

**Reconnecting with Nature**  
And Pro-environmental Consciousness & Behavior

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Thesis for the fulfilment of the  
Master of Science in Environmental Management and Policy

Lund, Sweden, September 2009



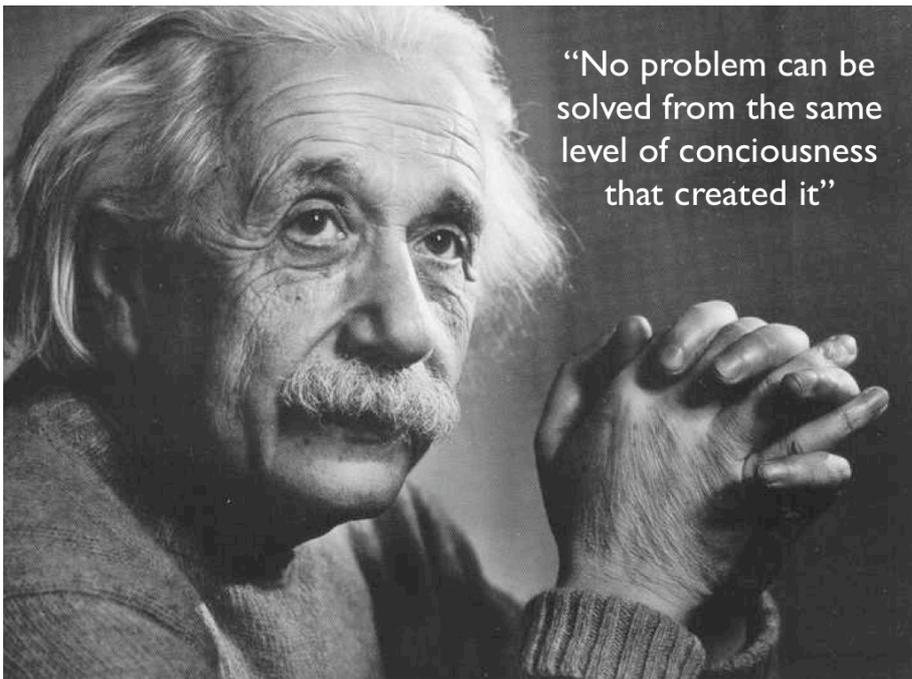
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Published in 2009 by IIIIEE, Lund University, P.O. Box 196, S-221 00 LUND, Sweden,

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ISSN 1401-9191



“No problem can be solved from the same level of consciousness that created it”

## Acknowledgements

Sadly, the time's up for the batch 14 at the 'Tute' - at least in our current capacity as students. What a ride it's been!

I wish to express my heart-felt gratitude to the staff and educators at the Institute for creating such a unique environment and for providing learning opportunities that went way beyond what was stated in the curriculum. I will also be forever thankful to my batch-mates for helping me rediscover what true friendship and camaraderie can mean. Guys, I miss you already!

I much appreciated - and indeed was dependent on – the support from various people during the past year. Among others, I owe a big thank you to:

Håkan Rodhe, who, with an unfaltering grin, pulled off the mission impossible of successfully dealing with the motley crew of us batch 14'ers for an entire academic year. Seeing a perfect match between a man and a job was a constant source of inspiration.

Don Huisingh for his sage advice, encouragement and inspiration during my thesis work and otherwise.

Oksana Mont for her expert advice and efforts in trying to make me realize that writing a book and a thesis are two distinct endeavors.

Thomas Lindhqvist for his generous support and understanding for some of my decisions that may have seemed somewhat incoherent. Thank you for bearing with me.

Fredrik Eriksson for making the IIIIEE library more than just a place to borrow books from, and, of course, for the opportunities to show my true mettle on the innebandy court.

Elna Andersson for her friendly and crucial admin and other help whenever it was needed.

Carl Eneroth and Göran Gennvi for their inspirational and pioneering nature awareness work in Sweden. Without them this thesis would never have gotten off the ground.

My co-participants and trainers for their friendship and cooperation during the nature awareness training in the amazing Vålådalen.

Tällberg Foundation for the memorable June 2009 Forum in Dalarna, which convinced me of the topicality of my chosen field of thesis study.

Lund, September 2009

Jyri Rantanen

*This thesis is dedicated to my parents Heikki and Pirkko  
for their unwavering love and support despite my many years away from home.*



## **Abstract**

There is a significant risk that the current pro-environmental efforts embedded in the prevailing paradigm (shallow ecology) will not be sufficient to solve the increasing number, severity and urgency of environmental/societal challenges – at least they appear to be unable to solve the problems in time. Through literature review and case studies, this thesis author explores how humans having direct nature experiences – by reconnecting with nature – seem to have positive impacts upon individuals and societies at a deeper level, which can lead to more pro-environmental consciousness and behavior<sup>1</sup>.

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<sup>1</sup> Pro-environmental consciousness' is made up of environmental knowledge, values, and attitudes, together with emotional involvement. 'Pro-environmental behavior' seeks to minimize the negative impact of one's actions on the natural and built world, such as minimize resource and energy consumption, use of non-toxic substances, and reduce waste production (Kollmuss 2002).



## Executive Summary

In the first decade of the twenty-first century, humanity is still dominated by materialistic, energy- and resource-intensive, and narrowly self-concerned technological civilizations originated in the West and extended to all continents. A linear continuation of these trends and processes engendered by this civilization is not sustainable, and if continued unabated, will in the next decades lead to major crises and ultimately break-down jeopardizing the existence of human civilization.

Many observers and scientists point a finger at the post-modern societies where consumption defines our identities despite the lack of (positive) correlation between income and happiness in most of the developed world. Growth has not only failed to make us happier but it is also degrading the more-than-human world on which we utterly and ultimately depend.

Until a decade or two ago, scientists and science-minded people considered the feeling of human and human-nature interconnection to be a mere delusion. A fresh look at our interconnections in the framework of the new sciences – quantum physics above all – began to indicate that the “oneness” people sometimes experience is not delusory and that the explanation of it is not beyond the ken of the sciences.

It is crucial not to underestimate the importance of the shift toward intrinsic values as a way of helping humans avert ecological catastrophe as personal relationships with nature may provide some insight into the way people treat the environment; disconnection of humans from the natural world may be contributing to our destruction of the planet’s natural systems.

There is a significant risk that the current pro-environmental efforts embedded in the prevailing paradigm (shallow ecology) will not be sufficient to ‘solve’ the ever-more urgent and bigger environmental challenges – at least they appear to be unable to solve the problems in time. Through literature review and seven case studies, this thesis hopes to contribute to the discovery on how direct nature experience – by reconnecting with nature – can have positive impacts on individuals and societies at a deeper level and might therefore, lead to more pro-environmental consciousness and behavior.

To address the purpose of this thesis research, the following **research questions** were examined in this thesis:

1. What are key environmental worldviews, values and approaches that can help us to understand the human-nature relationship?
2. What are their common features and linkages?
3. What is the effect of humans’ contact with nature in general and within Vision Quest (VQ)<sup>2</sup> in particular on participants’ environmental behavior?

The literature review revealed some important similarities and discrepancies, which are captured in Figure 0-1.

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<sup>2</sup> See section 2.6 “Vision Quest – key characteristics”

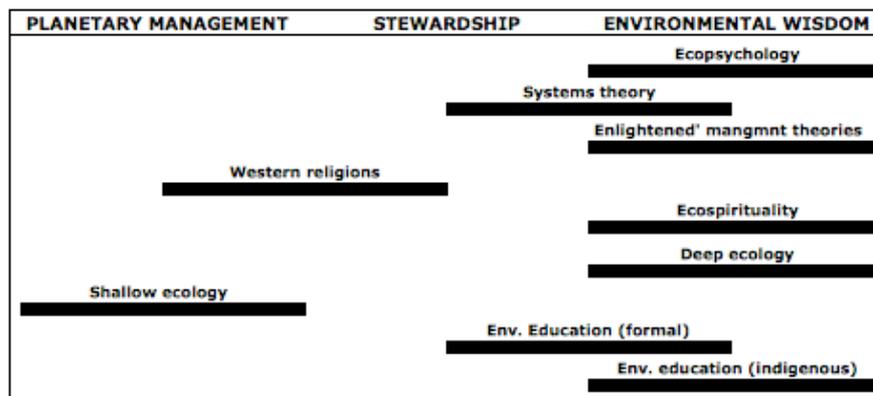


Figure 0-1: Similarities and discrepancies between environmental approaches.

The approaches to human-nature relationships that are solidly in the ‘Environmental Wisdom’ (EW) category, not only recognize the importance of direct experience with nature as well as the concept of oneness, but, also, send out a warning that the current dominant paradigm is a one-way ticket to destruction. According to research on connectedness to nature scale (CNS), “direct experience has significant impact on increasing attitudinal and behavioral consistency.” It is particularly noteworthy, that this basic principle of unity and interrelatedness is also at the heart of systems thinking’s analysis of environmental problems as well as a key component in emerging management & leadership practitioners’ successes in the transforming of individuals and organizations.

Most environmental problems are intricate and immensely complex. Yet we are often unable to comprehend such complex systems and tend to simplify them and think linearly. This prevents us from a deeper understanding of the consequences of natural destruction. It might also lead to underestimating the extent of the problem. Overall, our cognitive limitations to understanding environmental degradation, seriously compromises our emotional engagement and our willingness to act. This bears out what Kahane wrote about tough problems and the three ways in which they are complex: (1) *dynamically* complex, i.e. cause and effect are far apart and so are hard to grasp from firsthand experience; (2) *generatively* complex, i.e. they unfold in unfamiliar and unpredictable ways; (3) *socially* complex, i.e. the people involved see things very differently, and so the problems become polarized and stuck.

Although most of the discussed approaches are clearly in the “environmental wisdom” category, the problem of introducing new paradigm is difficult and most of the resources are with ideas that are supported by currently dominant institutions - businesses, governments, religions, and universities. It is even argued that current institutions with the values that they represent – and in comparison with the cutting edge science that some of them do promote – are, overall, an impediment to the development of a paradigm that acknowledges environment as the context, which all other human endeavors will have to respect and accommodate.

The empirical part of this thesis used the CNS to predict the environmental behavior of the participants in the survey. A number of prior studies support the contention that connection to nature is an important predictor of ecological behavior. The seven case studies in this thesis were divided into three clusters according to the motive for which they were selected:

1. Case studies 1 and 2: Ascertain the level of the post nature experience affective link to nature of modern humans’ using CNS as the key methodology;

2. Case studies 3, 4 & 5: Gauge the impact of Vision Quest experiences on modern humans in general, and the direct relevance these experiences may have on environmental consciousness;
3. Case studies 6 and 7: Empirically measure VQ's impact on participant's affective relationship to nature and – due to assumed causality – on participants' environmental behavior.

The **key findings** with regard to the literature cases and empirical case studies include the following:

Case 1 (“Environmental volunteering”) reports 88 per cent of participants having increased post-nature experience feelings of connectedness to nature with 71 per cent reporting increased environmentally friendly behavior. This compares with 100 per cent and 86 per cent with Advanced Awareness Training (AAT) and Vision Quest (VQ), respectively, which may be reasonably good proxy indicators of increased pro-environmental behavior as well. The findings of the study on the role of age and gender bear out in the empirical study – older age and being a female are linked with more intense affective relationships to nature and the environment.

Case 2 (“Wilderness therapy for troubled youth”) states that the role of solo time in the wilderness has an impact on the CNS score. This was also found in the VQ case. Both cases arrive at approximately 15 per cent increase in CNS in the post-experience score, which, according the researchers of case study 2, is “significant”.

The approaches and methodologies in cases 3-5 demonstrate, in their own markedly different ways, that given the right framing conditions and personal intent, individuals can experience profound shifts in perspective and insights of themselves and that of the world around them.

Systems thinking and deep ecology proponents suggest we take the foot off the gas pedal – reduce consumption and hence the burden on the environment. Understanding and knowing at a deeper level that we are in this together – that harming others equals harming oneself, the necessary transformation is not only possible, but it can be fast, as not only ‘negative’ developments can be non-linear. When embarking on them with the right attitude and intention, direct nature experiences, in general, and Vision Quest, in particular, have been shown to be potentially valuable facilitating “tools” in such necessary positive transformations.

One conclusion that can be drawn from this thesis research is that, while we need to generate a higher level of ecoliteracy - understanding the principles of organization that sustain the web of relationships called ‘life’ - it cannot compensate for direct nature experiences in generating affective feelings toward nature, which are known to have positive relationships with pro-environmental behavior. Concepts alone will not do the job. One is even tempted to argue that reconnecting with nature ought to be the priority, which, once established, would then motivate the search for knowledge and practical tools to facilitate the adoption of more sustainable behaviors.

There is a gap between many people's feelings and attitudes about environmental problems and their own actions. A way to shrink this gap and to transform concern for the environment into environmentally responsible behavior needs to be found. According to the findings of this thesis, increasing nature-relatedness may be one effective way to accomplish this.



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# 1 Introduction

*"It is quite clear to me after several years in the environmental movement that all physical problems of man's impact on the environment - pollution of the air and waters, the desecration of the land, the contamination of the food chain - all start within the environment of man's mind." - Maurice Strong, Founder of UNEP*

## 1.1 Problem

Manipulation of nature to satisfy people's needs is as old as humanity itself. In his chilling book *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond attributes the falling apart of ancient and modern societies to predominantly environmental factors. Not every collapse has an environmental origin, but an eco-meltdown is often the main catalyst, particularly when combined with society's response to (or disregard for) the coming disaster. Collapse is the common destiny of societies that ignore resource constraints (Diamond, 2005).

Up until recently, the environmental challenges have been primarily local, national or regional. What might be some of the indications and indicators of our current civilization heading for a *global* calamity, and possibly collapse?

Interrelated, interconnected and complex issues that are increasingly threatening our societies causing damage that is already becoming irreversible in some areas, and decreasing the per capita productivity of the earth area, include global warming, species diversity losses, advancing deserts and increasing human populations. Consequently, water and food insecurities are resulting in increasing numbers of ecological and political refugees (Capra, 1996). Further, the increasing frequency and severity of 'severe storm events' is causing dramatic increases in disease, poverty and geo-political stability. The authors of the UNEP Year Book 2008 (2008) warn about the consequences of accelerating annual emissions of carbon dioxide, increasing ocean acidification, changing weather patterns, and increasing rates of global ice melting, which are already furthering human habitat losses and mounting pressure on biodiversity.

