingness to speak up for others</td>
</tr>
<tr>
<td>Commitment to action</td>
<td>Value difference and diversity</td>
</tr>
<tr>
<td></td>
<td>Welcome opportunities to learn from other cultures and societies</td>
</tr>
<tr>
<td></td>
<td>Respect human rights and fundamental freedoms</td>
</tr>
<tr>
<td></td>
<td>Concern about over-consumption, environmental degradation and resource depletion</td>
</tr>
<tr>
<td></td>
<td>Concern for the future of the planet and future generations</td>
</tr>
<tr>
<td></td>
<td>Commitment to sustainable livelihoods and lifestyles</td>
</tr>
<tr>
<td></td>
<td>Belief that people can make a difference</td>
</tr>
<tr>
<td></td>
<td>Being prepared to take a stand on important issues</td>
</tr>
<tr>
<td></td>
<td>Being prepared to work for a more equitable future</td>
</tr>
</tbody>
</table>

techniques, communication strategies and listening skills. A class discussion using the instructors' and students' experiences was used in the first half of the course to introduce the idea of worldviews. This was followed by a multimedia lecture that built on what was discussed in the previous class and introduced some new concepts and online tools that would allow the students to further explore the notion of worldviews.

Table 6.3 - Timeline of class events

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>18th September</td>
<td>Pre survey</td>
</tr>
<tr>
<td>20th September</td>
<td>Discussion on values and conservation</td>
</tr>
<tr>
<td>27th September</td>
<td>Lecture on worldviews and integral framework</td>
</tr>
<tr>
<td>10th October</td>
<td>Lab - Role playing - Stakeholder presentation</td>
</tr>
<tr>
<td>17th October</td>
<td>Lab - Role playing - Stakeholder presentation</td>
</tr>
<tr>
<td>31st October</td>
<td>Lab - Mock planning exercise</td>
</tr>
<tr>
<td>7th November</td>
<td>Lab - Mock planning exercise</td>
</tr>
<tr>
<td>8th November</td>
<td>Discussion and reflection on planning exercise</td>
</tr>
<tr>
<td>29th November</td>
<td>Individual reflective paper due date</td>
</tr>
<tr>
<td>13th December</td>
<td>Post survey and interviews</td>
</tr>
</tbody>
</table>

In the labs, the students were divided into groups that would represent a number of stakeholders (Table 6.4) in a mock land use planning of the Elaho Valley. The area of study was TFL\textsuperscript{30}, held by International Forest Products Ltd. (Interfor), which has an AAC\textsuperscript{31} of approximately 250,500 m\textsuperscript{3}/year. The objective of the lab was for students to work through the problem of planning and managing for multiple forest uses in a contentious area of the province. Part of the complexity of the planning exercise was rooted in the need of land managers to manage for multiple (and at times, competing) land uses on finite spatial and natural resources. This area has a contentious history due to the presence of old growth stands and attractive recreation opportunities.

The students were asked to research the area where the planning exercise was going to take place, what their groups stakeholder interests were, and what goals and objectives they would be putting forth at the planning table. The groups also prepared an oral presentation that was delivered to the other stakeholder groups to inform them of what their perspective and interests were in the Elaho Valley. The students were asked to fully engage and pretend that they held the values and beliefs of the groups they were

\textsuperscript{30} TFL stands for Timber Farm License, which is a privately managed area of forest within the Crown land.

\textsuperscript{31} AAC stands for allowable annual cut, which is the allowable rate of timber harvest from a specified area of land. This target is set by the Chief forester of the government in accordance to the BC Forest Act.
representing. The whole process of the lab can be seen as engaging in all the aspects of the social learning framework that we outlined in the previous chapter.

Table 6.4 - Lab stakeholder groups

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Number of students (Lab 1 – Lab 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Motorized Recreation</td>
<td>5 - 3</td>
</tr>
<tr>
<td>Commercial Recreation and Tourism</td>
<td>6 - 3</td>
</tr>
<tr>
<td>Forestry and First Nations</td>
<td>5 - 3</td>
</tr>
<tr>
<td>Motorized Recreation</td>
<td>4 - 4</td>
</tr>
<tr>
<td>Consumptive recreation - Hunting and Fishing</td>
<td>5 - 3</td>
</tr>
<tr>
<td>Conservation and Environment</td>
<td>6 - 3</td>
</tr>
</tbody>
</table>

In the second half of the term, the lectures aimed at providing the students with the relevant 'hard skills' for land use planning. These skills are more technical and informative, for example students were taught specific tools and strategies used in land use planning and recreation stewardship, compared to the soft skills provided in the first half of the term. In the labs held during the second part of the term, the students engaged in two sessions of a mock planning exercise. The objective of the lab exercise was to place the students in a complex environment, where there was not a single right answer and students would have to communicate effectively. We wanted them to face, to a degree, the intricacies of a real life scenario similar to what they will be facing once they graduate. The students were divided into tables of 4 – 6 people, each one having a complete representation of all stakeholders. Baseline maps were handed out with a coloured set of erasable markers to draw on top and a basic structure of how to follow through the two sessions of planning was given out. The students had also received instruction\(^32\) on how to communicate so that it would be more likely that a dialogue style of conversation would emerge.

There were two lecture times devoted to the introduction of the concepts of mindsets, values, communication, and integral theory: one was a class discussion and the other a lecture. To broaden the worldviews of the students, as well as giving them the skills to identify value systems we began with a class discussion of Chapin’s (2004) paper on the challenges conservationist are facing in the Global South\(^33\). The paper describes the ethical concerns that the three largest conservation NGO’s are facing by negatively affecting the local people who live in the natural habitats they are trying to protect. The class discussion aimed at exploring the themes of conservation and social justice by deconstructing the worldviews and values of the conservationist, native people, and politicians that were discussed in Chapin’s paper. We also discussed issues of power imbalances and the dynamics between poverty, conservation and development.

\(^{32}\) See appendix 1 for a summary of guidelines given.
\(^{33}\) See appendix 2 for the power point presentation that guided the class discussion.
The week after the discussion followed a lecture to build upon the ideas and topics that had been aroused in the discussion. For the lecture, the students were required to read the first chapter of Clapp and Dauvergne's (2005) book 'Paths to a green world: the political economy of the global environment'. The chapter describes how different worldviews, and value systems clash and how these contrasting views argue for conflicting solutions to the contemporary environmental problems. The objective of the lecture was: first, to highlight the importance that different values and worldviews have in shaping our realities; second, to illustrate how different worldviews have difficulty communicating to each other; third, to introduce the all-quadrant approach and how it can be used in planning.

Overall, the course had a number of learning objectives that are in line with McKenzie's (2000) education curriculum for global citizenship (Table 6.5). The themes (knowledge and understanding) that were emphasized in the class were: cultural differences and diversity; the interdependence of systems; future generations' needs and rights; and the role that community involvement and participation plays in addressing socio-environmental issues. The skills (cognitive, social and practical) that we tried to foster were: a holistic thinking and inquiry by using the integral four quadrant framework to guide them in the lab exercise; a reflective practice of writing and reflecting on various aspects of their experience in the mock exercise; an ability to identify value systems by providing lectures, discussions and readings that broaden their mindset, as well as a providing a framework to identify value systems; communication skills that leaned towards dialogue more than debates; and an ability to work in teams and build partnerships. Finally the dispositions (values and attitudes) that we attempted to foster were: a concern for inter- and intra-cultural issues; self-criticism and reflection; and the belief that individuals can affect change.

Table 6.5 - CONS 481 learning objectives analyzed with McKenzie's curriculum outline

<table>
<thead>
<tr>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Values and cultures in specific societies and across global society</td>
</tr>
<tr>
<td>• The interaction of different values and beliefs in our lives</td>
</tr>
<tr>
<td>• Local-global people-environment relationships</td>
</tr>
<tr>
<td>• Steps to sustainable development</td>
</tr>
</tbody>
</table>

34 See appendix 3 for the power point of the lecture.
### Skills
- Detect bias, opinion and stereotypes
- Identify tension and consonance in complex issues, problems and questions
- Collect, synthesise & evaluate information/data from relevant sources
- Review cycles of thought and action
- Critically appraise earlier cycles of thought and action
- Advance an optimal solution to a particular problem, question or issue
- Listen to and summarise an argument
- Verbally present an argument
- Argue a case through essays and papers
- Research the needs and interests of a particular target group
- Develop an information programme relevant to a particular target group
- Participate in decision-making processes
- Act sensitively in decision-making processes
- Involve different actors in the decision-making process
- Manage change with a given group of actors
- Enthuse, involve and support relevant actors
- Make difficult but reasoned decisions

### Disposition
- Open-mindedness and curiosity
- Empathy with others’ views and needs
- Respect for others’ views and needs
- Associate perspectives and predicaments
- Value difference and diversity

### 6.3 Assessing development – methods of measurement

The course was structured in such a way that students engaged in both horizontal and vertical learning as described by Cook-Greuter (2004). Horizontal learning provides knowledge, skills and understanding so a person can better face future challenges. This type of learning is found in the more common forms of teaching and is measured by classical multiple-choice exams and essay. On the other hand, vertical learning is not something that can be explicitly taught (Cook-Greuter, 2004). The conventional forms of education or the ‘banking system’ as Freire would describe it, cannot address vertical growth. Vertical learning needs to be lived; it cannot be acquired by reading a book or studying a lecture. Cook-Greuter states that “[o]nly specific long-term practices, self-reflection, action inquiry, and dialogue as well as living in the company of others further along on the developmental path has been shown to be effective” (p.277). In this course, we emphasized skills such as listening, dialogue and self-reflection as ways to foster learning on both vertical and horizontal axes. These skills seek to build the capacity to critically reflect on the assumptions of others, as well as to critically self-reflect on one’s own assumptions, which in time will lead to a transformation of worldview. This is what Mezirow (2000b) calls objective and subjective reframing, which provides the students the opportunity to become aware of how they construct their knowledge and values. It is important to note that the potential to grow vertically is within an individual. This potential can be encouraged and supported by the educator but it cannot be forced. The best that an educator can do is create an environment where the individual and the group is challenged to look beyond themselves and experience the greater self, creating structures to support and facilitate any shifts that happens through vertical learning.
We used three metrics to gauge how effective the course was at fostering vertical learning. The metrics were a pre and post survey of the spiral dynamics (SD) values test, a reflective paper and a semi-structured interview. The reflective paper was completed by all students, but the survey and semi-structured interviews were completed by only 12 students out of 50 in total of the class (24% of the class). The SD survey was the only metric that consisted of a pre and post measurement of the student's development. The reflective piece was completed in the last weeks of class and the interviews were done after the class was finished.