The current state of humans and ecosystems makes for grim reading with the primarily human-induced climate change (GHF, 2008)<sup>3</sup> offering us the ultimate warning: change your ways or jeopardize the existence of our very civilization.

The clincher is the trend that does not bode well for the future. Comparing two periods 1978 -1987 and 1998 -2007, the number of climatic disasters has almost tripled from 1280 to 3435 driven largely by human-induced climate change (EC, 2009). There is no longer any doubt that extreme weather events – floods, droughts and storms – have become more frequent, severe and unpredictable wreaking havoc in the most vulnerable societies and communities that have contributed least to the problem<sup>4</sup>. The 2009 World Disaster Report tells us that more lives and livelihoods are being threatened by climate change than by any other disaster the world has ever faced (WDR 2009). All the scientific evidence suggests this trend will

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<sup>3</sup> Science is now unequivocal as to the reality of climate change. Human activities, in particular emissions of greenhouse gases like carbon dioxide and methane are recognized as its principle causes (GHF, 2008).

<sup>4</sup> Around 80 percent of the human induced climate warming has been/is being caused by developed countries (Prof. Jacqueline McGlade, Executive Director, European Environment Agency at Tallberg Forum June 2009)

continue and accelerate (Holmes, 2009).<sup>5</sup>

Complex systems such as living species and civilizations do not evolve smoothly but step-by-step up to a point, then they reach a threshold of instability and either break down or bifurcate<sup>6</sup>. Several reviews have postulated the resultant negative effects if we continue on our present path with only minimal adjustment to our socio-cultural system (see Figure 1).

In his book *An Inconvenient Truth*, Al Gore echoes not only many of the dire warnings presented in *Collapse* but, also, those resulting from the most elaborate and well-organized scientific collaboration in the history of humankind<sup>7</sup>: “The climate crisis is a true planetary emergency and unless we act boldly and quickly to deal with the underlying causes of global warming, our world will undergo a string of terrible and catastrophes unprecedented in the human history” (Gore, 2006).

- A shift to mega extinctions of biodiversity, due largely to habitat loss (via land clearing) and climate change
- An increase in toxic pollution in and around major urban centers, resulting in human health problems (and problems to other organisms high on the food chain) due to bioaccumulation
- *Hyperconsumption*, particularly in the developed world with *rich nomads* being able to partake in destination tourism
- The increased commodification of products, extending to other forms of relationships
- More cases of *burn-out* among full-time members of the labor force with the higher paid members having less time for leisure (i.e. being *time poor*, as in *reverse leisure*)
- A continuation of too many members of the developed world being overweight and in poor health, as in *lifestyle* diseases
- An increasing gap between the rich and poor both between the economically developed and developing worlds, and within the nation-states of the developed world
- Increased numbers of environmental refugees and conflict over natural resources, as this natural capital continues to be over-utilized, which already occurs with freshwater resources
- An increase in *soul sickness* as more members of modern, Western society (in particular) feel that there is little meaning in their lives, and not much hope for the future.

James Lovelock, an eminent British scientist, could not agree more and he ominously invites us to “enjoy life while

we can” while encouraging us to prepare for scenarios of near apocalyptic proportions with a large chunk – up to 80 per cent - of the world’s population perishing in the decades to come (The Guardian, 2008).

Figure 1-1; 21st century trends (Hay, 2006)

Clearly, the survival of the human civilization the way we perceive and define it today is at stake. Yet, these clear warnings are met with a "blinding lack of situational awareness", as Al Gore stated in his Nobel Prize acceptance speech in December 2007. Never before in history has there been a bigger disconnect between science and politics than today.

The environment has been on the political agenda since the early 1960’s. While much has happened since then, few can deny that we currently live in an ecologically destructive

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<sup>5</sup> According to the United Nations 2008 report, between 1991 and 2005, 3,470 million people were affected by climate-induced disasters, 960,000 people died, and economic losses amounted to US\$ 1,193 billion with poor countries disproportionately affected relative to their population size and GDP. Over the last two decades (1988-2007), 76% of all disaster events were hydrological, meteorological or climatological in nature; accounting for approximately 45% of the deaths and 80% of the economic losses caused by natural hazards (IASC & ISDR, 2008)

<sup>6</sup> Bifurcation = The path of development of a system encounters a rapid, previously unforeseen change

<sup>7</sup> This refers to the 4th Assessment Report on Climate Change released in 2007 and prepared by the International Panel on Climate Change (IPCC) convened under the auspices of UN Environmental Program (UNEP) and the World Meteorological Organization (WMO), see <http://www.ipcc.ch>.

culture. According to measurement of our *ecological footprint*<sup>8</sup>, things are bad and are rapidly getting worse. The per capita footprint first exceeded the Earth's biological capacity in the late 1970's overshooting it by 40 per cent in 2005 with glaring disparities among nations (Meadows, Randers, & Meadows, 2004; Carter, 2007). We have become "future eaters" not recognizing that running a linear system endlessly on a finite planet is not possible (Hay, 2005; Leonard, 2009). The rising curve of demand is exceeding the descending curve of supply.

The fact is that, even with all the evidence regarding the role of Green House Gases (GHG) in climate change, the global emissions are still increasing every day, and the GHG reduction offers currently on the table by the biggest emitters, in view of post-Kyoto treaty, are nowhere near the target set by experts to ensure the mean global temperature stays within estimated safe limit. In fact, the assessments of many of the scientist involved in the process say that, even if – and this is a big 'if' judging by the transcripts from the pre-COP15 (Conference of the Parties) multilateral discussions - we were to reach the set target in Copenhagen in December 2009, the result will still be a failure. The reality on the ground together with the predictions based on latest research indicate that for us to avoid catastrophe GHG emission reductions need to be much larger than the negotiation targets for COP 15. Even the experiences from Hurricane Katarina – that caused major havoc and casualties in a major first-world country – were not painful enough to cause a significant shift in our attitudes, actions and habits.

Many observers and scientists point a finger at the post-modern societies, which are built on materialism and systemic economic growth, which, with the current technologies and population growth rate threatens the survival of the human species. Consumption defines our identities. All key aspects of the system and important public policies in affluent societies are harnessed to increase consumption, through "cultivation of needs" – increasing and converting wants into vital needs (Miller, 2007; Hay, 2005; Leonard, 2009; Berry, 1999). This, despite the lack of (positive) correlation between income and happiness in most of the developed world (Orr, 2009). Growth has not only failed to make us happier but it is also degrading the more-than-human world on which we utterly and ultimately depend (Harding, 2006).

In a world that is increasingly urbanized and dominated by human artifacts, people's contact with nature can no longer be taken for granted. Close encounters with wilderness are still possible in remote locations, where human civilization is barely noticeable. In most modern urban environments, however, people's interactions with wild nature are highly restricted and largely dependent on people's willingness to invest time and resources in visiting the great outdoors.

Modern lifestyles have, for much of the developed world, created psychological and physical divisions between human inhabitants and the natural world. Since the beginning of the last century, the majority of the population in many Western countries has made their work and home in towns and cities. As a result of this trend, many people no longer experience the natural world directly. Reduced direct contact with the natural world has been labeled the 'extinction of experience' by Pyle (2003), which, he claims, leads to a cycle of apathy and a lack of concern with ecological issues, the natural environment and the wildlife within it.

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<sup>8</sup> Ecological Footprint = a measure of the amount of nature it takes to sustain a give population over the course of a year (<http://www.ecologicalfootprint.com/>).

According to Berry (1999), the deepest cause of the present devastation is found in a mode of consciousness that has established a radical discontinuity between the human and other modes of being and the bestowal of all rights on the humans. The other-than-human modes have value only through their use by the human and, as a result, they become totally vulnerable to exploitation by human, an attitude that is shared by all four of the fundamental establishments that control the human realm: governments, corporations, universities, and religions – the political, economic, intellectual and religious establishments. All four are committed to upholding the current ‘growth is good’ paradigm.

Mankind is good at adapting to new situations as it has done throughout history. The bad news is that these developments are happening at unprecedented and unanticipated speed. Unless we act comprehensively and quickly, they will overwhelm us. What's new about today is that things have deteriorated to a point where our delusions can no longer paper over complex and disastrous problems. According to experts’ recent estimates, we have 100 months to fix the problem related to human-induced climate change lest we reach a tipping point and it spins out of control. The stakes are high and the time is short (BBC, 2008; Guardian, 2009; Holmes, 2009).

An interesting perspective is offered by Eckhardt Tolle (2005), an influential modern spiritual teacher, who echoes the message from mystics of various philosophical and religious persuasions by claiming that our ‘outer’ actions and perceptions are reflections of our ‘inner world’, encouraging us to delve deeper into ourselves to avoid ‘dysfunctional’ and destructive behavior. Evolution is calling us to take a leap to the next level of human consciousness for our species to survive.

The cavalry may very well be on its way. Ervin Laszlo (2008), twice nominated for the Nobel Peace Prize, shares the following encouraging and exciting view: “...Global shift in the global brain is a sudden and fundamental transformation in the relations of a significant segment of the six and a half billion humans to each other and to nature – a macroshift in society – and a likewise sudden and fundamental transformation in cutting-edge perceptions regarding the nature of reality – a paradigm shift in science. The two shifts together make for a “reality revolution” in society as well as in science.” This decade is the first in history that offers the choice between being the last of a fading, obsolete world or the first of a new and viable one.

History also offers encouraging precedents. According to Capra (2006), paradigm shifts occur in discontinuous, revolutionary breaks, and not only with regard to biophysical impacts associated with the loss of natural capital. Ecologist Paul Ehrlich’s agrees: “social systems are just as non-linear as many biological systems. Just as there are thresholds in ecosystems, there are thresholds in human behavior, times when cultural evolution moves unexpectedly rapidly...”we saw that in the dramatic in racial justice in the 1960s, the surprise decline of American birthrates in the early 1970s, and the utterly unexpected fall of the Berlin Wall and dissolution of the Soviet Union in the early 1990s”...”when the time is ripe, society can be transformed virtually overnight – and that could occur in our treatment of the environment in general and natural capital in particular. Our challenge now is to find ways to ripen the time” (Daily & Ellison, 2002).

## 1.2 Justification

In the words of Ernst von Weizsäcker, former founder and director of the Wuppertal Institute: “We are entering the century of environment, whether we want it or not. In this century everyone who considers himself to be a realist will be forced to justify his behavior in light of the contribution (s)he made toward the preservation of environment” (Hawken, Lovins, & Lovins, 2008).

In just a few years, nine billion people will need to be sustained by the economic and by the earth’s natural systems (EarthTrends, 2009). The models of today are not up to the task. This demands a major mind shift from the business-as-usual approaches.

As increased materialism does not equal happiness, after basic material needs are met we seem to be running away from what we are actually trying to reach – like a dog chasing its tail (Tacey, 2004; Tolle, 2005; Richins & Dawson, 1992). Despite the hypothesis of pro-social behavior models, increased affluence has not led to more ecologically sound behavior (Kollmuss & Agyeman, 2002). The more people pursue these extrinsic, materialistic goals, the higher their ecological footprints (Kasser, 2009).

With concern about environmental changes steadily growing there is an urgent need for research that addresses how, when, and why this concern can be effectively translated into action (Amel, Manning, & Scott, 2009). There is a growing consensus that individuals in the Western world need to change their behavior and consumption patterns in profound ways in order to create an environmentally sustainable society. And while interventions aimed at specific environmental issues have been shown to be effective, increasingly it is also becoming apparent that the magnitude of the environmental problems we face necessitate a broader intervention aimed at changing our cultural worldview (Myer & Franz, 2005).

The world needs new, creative solutions rooted in our interconnectedness and systemic interdependence. There is a pressing need to search for the underlying causes of the global crisis, and to start the process of envisioning ways out of it. At a time when historic challenges face humanity, business-as-usual is not good enough - traditional political, legal and economic approaches do not go far enough. As Tällberg Foundation (2009) puts it: “tinkering at the margins of the existing industrial, fossil fuel-based economic system, with its 50-year old global governance system and nation-state political system just will not do”. This calls for creative solutions, integrating both nature and the arts, where people feel free to step outside of their professional identity and regular context, to share doubts and new ideas, and search for ways forward outside of established frameworks. Leaders are pioneering many such solutions everywhere and in all walks of life of our societies. However, old institutions, frameworks and structures are stifling their application as rapidly and as effectively as is needed to make the urgently needed societal transitions to more sustainable paradigms, values, policies and life-styles.

Until a decade or two ago, scientists and science-minded people considered the feeling of human and human-nature interconnection to be a mere delusion. A fresh look at our interconnections in the framework of the new sciences – quantum physics above all – began to indicate that the “oneness” people sometimes experience is not delusory and that the explanation of it is not beyond the ken of the sciences. As atoms and molecules can be instantly connected across space and time, so too living organisms can be instantly connected with other organisms, with nature and the cosmos as a whole. Admitting the intuition of

connections to our everyday consciousness can inspire the solidarity we need to live on this planet – to live in harmony with each other and nature (Laszlo, 2008).

It is crucial not to underestimate the importance of this shift toward intrinsic values as a way of helping humans avert ecological catastrophe. Personal relationships with nature may provide some insight into the way people treat the environment while disconnection from the natural world may be contributing to our planet's destruction. Whereas the importance of people's connection to nature is often mentioned, measuring this connection, and hence environmental behavior, has been difficult (Nisbet, Zelenski, & Murphy, 2008). The research that does exist indicates that reconnecting with nature has a correlation with more intrinsic values and a more positive/balanced view of nature, which might contribute to sustainable behavior (Kasser, 2009). We need to better understand why we treat our environment the way we do if we are to prevent continuing degradation and human suffering.

Research also shows is that, although many people are aware of and care about environmental problems, these sentiments are not always reflected in their behavior. Psychologists have examined people's motivations, attitudes, values, and beliefs to better understand these discrepancies and try to determine why some people engage in environmentally responsible behavior, while others do not. Nisbet, Zelenski and Murphy (2008) suggest that nature relatedness captures many of these individual differences and, thus, differences in pro-environmental behavior.