There are three main tests to measure vertical development: the SD values test (NVC, 2006; Online PeopleScan, 2006), the Sentence Completion Test (Cook-Greuter, 1999; Loevinger, 1966, 1985), and Subject/Object interview (Kegan, 1994). SD values test is the weakest of all these methods for a number of reasons. First, the test has not been as extensively researched by academia as have the other methods. Second, the test uses a fixed format and ranking schema that does not allow for individual expression. Third, it targets mainly the values line of an individual and does not provided as good a measure of the whole self as the other tests do. Fourth, the test is weak for scoring levels teal and above (Todorovic, 2002). Finally, the test is dependent on the individual's sincerity when answering the question, since the individuals can project values that they actually do not possess. However, given the resources and training of the instructors, the only accessible and practical test to perform was the SD values test.

The SD values test that was used in the class is proprietary of Online PeopleScan (2006). The test is based on 20 questions, where each question is comprised of seven statements reflecting different values and viewpoints. For each question, fifteen points are distributed among the seven statements depending on the individual's agreement with the statements. The fifteen points can all be allocated to one statement if the individual only agrees with one statement or distributed among the statements in order of importance as the individual sees fit. The result of the test (i.e. Figure 6.1) is a quantitative representation of an individuals or groups acceptance of the values and mindsets that are more prominent at each level: the higher the bar, the higher the acceptance of that level.

The reflective paper was used both as way to foster subjective and objective reflective skills, and as a way of gauging the student's capacity to critically reflect. The paper prompted the students to reflect on the both the object and inter-objective realm, as well as the subjective and inter-subjective realm. The guidelines given were broad and left each student to reflect on what was most prominent in their experience of the mock planning exercise.

To measure the depth of reflective thinking we used a coding schema using Mezirow's (1991) work on reflective thinking and Wilber's (Wilber, 2000) four quadrant framework. Mezirow categorized a number

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35 See appendix 4 for the outline given to the students on how to write the paper.
36 See appendix 5 for the questions asked in the semi-structured interview.
of reflective actions and capacities that an individual can have. First, Mezirow distinguishes between non-reflective and reflective actions, dividing non-reflective action into three categories: habitual action, thoughtful action and introspection; and reflective action into three other categories: content, process, and premise reflection. Habitual actions are a learned activity that is performed automatically with little conscious thought. Thoughtful action uses existing knowledge and cognitive capacity to perform better an action. The knowledge is put to use and underlying assumptions are not questioned. Introspection refers to the process of recognizing and acknowledging the thoughts and feelings about ourselves. This process is considered non-reflective for Mezirow because it does not analyze, by re-examining and testing, the thoughts and feelings, it just recognizes them. Content reflection is thinking and analyzing an experience and ‘what’ we perceive, think or feel about it. Process reflection is examining ‘how’ to handle the experience, by thinking of “how one perform[s] the functions of perceiving, thinking, feeling or acting” (p.107). Premise reflection involves becoming aware of the assumptions, beliefs and values that construct our experience, of ‘why’ we “perceive, think, feel or act as we do” (p.108). For Mezirow, the capacity for premise reflection is of a higher order and is the only reflective thinking that can transform an individual’s perspective. Reflection can be about any of Wilber’s four-quadrant framework. We can reflect about our self’s narratives, feelings, beliefs, morals, and values (‘I’ quadrant); our cultural values and social constructs (‘we’ quadrant); our actions and behaviours (‘it’ quadrant); and our societies systems (‘its’ quadrant).

To analyze the papers, we scanned them into PDF files, then used the word recognition (OCR) feature in Acrobat professional to translate the images into text, and finally we imported the text into NVivo7 (QSR International, 2006), which is a qualitative data analysis program. The unit of analysis were sentences or phrases in the papers. The themes coded were based on the reflective and integral quadrant categories described above (see results section 6.4 for examples of phrases for each category). The papers and interviews were analyzed only by one person. Given the subjectivity of the data analyzed it would have been optimal for at least two other reviewers to code the data. This would have allowed for a more consistent coding of reflective categories as well as improved the validity of the results.

The semi-structured interview was used as an explorative method to both gauge if the students were engaging in vertical learning and to inform the educators what methods had fostered or inhibited vertical learning. The interviews lasted between 30 and 50 minutes and they were conducted at the end of the course. The recordings were semi-transcribed, where only the parts of the conversation that we thought useful for this chapter where transcribed. The transcription was not exact, since few people speak in grammatical prose and normally use phrases such as “you know what I mean” and others that make for a harder read afterwards. We use the software Transcriber (Manta et al., 2005) to do the transcription. The data was then exported as text files and imported into NVivo7 to be analyzed in an exploratory manner looking for comments and descriptions that would highlight the learning process of the individual as well as the aspect of the course structure that enabled or not vertical learning.
6.4 Results

6.4.1 Survey

The survey was the only metric that we used that had a pre and post course measurement. Table 6.6 and Figure 6.1 shows the results for the group in both tests. The mean and standard deviation for the pre and post survey of the group for each level are displayed in Table 6.6. The bars in Figure 6.1 illustrate the acceptance of the values and mindsets that are more prominent at each level: the higher the bar, the higher the acceptance of that level. The arrows on top of the bars point to the changes of the pre and post survey that are statistically significant (p<.05). Excluding magenta, we observe an overall shift towards higher levels. Red and orange tend to decline and green, teal and turquoise tend to increase. We can observe that only alternating levels show significant change. This can be explained by SD theory, which groups alternating levels into opposing yet complementary groups or systems. The sacrificial systems, which consist of the magenta, amber, green, and turquoise levels are concerned with understanding the internal world. On the other hand, the expressive systems that consist of the red, orange and teal levels are focused on the external world. The focus on the external world is manifested differently given the level. For example, a predominance of red tends towards mindsets and values that want to dominate the surroundings, whereas a predominance of orange tends to focus on measuring, controlling and engineering the environment, and a predominance of teal normally seeks to integrate and understand the interactions of the external world. We will discuss the significance of these results in the discussion section.

Table 6.6 - Numerical results from the pre, post spiral dynamics survey

<table>
<thead>
<tr>
<th></th>
<th>Magenta</th>
<th>Red</th>
<th>Amber</th>
<th>Orange</th>
<th>Green</th>
<th>Teal</th>
<th>Turquoise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre survey Mean</td>
<td>6.833</td>
<td>12.833</td>
<td>14.416</td>
<td>25.5</td>
<td>19.25</td>
<td>40.916</td>
<td>30.25</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.634</td>
<td>0.637</td>
<td>0.946</td>
<td>0.909</td>
<td>0.914</td>
<td>0.922</td>
<td>0.684</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Df</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>t Stat</td>
<td>1.526</td>
<td>2.058</td>
<td>0.262</td>
<td>3.182</td>
<td>1.030</td>
<td>3.074</td>
<td>0.322</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.077</td>
<td>0.032</td>
<td>0.398</td>
<td>0.004</td>
<td>0.162</td>
<td>0.005</td>
<td>0.376</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.795</td>
<td>1.795</td>
<td>1.795</td>
<td>1.795</td>
<td>1.795</td>
<td>1.795</td>
<td>1.795</td>
</tr>
<tr>
<td>Significant difference one-tail p&lt;.05</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
6.4.2 Reflective papers

6.4.2.1 Analyzing the types of reflection

Table 6.7 shows the results from analyzing the number of times (sentence or running-sentences) that a student engaged in some form of reflective and non-reflective action as defined by Mezirow (1991). The non-reflective actions are when a student mentions a concept or a feeling but does not actually reflect on the what, how or why of it. Aspects of habitual actions and thoughtful actions were found embedded in reflective statements that the students have made. However, no habitual actions or thoughtful actions were made reference to by themselves, so we have not included them in the table. Only a few students engaged in introspection, which refers to the process of just mentioning a concept or feeling without going into further depths and reflecting on the what, how, or why of it. For example, a student notices her feelings the first day sitting at the planning table:

"During the multi-stakeholder process I found that I felt very nervous to exercise my opinions before my peers until someone took the lead in our group." (SP.7.121)37

37 Quotation system: Each quotation is followed by code consisting of letters and numbers. The student paper quotations are assigned the letters ‘SP’, followed by a number that identifies the student and a second number that indicates where in paper the quote comes from. The interview quotation is assigned the letters ‘II’ followed by a
This statement is considered just introspection because the student is noticing a feeling but does not further reflect on it. Most students started with a sentence that was introspective and then followed by analyzing and reflecting on it. Therefore, such situations were coded as a reflective statements.

<table>
<thead>
<tr>
<th>Student</th>
<th>Introspection</th>
<th>Content reflection</th>
<th>Process reflection</th>
<th>Content and process reflection</th>
<th>Premise reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>4</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
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In Table 6.7, we can observe that most students engaged in reflection, and not simply introspection. Content reflection was the most common form of reflection, where the students analyzed ‘what’ is making them feel or behave in a given manner.

"I sometimes caught myself in the negotiation feeling like I was perhaps unclear on exactly what values I was representing. This feeling was exaggerated by the difficulty I had in representing both a timber company and a First Nations group. I find that I sometimes go out of my way to please other people even if it inconveniences me or jeopardizes a mutually beneficial negotiation." (SP.5.131)

From this statement, we observe that the student starts with an introspection on how he was feeling and acting, and then follows to reflect what aspect of the situation he was in that was giving him difficulties, as well as what habitual actions he performs that affect the feelings he was introspecting on. The same student continues to reflect on his negotiation abilities:

"If these negotiations had been more heated due to what I considered to be unreasonable demands then this may have been a significant challenge for me. If this had been the case I don't think I would have placed myself in a negotiator position as I do not feel that I am a strong debater. I often find it difficult to effectively strategize my dialogue when engaged in debate. When I find myself in an argument I almost always leave the situation thinking of all the good things that I could have said." (SP.5.151)
The student reflects on his weaknesses as a negotiator and is able to see what aspects of the negotiation make him weak. At the same time, the student is also reflecting on how he conveys ideas and how to strategize his dialogue, which falls into the category of process reflection. Hence, this phrase was categorized as content and process reflection.

Engaging in process reflection by itself was the second most common form of reflection. In this type of reflection, we look into the mental process, such as articulation of arguments, and behavioural activities, such as tone of voice, which affect and influence what we are doing. For example, a student reflects on her ‘nature’ or habits of conversation:

"In this lab I felt I was more aware of my role as a representative of a larger group and thus felt I had to advocate certain responsibilities. I believe it was this perceived responsibility to my group and the internal motivation driving me to be a better listener in this situation rather than a strong debater. This was a struggle for me at first as my argumentative nature tends to feed off debate-style conversations. However, by observing the way the other stakeholders presented themselves I quickly became aware of the process and how I was going to best communicate with them. This ability to be an active listener is much harder for me than that of an aggressive debater. I feel, however, that is was a valuable learning experience as I believe this is a much more effective style for negotiations."

(SP.3.141)

This student observed how she naturally tends to engage in a form of communication that is of a ‘debate-style’. Where she aggressively debates a point and does not allow herself the chance to listen and open up to what other are saying, which might lead to new understanding. Luckily, she was able to observe how others in her group were trying to hold the space and communicate in a manner that tended towards a dialogue form of communication, and she proceeded to imitate them. Unfortunately, the student did not critically reflect if she was actually able to communicate in this new manner, which would have allowed her to experience a new perspective of communication.

Another student also engages in process reflection, on how her form of argumentation was starting to build barriers to the process of dialogue:

"My aggressive nature made me fight for certain areas of the map, and while I received these areas, I became aware that not everyone at the table was comfortable with what was happening. At one point, the negotiating process was going nowhere, and we were coming back to same issues over and over again. I believe we all realized that in order to create a common plan, we would have to work together. This also meant that we had to give up the things we wanted. Rather than talking about all the area uses we wanted, we began talking about why we wanted them, and what was best in terms of the area."

(SP.9.141)

Later in her conclusions, the student came back to the concept of communicating with her peers:

"I believe to become an efficient problem solver one has to be a good listener and perceiver as well as being aware of how behaviour in the communication process can affect how others relate back to you. These traits have to be developed over time, and with a lot of effort. As I analyzed my interactions, I realized that I have to work on how I relate to other people. My personality is very forward, and while in some instances this may be good, in many instances it may shift how other perceive me and how they relate to me."

(SP.9.142)
The student, through the process of reflection, noticed that she needed to work on how she interacts with others. She is not only aware of what her personality is like; she also became aware of how her personality and form of conversation come across to others. This gave the student a new perspective on herself and opened the doors for a possible transformation on her way or relating if she continues to works on it.

We can observe from the previous statement that the students are aware and reflect on aspects of their feelings or behaviours that limit them. However, they generally do not reflect further on why they feel or behave in a certain way, a type of reflection that Mezirow describes as premise reflection. This type of reflection is less common than the other two because it requires a capacity to analyze and take perspective on behaviours, beliefs and values of which we are normally unaware. The capacity to bring into consciousness what we are normally unconscious or unaware of is what opens the possibility to a transformation and growth of perspective. A student describes how through the planning exercise they collectively started to realize some of their underlying beliefs of how the land should be managed:

"In the last phase of the multi-stakeholder process we attempted to create one cumulative management plan for the Elaho valley. We did not succeed in this effort as we uprooted many larger issues that affect the proper management of the area. It became clear that issues such as native rights and historical land use play a key role in how we believe a site should be governed. These issues have been debated for centuries, and while it may seem unlikely that we can resolve all issues in our management plans, it highlights the importance of the integral theory. In one way or another, everything is connected, from aboriginal rights to conservation, and unless we try to consider all the variables present in conflicts, we only partially solve disputes." (SP.9.161)

This student realized, through the planning exercise, how connected her interests and concerns for the land were with what other people wanted. It became clear for her what the underlying beliefs that were guiding her action were, as well as the need to take multiple perspectives on a situation so it can be better understood.

Another student also realizes, through communicating with her peers, how a same area of land can be seen and understood so differently by the different stakeholders:

"I believe that the goals and objectives of each group were a reflection of their "stakeholder worldview". These belief systems affected how we each envisioned the land base in terms of ownership and acceptable forms of use. A deactivated forest road was simultaneously interpreted as an ideal place to set a trapline, an effective wildlife corridor and part of an off-road network for ATV's." (SP.10.161)

This student is noting a point that we discussed in previous chapters - the notion that we all have lenses through which we see and construct reality, and these lenses affects what we think and the way we act. In the process of realizing and bringing into our awareness of these lenses, a door of transforming opens up, expanding how much we see, as well as how we act.
From the data, we can see that the most common form of reflection is content reflection, followed by process reflection, both of them together, and finally premise reflection. This sequence in the data seems logical given that premise reflection is a harder and more in depth way of critically observing oneself.

### 6.4.2.2 Analyzing types of reflection throughout the quadrants

Table 6.8 shows the results of categorizing the different types of reflection by the quadrant of integral theory that they address. The total number from the types of reflections is different than in Table 6.7 because some phrases that were considered one unit in Table 6.7 became multiple units once we parsed them out into which quadrant they were analyzing. The results show that, by far, the most common form of reflection was the first person (‘I’ quadrant) followed by a reflection of their behaviour (‘it’ quadrant), then by the cultural values and beliefs (‘we’ quadrant), and finally by the external systems (‘its’ quadrant). The reason that the students reflected more on the interior quadrants is probably due to the guide that we gave them for writing the reflective paper, where we ask them to spend 2/3 of the time on the subjective and inter-subjective realm, and only 1/3 on the objective and inter-objective realm.

<table>
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### 6.4.3 Interviews

The first three questions of the survey were the most useful for this chapter. The first question that asked what was the most important thing they learned in the class and why, elicited a variety of responses. In general, the themes were about negotiation, communication, worldviews and broadening of perspective. For example, one student commented about the relationship between communication and worldviews:

"I've been thinking [before the course] why we can't communicate, but I couldn't put my finger on it, and then you started talking about worldviews, and I was like ok, maybe that's why." (II.9.0740) "[What I most got out of the course] was the worldviews, the way I approach people when there was a conflict, because I have more respect and that I try to compromise more than other wise. Before I thought I had to give up something, but now I'm not really giving anything up, because there point is just as right as mine, and is sort of combining things." (II.9.1335)

A few students also commented on the integral theory:

"Honestly what I got out of it most, what affected me most, was thinking about the integral theory. Because it changes my perspective, I'm not only thinking of my needs and what I want, I'm looking at all different views on it. The other thing is communication, and that has a lot to do with integral theory... [Integral theory expands my perspective because] I..."
may never have though to consider things like culture or behaviour. The quadrants help me visualize it - the situation and myself - I might have not thought [before] on how my background affects my view." (II.1.0205)

One student commented on how the experience of the courses was making him rethink the role of his career:

"It's changing my idea of my career basically, because I want to make a change... I wanted to be just a consultant before, advising development. But now I'm thinking more in terms of the policy side of things, whereas I could be a scientist, a biologist just doing consulting or I could get more into the political side of it, the planning process side of it." (II.13.0215) "The lab itself was the thing that really sparked my interest in the stakeholder process... the [multiple] perspective thing is huge, the worldviews. God, the interview on CNN was awesome, where the scientist was fighting with the reporter. Neither could understand each other in the least, so communication at that point was huge. It made a big impact on me." (II.13.0500)

The topic of worldviews and integral theory was a favourite for many students. They found that it gave them a framework for understanding others, which allowed them to be more open to them and respect them more, which improved their communication and reduced conflicts. A student comments on the changes in perspective in her personal life:

"...for example my boyfriend, he is very into business, he is very different, and we argue and argue and we don't get anywhere. I think I'm right and he thinks he is right. Those are the things that aggravate me, but now I realize that maybe it is because we are so different, our views are so different, and it makes me realize that. I think I realized too, well you know everyone thinks that they are right, well that is just a product of my teaching, but other people are as convinced of theirs as well, and they have just as enough evidence to back up their things, so I can't just assume that I'm right and just force onto somebody." (II.9.0615) "... I have more respect for people's opinion [now]. Before I sort of thought, I know I'm right and they are wrong, and they are just not understanding it. But now I sort of have respect for it and I try to see it from their way more of it, I think it will be useful, though it is going to make it more complex." (II.9.0815)

Another student comments on how the concept of worldviews resonated with him:

"[The best part of the course was] probably worldviews, because for me it was the kind of thing I was familiar with. But I felt that because of the course and everyone else getting a perspective on worldviews, what they are, how they influence things. It was like a process of enlightenment for everyone else, and reminder for me that you have a perspective and it can be completely different from somebody else's, but it is important to acknowledge that and treat it respectfully." (II.11.0235)

One student comments on how she now realizes that there is much more to conservation, and realizes that a holistic approach is needed to solve problems:

"You have to be careful about what your decision is and who it is affecting, and you have to consider all those people and you have to have such a holistic approach to the problem and solving the problem. The main thing was looking at different groups and people. Were we learned peoples ideas because of their values. You don't think about that at first, but once you think about it, yeah, everyone has different ideas. I just think conservation is conservation, but it can vary so much, because people would have different ideas about it...everyone is different, everyone has different values and morals, that was really interesting, even though it seems obvious, it is quite important" (II.4.1120)
The student also comments how this adds much more complexity to the issues of conservation. As well, another student comments how now everything is more uncertain:

"[Having multiple views] creates a lot of uncertainty, I don't know if I'm right anymore than anyone else is so, it makes it very confusing" (II.9.0710)

A few students found it hard to grasp some of the issues that had no clear right and wrong answers. They found the uncertainty overwhelming and preferred course material that was more straightforward. However, other students were calling for more complexity, because they thought that it resembled life and wanted to get a handle on it since they saw it as the way of resolving conservation problems

"...whereas this [the course curriculum] because it deals with the human concept, people are complex and so are our interactions, so the answers regarding any type of problem has to be complex as well."(II.11.1250)

When answering the second question "what a good education is" students mainly mentioned comprehensiveness, critical thinking, interactive, and skilful. A few students summarized it as:

"A good education is [one] that allows me to think critically, think on the spot, not necessarily memorize, to be able to walk away and make conscious decision based on knowledge and also the ability to think critically on the spot. To know where to look for resources, for information, not necessarily to know everything, but to know where to go to get it." (II.1.1525)

"Comprehensive, dynamic and it involves learning from different perspectives. Approaching a topic from a wide range of perspectives." (II.10.0852)

"Comprehensive, interactive education, where you have the practical side of it, which was the lab, the stakeholder process of it. And then the theory part that of it that was the class lectures. And a good education is exposure to a lot of different views, especially in an issue like this." (II.13.0855)

As the students developed more their ideas and reflected on what they would like to see more of, the two main themes that came up were more practical, hands-on experiences and less memorization of facts, detached from practice. Students preferred courses that integrated theory and practice because they found they learned and remembered better the things they had practiced.

The question on self-reflection triggered contrasting answers. One student found the paper extremely hard, too broad and irrelevant to learning. However, most students, even though they found the paper hard to write, also found it very useful. For example, a student's response to the question "how did you find writing the reflective paper?" was:

"Ooo so hard!! Plus when you are self reflecting you are like ooo, I do this, this isn't very good, [but reflecting] was useful. One of my things is that I don't like conflicts, and I always try to avoid them no matter what, so I think [self reflecting] is very useful. If you are aware that you don't like conflict, it is something you should work on." (II.9.1815)

"[The reflective paper helped me] kind of explain the way I behaved in the multi stakeholder process... [I realized] I do this, because of this, and that is the way I react." (II.9.1900)

Another student also notes that she discovered and understood some aspects of herself better after writing the paper:
"...in fact when I wrote my paper there were two things that I never would have considered had I not had to sit down and write the paper... I would've just walked away and not known, not really understood what happened, but having sat down and had to think about it came up, and ooo that is interesting" (II.1.23.30)

One student said that it helped her not only to take a perspective on what had happened in the planning exercise, but also take perspective on her education:

"... you should be constantly reflecting on what you want to get out of University, what specifically you want to learn... When you are busy and rushing through, six months and a semester is gone, but you didn't reflect what you wanted to get out it for you."(II.4.2605)

Finally, one student thinks that reflection should be fostered more than memorization:

"School definitely doesn't ask me to be reflective! In my opinion it asks me to regurgitate knowledge and that is it. I definitely think that it is important. I do it in a personal basis... reflection is the premise for growth, if you don't have enough of it, how much are you growing and how much are you learning and taking from those experiences. (II.11.1153)

6.5 Discussion

In this section, we will discuss a number of topics that arise from the material presented so far. Each of these topics will be grouped by subheadings. In the first subheading, we will discuss the significance of the survey, how it relates to vertical learning, as well as how it compares to Kegan's findings in vertical growth. In the second subheading, we will discuss students experience's with communication in the multi stakeholder planning exercise and show how it connects to the topics presented in the previous chapter of social learning and dialogue as skills for both individual and collective growth. In final section, we will go back to the concept of education for global citizens, and discuss how Kolb's experiential learning model helps to better understand 'problem-posing' models of education.

It is important to keep in mind that we are basing this discussion on the results of only 12 out of 50 students in the course. The generalizeability of this sample is questionable, since it is possible that the students that were willing to share their learning experience and participated in the post-survey and interview were the ones who got the most out of the course and felt that it was a valuable learning experience.

6.5.1 Survey and vertical learning

The results of the survey only showed a significant change on the expressive system, which consisted of a reduction of both the red and orange level and an expansion of the teal level. This could be biased, as we discussed earlier, by the nature of the survey. However, we believe that this shift could be explained by the strong focus and emphasis that the course had towards addressing external phenomena of sustainability, and understanding the complexity and interconnectedness of the external and internal
aspects of a sustainability problem, which resonates with a teal mindset and values. Also, throughout the course and in the lab exercises, the students learned and experienced that they could not impose their wants on others, which is a predominantly red mindset. As one student puts it:

"Always it seems as though conservationists are trying to change how people see and interact with the natural environment, instead of embracing that there are numerous right answers, not just what is right for conservation. I believe that if we are to go out and create effective and sustainable management plans, we have to be aware that our idea of what is right is one among many others which need to be taken into account."

(SP.9.609)

The type of understanding and values this student reflects is more in line with a green or teal mindset. Embracing these ideas and values more would reduce red and increase green or teal in the SD survey.

When in the mock exercise, the students experienced that one group (forestry and first nations) had more power over the rest because they controlled the access road, they saw this as unfair playing field and did not value it. One student said that a government representative was missing to balance out the power inequalities.

"Perhaps the only group with a higher authority in the management of the TFL would have been the provincial government; however, in our negotiations there were no representatives speaking on behalf of the government, which left the Forestry/First Nations group with definitive control over the process."

(SP.3.606)

Power and control are more related to red and orange mindsets, whereas egalitarian values generally stem from green and teal mindsets.

In the lab, the students came to experience and understand that reductionist science or management cannot address the solutions to contemporary social and environmental problems, which is predominantly an orange mindset. The orange mindset and values tend only to focus on the external system, on measuring and controlling the parts, and not addressing the internal aspects that also affect the issue at hand. In a sense the orange mindset is the cusp of differentiation between the three cultural value spheres, focusing entirely in the external knowledge value sphere to address all our problems. In the lab, the planning process was focused on finding solutions to an external problem. Basically, the exercise was about creating a management plan for the Elaho Valley. However, in the lectures and class discussion we highlighted the importance of the internal aspects of the quadrants, the other two value spheres, for addressing complex problems. As one student reflects:

"I found that in order to be entirely open to new perspectives presented by the other stakeholders I had to eliminate any fundamental personal emotions related to the topic. It became apparent to me that I often debate because I am emotionally driven about an issue. Thus, I needed to put all emotions, values, beliefs, and cultural issues aside that might block these new concepts. I also needed to learn to embrace difference rather than reject the unfamiliar. This can be a difficult thing to do as it is human nature to adhere to the proverbial entities in our lives. However, in order to grow as individuals, as well as a society, we need to step outside of what is deemed to be safe and embrace the"

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38 See Table 4.2 for a more detailed description of how different mindsets address sustainability.
unfamiliar as it may be the key to developing more innovative solutions to our complex problems." (SP.3.610)

Embracing the unknown and holding contradicting views was also a capacity we wanted to foster in the students. One student describes how she has always tried to see both sides of a problem:

"I have always tried to 'see the other side of things', no matter what the situation. This is not easy to do, and by no means do I always succeed, but it causes me to embrace new ideas and new points of view. I believe in science, and that everything that occurs follows some sort of natural law. I also believe that it is possible that everything in our world is the product of supernatural events. I have beliefs that are very contradictory, how I manage to cope with these is still a mystery to me; yet ultimately I believe that everything is possible." (SP.9.608)

This statement reflects an individual who is more permeable to change, is not fixed in her ways and seeks to integrate multiple, contrasting perspectives; basically, a teal mindset. These types of embracive, multi-dimension views are the ones we tried to foster throughout the course, reflected in the increase of teal, and decrease of orange and red that we found in the SD survey. Does this mean that the students have engaged in vertical learning and transformed their mindsets? Have we actually been able to foster vertical learning in just 3 months in one course?

Kegan (1994) states from the findings of his research on adult development that "[w]ithout exception, if a person's order of consciousness changes from one year to the next it changes only very gradually (never more than two discriminations, that is 'fifths' of the way from one order of consciousness to another)" (p.188). This would suggest that it takes five years for a person to develop from one order of consciousness to the next. Unfortunately, there is no way to compare how the shift that we found through SD correlates with a similar shift in the Kegan's orders of consciousness. However, we observed a significant change in the SD levels in just over 3 months. We will illustrate a few reasons why the change that we observed was possible in such a short time.

First, one can argue that university students are normally in a time of their life where they are open, receptive, and eager to learn. On the other hand, Kegan's research focused on a working population of adults that one can argue tend to be more closed and fixed to their daily routine. The growth in this later group tends to be focused on horizontal learning, increasing their knowledge and expanding their skill to grow in their careers, and not so much on growth of the person having the career, on vertical learning. This is especially the case given, as Rooke (2005) describes, that 85% of the adult population functions from an orange mindset or below. Cook-Greuter describes a similar finding and argues that western cultural social ceiling is somewhere between orange and green. Society, with its educational, political, and economic systems foster individuals to function from an orange mindset and breaking away from what we are brought up to be is extremely challenging. However, Kegan states that each time more of the contemporary demands of life require us to have higher orders of consciousness to function correctly in society, and these demands are currently "over our heads". We need surrounding environments that challenge and foster individuals to grow and develop past the current orange mindset.
Second, the students participated in an environment that challenged and fostered their vertical growth throughout three to four months. The overall environment of the course, their peers, and other courses that the students take on par with CONS481 also probably played a role on how the students developed. The environment is safe and nurturing to growth. Individuals tend to have a number of characteristics that Mezirow (2000b) outlines as necessary for transformative learning:

- More accurate and complete information
- Freedom from coercion and distorting self-deception
- Openness to alternative points of view: empathy and concern about how others think and feel
- The ability to weigh evidence and assess arguments objectively
- Greater awareness of the context of ideas and, more critically, reflectiveness of assumptions, including their own
- An equal opportunity to participate in the various roles of discourse
- Willingness to seek understanding and agreement and to accept a resulting best judgment as a test of validity until new perspectives, evidence, or arguments are encountered and validated through discourse as yielding a better judgment. (p13-14)

However, these conditions are necessary but not sufficient for vertical learning to occur. The challenges that the course provides to the students, the role that the educator plays in facilitating vertical learning, and most importantly, the openness and readiness of the student are paramount for vertical learning to occur. This type of environment for personal growth can be described as a genuine educational environment compared to a training environment. Kegan puts it clearly: "The word education is built out of the Latin prefix ex plus the verb decere ('to lead') and suggests a 'leading out from.' While training increases the fund of knowledge, education leads us out of or liberates us from one construction or organization of mind in favor of a larger one" (p.164). The environment that the CONS481 students were imbedded in is generally more conducive to vertical learning than a common work environment. Much of the literature on organizational learning (Argyris & Schon, 1978; Nonaka & Takeuchi, 1995; Rowland, 2004; Senge, 1990) highlights the need to change the current working environment of organizations from one focused on productivity and efficiency to one of personal mastery, systems thinking, and mindfulness - closer to the environment that the CONS481 students experienced than what an average employee experiences.