A myriad of environmental educational and nature awareness programs are available and these are provided by an equally diverse array of institutions ranging from university courses to recognized environmental agencies and NGOs to programs created more around 'deep ecology' which may often include a spiritual dimension and deviate from the main environmental education paradigm. Common issues related to all of these programs - and more obvious further the program design and content deviates from the mainstream - is the scarcity of evaluation studies on their impact on pro-environmental consciousness and behavior.

The research on outdoor adventure programs and nature therapy has demonstrated that a change in perspective and feelings about the human-nature relationship is possible. However, much of the research on the benefits of nature experiences comes from the marketers of structured wilderness trips (Nisbet, Zelenski, & Murphy, 2008). Unbiased, empirical information about people's everyday nature experiences and the sustained benefits of being nature related is lacking.

To the knowledge of this thesis author, there are only three prior studies conducted on the transformative and empowering effects of Vision Quest (VQ) and none on their impact on environmental behavior specifically.

We need to uncover ways to heal the culture as well as the individuals who live in it. Gomes (1998)states: "Given the urgency to be engaged in this process it is clear that the forests cannot be saved one at a time, nor can the planet be saved one issue at a time; without a profound revolution in human consciousness, all the forests may disappear if we work at such a slow and incremental pace." Studies and research on how to facilitate profound changes in human hearts and minds at large scales appear to be urgently warranted for us to reach a positive 'tipping point'.

Many prominent psychologists have insisted that a more connected sense of self is necessary to change behavior toward the environment. This approach taps into (assumed) innate biophilic tendencies and into the experience of people's relationships with nature to promote environmentally responsible behavior. Although this is an attractive idea, empirical research on its efficacy is scarce. One impediment to such research has traditionally been the lack of a tool to assess individual differences in people's connection to nature (Nisbet, Zelenski, & Murphy, 2008).

### 1.3 Purpose of study

The purpose of this thesis study is two-fold:

1. There is a significant risk that the current pro-environmental efforts embedded in the prevailing paradigm (shallow ecology) will not be sufficient to 'solve' the ever-more urgent and bigger environmental challenges – at least they appear to be unable to solve the problems in time. Through literature review and case studies, this thesis author hopes to contribute to the discovery on how direct nature experience – by reconnecting with nature – might have positive impacts on individuals and societies at a deeper level and might therefore lead to more pro-environmental consciousness and behavior.
2. Apart from being a requirement of the Master's of Science degree in Environmental Management & Policy (EMP) at H3E in Lund University, Sweden, the wider aim of this thesis process was to enrich the author's educational experience by gaining personal understanding of the environmental issues from the 'deeper' ecology perspective, so as to bring, in a complementary manner, the Institute's educational program into a wider personal and philosophical framework so as to become more effective for the thesis author.

### 1.4 Research questions

To address the purpose of this study, the following research questions are examined in this thesis:

4. What are key Environmental Worldviews, Values and Approaches that can help us to understand the human-nature relationship?
5. What are their common features and linkages?
6. What is the effect of humans' contact with nature in general and within Vision Quest (VQ)<sup>9</sup> in particular on participants' environmental behavior?

The hypothesis of this thesis is: "the lack of connection to nature contributes to environmental degradation and climate change". This, in turn, rests on the following two assumptions: (1) "People who reconnect to nature are more likely to work toward preserving it, and"; (2) "Stronger affective feelings toward nature cause more environmentally friendly behavior."

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<sup>9</sup> See section 2.6 "Vision Quest – key characteristics"

## 1.5 Methodology

Four primary methods were used to gather information for this thesis:

1. Consulting relevant members of academia at Lund and Malmö universities (Sweden);
2. Performing an extensive literature review;
3. Performing three clusters of case studies:
  1. Case studies 1 and 2: Ascertain the post experience affective link to nature of modern humans' using Connection with Nature Scale (CNS) as the key tool;
  2. Case studies 3, 4 and 5: Gauge the impact of the Vision Quest experience on modern humans in general, and on clarifying what the direct relevance that such experiences may have on participants' environmental consciousness;
  3. Case studies 6 and 7: Develop empirical findings on Vision Quest's impact on participant's affective relationship to nature and – due to assumed causality – on participants' anticipated future environmental behavior.
4. Performing analyses of:
  - The literature review
  - Case study 5 vs. 6 (one empirical study vs. another)
  - Case studies 5 & 6 vs. 3 & 4 (literature case studies vs. empirical case studies)
  - Case studies 3-6 vs. literature review

The literature review process entailed obtaining recommendations from relevant faculty members from both Lund and Malmo Universities as to what might be appropriate research fields in view of the topic of the thesis not only to obtain answers to the research questions, but also, to obtain solid academic background and context to examine the case studies.

It was impossible for the author to establish any hierarchy between or among the various fields of study related to human-nature relationships. While literature and research from a wide array of relevant disciplines were consulted, the final selection of research fields included in the literature review section of this thesis was dictated by the amount and relevancy of the material gathered; not all the suggestions from academia were necessarily included. For the literature review this thesis drew primarily on human ecology, ecopsychology, ecospirituality, environmental education, systems theory and advanced management theories but also made occasional references to other fields of study where appropriate.

The empirical work for this thesis was performed in two separate but similar one-week events in Vålådalen in Sweden, one in June and the other in July 2009. The June event was an advanced awareness training (AAT), meant for future trainers for Vision Quests, which was attended by this thesis author. The July program was an actual Vision Quest where the same questionnaire process was administered by a one of the educators, upon the request by the author.

The empirical research itself was performed following some of the basic principles of *action research* where “the researcher is involved in, in conjunction with members of an organization, dealing with a problem that is recognized as such by both parties”, and where “the researcher becomes part of the field of investigation (Bryman, 1989). The process included a baseline, self-administered, pre-experience and a post-experience questionnaire, in order to provide stand-alone findings for a snapshot survey. The empirical part of the study had no follow-up longitudinal component.

A connectedness to nature scale (CNS) was used to predict the environmental behavior of the participants in the survey. Five prior studies conducted by Department of Psychology at Oberlin College assessed the validity and reliability of the CNS, a new measure of individuals' trait levels of feeling emotionally connected to the natural world. The studies support ecopsychologists' contention that connection to nature is an important predictor of ecological behavior and subjective well-being. According to the researchers of the study "the CNS promises to be a useful empirical tool for research on the relationship between humans and the natural world" (Myer & Franz, 2005). CNS is discussed in more detail in Section 2.7.

## 1.6 Scope and limitations

Though often the goal of both producers and mediators of information, total objectivity remains an elusive goal. To the extent that the information enters the realm of a societal study and analysis, a degree of subjectivity inevitably creeps in.

According to the Finnish environmental journalist Pasi Toiviainen (Toiviainen, 2008), journalistic objectivity is a myth. To appear objective is, however, possible as long as one manages not to antagonize the target audience and the views of the source of the information are more or less in keeping with the prevailing public opinion. The challenge of spreading the environmental 'gospel' – particularly when one examines the issues from a 'deep ecology' perspective where mysticism and spirituality play a role – is that more often than not, the new viewpoints deviate from those of the mainstream and dominant paradigm and therefore can be perceived as compromising objectivity, and may even elicit violent defensive reactions because they are beyond the 'comfort zone' of the target audience.

Objectivity being an elusive and unrealistic target, the author of this thesis strove to achieve 'transparent subjectivity', the closest realistic alternative. Hopefully this was achieved by keeping the statements and opinions of scientists and researchers clearly separate from the personal view points of the author.

This stated, there is no doubt that, the author's personal direct experience of a VQ exercise during the course of the preparation of the thesis has generated a bias manifested in the subsequent choice of further literary material and its analysis. Whether this is due to, or despite, constant efforts at self-reflection, is a mute point.

The somewhat "generous" scoping of the study is due to the following factors:

- This thesis – by necessity, given the nature of the topic – is not about 'knowing a lot about little' but, instead endeavors to respect the very premise it tries to make a point about: acknowledging the need for holistic, cross-disciplinary approaches to solving environmental challenges that affect our well-being and survival as a species, while looking at nature's role and possible contribution as complementary to the current dominant paradigm which, on its own, is still taking us in the wrong direction.
- While not endeavoring to provide any definitive answers on pro-environmental behavior, this study was designed to go beyond mere provision of 'tips for more harmonious living with the environment'. This said, and as the topic is about the potential of an alternative to the existing paradigm (even within in the environmental realm), the provision of a relatively extensive context and provision of various fields of study was necessary to provide a deeper understanding of the core of this study. It could not be experienced in a vacuum.

Given the set schedule by the organizers, the short time allocated for the Vision Quest events' pre and post experience did not allow for more elaborate questionnaire development and testing, nor for opportunities to carry out semi-structured interviews, as had been planned by this thesis author.

The CNS approach and the base scale used by (at least) two reputable academic institutions, that both had tested and verified the tool to a reasonable level of validity and reliability for the approach and scale, gave this thesis author enough confidence to follow along the same lines without perceived need to become an expert in understanding the intricacies of statistical methodologies used in psychological research in general nor into analyzing the validity of CNS as a tool in particular, beyond what is discussed in the case studies.

According to the extensive review by Kollmuss & Agyeman (2002) of the key models for explaining/predicting/preventing pro-environmental behavior, any model applied in isolation is not comprehensive enough and a synthesis of several models produces an approach that is too complicated so as to be useful. Although a reasonably extensive discussion on barriers to pro-environmental behavior is provided in this thesis study, no other 'framework', apart from the CNS, was used to analyze the empirical data.

## **1.7 Outline**

This thesis is organized into the following chapters:

Chapter 2 examines nature connection as a catalyst for change through various environmentally relevant theories, worldviews and approaches, as well as looks at barriers to pro-environmental behavior and elaborates on the adopted approach on how to analyze the empirical data of this thesis.

Chapter 3 delves into seven case studies that are divided into three clusters according to the motive for which they were selected for a deeper analysis, i.e. (i) ascertain the affective link of modern humans to nature by using CNS as the key evaluation methodology; (ii) Gauge the impact of the VQ experience on modern human in general, and investigate any direct relevance this may have on environmental consciousness, and; (iii) Develop empirical findings on VQ's impact on participant's affective relationship to nature and on participants' environmental behavior.

Chapter 4 provides an analysis on the linkages between the examined approaches to human-nature relationship and pits the studies cases against one another to tease out key commonalities and differences.

Chapter 5 is dedicated to summarizing and discussing the answers to the original research questions based on findings from the literature research and case studies.

Finally, chapter 6 puts the key findings in a larger perspective, and offers an implementable recommendation on how to make the nature connectedness concept a reality by leveraging existing resources in a familiar context for the IIIIEE.

## 2 Nature connection as catalyst for change

To deal with the causes of the impending socio-political-environmental disasters, we need a more thorough and deeper awareness and understanding of how we got to the brink of destroying the human prospect and much of the planet. It did not happen accidentally but is the logical working out of a set of assumptions, philosophies, worldviews, and unfair power relations that have been evident for a long time. Looming environmental catastrophe is a symptom of a larger disease.

### 2.1 Systems thinking and environment

Kahane (2004) offers the following set of generic criteria for tough problems. The current environmental challenges seem to fit the bill perfectly:

“Problems are tough because they are complex in three ways: (1) *dynamically* complex, i.e. cause and effect are far apart and so are hard to grasp from firsthand experience (low if rules and solutions from the past work in the future); (2) *generatively* complex, i.e. they unfold in unfamiliar and unpredictable ways; (3) *socially* complex, i.e. the people involved see things very differently, and so the problems become polarized and stuck (low if involved parties have common assumptions, values, rationales and objectives).”

According to Kahane (2004), complex problems – “messes” - can only be understood systemically, taking into account of the interrelationship among the pieces and the functioning of the system as a whole. What does this mean in terms of the current environmental challenges?

The fact that ecological sustainability is a property of a web of interrelationships means that in order to understand it properly, to become ecologically literate, we need to think in terms of relationships, interconnections, patterns, contexts and processes. In science, this type of thinking is known as "systems thinking." It entails a shift of perception from material objects and structures to the nonmaterial processes and patterns of organization that represent the very essence of life (Capra, 2009).

It is now becoming increasingly evident that the major problems of our time cannot be understood in isolation. They are systemic problems, which means that they are all interconnected and interdependent. The vicious circle of demographic pressure and poverty leads to the depletion of resources – falling water tables, wells going dry, shrinking forests, collapsing fisheries, eroding soils, grasslands turning into desert, and so on. This resource depletion, exacerbated by climate change, produces failing states whose governments can no longer provide security for their citizens.

All these problems, must ultimately, be seen as just different facets of one single crisis, which is largely a crisis of perception. It derives from the fact that most people in our society, and especially our political and corporate leaders, subscribe to the concepts of an outdated worldview, a perception of reality inadequate for dealing with our overpopulated, globally interconnected world.

There are solutions to the major problems of our time; some of them are even simple. But they require a radical shift in our perceptions, our thinking, and our values. Indeed, we are

now at the beginning of such a fundamental change of worldview, a change of paradigms. Systems thinking and ecological literacy<sup>10</sup> are two key elements of the new paradigm, which is very helpful for understanding the interconnections among humans, food, health, and the environment, but also for understanding the profound transformations that are needed globally for humanity to survive (Capra, 2009).

Modern physics shows that nothing in the universe exists in isolation – everything depends for its very existence on its relationships with everything else. Systems thinking research has documented that the metaphor of control is the wrong basis on which to build a fruitful relationship with nature. In Harding’s (2006) view, participation is more appropriate and is in fact the only available option.

According to the well-known systems theorist Donella H. Meadows (1999), “there is more leverage in slowing down the system (economic growth) than faster technological progress.” Negative feedback loops are there to keep important systems within safe limits. When mistakenly stripped away, the range of conditions over which the system can survive is narrowed. Encroaching on the habitats of endangered species or on our time for rest, recreation and socialization serve as examples. Positive feedback loops are sources of growth, explosion, erosion and collapse in systems and when unchecked, will ultimately destroy themselves.

As the development – and particularly the negative effects of it – are about to spin out of control in our society, we might choose to pay heed to the notion that “slowing the growth is usually more powerful leverage point in systems than strengthening negative loops – slowing down the speed of the car is preferable to investing in more powerful breaks.” Slowing down economic and population growth gives the negative loops, such as technology, markets and other forms of adaptation, all of which have limits and delays, time to function. A system that changes much faster than its negative loops, leads to chaos (Meadows D. , 1999).

## 2.2 Environmental worldviews <sup>11</sup>

*“There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy.”* – Hamlet Act 1, scene 5

The following provides a broad overview of some of the main underlying - and often overlapping and interacting – views and values on our civilization’s attitudes and behavior regarding nature and the environment.

Research from several sources supports the identification of three general value orientations (biospheric, altruistic, and egoistic) associated with environmental behavior. Biospheric values are related to concern for the natural world (plants, trees, and animals); altruistic

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<sup>10</sup> **Ecological literacy** (*ecoliteracy*) is the ability to understand the natural systems that make life on earth possible. To be ecoliterate means understanding the principles of organization of ecological communities (i.e. ecosystems) and using those principles for creating sustainable human communities”. . . . “An ecologically literate society would be a sustainable society which did not destroy the natural environment on which they depend” ([http://en.wikipedia.org/wiki/Ecological\\_literacy](http://en.wikipedia.org/wiki/Ecological_literacy)).

<sup>11</sup> Environmental worldview refers to a person’s belief about humanity’s relationship with nature. According to Miller (2007): “the environmental worldview encompasses how one thinks the world works, what one believes his/her environmental role in the world should be, and what one believes is right and wrong environmental behavior” . . . “the major difference among environmental worldviews is the emphasis they put on the role of humans in dealing with environmental problems”

values are related to concern for other people (family, community, and friends); and egoistic values are centered on self-concerns (one’s own personal well-being).

The Basic approach on how to place environmental worldviews on a continuum is provided in the following diagram (Figure 2-1):

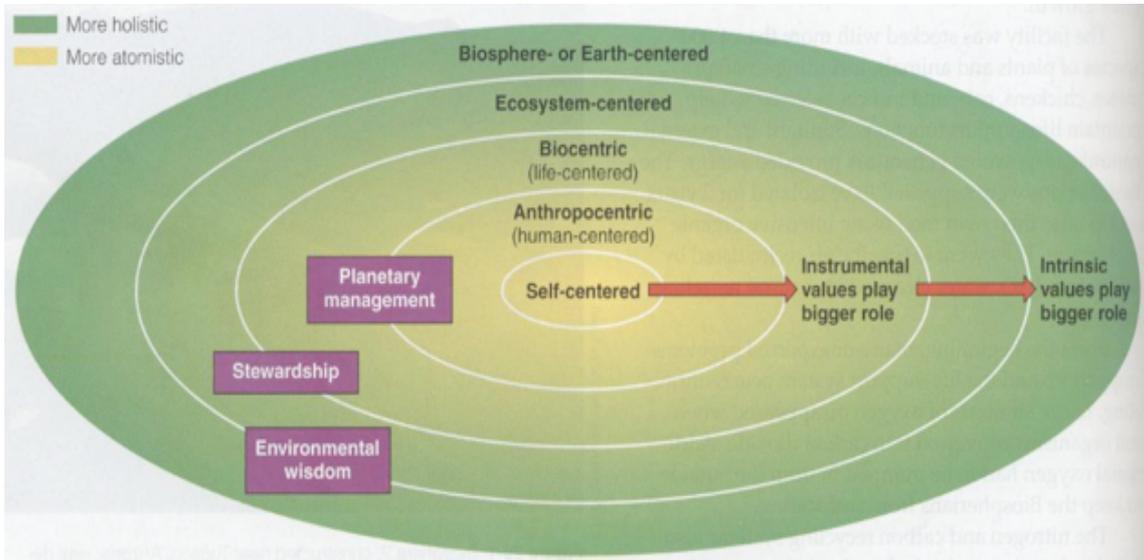


Figure 2-1: Various environmental worldviews (Miller, 2007)

A comparison of the three major environmental worldviews of Figure 2-1 – and corresponding to the increasing pro-environmental attitudes from self-centeredness to more dominant intrinsic values - is provided in the below Table 1:

Planetary Management	Stewardship	Environmental Wisdom
<ul style="list-style-type: none"> <li>We are apart from the rest of nature and can manage nature to meet our increasing needs and wants.</li> <li>Because of our ingenuity and technology we will not run out of resources.</li> <li>The potential for economic growth is essentially unlimited.</li> <li>Our success depends on how well we manage the earth’s life-support systems mostly for our benefit.</li> </ul>	<ul style="list-style-type: none"> <li>We have an ethical responsibility to be caring managers, or stewards, of the earth.</li> <li>We will probably not run out of resources, but they should not be wasted.</li> <li>We should encourage environmentally beneficial forms of economic growth and discourage environmentally harmful forms.</li> <li>Our success depends on how well we manage the earth’s life-support systems for our benefit and for the rest of nature.</li> </ul>	<ul style="list-style-type: none"> <li>We are a part of and totally dependent on nature and nature exists for all species.</li> <li>Resources are limited, should not be wasted, and are not all for us.</li> <li>We should encourage earth-sustaining forms of economic growth and discourage earth-degrading forms.</li> <li>Our success depends on learning how nature sustains itself and integrating such lessons from nature into the ways we think and act.</li> </ul>

Table 1: Comparisons between key environmental worldviews (Miller, 2007)

Another typology of environmental philosophy – much in line with the basic approach presented in Table 1 – was proposed by Carter (2007). Shallow perspectives are concerned about environmental protection but remain subordinate to other human interests accepting the assumption that humans are the sole items of value (Sole Value Assumption).

Intermediate perspectives, in turn, argue that moral consideration should be extended to include certain non-human entities with human interests always out-valuing other considerations and the value of non-humans (Greater Value Assumption). Ecocentric perspectives reject both of these above assumptions and see value residing in the ecosphere as a whole rather than in humans or in individual entities (Carter, 2007; Berry, 1999).

Ecocentrism regards humans as subject to systems and laws, and contrasts with the human arrogance rooted in anthropocentrism, which places humans in the centre of the universe – separate from nature - legitimizing the exploitation of the environment of the natural world to (exclusively) satisfy human needs. This approach is deeply seated in the psyche of the western mindset as it is argued that the historical roots of our ecological crisis can be at least partly traced back to the Judeo-Christian world-view, which interpreted Genesis as supporting the contention that all of creation existed solely to serve mankind and therefore was/is ripe for exploitation (Carter, 2007; Hay, 2005; Miller, 2007). Likewise, the Enlightenment of the 16th and 17th centuries, by encouraging mastery over the nature, which could then be manipulated, contributed to the current exploitative behavior of the western societies (Berry, 1999; Laszlo, 2008; Carter, 2007).

The reformist and radical approaches, in turn, offer two distinct and succinct classification approaches to environmental philosophy and political thought. Reformist approach leans toward the traditional managerial approach to environmental problems, secure in the belief that they can be solved without fundamental changes in present values or patterns of production and consumption, whereas radical positions argue that a sustainable and fulfilling existence presupposes radical changes in our relationship with the non-human natural world, and in our mode of social and political life (Carter, 2007).

As a result of anthropocentric views, we became more individuated and the rights of the individual that were advanced in political philosophy were entrenched in Western constitutions. But there have been costs to us all due to this approach creating a social vacuum, marked by the absence of social norms or values leading to alienation. Hay (2005) claims that this isolation leads to the frustration of three universal urges: the urge for community, for engagement, and for shared responsibility and interdependence, with obvious relevance for sustainability and the environment.

Related to the sense of oneness, Tolle (2005) emphasizes the general importance of direct experience in developing our attitudes and behaviors. In the context of environmental behavior, we need to learn from experiencing nature directly and not just in the context of formal learning. Many analysts urge us to take time and escape the “cultural and technological body-armor we use to insulate ourselves from nature and to experience nature directly” (Miller, 2007) in order to come closer to understanding the difference between abstractions and reality. Words are not the same thing as what they refer to; concepts not the same as reality (Mello, 1990).

Holistic perspectives – holism – is concerned with interdependence and reciprocity that make up the whole – everything is connected to everything else and the whole is greater than the sum of its parts. There is unity of humans and non-human nature and nothing is independent and, therefore, has value (Tolle, 2005; Walsch, 2008; Capra, 2002; Walsch, 2008). This is a metaphysical argument about how the closer identification of the human self with nature could provide a rationale for nurturing a higher ecological consciousness. Says Laszlo (2008): “Solidarity based on a sense of oneness with other-than-humans and with nature is a basic condition for creating a world that is peaceful and sustainable.” By seeing

ourselves as part of nature, and by indentifying more closely with it, to the extent the other (nature) becomes part of our self, a self-realization emerges upon which we can develop obligations to non-human nature. Put simply: “by developing ecological consciousness by changing the way we perceive and think about nature we can overcome the ecological crisis (Carter, 2007).”

Earth-focused philosophers say that to be rooted, each of us needs to find a sense of place, a piece of earth that we feel at one with as a place we know, experience emotionally and love. When we become a part of a place, it becomes a part of us. Then we are driven to defend it from harm and to help heal its wounds. This might lead us to recognize that the healing of the earth and the healing of the human spirit are one and the same (Miller, 2007).

Hay (2005) also speaks about the rootlessness as an important cause for limited care for the environment. You protect what you feel attached to. In Western nations one-half of the population moves every five years, or between eight and 15 times in a lifetime which may lead to a lack of commitment to anything. By not remaining in and around one place over most of one’s lifetime, “deepseated feelings of rootedness, belonging, dwelling and connection to nature in that locale are often sacrificed” (Hay, 2005).

A mitigation of this modern trend could have positive outcomes for the environment: Experiences in the natural environment have been found to have significant correlations with pro-environmental behavior, such as recycling, signing petitions in favor of environmental protection and using public transport. Researchers have found strong correlations between frequency of visits to forested areas and self-reported pro-environmental behaviors such as contributing money to environmental organizations and environmentally conscious consumerism. Similarly, intimate contact with the natural world has been found to be essential in forming meaningful bonds with, and promoting positive values towards, the natural environment (Hinds & Sparks, 2007).

### **2.2.1 Shallow vs. deep ecology**

Human ecology is the study of relationships between humans and nature, all intimately connected in a web of interactions. Humans are part of ecosystems - not as actors having an effect on the environment 'out there', but each one of us as part of the environment of everyone else, and as part of the environment of every other species.

Human ecology explores not only the influence of humans on their environment but also the influence of the environment on human behavior, and their adaptive strategies as they come to understand those influences better (Oxford, 2009).

The separation of nature and culture, mind and body, or subject and object has been formalized in Western thinking by the Enlightenment. For many contemporary environmental philosophers the “ills that have beset modern society”, most notably since the industrial revolution, can be traced to these dichotomies in both theory and practice. By examining the place of humans in the universe encompassing planet Earth, we have come to realize that, while people have attained a level of intellect to harness and control nature better than any other living organism, they have not escaped the constraints of “natural laws.” Culture and society simply cannot claim supremacy over nature (Thomas F. R., 2009).

On the other hand, it would be incorrect to assume that nature necessarily opposes societies’

efforts in carving out their ecological niches, provided these are accomplished within the framework of dynamic eco-stability. In brief, there is a need to acknowledge that humans have co-evolved with nature, but that somewhere along the way culture and society have rebelled against this idea, thus leading to the first environmental crisis in human history (Thomas F. , 2009).

The self-explanatory graph on “beyond the triple-bottom-line” (Figure 2-2) captures the true hierarchy and context that we need to understand and adhere to, in order to have hopes of attaining the goal of sustainable development.

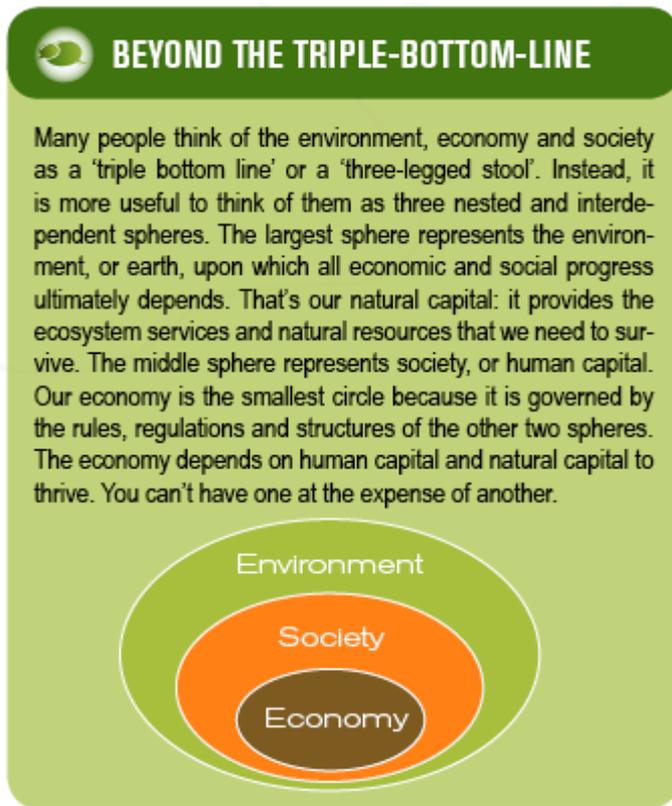


Figure 2-2: Beyond triple bottom line (Thomas F., 2009)

Deep ecology – a term coined by Norwegian philosopher Arne Naess in 1972 - calls for us to think more deeply about our obligations toward both human and nonhuman life representing a very earth-centered worldview (Miller, 2007). Deep ecology promotes the idea that nature has intrinsic value and to offer an alternative viewpoint to anthropocentric, ‘shallow’ environmentalism, which Naess criticized for its instrumental view *vis-a-vis* nature.

Deep Ecology is a philosophy of nature, which sees the environmental crisis as a symptom of a psychological or spiritual ailment, which afflicts modern humanity. We are enveloped by the illusion of separation from nature, by human centeredness. Deep ecology critiques the idea that we

are the crown of creation, the measure of all being: that the world is a pyramid with humanity rightly on top, merely a resource, and that nature has instrumental value only.