Finally, it could be argued that these students came with a predisposition to vertically learn, all they needed is the time and the environment that will foster their growth. Eleven out of twelve students that participated in the research were majoring in natural resource conservation. This subject of study requires and fosters individual's integratation of multiple perspectives and ways of knowing. As the pre SD survey illustrates, these students already came with a predominance of teal values. Graves (Graves, 1974) argues that as we move up each level, we spend less and less time at each new level. "It took literally millions of years for our ancestors to become tribalistic B-O [purple] man, while in the technologically advanced nations today man is moving from the E-R [orange] level through F-S [green] to G-T [yellow or teal] in a scant twenty years" (Graves, 1974). If this is true, then our education systems must provide and foster vertical learning at multiple levels simultaneously. Students can move between
an amber mindset to a yellow from the beginning to end of their undergraduate education. This is an assumption, but if it is true, the education system has to be ready to foster this type of growth and not impede it.

6.5.2 Communication and shared platforms for learning

Providing students with competent communication skills is crucial to enabling social learning, which fosters both individual and collective growth and transformation. Not only is this beneficial for the learning environment within the course, it also profits the community where the students belong. However teaching and conveying these skills is a difficult task and, as described above, success is dependant on both the student and the educator.

In the previous chapter, we presented a detailed description of different types of communication (Figure 5.5), as well as outlining which ones are more conducive to social learning. As a conversation starts approaching conflicting views and we start to deliberate alternatives, we can make the conscious decision to strive for forms of interacting that are based on dialogue vs. debates or dialectic forms of conversation. A student reflects on how he came to realize, by experiencing the negotiation process in the lab, that some forms of communication are more productive than others. He also realized that opening up, respecting others' viewpoints, and building trust or common ground was essential to move towards a dialogic process of interacting:

"My ability to interact with others effectively has undergone tremendous change throughout this course, and specifically this lab. I possess good communication skills from my high school education, but my university career has been largely devoid of such practice, and as a consequence these skills have atrophied. The lab exercise, based on a multi-stakeholder process, demonstrated the power of positive personal interaction. My instinct when faced with people of such opposing worldviews is to stonewall, or stubbornly defend my position. I found out later that this was a terrible approach to solving contentious issues. The moment I put my guard up and became defensive, a similar response was elicited from my counterpart. At this point negotiation would break down, and due to the number of issues at hand, it would generally be pushed aside and not examined again. I lost much ground in the negotiation process because of this, and our group was hurt as a result (as in, I didn't get as many of our objectives as I could have). I found that finding common ground was essential to getting a positive interaction established, which could then be used to make progress on the issues at hand. Once I found something we agreed upon, I would reinforce this point so that we both acknowledged our similarity. Once this similarity of was established, we could begin to explore our differences of opinion as a unit instead of two individuals. I found this method of approaching tough issues incredibly effective as a start to the negotiating process." (SP.13.609)

It is important to note that even if people aspire to the path of dialogue, very few reach it. In the West, we are taught to think for ourselves, which many times gets translated as think alone. This leads naturally to defending ones view or opinion. Not being aware that there is another alternative, people tend to think that either they can have a controlled discussion or a skilful conversation, the notion of genuine dialogue does not come to mind. The reason for this, is that the notion of suspend, or suspension as Bohm (1996) calls it, is very foreign to western culture. To work through this, Isaacs (1999a) proposes four practices
that need to be deliberately cultivated and developed to foster dialogic leadership. Listening refers to the capacity of immersing oneself in what the other is saying and fully understanding how they understand, not imposing our interpretation or understanding on top of the other. Though none of these techniques was presented to the students, we can observe that some of them intuitively engaged to some degree in these skills of communication.

The first practice that Isaacs talks about is listening, where he says listening "together is to learn to be part of a larger whole – the voice and meaning emerging not only from me, but from all of us" (p. 4). Two students describe how they experience or understand listening skills:

"For me, actively listening is synonymous with learning. This occurs when I am able to push my own concerns to the back corners of my consciousness, make eye contact with the speaker and absorb his or her message. Patience is also essential in order not only to hear but also understand what others are expressing. I felt that during this dialogue I was able to absorb the ideas and opinions of others until it was appropriate for me to add input or voice my concerns." (SP.10.608)

Another student describes how through the lab experience she came to understand the need for listening:

"In this process it was not only important to set aside any biases, but also part of our personalities which could interfere with the planning process. I believe that throughout the multi-stakeholder process my interaction with representatives changed immensely. At first I was more concerned about expressing my own ideas and wants for the disputed area, then I was about anyone else’s ideas. Towards the end of the plan I began to listen more to what people wanted and why they wanted them." (SP.9.606)

The second technique that Isaacs talks about is respecting, which refers to the ability to shift the quality of how we oppose. Truly respecting the other’s view, and opposing without the idea of certainty in ones thoughts.

"I find that by treating everyone with respect no matter whom they are, always wins you respect back, even it is self-respect... It’s hard to determine how others will react in such [conflicting] situations without actually being in it, but as long as you remain calm and treat people fair, I find most situations will be better." (SP.12.332)

The third technique is suspending, which is the same concept that Bohm refers to. "Suspension involves attention, listening and looking and is essential to exploration... If you are able to give attention to, say, the strong feelings that might accompany the expression of a particular thought – either your own or anothers – and to sustain that attention, the activity of the thought process will tend to slow you down. This may permit you to begin to see the deeper meanings underlying your thought process and to sense the often incoherent structure of any action that you might otherwise carry out automatically." (Bohm et al., 2001). In essence, suspension is the individuals' quality of awareness of oneself and others. Though students did not fully describe a sense of suspension, they had a glimpse of it:

"I was prepared to be open to ideas and perspectives that I had not expected, and I monitored my presence so that I was not overshadowing or intimidating. I made sure the tone of my voice or general manner was never too bold, but at the same time never too timid." (SP.6.607)
The skill of suspending is closely linked with the action of bystanding (Figure 5.6), where a person observes the conversation and takes all aspects of it in, and only 'moves' or voices her/his thoughts if s/he sees that it will add to the conversation. A student describes how as a bystander he noticed how other groups were in a disadvantageous position and he moved in to the conversation to fix the imbalances for the wellbeing of the entire group.

"So not only did I feel morally obliged to let the others know that they might be putting themselves at a disadvantage, but also I thought that by overlooking these points, later parts of our discussion would suffer from being 'incomplete'. Everything in our discussion was linked to something else, and by leaving something relevant out, not only was the one stakeholder group losing, but so was everyone else, since the whole problem would not be solved." (SP.14.606)

Finally, the last technique is voicing. Isaacs argues that this skill is the most challenging of the four practices. Voicing refers to "speaking your true voice, and encouraging other to do the same" (p.4). In a sense, an individual has to master the other three practices before s/he can speak from a place that is free from the more common constraints of the habitual mind. Though from the interviews and reflective papers we could not depict any student as having this capacity, some described actions that might lead to it.

"I think I played an important role in facilitating healthy and productive conversation within the meeting. When other groups were having trouble expressing themselves I suggested ideas or asked questions to try and resolve whatever was blocking the conversation and helped other groups understand each other. Communication was important and it benefited me if everyone was communicating effectively because this gave me a greater opportunity to and contribute to the process." (SP.4.605)

What students learned through the lab exercise cannot be taught in a class lecture. This type of learning is not cognitive; you cannot read it and learn it. It is experiential. It needs dedication and practice. Reading, talks, lectures, might inform and help us to develop faster and better these capabilities, but they cannot replace the individual practice. As one student realizes this after her lab experience:

"I feel through this process I was able to re-evaluate the ways in which I communicate ideas. It wasn't until after the lab, however, that I was able to see the value in this experience. I have found that since this lab I have altered the way in which I participate in conversations, in particular with groups. I find myself being a much more attentive participant, seeking to be more reflective on the dialogues I have. In addition, I have learned the value in keeping an open mind and being able to see the big picture." (SP.3.609)

The knowledge this student gained speaks to the difference between content and process knowledge that we spoke about earlier, and that we will expand on in the next subsection.

The second aspect that enables effective interrelationships between the parts is the shared platforms and partnerships for learning. In a sense, the CONS481 course was the shared platform for learning, which at the same time was situated within a holarchy of platforms, such as the Forestry faculty and building, and the underlying UBC institution. However, not always will an institution like UBC or any other institution, be a functioning platform for shared learning.
Effective platforms for shared learning have the same characteristics, as we have already discussed in the previous subsection, which Mezirow (2000b) outlines as necessary for transformative learning. The learning platform and the partnerships have to allowed each interacting part to have:

1. accurate and complete information
2. freedom from coercion and distorting self-deception; openness to alternative points of view
3. empathy and concern about how others think and feel
4. the ability to weigh evidence and assess arguments objectively; greater awareness of the context of ideas
5. an equal opportunity to participate in the various roles of discourse
6. willingness to seek understanding and agreement and to accept a resulting best judgment as a test of validity until new perspectives, evidence, or arguments are encountered and validated through discourse as yielding a better judgment

One student reflects on aspects of the underlying environment of the lab that allowed learning to prosper:

“As a result communication was transparent throughout the process in which all representatives were given free reign to express their vision of the planning outcome. The medium used to express our respective ideas, the mylar sheet and erasable markers, created an environment in which unambiguous visual and oral communication was used in order to surmount any existing cultural barriers.” (SP.10.606)

However encouraging many of the findings and comments of students are, we believe that the process of teaching communication can be greatly improved in this course. First of all, the students were placed in a conflicting position since the instructions given to communicate effectively had an underlying structure of generative dialogue as described by Banathy (1996). The prime objective was suspension and openness to others and ideas and issues could be brought up and discussed, but without an underlying need to solve the problems at hand. However, in the lab, students were instructed that they should reach some form of agreement by the end of the planning exercise. This made it very difficult for them to explore many of the recommendations that were given on how to communicate.

Students had to balance between generative and strategic forms of dialogue. Generative dialogue is the concept of dialogue that we have been referring to throughout the last two chapters. Where its purpose is to establish a common ground of shared understanding and values, build trust, create bonds, and strengthen the sense of community among participants. However, generative dialogue is not a tool to address specific issues as the one the students were faced with. Once a collective worldview and a shared consciousness have been created by generative dialogue, the concept of strategic dialogue can be fostered. Strategic dialogue is the communication mode that is task and action orientated, yet at the same time is able to hold the container of collective consciousness. As the strategic dialogue unfolds, there are always elements of generative dialogue that continue to infuse and hold the process.
Not only were the recommendations of the dialogue forms of communication contrasting with the final labs objectives, but the students did not have an opportunity to practice conversation techniques before the lab exercise. This could have been addressed if we would have used some lab time before the mock planning exercise to practice and explore generative dialogue skills in line with Bohm’s and Isaacs notions of communicating. This would have prepared students with basic generative dialogue skills and would have allowed them to explore a more strategic form of dialogue in the land use planning exercise.

6.5.3 Educating global citizens

As we discussed in a previous section, a problem-posing education empowers students to co-create knowledge and experience, complementing theories of strong democracy outlined in the previous chapter. In the context of democracy theory and self-transformation, Warren (1992) argues that “where individuals more broadly empowered, especially in the institutions that have the most impact on their everyday lives (workplaces, schools, local governments, etc.), their experiences would have transformative effects: they would become more public spirited, more tolerant, more knowledgeable, more attentive to the interests of others, and more probing of their own interest.” (as cited in Mezirow, 2000a; Warren, 1992).

We believe Kolb’s (1984) experiential learning theory complements and adds to the notion of problem-posing education outlined by Freire (1972) and Shor (1992). Kolb’s theory can help us find a balance between the different forms of learning and teaching, between successfully integrating theory and practice, reflection and advocacy. Kolb’s suggests that learning is the creation of knowledge through the transformation of experience (Figure 5.3). Knowledge is created through a combination of grasping experiences and a process of transforming it. While grasping, an individual takes in information either by actively experiencing the activity or by conceptualizing what is observed. The process of transforming happens when an individual reflects back on the experience or by acting a plan for a forthcoming experience.

Throughout the CONS481 course, the students were effectively engaged in learning by grasping knowledge in the lectures, class discussions and in preparation for the planning exercise. The lectures of the first half of the course dealt with matters of planning, worldviews and communication that the students could put in practice in the land-use planning exercise. The lectures provided the ‘abstract conceptualization’ and the planning exercise provided the ‘concrete experience’. Many students found that the first half of the lectures fit in very well with the course, and they felt that they could actually practice in the labs what they learned in the lecture. On the other hand, the second half of the lectures provided the students with necessary knowledge for future conservation and forestry careers, but it was disengaged from the practical lab experience. In general, students did not like these lectures, since they felt that the process of transmitting knowledge where they were expected to memorize and later repeat it back in the exam was not an effective way of learning. This reflects the ‘banking’ model that Freire
describes of education. This type of teaching fosters the right and wrong answer mentality, instead of one that searches for alternatives, questions the underlying constructs, and seeks a number of effective approaches of addressing a particular issue. The course needs to improve on this aspect in the following years.

The second aspect of Kolb’s experiential learning cycle is the process of transformation through ‘active experimentation’ and ‘reflective observation’. Students were transforming knowledge when they engaged in the lab exercise and the reflective paper. The entire lab exercise, can be seen as a process of engaging in all learning aspects of Kolb’s theory, and it is not surprising that the labs were the place where most students felt that everything fell into place. The objective of the lab planning exercise was to challenge students to think outside of the box, posing a complex problem and asking the students to try and solve it. Not only did the students gain a lot from researching and participating in the planning exercise, but they also came to realize and understand the relevance of many points raised in the lectures and class discussions. Points included the notion of complex problems, of the responsibility of oneself, and the importance of suspending, of becoming a bystander and understanding the bigger picture:

"With all the research that took place for this assignment one can fully appreciate what a complex world it is out there and how all your actions impact it. Before the research started I had no idea what I was dealing with. But with knowledge comes responsibility – you know your decisions could affect an entire ecosystem." (SP.2.609)

"Holding various types of paradox and tracking multiple aspects of a complex situation is something I also found to be challenging in the negotiation process. Especially while working with six interest groups simultaneously and attempting to consider all of their viewpoints it is difficult to keep track of the process at work. If you get ‘tunnel vision’ on resolving a single issue it is easy to lose track of the big picture, the systems at work and how everything interrelates, the ‘Its’ of integral analysis... Due to the multi-tasking required to deal with the objectives of all six interest groups, I feel that I learned the importance of periodically taking a step back and trying to get an overall picture of the processes at work." (SP.5.610)

The reflective papers can be seen as the final process the helped the students learn and co-create new knowledge. It is the ‘reflective observation’ aspect of Kolb’s learning theory. We believe that this is a crucial aspect that needs to be encouraged and fostered for both horizontal and vertical learning to take place. The results of students’ reflective papers show that the students were engaging in some form of reflection, both internal and external. However, we think that a metric should be developed to gauge how in depth a student reflects. Each category described by Mezirow that we based the students reflective skills can have multiple depths of reflection. A way of quantifying these different depths would be helpful to gauge a student’s reflective capacity. After the experience of teaching this course, we believe that shorter papers, distributed throughout the course would better build the reflective skills of the students. Educators should give feedback to foster deeper reflection, and this could be done through challenging questions or by giving techniques for students to question further.
The capacity and skills these students developed throughout the course are apparent in the number of quotations we have presented. Many of these skills and knowledge are the ones needed to prepare the students to be a catalyst of change, to be global citizens who work towards a global society. However, building courses and degrees that have a curriculum that embraces both the traditional concepts of education and one that fosters global citizens is not an easy task.

Many of today's degrees are created as if education was a puzzle, where the curriculum is created by deciding what knowledge the student needs to have. The students are seen as empty containers where all this knowledge will be deposited. By the end of a student's studies, they will have a degree that will make them employable in the society. This is a narrow conception of education and in line with Freire's 'banking' model of education. For a problem-posing form of education, the curriculum of study should not only include the knowledge the students need to have, but also the soft skills that allow them to have a deep understanding of what motivates and drives people, and how their values and the values of others are fostering or inhibiting creative change. These soft skills transcend the knowledge domain and include a broad set of abilities that are experiential in nature and that can only be fostered through practice and reflection. Skills of communication that enable dialogue forms of conversation are crucial for students of any discipline. As an example, a student of environmental sciences, majoring in biology, was incredibly surprised after experiencing the mock planning exercise to find out how limited his education was preparing him to address the environmental problems that were so important for him:

"My interest is in how to minimize the impact of human development on natural ecosystems. However, I am crippled in my knowledge because of the way my course curriculum is designed. Without knowledge of how to debate, convey important biological concepts to someone of a totally different background, create win-win situations from seemingly intractable positions, and other aspects taught in this course, I remain solely a biologist." (SP.13.602)

Skills of communication are not only important to convey important information as the student reflects. It is also crucial to fostering the cycles of social learning that we have been discussing throughout these last two chapters.

Following McKenzie's (2000) curriculum for global citizenship, we believe that the knowledge students explore (generic themes) have to go hand in hand with skills of communication and reflection (social, practical and cognitive skills), as well with topics that expand and foster healthy values and attitudes (disposition). It is through the process of communication and reflection of the generic themes and dispositions that students will come to understand their role and responsibilities as a global citizen. This means that a biology curriculum, as any other higher education curriculum, should bridge the divide between the three cultural values spheres. Students should have the opportunity and be encouraged to engage throughout their studies on topics of values, justice, and ethics that bridge between the value spheres and between the Global North and South rather than simply being taught by the professor what is right or wrong. Students should be encouraged into a journey of discovery of the complexity of the self, others, and the world that we live in.
6.6 Conclusion

In this chapter, we have illustrated how using lectures that challenged students' concepts of self and other, as well as engaging students in labs that created shared learning platforms coupled with fluid relations, communication and balanced power dynamics has fostered an expansion of the student's worldview. Students learned how to integrate and, if needed, hold multiple, contrasting perspectives on a situation. They gained knowledge and understanding of the dynamic systems at play in any socio-ecological context. As well, they developed a number of soft skills such as the capacity to suspend and actively listen in a conversation. The students have acquired a broader value schema as well as become aware of the constructed nature of reality.

We have also presented two conceptions, a narrow and a broad, of higher education. We argue that the narrow conception of higher education is not compatible with the concept of sustainability and social learning that we have presented in this thesis. Whereas the broad conception of higher education is compatible with these ideas and we find that it is a good guideline to assess if the minimum requirements of a curriculum to foster global citizens are being met.