Naess believed that this identification is available to anyone lucky enough or willing to pursue a life in ‘free’ nature: ‘There is fortunately a way of life in free nature that is highly efficient in stimulating the sense of oneness, wholeness and in deepening identification’. But ‘one who wishes to arrive at a proper spiritual perception must first get away from the city’s artifice and distractions’ (Taylor, 2001).

This catchy term ‘deep ecology’ rapidly gained acceptance among a variety of figures and movements that had been or would soon be advancing their own criticisms of anthropocentric environmental ethics. Especially enthusiastic were the leaders of the radical environmental organizations many of whom embraced deep ecology immediately, and other promoters of deep ecology argue that there is a cross-cultural, ‘perennial philosophy’ - a metaphysic that recognizes the sacredness and interdependence of all life (Taylor, 2001).

The crux of the matter is how to see ourselves differently so that we can approach the pressing environmental and social issues that confront us in a different manner. Our typical way of dealing with these issues is described by shallow ecology, where a technological fix is advocated<sup>12</sup>. This is not much of a ‘fix’, though, since, according to Hay (2005), “various actions and programs toward achieving sustainability are seldom coordinated and are often subject to both intense lobbying by special interest groups and funding limitations, and the (partial) solutions are too often short term in nature.”

POS	RATING	SOLUTION	CATEGORY
1	Very good	Marine cloud whitening	Climate engineering
2		Energy R&D	Technology
3		Stratospheric aerosol insertion	Climate engineering
4		Carbon storage research	Technology
5	Good	Planning for adaptation	Adaptation
6		Research into air capture	Climate engineering
7	Fair	Technology transfers	Tech transfers
8		Expand and protect forests	Forestry
9		Stoves in developing nations	Cut black carbon
10	Poor	Methane reduction portfolio	Cut methane
11		Diesel vehicle emissions	Cut black carbon
12		\$20 OECD carbon tax	Cut carbon
13	Very Poor	\$0.50 Global CO2 tax	Cut carbon
14		\$3 Global CO2 tax	Cut carbon
15		\$68 Global CO2 tax	Cut carbon

A prime example of how strong and unwavering the dominant faith is in technological solutions to our environmental problems is the recent recommendation of five top economists, including three Nobel prize winners, on how best to spend up to \$250bn a year to deal with climate change. In the ratings they developed, (Figure 2-3), technological solutions take all the slots in the ‘very good’ category with proposals on cutting carbon all in the ‘very poor’ category (BBC, 2009).

Figure 2-3: Best ways to spend \$250bn tackling climate change (source: Copenhagen Consensus, 2009)

Hay (2005) lists the following as points that are characteristic of shallow ecology: nature is seen as

having only instrumental value; progress is the aim (i.e. for increased scientific knowledge, technological power and industrial production); the worldview is anthropocentric and mechanistic (nature as machine); and, only minor reforms are seen as needed to society, (a reformist agenda). Besides providing the opposite to these principles, deep ecology goes further, in a more radical agenda, to advocate the reduction of human population, an emphasis on the appreciation of life quality and an obligation among adherents to try to implement the necessary changes.

Examples of common environmental programs which would likely fit within a shallow ecology approach are recycling, ecological economics, green consumerism, the ecological footprint, environmental impact assessment, environmental law, integrated waste

<sup>12</sup> Overall, the global public has very positive attitudes towards science and technology. The 1995 World Values Survey asked respondents whether “in the long run, do you think the scientific advances we are making will help or harm mankind?” Worldwide, 56 percent of respondents thought science will help mankind, while 26 percent thought it will harm mankind. Further, 67 percent said an increased emphasis on technological development would be a good thing, while only 9 percent said it would be bad. Likewise, GlobeScan 2002 found that large majorities worldwide believed that the benefits of modern technology outweigh the risks. The support for technology, however, was significantly higher in countries with low GDP’s (69%) than in high-GDP countries (56%), indicating somewhat more skepticism among people in technologically advanced societies. Further, this survey found dramatic differences in technological optimism between richer and poorer countries. Asked whether “new technologies will resolve most of our environmental challenges, requiring only minor changes in human thinking and individual behavior” 62 percent of respondents from low-GDP countries agreed, while 55 percent of respondents in high-GDP countries disagreed (Leiserowitz, A., Kates, R. W., & Parris, T. M., 2004).

management, ecosystem services, natural capitalism, integrated land use planning and environmental education. These initiatives can be improved through addressing management systems and the global political economy better. However, our modern, Western societal system is still not challenged by this approach. In particular, the values that are the foundation of its socio-cultural system are largely left alone. We are not asked to reform our personal ways in any larger sense, beyond some inappropriate behaviors (Hay, 2005).

As a result, there is often a lack of mission in our lives, and our leaders provide little or no vision. We tend instead to muddle along, making decisions in a form of disjointed incrementalism, while all around us the problems increase in magnitude. The shallow ecology framework does not, therefore, provide either a sound basis for a deep sense of personal meaning or a path forward toward sustainability. Such efforts need not be abandoned, but they do need to be brought into a wider personal and philosophical framework to become more effective (Hay, 2005).

The findings of Kolmuss & Agyeman (2002) lend support to Hay's conclusion: very detailed technical knowledge per se does not foster or increase pro-environmental behavior although other incentives (economic advantages, taxes etc) and cultural values can motivate people to act pro-environmentally without doing it out of environmental concern. The downside is that such unconscious pro-environmental behavior is fickle and can easily be reversed or changed to a more unsustainable pattern because it is not based on any fundamental values. Those who believe technology and growth will solve environmental problems were less likely to make personal sacrifices. These findings indicate that people with a strong belief in growth and technological solutions might not see the need and will be less willing to engage in pro-environmental behavior with the implicit lifestyle changes. One of their arguments is that humans' reconnecting with nature can provide answers and inspiration to deal with this major issue affecting us all (Kollmuss & Agyeman, 2002).

Nature itself has throughout history challenged the view of humans 'omnipotence' in finding technological solutions to environmental challenges. An interesting contemporary lesson in humility was provided by the \$200 million experiment designed to develop and to live in a self-sustaining life-support system. The 1.3- hectare sealed system was built mimicking earth's chemical recycling systems and was stocked with 4000 of plants and animals. To cut to the chase, after the occupants were threatened with brain damage and other system failures due to the dysfunctional experiment, the project evaluators concluded that 'no one yet knows how to engineer systems that provide humans with life-supporting services that natural ecosystems provide for free'. Whatever the larger implications of this case may be, it is clear that humans cannot re-create the ecosystems but are part of and subject to the laws of nature and are well-advised to find a balanced relationship to it (Miller, 2007).

Shallow contact with nature seems to lead to shallow solutions for conservation of the environment (Pyle, 2003).

Related to 'deep ecology' is the concept of 'three deeps'. In the diagram (Figure 2-5), deep experience equals profound awakening into Gaia<sup>13</sup> experience (Harding, 2006), which for most of us lies just below the surface of everyday experiences and which a slight shift of context can easily make visible. The assimilation of the ethical implications happens when one engages in deep questioning of both oneself and society. In questioning oneself one asks

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<sup>13</sup> Gaia = Earth seen as vast self-regulating organism ([http://en.wikipedia.org/wiki/Gaia\\_hypothesis](http://en.wikipedia.org/wiki/Gaia_hypothesis))

whether one is living in a way which is consistent with the general flavor of one's deep experience by using the rational mind to tease out the web of connections between assumptions and actions at all levels of one's life in order to articulate an ethical standpoint, which, although provisional and always under revision, can help to guide our life-style choices.



Figure 2-5: The 'three deeps' (Harding, 2006)

In questioning society, one tries to understand its underlying assumptions from an ecological perspective by looking at the collective psychological origins of the ecological crisis and of the related crises of peace and social justice. This deep questioning of the fundamental assumptions of our culture contrasts markedly with the mainstream shallow or reform approach, which tries to ensure the continuance of business-as-usual by advocating the 'greening' of business and industry through a range of measures such as pollution prevention and the protection of biodiversity due to its "monetary value as medicine or for its ability to regulate climate" (Harding, 2006).

Finally, one feels a sense of deep commitment for the work of bringing about change in peaceful and democratic ways, which feeds back to deepen one's experience.

By working on these three interconnected aspects of deep ecology in oneself, we can begin to develop what Naess calls one's own personal ecological wisdom – a way of being in the world which minimizes harm to nature whilst enhancing one's own feelings of awe, wonder and belonging (Harding, 2006).

### 2.2.2 Eco-psychology

Ecopsychology has emerged as an intellectual and social movement that seeks to understand and heal our relationship with the Earth. It examines the psychological processes that bond us to the natural world or that alienate us from it (Roszak, Gomes, & Kanner, 1995).

A central assumption of ecopsychology is that the outer world of the environmental crisis and the cultural and political processes that support it influence our most intimate personal experiences and feelings. In turn, our states of mind find expression in the way that we relate to the natural world. The outer and inner worlds reflect and support one another, which means that a healthy ecosystem is inseparable from a healthy psyche (Gomes, 1998).

According to (Plotkin, 2003) "it is not just our inner afflictions that arise from soul loss; the crises of the outer world can be traced there as well. When we become alienated from soul – or inner nature – we lose respect for outer nature, resulting in pollution and degradation of the environment."

The basic idea of ecopsychology is that while the human mind is shaped by the modern social world, it can be readily inspired and comforted by the wider natural world, because that is the arena in which it originally evolved. One has to include the relationship of humans to other species and ecosystems. These relations have a deep evolutionary history; they have

deep psychic significance in the present time, in spite of urbanization. Humans are dependent on healthy nature not only for their physical sustenance, but for mental health, too. The destruction of ecosystems means that something in humans also dies (Hay, 2005).

C.G. Jung also saw the need for restoring the human soul in its integral presence with the vital powers of the earth. “In losing our sense of soul”, he asserted, “we have trivialized our existence”. Our industrial accomplishments are leading us deeper into a meaningless world, a meaningless but not an innocent or a harmless world. All our inventions or medicinal formulas cannot keep at bay the deep anxieties to which we are subject. We seek protection through ever-greater control over other humans and over the natural world that we inhabit. Our values do not reflect our deeper human nature (Harding, 2006).

Ecopsychologists examining the psychological effects of our society’s disconnection with nature, speak of our original trauma, where humans who were born to live in vital participation with the natural world were separated from nature in their daily lives.

Because we cannot cope well with such existential shock, ecopsychologists claim that we are in a continual state of denial about our situation. They also assert that, without some form of ecotherapy to heal and re-create ourselves, we remain stuck in this state of denial. Forms of therapy have long included advice for personal renewal in a peaceful, wilderness or rural setting. Programs are as diverse as eco-education, at times through ecotourism; outward bound activities; rediscovery programs for troubled, urban First Nations youth (in British Columbia, Canada); community wellness programs, and actively taking part in restoring the Earth, such as by contributing through land care activities (in Australia) and helping with environmental research (e.g. Earthwatch).

In essence, ecopsychologists believe that, through our bonding to a portion of the Earth and by attempting to heal it through direct action, we can heal ourselves. Such programs are similar to the interpersonal therapy of self-help initiatives (e.g. 12 step programs) which involve an early confession of a person’s role in their own damaging ways, grieving, taking responsible steps to remedy the situation and consolidating one’s new ways, often through a support network. Some people are taking initial, tentative steps to heal their relationship with the Earth, but for such programs to become widespread ecopsychologists assert that the majority of us needs to get past the denial stage, regarding both the extent of the problem and our modern, Western society’s role in creating the problem.

Ecopsychologists have suggested that mindful awareness of our interdependence with nature may not only help us regain our lost, ecologically embedded identity but may also help us behave more sustainably, closing the documented gap between pro-environmental attitudes and behaviors. More specifically, in contemporary consumer culture with its lack of pro-environmental norms and cues, mindful attentiveness may be necessary to develop sustainable habits. Exploring the connection between mindfulness and sustainable behavior, Amel, Manning and Scott (2009) came to the conclusion that “acting with awareness was significantly positively correlated with self-reported sustainable behavior.” This finding is consistent with the idea that, until sustainable decisions become the societal default, their enactment may depend on focused consideration of options and mindful behavior.

Though humans can process and retain a remarkable amount of information, our cognitive processes are capacity-limited, and, thus, we rely on strategies and shortcuts to maintain efficiency. Decisions are made without a thorough examination of the merits of all the

choices. Instead, we might choose the option that comes most easily to mind or based on the advice of an authority figure. This tendency to use mental shortcuts whenever possible is complicated by another feature of cognitive processing: automaticity. When we practice a task often enough, performing it becomes second nature, or automatic, and we no longer have to pay attention to carry it out. Driving is a classic example of this. The downside to automaticity is that, once a task has become automatic, it is difficult to change how it is carried out and they are likely to stay that way unless we exert substantial effort to change them.

According to Amel, Manning & Scott (2009), “the value contemporary industrialized cultures place on being busy and accomplishing more in less time likely exacerbates our natural tendency to operate on autopilot and use mental shortcuts rather than pay more attention to our actions and choices.” And, there is an additional important factor abetting these trends: the subtle cues that we receive from our social and physical environment about what kind of behavior is normal and acceptable. If other people (media included) display consumptive, non-sustainable behaviors, then we are likely to follow suit, generally without any awareness that we have been influenced.

A common point various definitions for mindfulness is that it is an intentional awareness. To reconnect ourselves and awaken our sense of reciprocity, ecopsychologists have used and developed myriad exercises and rituals - contemplative practices, vision quests, environmental education, nature therapy - which include a focus on bringing consciousness or attention to the forefront of our relationship with nature. For practical purposes, fairly narrow definition of mindfulness could read “attention and awareness of internal and external phenomena” (Amel, Manning, & Scott, 2009).

When it comes to fostering sustainable behavior, mindfulness can make a difference. Mindful individuals are more apt to pay attention and to intentionally process information about environmental impact. Furthermore, when people are mindful they are more likely to seek out choices that do less harm to the natural environment, despite many real or perceived barriers to doing so. Research by Amel, Manning, & Scott(2009)supports this notion: “dispositional mindfulness, along with an intrinsic value orientation, is related to more ecologically responsible behavior. Situational variables, for instance feedback or prompts that grab attention, may encourage people to consider information in a more mindful way.”

Research has also demonstrated the value of mindfulness in behavior change interventions. Mindfulness moderates the link between intentions and behavior for physical health-related activities. Specifically, mindful individuals demonstrated a stronger link between intentions and behavior than less mindful individuals. It is reasonable to expect that those who display the intention to act more sustainably, mindfulness will increase the likelihood that they carry out those intentions.

Reducing individuals’ consumption of material goods, energy, and natural resources is critical as we move toward environmental sustainability. Several psychologists have suggested that overzealous acquisitive desire stems from a feeling of emptiness or meaninglessness in one’s life and that material consumption is a form of self-medication to soothe these bad feelings. Thoughtful reflection is proposed as a tool for identifying the mismatch between what is missing and the material goods with which we try to fill the void.

Mindfulness is suggested as an “antidote to consumerism” because it reduces reliance on

automaticity and enhances fulfillment through non-consumer experiences. From a distinctly more eco-psychological perspective, increasing our mindful awareness of the natural world around us is a key to reducing our consumptive behavior. Becoming more attuned to the natural world will decrease the drive for material consumption also stems from the assumption that our consumerism is motivated by a feeling of lack, and what we are lacking, specifically, is an ecologically imbedded sense of identity. As we have an innate desire to affiliate with nonhuman nature, several approaches to “re-awaken our ecological unconscious” are suggested, including engaging with wilderness.

Amel, Manning, & Scott(2009) see as the most basic, perhaps extreme, implication of mindfulness research the finding that “we either must change the attentional practices in our culture to be more encouraging of mindfulness or change the available choices so people can function more sustainably while on autopilot.” These both present significant challenges and will require nothing less than a major cultural shift.

### **2.2.3 Eco-theology/spirituality<sup>14</sup>**

Often we do not realize – and sometimes even wish to deny - the decisive role religion has played in influencing the lives in the society. Our current laws and social customs have been heavily impacted, even originally built upon, religious decrees and dogma. This indirect influence may even have more impact than the direct effect of religion on our values attitudes and behavior.

Religion is a powerful force in our lives because its “central characteristic and function is the construction of worldviews that guide individuals and communities in decision making and action,” that is, it is the connection religion has been able to make between our beliefs, values and actions that has made it (and continues to make it) such an influential, divisive, empowering, controversial, inspiring and useful source of cultural information to the vast majority of people that have lived on this planet (Colon, 2008).

Earth-based spirituality and higher ecological awareness are on the rise (Senge, 2004; Miller, 2007). The spirituality revolution is of the time and yet also ahead of the time. There is a gap between the new social and environmental awareness or movement and our established practices, values and attitudes. Many people are interested in exploring spirituality, but the social, cultural, educational and religious institutions that claim to represent the community are still grounded in a former era, prior to this upspring of spiritual interest. Most of our social institutions are grounded in an intellectual point of view that is inherently critical of the idea of spirit (Tacey, 2004; Berry, 1999).

According to Tacey (2004), the new attention to spirituality is not just some fashionable in esoteric matters, nor is it an escape from the real or an intellectual enquiry into human nature. It is an emotional and urgent reaction to widespread alienation, disempowerment and disillusionment. It is a response to the apparent lack of connectivity in contemporary life. To call for spirituality is to call for the reconnection to and healing of the damage to spiritual and natural ecology - a hope for some mystery that will fit the broken parts together.

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<sup>14</sup> A number of scholars have recently drawn a distinction between spirituality and religion. A common perception today is that ‘to be religious conveys an institutional connotation while to be spiritual is more personal and empowering and has to do with the deepest motivations in life’ Testing this interpretation, a recent study confirmed that ‘religiousness is increasingly characterized as “narrow and institutional,” and spirituality as “personal and subjective” (Taylor, B. 2001).

Humans have caused extensive environmental degradation and destruction – often in the name of liberation and freedom - and now we wonder why we feel so bad, so ill at ease, so unsupported and cut off. Our lack of organic connection to the whole of life begins to take its toll on the physical world, as we have not understood the delicate balance of our ecological relationship with nature. We exploit the whole of nature to serve the human part, and we ignore sustainable development to meet short-term and egotistical goals. In the same way that severance from our own invisible roots destroys the ecology of the environment (Tacey, 2004).

As key components of every human civilization, religions<sup>15</sup> are necessarily critical elements of the environmental crisis. In various ways they have been both agents of environmental domination and repositories of ecological wisdom (Gottlieb, 1996).

The Judeo-Christian tradition prevalent in the industrialized West has traditionally at best been supportive of the view of “wise use” of the earth and its resources. The moral traditions have not traditionally recognized humans’ direct moral principles to non-human creatures (Gottlieb, 1996; Colon, 2008). Such approaches are limited in their ability to guide us toward appropriate environmental action for they do not necessarily fit the way the natural world actually functions (Scoville, 2002).

Scoville (2002) goes as far as to state that The Judeo-Christian, Enlightenment, and postmodernist paradigms have become intellectually and ethically exhausted while earth and nature-based spirituality is proliferating globally. The participants in these countercultural movements find ultimate meaning and transformative power in nature; they contend that Monotheism has elevated us at the expense of everything else: the idea of man dominating nature as the will of God. Paganism, by contrast, has “escaped the fallacy of dualism” in our relationship to the environment (Thomas F. R., 2009). Earth-based spiritualities are based on personal experiences that foster a bonding with nature. These experiences are diverse, take place in different venues and are expressed in plural ways (Taylor, 2001).

If we want to know about this heretofore missing aspect of self experience - balance within fragile ecological networks and restraint in relation to the natural world – Spitzform (2000) suggests we “play catch-up to indigenous cultures, which are frequently marked by a deep sense of ecological place conspicuously absent from our psychoanalytic theoretical foundation.”

All these diverse nature spiritualities are fused in a quantum universe, sharing the metaphysics of interrelatedness. Since everything shares a common origin (in the big bang), and since everything is interrelated subatomically, kinship and even communion are the appropriate moral sentiments and goals. This worldview provides also a metaphysical basis for many perceptions, including animism, sorcery, shamanism and pantheism. But the key is a felt sense of ‘connection’, kinship and loyalty to earth and all her life forms and living systems.

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<sup>15</sup> Gottlieb (1996) defines religion as ‘those systems of belief, ritual, institutional life, spiritual aspiration and ethical orientation which are premised on an understanding of human beings as other or more than simply their purely social or physical entities.

## 2.3 Environmental education

Most definitions of environmental literacy include some variation of four components: knowledge, skills, effect, and behavior. Students can be seen as environmentally literate if they can understand and think critically about the following six criteria: (a) basic scientific principles that govern natural systems, and using these to understand the limits and major factors associated with the earth's capacity to sustain life; (b) linkages among all living things and their dependency on each other as well as the physical environment; (c) consequences of human activity on local, regional, and global natural systems; (d) impact of changes within natural systems of life, health, and welfare; (e) cultural, economic, and political forces – past and present – that affect environmental attitudes and decision making; and (f) role of ethics and morality in individual and group decision making related to the environment (Cole, 2007).

There is a budding tendency for the educators to broaden the scope of environmental education beyond just including socio-cultural studies. Says Cole (2007): “We need to look critically at the ways the primarily dominant, White, western tradition of scientific knowledge, inquiry methodologies, and decision-making behaviors (as “environmentally literate citizens”) shape environmental education methods and practices”... “in my classroom, a central disconnect between students and learning was the fact that by prioritizing scientific investigations of place, I was excluding and devaluing indigenous ways of knowing and community experiential knowledge”... “Failing to critique the role of science and its reproduction dominant, White, western ways of knowing, and accepting those views as a universal standard my curriculum and teaching marginalized all other ways of learning, experiencing and coming to know place.”

While our universities have gone through many transitions since they first came into being in the early medieval period, they may have never experienced anything like the transition that is being asked of them now. Berry (1999) takes Cole's observations even further by stating: “The difficulty cannot be resolved simply by establishing a course or a program in ecology, for ecology is not a course or a program. Rather, it is the foundation of all courses, all programs, and all professions because ecology is functional cosmology. Ecology is not a part of medicine; medicine is an extension of ecology. Ecology is not part of law; law is an extension of ecology, as, in their own way, are economics and even the humanities.”

For David Orr (1992), education relevant to the transition to a sustainable society demands first and foremost “an uncompromising commitment to life and its preservation. Anything less is morally indefensible.”

At a minimum, one is tempted to argue that it is time for the environmental education community to take stock of itself. Problems lie not only with the content but also with the way environmental education curricula have been developed and evaluated. According to Blumstein and Saylan (2007), “the hypothesis that environmental education is successful, needs to be challenged and for us to pave way for ‘evidence-based’ approach which can improve environmental education to create environmentally aware citizens.”

Formal education was introduced to many developing countries in the 19th century (often by colonial governments) to produce administrators, clerks, teachers and interpreters. This type of education was based on abstract knowledge systems - scientific knowledge - that evolved

in the western industrialized world. Formal education systems had little place for indigenous knowledge or indigenous methods of education.

Aspects of Education	Indigenous Education	Formal Education
<b>View of Knowledge</b>	<ul style="list-style-type: none"> <li>Sacred and secular together; includes the spiritual</li> <li>Holistic and integrated - based on a whole systems view of knowledge</li> <li>Stored orally and in cultural practices</li> <li>Powerful predictability in local areas (ecological validity)</li> <li>Less valued in distant areas</li> </ul>	<ul style="list-style-type: none"> <li>Secular only; often excludes the spiritual</li> <li>Analytical or reductionist - based on sub-sets of the whole</li> <li>Stored in books and computers</li> <li>Powerful predictability in natural principles (rational validity)</li> <li>Weak in local use of knowledge</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>Long-term wisdom</li> <li>Cultural and ecological sustainability</li> <li>Practical; for use in everyday life</li> <li>Integration of critical thinking and cultural values in decision making</li> </ul>	<ul style="list-style-type: none"> <li>Short term recall</li> <li>Economic sustainability</li> <li>Abstract; to pass examinations</li> <li>Use of logical and critical thinking in making decisions</li> </ul>
<b>Methods of Teaching and Learning</b>	<ul style="list-style-type: none"> <li>Lengthy period of acquisition</li> <li>Learning through experience</li> <li>Teaching through example, modelling, ritual and storytelling</li> <li>Tested in practical life situations</li> </ul>	<ul style="list-style-type: none"> <li>Rapid acquisition</li> <li>Learning by formal education</li> <li>Teaching through abstract concepts and didactic methods</li> <li>Tested artificially in examinations</li> </ul>

Figure 2-6: Aspects of education: Comparison between indigenous and formal education (Blumstein & Saylan, 2007)

Contrasting with the contemporary western education, indigenous knowledge has been passed down from generation to generation through traditional education, with adults teaching practical knowledge of culture, the environment and survival through demonstrations and through a wide range of ceremonies, stories, songs, village meetings and taboos.

It was, until recently, assumed that indigenous knowledge was irrelevant, unscientific and outdated. Therefore, few attempts were made to integrate indigenous knowledge into formal education despite its potential value in solving contemporary problems. As a

result, education was confined to classrooms and children were separated from their culture and environment. The teacher-centered nature of formal education also separated children from parents and, consequently, parents became less able to pass on the knowledge they had inherited to their children.

Indigenous people have a broad knowledge of how to live sustainably. However, formal education systems have disrupted the practical everyday life aspects of indigenous knowledge and ways of learning, replacing them with abstract knowledge and academic ways of learning. Today, there is a grave risk that much indigenous knowledge is being lost and, along with it, valuable knowledge about ways of living sustainably. Figure 2-6 highlights the various aspects of indigenous education that contrast with formal education.

Virtually all indigenous or native cultures have regarded nature or the universe or Mother Earth as the ultimate teacher. At few points in history has the need to rediscover this teacher been greater.

## 2.4 Environment and new management & leadership approaches

Management theories have traditionally been linked to the ideas on how to improve efficiencies, increase markets and market share, and the shareholder value. How we measure and define wealth and the way to reach these goals are, however, gradually changing.

On a national level, alternative yardsticks to the GNP being designed and implemented, most notably in the case of Bhutan where, according to the officially adopted Gross National Happiness (GNH), true development of human society takes place when material and spiritual development occur side by side to complement and reinforce each other. The four pillars of GNH are (i) the promotion of sustainable development; (ii) preservation and promotion of cultural values; (iii) conservation of the natural environment; and (iv) establishment of good governance.

In Ecuador, the new constitution grants inalienable rights to nature assuring it the “right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution” and obligates the government to take “precaution and restriction measures in all the activities that can lead to the extinction of species, the destruction of the ecosystems or the permanent alteration of the natural cycles.”

These encouraging examples may be more than just populist green washing and may even mark the beginning of the end for the neoliberal development models (Mychalejko, 2008; Klein, 2007; BBC, 2006).

On a corporate level, and according to a recent interview of 150 top CEOs, the attitudes toward the environment and sustainability have changed and are changing from opposition to pro-environmental policies to genuine curiosity as to how the drive for profits, which has done so much harm to the planet, can possibly be harnessed to save it (Daily & Ellison, 2002). The decision makers are gradually realizing that a new mind-set makes sense because it is “necessary, possible and practical” (Hawken, Lovins, & Lovins, 2008). There is ever-wider acceptance that sustainability is a bottom line issue (Tappin, 2008).

Also, according to Mathew Bishop, U.S. business editor and NY bureau chief for *The Economist* states: “Companies can no longer attract the brightest and best in the world unless they genuinely identify and connect with the dominant social movements of our time (Tatge, 2009).”

Moreover, in the words of Bob Pickard of Shell Canada: “Those companies which lack the energy or the commitment to meet the demands of sustainable development will lose (1) their customers; (2) their reputations; (3) their investors, and (4) their best employees to better performers; not in any particular order, but all at the same time.”

Deeper dimension of transformational change represents a largely unexplored territory both in current management research and in our understanding of leadership in general. According to management guru Otto Scharmer from MIT, “the blind spot concerns not the ‘what’ and ‘how’ – not what leaders do and how they do it – but the ‘who’: who we are and the inner place or source from which we operate, both individually and collectively” (Senge, 2004).

## **2.4.1 Theory U**

In the words of Scharmer (2007), “we live in a time of massive institutional failure, collectively creating results that nobody wants. This time calls for a new consciousness and a new collective leadership capacity to meet challenges in a more conscious, intentional, and strategic way.”