If you are thinking a year ahead, sow seed. If you are thinking ten years ahead, plant a tree. If you are thinking one hundred years ahead, educate the people.
- Kuan Tzu, Chinese Poet, 500 B.C.
We are as the flute, and the music in us is from thee; 
we are as the mountain and the echo in us is from thee.

We are as pieces of chess engaged in victory and defeat: 
our victory and defeat is from thee, 
O thou whose qualities are comely!

Who are we, O Thou soul of our souls, 
that we should remain in being beside thee?

We and our existences are really non-existence; 
thou art the absolute Being which manifests the perishable.

We all are lions, but lions on a banner: 
because of the wind they are rushing 
onward from moment to moment.

Their onward rush is visible, 
and the wind is unseen: 
may that which is unseen not fail from us!

Our wind whereby we are moved and our being are of thy gift; 
our whole existence is from thy bringing into being.

Rumi - We Are As The Flute
7 Conclusion

Today's global society is facing many unprecedented challenges that are beyond our capacity to fully understand. We inhabit a world that consists of ecological, social, economic, and political systems and their complex interactions give rise to our livelihoods. Only recently we have become aware of the fragility of these systems, their interdependence, and the possibility of system-wide changes that can have detrimental consequences for both humans and other species.

Recent research has shown that the systems mentioned above and their interactions are best described by complexity science, which states that a complete understanding of these systems is not possible due to the nonlinear, emergent, and self-organizing characteristic they possess. Despite the advances in our understanding of these systems, examples show that we continue to address these complex systems and their problems by applying seventeenth-century mechanistic command-and-control forms of management and policies. We argue that the main challenge dealing with today's problems is not in improving the science of sustainability per se, but in addressing and shifting the predominant worldview of modern society that still behaves in accordance with our old Cartesian values and internal models of reality.

To address the interconnections of worldviews and sustainability we focus our research from an internal perspective as described by the integral theory (Wilber, 1996b). We outlined a number of different perspectives that people argue are the best path towards sustainability and mapped them against different levels of development as described by theories of adult development. This allowed us to illustrate how bounded the different concepts of sustainability are within a given mindset. We argue that to effectively move towards sustainability a more embracing and complex worldview needs to emerge. This change will require a cultural shift in how we conduct and understand our lives. This shift is fundamentally an expansion of consciousness, where both individuals and societies become aware of their implicit assumptions that ground our actions, judgments, values, and decisions. To accomplish this shift we proposed a social learning framework that explicitly aims at creating the conditions for higher awareness and expanded manners of thought to emerge out of the collective.

The social learning framework presented in this thesis describes the parts and dynamics that are needed for individuals and collectives to grow and transform. To illustrate the social learning framework we expanded it into an integral multi-stakeholder process (MSP), which has the potential to engage both internal and external aspects of sustainability planning processes. We also conducted a case study in an undergraduate course where we used the bases of the social learning framework as a process to foster transformational learning in class. The results of the case study are encouraging and demonstrate the potential of the social learning framework for shifting individual mindsets towards ones that are more inclined to cultivating sustainable livelihoods.

In our opinion, the current direction the world is heading is detrimental. This thesis takes a step in a different direction from the current trend in sustainability that calls for better technology, taxation systems,
and policies. We argue that the only way to move towards a more sustainable global society starts by questioning the underlying values and worldviews that are impeding us from truly shifting our course. To foster the necessary cultural shift we developed a social learning framework that engages both individuals and collectives in a process of self-transformation. This framework can be put in place in any organization or institution and has the potential to question our current worldview and transform it into one that truly embraces sustainability rather than merely giving lip service to it.
References


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Appendix 1 Guidelines for the multi-stakeholder round table

During the round table you are representing your group’s interest. But what matters most is not what you are representing but how you are representing it. It is important to understand the difference between a debate and a dialogue. In the first form of communication one party wins the other one loses. In the latter form of communication, both parties interact to try to form a new way of making sense of the issue at hand. This lab requires the ability to interact with others who have qualitatively different views, styles, backgrounds, and so on, in a way that values the other individuals and their ideas, while simultaneously maintaining the integrity of one’s own belief, and allowing oneself to be influenced by the differences. If everyone is successful in doing this, then what will emerge from the lab will be something new, co-created by all the stakeholders.

Some guidelines:

- **Keep a Big Mind approach** – If during the discourse/dialogue you get blocked into a debate more than a dialogue, try to step back and analyze what values, beliefs, cultural issues that might be standing in the middle. See if you can manage to bring them onto the table to help facilitate the dialogue.
- **Create a virtual container to hold and analyse the differences** – As is almost always the case in complex interactions, the issues on the table are not problems to be solved, but polarities to manage. It is likely that a variety of viewpoints will all be potentially credible, while at the same time seeming contradictory. It is in creating a container to hold these differences, and through them to clarify and revise one’s own thinking, that the potential for something new to emerge occurs.
- **Listen attentively, take the perspective of the other imaginatively, and let go of one’s own certainties, at least for the moment.**

A few more:

- **Presence**: When you are listening to others speak, be present and fully attentive; when others speak, do not use it as a chance to collapse into your own world. Remain open to the mystery of the person talking. Feel your body, open your heart, and clear your mind.
- **Reflective Dialogue**: When you want to speak, reflect on how your contribution will deepen the conversation. Do not just talk to make a point or to have your cool idea heard. Be willing to not raise your hand and be willing to raise it. Notice how long you talk. (i.e. often, with brief and concise points preferred to blabbing away)
- **Shadow Work**: Be aware of your tendency towards projection, splitting things into “all good” and “all bad,” and other defences such as rationalization and intellectualizing.
- **Inquiry**: Continually inquire into your own experience and be reflective of how you are contracted and/or open.
- **Perspective Taking**: Be open to perspectives, especially those that seem problematic or challenge your own. Take as many perspectives as you can, seeing the truth context of each.
- **Self-authorship**: Notice how you are often concerned with what people think of you, what the “rules” are, how to fit in, and so on. Continually embrace opportunities to strengthen your capacity to self-author and be autonomous in a non-egocentric way.
Appendix 2  WorldView discussion

Class Discussion
A Challenge to Conservationist

Cons 481
Lecture 5
2006

Quick Overview
Questioning the current practices of the 3 biggest conservation NGOs: CI, TNC, & WWF
Focus on Southern / developing nations

What else?

Main points
Power dynamics...

Large imbalances in economic and political power naturally weaken alliances between indigenous and conservation organizations

What is the role of conservationists?

Main points
Different worldview

What are the similarities and differences between them?

How does this affect value structures of a society?

Main points
Ethics / Values

Who's funding the NGOs?

Conservation refugees - 40,000 to 50,000 have been displaced in the Congo due to Parks

Who benefits??

Can you be apolitical?

Main points
Conservation vs. development

Quite frankly, I don't care what the Indians want. We have to work to conserve the biodiversity. Conservationist

Can they go hand in hand?

Science vs social realities?
Questions on communicating planning / sustainability initiative

How do individuals' interior values, beliefs, & culture influence their motivation & choices?

Do we have to tailor the way we communicate planning initiatives to the difference of individuals values, beliefs, & culture?

If so... how??

The importance of interiority

People’s attitudes and values about the environment filter scientific information to create an interpretation that conforms to those values.

One reason it is so hard to execute the often brilliant ideas and systems that emerge from the sustainable development movement is because their design and implementation usually are not rooted in an understanding of — and tailored response to — vastly different stakeholder values.

Worldviews & Integral Theory

Cons 481
Lecture 5
2006

Why care for the environment?

Because it is honourable and is our responsibility to be stewards
So I don’t get cancer from pollutants
For the technical challenge of achieving sustainability
For my kids and future generations
For the opportunity to make money
To preserve the beauty of nature
To stop the greedy industrialists by any means necessary
To sacrdly express love for all of existence
Because pollution is a sin against Creation

Definitions of the interior world

- Values: made of beliefs, ideas and/or opinions

- Consciousness: is a quality of the mind generally regarded to comprise qualities such as subjectivity, self-awareness, sentience, sapience, and the ability to perceive the relationship between oneself and one's environment.

- Worldview: “a look onto the world”
  A worldview is a map that we use to orient and explain, from which we evaluate and act.

The importance of interiority

People’s attitudes and values about the environment filter scientific information to create an interpretation that conforms to those values.

One reason it is so hard to execute the often brilliant ideas and systems that emerge from the sustainable development movement is because their design and implementation usually are not rooted in an understanding of — and tailored response to — vastly different stakeholder values.

Appendix 3 Worldview presentation

Moving lenses on how we see the world

People do not merely operate with one worldview

Worldviews change over time, becoming more complex and encompassing.

Each of these worldviews sees the environment— and is motivated to care for it—for different reasons.
### Two examples...

From which worldview are they communicating from?

<table>
<thead>
<tr>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication strategy: <strong>Transformation</strong></td>
<td>Communication strategy: <strong>Translation</strong></td>
</tr>
<tr>
<td>Change how someone sees the environment</td>
<td>Honouring how people see the world, without trying to change them</td>
</tr>
<tr>
<td>Shift a person's worldview</td>
<td>Frame a planning initiative / sustainability message in a way that resonates to their worldview and hence change their habits</td>
</tr>
</tbody>
</table>

Two ways of communicating for environmental planning

**Transformation**
- Change how someone sees the environment
- Shift a person's worldview
- Very difficult to do and takes a LONG time!

**Translation**
- Honouring how people see the world, without trying to change them
- Frame a planning initiative / sustainability message in a way that resonates to their worldview and hence change their habits

Before we move on....

http://www.global-mindshift.org/
The integral approach suggests that every sentient being has, at a minimum, four fundamental, simultaneous perspectives that must all be taken into account for a deeper and more integral understanding.

The upper two quadrants reflect the individual perspective.

- **Upper Left Quadrant:**
  - **The Interior - Individual**
  - The base.
  - What I am: Purpose, intentions, relationships, personal identity, spirituality, etc.
  - Integers: Output, substrate, subjectivity, personal way

- **Upper Right Quadrant:**
  - **The Exterior - Individual**
  - The top.
  - What I do: Process, actions, processes, experiences, etc.