In his book ‘Theory U: Leading from the Future as It Emerges’, Scharmer (2007) introduces the theory and practice of the U process, based on a concept he calls “presencing.” A blend of the words ‘presence’ and ‘sensing’, presencing signifies a “heightened state of attention that allows individuals and groups to shift the inner place from which they function. When that shift happens, people begin to operate from a future space of possibility that they feel wants to emerge”. Being able to facilitate that shift is, according to Scharmer, the essence of leadership today.



*Figure 2-7: Five movements of Theory U - a new approach to management & leadership (Scharmer, 2007)*

In the U process, we must embark on a journey— as depicted in Figure 2-7 - taking us through five movements that connect us to the world that is outside of our institutional bubble, and on to connecting us to the world that emerges from within, and, finally, up bringing forth the new into the world.

**1. Co-initiating** common intent: Stop and listen to others and to what life calls you to do

At the start of a project, one or a few key individuals get together with the intention of making a difference in a situation that matters to them and to their communities. Forming a core group, they also maintain a common intention around their purpose, the people they want to involve, and the process they have agreed to use. The context that allows such a core group to form is a process of deep listening - listening to what life calls you and others to do.

**2. Co-sensing** the field of change: Go to the places of most potential and listen with your mind and heart wide open

The limiting factor of transformational change is not a lack of vision or ideas, but an inability to sense—that is, to see deeply, sharply, and collectively. When the members of a group see together with depth and clarity, they become aware of their own collective potential - almost as if a new, collective organ of sight was opening up.

What is missing most in our current organizations and societies is a set of practices that enable kind of deep seeing - “sensing” - to happen collectively and across boundaries. When sensing happens, the group as a whole can see the emerging opportunities and the key systemic forces at issue.

3. **Presencing** inspiration and common will: Go to the threshold and allow the inner knowing to emerge

At the bottom of the U, individuals or groups on the U journey come to a threshold that requires a “letting go” of everything that is not essential. At the same time that we drop the non-essential aspects of the self (“letting go”), we also open ourselves to new aspects of our highest possible future self (“letting come”). The essence of presencing is the experience of the coming in of the new and the transformation of the old. Once a group crosses this threshold, nothing remains the same. Individual members and the group as a whole begin to operate with a heightened level of energy and sense of future possibility. Often they then begin to function as an intentional vehicle for the future that they feel wants to emerge.

4. **Co-creating** strategic microcosms: Prototype the new to explore the future by doing

Engineers, scientists, managers, and economists – due to their incomplete education - are missing a key skill when it comes to innovation: the art and practice of prototyping, which is typically what designers do.

Prototyping demands that first you empty out all the stuff (“let go”). Then you determine what you really need (“let come”) and provide prototype solutions for those real needs in real time. You observe and adapt based on what happens next.

So the prototype is not the stage that comes after the analysis. The prototype is part of the sensing and discovery process in which we explore the future by doing rather than by thinking and reflecting. The innovation processes of many organizations are stalled right there, in the old analytical method of “analysis paralysis.”

The co-creation movement of the U journey results in a set of small living examples that explore the future by doing. It also results in a vibrant and rapidly widening network of change makers who leverage their learning across prototypes and who help each other deal with whatever innovation challenges they face.

5. **Co-evolving** through innovation ecosystems that facilitate seeing and acting from the whole

Coming up with a sound assessment at this stage on which prototypes might have the highest impact on the system or situation at hand often requires wider stakeholders engagement. Very often, what you think you will create at the beginning of the U process is quite different from what eventually emerges. The co-evolving movement results in an innovation ecosystem that connects high leverage prototype initiatives with the institutions and players that can help take it to the next level of piloting and scaling.

The five movements revolve around that which is emerging. Thus, the team composition usually changes and adapts to some degree after each movement, as needed by the situation at hand.

## 2.4.2 A new social technology

Theory U is challenging because it requires an inner journey and hard work. The ability to move through the “U” as a team or an organization or a system requires a new social technology. The social technology of presencing is based on seven essential leadership capacities.

1. **Holding the Space: Listen to What Life Calls You to Do.** The key to holding a space is listening: to yourself (to what life calls you to do), to the others (particularly others that may be related to that call), and to that which emerges from the collective that you convene
2. **Observing: Attend with Your Mind Wide Open.** The second capacity in the U process is to observe with an open mind by suspending your voice of judgment (VOJ). Suspending your VOJ means shutting down (or embracing and changing) the habit of judging based on past experience. Suspending your VOJ means opening up a new space of inquiry and wonder. Without suspending that VOJ, attempts to get inside the places of most potential will be futile.
3. **Sensing: Facilitate an opening process by connecting with Your Heart.** The process involves the tuning of three instruments: the open mind, the open heart, and the open will. While the open mind is familiar to most of us, the other two capacities draw us into less familiar territory. Knowledge, the one that relates to the open heart and open will, is gained “by means of interconnected wholes (rather than isolated contingent parts) and timeless, direct presentation (rather than through stored re-presentations). Such knowing is ‘open,’ rather than determinate; and a sense of unconditional value, rather than conditional usefulness, is an inherent part of the act of knowing itself. Action resulting from that type of awareness is claimed to be spontaneous, rather than the result of decision-making; it is “compassionate, since it is based on wholes larger than the self; and it can be shockingly effective.”
4. **Presencing: Connect to the Deepest Source of Your Self and Will.** The fourth capacity in the U process is connecting to the deepest source of yourself and will. While an open heart allows us to see a situation from the whole, the open will enables us to begin to act from the emerging whole. Danish sculptor and management consultant Erik Lemcke describes his experience of this process: “After having worked with a particular sculpture for some time, there comes a certain moment when things are changing. When this moment of change comes, it is no longer me, alone, who is creating. I feel connected to something far deeper and my hands are co-creating with this power. At the same time, I feel that I am being filled with love and care as my perception is widening. I sense things in another way. It is a love for the world and for what is coming. I then intuitively know what I must do. My hands know if I must add or remove something. My hands know how the form should manifest. In one way, it is easy to create with this guidance. In those moments I have a strong feeling of gratitude and humility.”
5. **Crystallizing: Access the Power of Intention.** The success stories of inspiring projects, regardless of size, often follow a similar pattern - a very small group of key persons commits itself to the purpose and outcomes of the project. That committed core group and its intention then goes out into the world and creates an energy field that begins to attract people, opportunities, and resources that make things happen. Then momentum

builds. The core group functions as a vehicle for the whole to manifest. As contended by Nick Hanauer, the founder of half a dozen highly successful companies: ‘never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has’...’you could do almost anything with just five people. With only one person, it’s hard—but when you put that one person with four or five more, you have a force to contend with. All of a sudden, you have enough momentum to make almost anything within reach actually real.’”

6. Prototyping: Integrating Head, Heart, and Hand. Connecting to one’s best future possibility and creating powerful breakthrough ideas requires learning to access the intelligence of the heart and the hand—not just the intelligence of the head.
7. Performing: act and operate from the larger whole.

The seven Theory U leadership capacities are the enabling conditions that must be in place for the U process and its moments to work. In the absence of these seven leadership capacities, the U process cannot be realized. These seven Theory U leadership capacities are practiced today in several important multi-stakeholder innovation and corporate applications in major government, civic organization and major corporate network, involving, amongst others, Royal Dutch Shell and Hewlett-Packard.

## 2.5 Barriers to pro-environmental behavior

A number of key social, economic and environmental goals – related, for instance, to health and well-being, social cohesion, education and employment, and sustainability - depend upon individuals changing their patterns of behavior. Concerning the sustainability, lowering carbon emissions; switching to a less resource-intensive lifestyle; recycling and reducing waste; and choosing public transport serve as examples of such desired behaviors.

According to the extensive review of the key models explaining/predicting/preventing pro-environmental behavior, any model applied in isolation is not comprehensive enough and a synthesis of several models produces an approach that is too complicated so as to be useful (Kollmuss & Agyeman, 2002).

In addition, changing behavior is easier said than done. Most educational programs and information campaigns are designed along linear progression using the mind-focused model (Figure 2-8).



Figure 2-8: Mind-focused model on behavior (GAP, 2006)

The model looks very logical, but is in fact a poor model of reality. For instance, we educate and inform about the risks of smoking. If the model were an accurate picture of reality, there would hardly be a smoker left in the world today, yet one in four adults still light up. Each of us is bombarded with gigantic amounts of information every day, maybe hundreds of thousands as much as we can actually absorb. We often view initiatives aimed at influencing our behavior with cynicism and suspicion and, somehow, each of us decides what to hear and what to activate (GAP, 2009). Indeed, research has shown that in most cases, increases

in knowledge and awareness do not lead to pro-environmental behavior. Yet today, most environmental non-governmental organizations (NGOs) still base their communication campaigns and strategies on the simplistic assumption that more knowledge will lead to more enlightened behavior (Kollmuss & Agyeman, 2002).

The post-modern societies are built on materialism and systemic economic growth, and consumption - the crucial element that keeps the paradigm going - defines our identities. All key aspects of the system in affluent societies are harnessed to increase consumption through increasing and converting wants into vital needs (Miller, 2007; Hay, 2005; Leonard, 2009; Berry, 1999). In the process, we have become consumer addicts suffering from 'affluenza'<sup>16</sup>.

Though evidence supports that slowing down and reducing our consumption are associated with health benefits and that concern over personal health is very powerful, our cultural values of consumption and efficiency are equally strong and consumption norms (shop 'til you drop) and symbols (e.g., advertisements, convenience stores) are ubiquitous (Amel, Manning, & Scott, 2009).

The scientific evidence is quite clear about the environmental dangers of continuing to focus on the values and goals so prominent in today's hyperkinetic, consumeristic, profit-driven culture. A growing body of research shows that the more people value money, image, status, and personal achievement, the less they care about other living species and the less likely they are to recycle, to turn off lights in unused rooms, and walk or bicycle to work. Studies show that the more people pursue these extrinsic, materialistic goals, the higher are their ecological footprints. Contrasting with extrinsic goals, intrinsic goals are those focused on self-acceptance (personal growth and pursuing and individual's own interests), affiliation (close relationship with family and friends), physical health (fitness), and community feeling (contributing to the broader world) (Kasser, 2009).

The issue is the systematic nature of the pressures we face. There are many different problems, but the overall trend is that these problems are becoming increasingly common and increasingly severe because they are a direct result of the way our society grows and develops (Capra, 2009).

According to Meadows (2004): "one reason technology and markets are unlikely to prevent overshoot and collapse is that technology and markets are merely tools to serve goals of society as a whole. If society's implicit goals are to exploit nature, enrich the elites, and ignore the long-term, then society will develop technologies and markets that destroy the environment, widen the gap between the rich and poor, and optimize for short-term gain. In short, society develops technologies and markets that hasten a collapse instead of preventing it."

Cultural theorists have identified many ways that urban-industrial society creates a sense of separation from the land and steers us toward ecologically unsustainable actions. The qualities of our culture that are most damaging to the Earth are also those that are most

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<sup>16</sup> **Affluenza** = painful, contagious, socially transmitted condition of overload, debt, anxiety and waste resulting from the dogged pursuit of more...the bloated, sluggish and unfulfilled feeling that results from efforts to "keep up with the Joneses"...An epidemic of stress, overwork, waste and indebtedness caused by the pursuit of the American dream... An unsustainable addiction to economic growth (<http://en.wikipedia.org/wiki/Affluenza>).

destructive to the human soul<sup>17</sup>. Social forces such as the centralization of power and the replacement of cultural diversity with corporate monoculture undermine our ability to have meaningful, nourishing interactions with each other and with the more-than-human world (Gomes, 1998).

While the lifestyle choices have increasingly begun to reflect environmental considerations – organic products, recycling, cycling to work and ecotourism – the global capitalism and consumerism lifestyle grow ever more demanding on the environment. The Green political movement or the increasing number of people – amounting to millions - involved in environmental groups have been a poor match to the influence of the entrenched business interests and technocratic elites on most key political decisions. Electoral rhetoric continues to revolve primarily around materialist issues with environmental protection and sustainable development taking the back seat to economic growth (Carter, 2007). The ability or willingness to see social, economic, political and environmental issues as interrelated - i.e. adopting a more holistic view - is limited.

Inasmuch as we perceive a threat due to the degrading environment, our actions are likely to revert to what is habitual when we are in a state of fear or anxiety. Collective actions are no different leading, at best, to “reactive” learning, discounting interpretations and options that are different from those we know and act to defend our interests thereby reinforcing pre-established mental models and the current paradigm (Senge, 2004).

Linked to this, stress, trauma, and fear often lead people to treat themselves, others, and the environment in more damaging ways. Experiments show that when people are led to think only superficially (instead of deeply) about grave threats, they become more defensive, more focused on consumption and acquisition, more greedy, and more negative in their attitudes toward wilderness and environment. Similarly, studies show that economically difficult times often increase people’s levels of materialism and decrease their concern for the environment and for other people. Humanity might respond in a defensive fashion, becoming increasingly fearful and insecure as the climate changes, as species go extinct, and as Earth’s resources become scarcer. If this happens, psychological - and, indeed, international - forces are likely to perpetuate the very materialistic values that have contributed to current environmental and social challenges. On the other hand, the present climate crisis could be the “wake-up call” necessary to help humans realize how foolish they have been to fixate on material progress and personal achievement to the detriment of Earth, civil society, and human wellbeing (Kasser, 2009).

Nelson (1998) asserts that the *us-versus-them* combative mode of environmental activism is in need of deep reexamination. If environmentalists are to be more effective in changing environmentally destructive behavior, they need to develop more sensitive ways of reaching people. Overwhelming people with a barrage of bad news about the environment or making people feel guilty about their consumptive lifestyles does not often inspire people to change their behavior. In fact, this approach often creates the opposite effect: people become desensitized to all of the bad news and become apathetic. As Jiddu Krishnamurti has stated, “Only a profound inward revolution which alters all our values can create a different

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<sup>17</sup> Soul = The primary organizing, sustaining and guiding principle of a living being

environment, an intelligent social structure, and such a revolution can be brought about only by you and me.”