The lower two quadrants reflect the collective or inter-personal perspectives.

- **Lower Left Quadrant:**
  - **The Exterior - Collective**
  - The base.
  - What we do: Process, processes, environment, etc.

- **Lower Right Quadrant:**
  - **The Interior - Collective**
  - The top.
  - What we are: Purpose, intentions, relationships, personal identity, etc.

We can look at something from the four quadrants, this is called quadrivision.

And we can also become aware of these perspectives at foundational to our very being.

We often do not consider the impact of the cultural or social perspectives when examining situations that seem only personal. We therefore achieve only a partial understanding.

Again, valid but partial... only half the story.
or from a personal perspective... 

So I went to build...
The following is from participants from Swaziland, during a United Nations Development Programs training. They used the quadrants to identify the main forces propagating HIV/AIDS.

<table>
<thead>
<tr>
<th>Individual Attitudes</th>
<th>Individual Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear, anxiety</td>
<td>Depression, anxiety</td>
</tr>
<tr>
<td>Ungoverned</td>
<td>Depression, agitation</td>
</tr>
<tr>
<td>Poverty, hunger</td>
<td>Loss of family or spouse</td>
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<tr>
<td>HIV/AIDS</td>
<td>Bereavement, depression</td>
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</tbody>
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<table>
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<tr>
<th>Individual Behaviors</th>
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<tbody>
<tr>
<td>Depression, anxiety</td>
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<tr>
<td>Bereavement, depression</td>
</tr>
<tr>
<td>Loss of family or spouse</td>
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<tr>
<td>Bereavement, isolation</td>
</tr>
<tr>
<td>Loss of family or spouse</td>
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<tr>
<td>Bereavement, depression</td>
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<tr>
<td>Loss of family or spouse</td>
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</tbody>
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<tr>
<th>Individual Behaviors and Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violence, crime</td>
</tr>
<tr>
<td>Drug abuse, alcoholism</td>
</tr>
<tr>
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Using Integral Analysis for your planning initiative...

https://www.iaa.org/doi/abs/10.1007/s10979-012-9201-4
Appendix 4  Lab 3: Wrap up and reflection

Meeting date: None
Due date: Wednesday, November 29
Deliverable: A written report no more than 10 pages.
Weight: 40% of Lab Mark (individual mark)

This lab will be an individual effort. It is a reflective paper based on your experience in the labs and course. The paper should reflect on at least these 2 points:

- **Objective and inter-objective realm:** Reflect on how the process and outcome of the multi-stakeholder dialogue has affected your group standing.
  
  For example:
  
  o Where your goals and objectives met?
  o Why or why not?
  o What affected this?
  o Was the process beneficial to better understand the systems at interplay?
  o Have your goals and objectives changed in any manner after the multi-stakeholder process?

- **Subjective and inter-subjective realm:** Describe emotions, feelings, impulses, interpersonal experiences that were of importance during the lab.

  For example:
  
  o In what ways have you noticed that you adhere with social norms or fall into groupthink, peer pressure, and convention?
  o In what ways have you noticed that you are able to have clear and healthy boundaries and do what you know is best for you?
  o In what ways have you noticed that you are able to hold various types of paradox and track multiple aspects of a complex situation?

You can also describe:

  o How has your ability to interact with others changed, if it has?
  o How has your sense of moral obligation broadened, narrowed or stayed unaffected? Moral obligation can be broadly defined, from your obligation to your peers, all the way to your moral obligation to society and the greater good.

These two sections, as you have probably noticed, address the four quadrants of the Integral theory. If you wish you can use the Integral framework to help you think more broadly or focus on some specifics on these topics or use it as a guideline to structure your thoughts.

**Formatting:** This paper is a reflective piece, more free-flowing, with less structure. You do not need to start with an introduction, then discussion, then conclusion, unless you wish to. Unless you cite someone, there is no need for references. Again this is a reflective paper, where you look within yourself, analyze and make meaning of the experience.

**Evaluation:** We will be evaluating both section gauging on the degree of in-depth analysis and introspection described. You should spend 1/3 of the paper on the objective and inter-objective real and 2/3 on the subjective and inter-subjective realm. Aim for 10 pages double spaced.
### Appendix 5 Questions for the semi-structure interview

<table>
<thead>
<tr>
<th>Question</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td><strong>1. Related to the course:</strong> You’ve been studying topics in environmental planning, multi-stakeholder processes, and its interconnections with culture and worldviews. What would you highlight as one of the most important things that you’ve learned? Why?</td>
<td>To start the conversation and elicit the most significant aspects of the course for the student.</td>
</tr>
<tr>
<td>a. Do you feel this will help you in your professional or personal life?</td>
<td>To find out how the individual links the learning to other parts of their life.</td>
</tr>
<tr>
<td>b. How would you describe the process that led you to these new insights?</td>
<td>To find out how the individual understands and makes senses of the learning process, and try and understand where the linkages to new insights are made (at least consciously)</td>
</tr>
<tr>
<td>c. Could you comment on the difference in learning you experienced between participating in the class lectures vs. the labs where you prepared presentations and engaged in a dialogue processes?</td>
<td>To find out how the individual experienced each learning environment. Where they think that most of the learning happened and what aspects of the class they valued more.</td>
</tr>
<tr>
<td>d. Do these different ways of teaching complement each other or not?</td>
<td>To find out if the individual understand the different ways of learning and continue to understand where the linkages to new insights are made.</td>
</tr>
<tr>
<td>Where do you feel that you’ve learned more?</td>
<td></td>
</tr>
<tr>
<td>e. What role did the teacher and TA play at facilitating or inhibiting the learning?</td>
<td>To elicit comments on the ability of the professor and TA at facilitating or inhibiting the learning process. Find out how important their roles are.</td>
</tr>
<tr>
<td>How important was there role in this process?</td>
<td></td>
</tr>
<tr>
<td><strong>2. How would you complete this phrase:</strong> “A good education is…”</td>
<td>To elicit the individuals understanding of the complexity of education. This also hints at their cognitive development.</td>
</tr>
<tr>
<td>a. Using integral theory as a tool to highlight</td>
<td>Elicit individuals understanding of the...</td>
</tr>
<tr>
<td>different perspectives, how would you now describe what good education is.</td>
<td>integral theory (which could reflect how much they value the tool, but this could be hampered by a less than adequate representation of the integral theory). Also to help the individual expand on the answer provided before.</td>
</tr>
</tbody>
</table>

| b. How well do you think this course did in meeting this definition | Gauge the expectation of the individual and asses areas that could in a future improve the learning environment |

| 3. What role does self-reflection play in the learning environment at school? | Self-reflection is an important process of transformation. The question aims at eliciting the ties between learning, self-reflection and personal transformation |

| a. And what role does it play in the rest of your life? | Find out how the individual integrates and deals with both personal and professional life and the role the self-reflection plays in it. |

| 4. How would you describe the values you have vs. the ones society at large has? | To find out the social perspective and how sensible they are at perceiving the differences between themselves and society at large. Also to find out the individuals perspective, is it insular or more inclusive and global. |

| a. Would you describe one as better / more correct than the other? | To elicit the mindset as: |

<p>| b. How is it possible that people have such different points of views about a subject | To elicit comments about the individuals understanding of differences in perspectives and opinions (what they are based on and why there is such diversity of opinion about an issue) |</p>
<table>
<thead>
<tr>
<th>c. Do you think this course has shaped your thinking/opinion about this in any way?</th>
<th>What role the individual feels the courses and instructors played in shaping their understanding of values.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. What are your thoughts of bringing the cultural and social aspects into environmental planning and multi-stakeholder processes?</td>
<td>To find out how the individual understands the linkages between environment and society.</td>
</tr>
<tr>
<td>a. Do you think that including these topics in a future environmental planning initiative would improve the outcomes or it would just add unnecessary complexity?</td>
<td>To further understand how the individual makes sense of the linkage environment and society. Also to give the opportunity for the individual to express doubts about the linkages.</td>
</tr>
<tr>
<td>b. If you would have been asked to perform an environmental planning initiative before taking this course, do you think you would have paid attention to these issues?</td>
<td>To find out how well the individual was aware of these linkages before taking the course.</td>
</tr>
<tr>
<td>c. Did the course provide you any additional insights?</td>
<td>To gauge the efficacy of the course</td>
</tr>
<tr>
<td>6. For lab 2, the multi-stakeholder process, what were your thoughts and feelings about this lab section, before you participated in the lab?</td>
<td>To elicit any preconceived fears/hesitation or expectations of the lab</td>
</tr>
<tr>
<td>a. What were your thoughts and feelings after you participated in the lab?</td>
<td>To find out what experience most resonated with the individual.</td>
</tr>
<tr>
<td>b. How would you describe the lab experience? Did you feel it was a safe learning environment?</td>
<td>To try and understand the experiential factor in the learning environment (learning is more than the understanding the interrelationships between the issues, it is also about experiencing them). Also to elicit comments on the process of dialogue, discourse and participation.</td>
</tr>
<tr>
<td>c. How do you think the multi-stakeholder</td>
<td>To find out how the individual makes</td>
</tr>
<tr>
<td>process in the lab differs from a similar process in real life? Do you think that the learning experience is different?</td>
<td>sense of the learning experience and to continue to find out what the individual experienced.</td>
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<tr>
<td>d. Do you think multi-stakeholder processes are useful? Why?</td>
<td>To elicit comments on the individuals learning experience and to try and understand if there is any transformational learning occurring.</td>
</tr>
<tr>
<td>e. Did you feel that the exercise permitted you to move from a self-interested point of view to an understanding of the common good?</td>
<td>To gage the sense of expansion of the individuals awareness?</td>
</tr>
<tr>
<td>7. Overall how well connected did you feel with the class topic, the instructors and your fellow students?</td>
<td>To elicit comments on the experiential and more emotional aspect of the course</td>
</tr>
<tr>
<td>a. What made it easy/difficult to feel connected?</td>
<td></td>
</tr>
</tbody>
</table>