In the current economic crisis and even in the context of the deteriorating environment, we are encouraged to “consume ourselves out of the crisis” while environment – on which our very survival depends - does not receive the level of attention it needs and deserves. Our motivation in western individualistic societies is in the short-term and self-interest rather than long-term and collectivist rewards.

Many analysts urge us to learn how to live more simply and seeking happiness through the pursuit of material things is considered folly by most major religions and philosophies. We encounter huge challenges posed by the modern advertising encouraging us to buy more and more things as a way to achieve happiness. As a result, polls show that too many people are working too many hours to buy too much stuff that gives them too little true happiness (Miller, 2007; Leonard, 2009; Richins & Dawson, 1992).

It has become clear that values and attitudes, despite their importance, often do not translate directly into actual behavior, and many research studies have identified critical gaps and barriers between expressed values or attitudes and actual behaviors, both at the individual and collective levels (Leiserowitz, Kates, & Parris, 2004).

The 2004 World Values Survey found that overwhelming majorities of Europeans, Japanese, and North Americans said that human beings should coexist with nature ranging from 85 percent in the United States to 96 percent in Japan. The survey also asked respondents to rate the seriousness of several environmental problems (Figure 2-9) with the results suggesting that large majorities worldwide reject a domination ethic as the basis of the human-nature relationship, at least at an abstract level (Leiserowitz, Kates, & Parris, 2004).

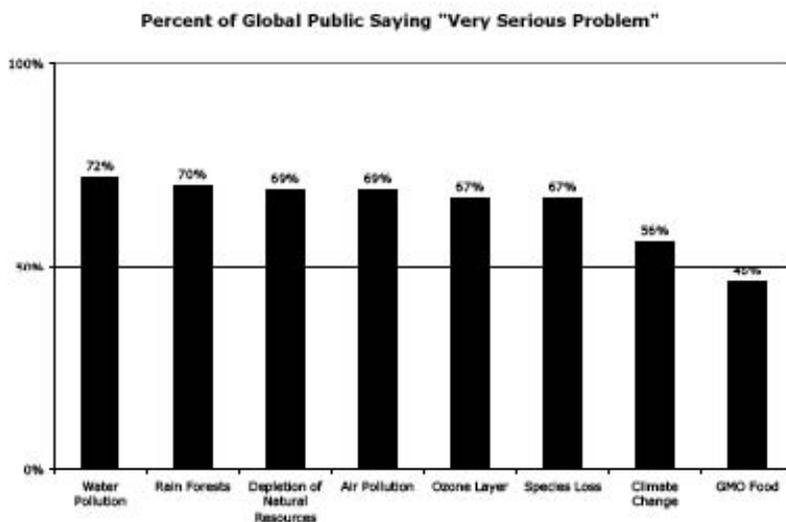


Figure 2-9: Survey on relative seriousness of environmental problems (GlobeScan 2004)

A 2004 Harvard University study (Leiserowitz, Kates, & Parris, 2004) on global trends on sustainability values, attitudes, and behaviors assert that consumption is currently one of the primary media through which environmental values and attitudes get translated into behavior. As a share of gross domestic product, worldwide household consumption – roughly mirroring affluence - has increased to around 60 percent. It remains to be seen

whether consumption can “dematerialize” to less energy and material intensive products. While some intensities of use are indeed declining (e.g. energy and water use per unit gross domestic product), these trends have been outpaced by increases in population and affluence. Ecolabels, and other similar schemes may only be moderately successful with individual consumers, and trends for specific, but environmentally important products – such as car ownership and the associated vehicle fuel-economies - are not encouraging.

According to the same study, worldwide, 54 percent thought “less emphasis on money and material possessions” would be a good thing, while only 21 percent thought the opposite. Further, large majorities agreed that gaining more time for leisure activities or family life is their biggest goal in life. At the same time, however, two-thirds of the respondents said that the spending of money on themselves and their family represents one of life’s greatest pleasures. Respondents from low-GDP countries were much more likely to agree (74%) than those from high-GDP countries (58%), which suggests that a post-materialist transition is underway in the developed world, with nonmaterial values playing a larger role in human happiness. Nonetheless, majorities in almost all countries surveyed still derive great pleasure from material consumption (Leiserowitz, Kates, & Parris, 2004).

Why are these values not reflected in action and development?

Numerous theoretical frameworks have been developed to explain the gap between the possession of environmental knowledge and environmental awareness, and displaying pro-environmental behavior. Although many hundreds of studies have been undertaken, according to Kollmuss & Agyeman (2002), no definitive explanation has yet been found.

Many of the models that are designed to explain the attitude-action gap have some validity in certain circumstances. This indicates that the question of what shapes pro-environmental behavior is such a complex one that it cannot be visualized in one single framework or diagram. Such a single diagram, with all the factors that shape and influence behavior would be so complicated that it would lose its practicality. Yet, there are commonalities that can be found in the different models.

To follow are some specific and interrelated factors that – based on research by Kollmuss & Agyeman(2002) - have been established as having influence (positive or negative) on pro-environmental behavior.

### 1. Demographic Factors

Two demographic factors that have been found to influence environmental attitude and pro-environmental behavior are gender and years of education. Women usually have a less extensive environmental knowledge than men but they are more emotionally engaged, show more concern about environmental destruction, believe less in technological solutions, and are more willing to change. The longer the education, the more extensive is the knowledge about environmental issues. Yet more education does not necessarily mean increased pro-environmental behavior.

### 2. External Factors

*Institutional factors.* Many pro-environmental behaviors can only take place if the necessary infrastructure is provided (e.g. recycling, taking public transportation). The poorer such

services are the less likely people are to use them. These institutional barriers (e.g. lack of public transportation) can be overcome primarily through people's actions as citizens (indirect environmental actions). Because of this, it is important to explore how environmental attitudes influence indirect environmental action. It might be true that environmental knowledge and environmental attitude have a more powerful influence on people's indirect actions than on people's direct pro-environmental behaviors.

*Economic factors.* Economic factors have a strong influence on people's decisions and behavior. If a person decides between two possible items, one energy-efficient and the other not, he or she will only choose the energy efficient item if the payback time for the energy saved is very short. While the economist's assumption that people act in an economically rational fashion may often not be true, people can be influenced by economic incentives to behave pro-environmentally. Until recently, very low prices for heating oil in the US prevented people from taking energy conservation measures. Predicting people's behavior on purely economic grounds, however, will not reveal the whole picture. Economic factors are intertwined with social, infrastructural, and psychological factors.

*Social and cultural factors.* Cultural norms play a very important role in shaping people's behavior. Research exploring the history of policy reactions to acid rain in Germany and the UK showed that the high cultural value of the forests in Germany, along with its geographic position and the Germans' strong need for security and stability, led to a drastically different approach to the problem.

### 3. Internal Factors

*Motivation.* Motivation is the reason for a behavior or a strong internal stimulus around which behavior is organized and is shaped by intensity and direction (which determines which behavior is chosen from all the possible options). Motives for behavior can be conscious or unconscious. Researchers distinguish between primary motives (the larger motives that let us engage in a whole set of behaviors), e.g. striving to live an environmental lifestyle, and selective motives (the motives that influence one specific action). The primary motives (environmental values) are often overridden by the selective motives (personal comfort).

*Environmental knowledge.* Most researchers agree that only a small fraction of pro-environmental behavior can be directly linked to environmental knowledge and environmental awareness. At least 80% of the motives for pro-environmental or non-environmental behavior seem to be situational factors and other internal factors. The implication is that environmental knowledge per se appears not to be a prerequisite for pro-environmental behavior. Clearly, people have to have a basic knowledge about environmental issues and the behaviors that cause them in order to act pro-environmentally in a conscious way but studies have shown that very detailed technical knowledge does not seem to foster or increase pro-environmental behavior.

Other incentives – such as economic advantages - and cultural values can motivate people to act pro-environmentally without doing it out of environmental concern. Ecological economists like to take advantage of this fact. By imposing taxes on environmentally harmful activities, people will automatically move away from these behaviors and look for less damaging alternatives. For example, in countries with high gasoline tax, people tend to drive significantly less than in countries with very low taxes. Yet some people caution that such unconscious pro-environmental behavior can easily be reversed or changed to a more

unsustainable pattern because it is not based on some fundamental values.

*Values.* Values are responsible for shaping much of our intrinsic motivation. The question of what shapes our values is a complex one. According to a prevalent hypothesis, a person's values are most influenced by the 'microsystem', which is comprised of the immediate social net—family, neighbors, peer-groups, etc. Values are influenced to a lesser extent by the 'exosystem' such as the media and political organizations. Least strong, but nevertheless important, is the influence of the 'macrosystem', the cultural context in which the individual lives.

The 'value dilemma' can also be explored from the environmental sensitivity<sup>18</sup> perspective where research has found a number of explanatory factors (in decreasing relevance): (1) Childhood experiences in nature; (2) Experiences of pro-environmental destruction; (3) Pro-environmental values held by the family; (4) Pro-environmental organizations; (5) Role models (friends or teachers); (6) Education.

These findings are valuable in that they show how important an emotional connection to the natural environment seems to be in fostering environmental awareness and environmental concern. Furthermore, a prevalent hypothesis states that the stronger a person's emotional reaction, the more likely that person will engage in pro-environmental behavior. Research has also shown that women tend to react more emotionally to environmental problems.

*Environmental attitudes*<sup>19</sup> have been found to have a varying, usually very small impact on pro-environmental behavior. This discrepancy is explained low cost/high cost model, which proposes that people choose the pro-environmental behaviors that demand the least cost (in a broader psychological sense including time and effort). Attitudes can, however, indirectly influence our pro-environmental behavior. A study of college students' willingness to engage in pro-environmental behavior found that those who believe technology and growth will solve environmental problems were less likely to make personal sacrifices. These findings indicate that people with a strong belief in growth and technological solutions might not see the need and will be less willing to engage in pro-environmental behavior with the implicit lifestyle changes.

*Environmental awareness*<sup>20</sup> has both a cognitive, knowledge-based component and an affective, perception-based component. Environmental awareness is constrained by several cognitive and emotional limitations. Cognitive limitations of environmental awareness include:

(1) *Non-immediacy of many ecological problems.* Most environmental degradation is not immediately tangible. We cannot perceive nuclear radiation, the ozone hole, or the accumulation of greenhouse gases in the atmosphere. We can only experience the effects of pollution and destruction, which implies a time lag: very often, we only perceive changes

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<sup>18</sup> Environmental sensitivity = a predisposition to take an interest in learning about the environment, feeling concern for it, and acting to conserve it, on the basis of formative experiences'

<sup>19</sup> Attitudes are defined as the enduring positive or negative feeling about some person, object, or issue. Closely related to attitudes are beliefs, which refer to the information (the knowledge) a person has about a person, object, or issue.

<sup>20</sup> Environmental awareness as 'knowing of the impact of human behavior on the environment'

once the human impact has already caused severe damage. Also, more subtle changes and changes in remote areas escape our awareness.

Because most environmental degradation is not immediately tangible, the information about environmental damage has to be translated into understandable, perceivable information (language, pictures, graphs). Most of the time this information will further our intellectual understanding without making a link to our emotional involvement. It is the rare exception that a vivid, provocative image can be found to explain a scientific concept that at the same time engages people emotionally (a good example of this is the ‘ozone hole’). The reliance on secondary information about environmental destruction removes us emotionally from the issue and often leads to non-involvement.

(2) *Slow and gradual ecological destruction.* Another cognitive barrier is the often very gradual, slow pace of environmental change. Human beings are very good at perceiving drastic and sudden changes but are often unable to perceive slow, incremental changes. We are, in many respects like the frogs in the famous experiment: when placed into hot water, they immediately jumped out but when put into cool water that was slowly heated, they did not react and boiled to death.

(3) *Complex systems.* Most environmental problems are intricate and immensely complex. Yet we are often unable to comprehend such complex systems and tend to simplify them and think linearly. This prevents us from a deeper understanding of the consequences of natural destruction. It might also lead to underestimating the extent of the problem. Overall, our cognitive limitations to understanding environmental degradation seriously compromises our emotional engagement and our willingness to act.

*Emotional involvement*<sup>21</sup>. An emotional connection seems to be very important in shaping our beliefs, values, and attitudes towards the environment. Research has shown that women tend to react more emotionally to environmental problems, The prevailing hypothesis is that the stronger a person’s emotional reaction, the more likely that person will engage in pro-environmental behavior. What makes us care? Why is it that some people care and others do not? The answers seem to be diverse, complex, and poorly understood. We all have areas that we are more passionate about than others. The question of why we are emotionally involved in one thing but not another is a very profound one. The following paragraphs are an attempt to give a brief overview on the issue.

(1) *Emotional non-investment*

(a) *Lack of knowledge and awareness.* Because of the non-immediacy of ecological destruction, emotional involvement requires a certain degree of environmental knowledge and awareness. In many cases, emotional involvement is a learned ability to react emotionally to complex and sometimes very abstract environmental problems (different degrees of abstraction that trigger different levels of emotional reaction). Lack of knowledge about the causes and effects of ecological degradation can therefore lead to emotional non-involvement although just providing this knowledge is not sufficient to create such emotional involvement.

(b) *Resistance against non-conforming information.* According to the theory of dissonance we

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<sup>21</sup> Emotional involvement is the extent to which we have an affective relationship to the natural world.

unconsciously seek consistency in our beliefs and mental frameworks and selectively perceive information. Information that supports our existing values and mental frameworks is readily accepted whereas information that contradicts or undermines our beliefs is avoided or not perceived at all. We tend to avoid information about environmental problems because they contradict or threaten some of our basic assumptions of quality of life, economic prosperity, and material needs.

(2) *Emotional reactions.*

Even if we are experiencing an emotional reaction to environmental degradation, we might still not act pro-environmentally. Faced with the effects and long-term implications of environmental degradation we can feel fear, sadness/pain, anger, and guilt. The emotional reaction is stronger when we experience the degradation directly. Fear, sadness, pain, and anger are more likely to trigger pro-environmental behaviors than guilt. A decisive factor for action is locus of control (see below). Strong feelings together with a sense of helplessness will not lead to action. The primary emotional reactions we experience when exposed to environmental degradation are distressing. They will lead to secondary psychological responses aimed at relieving us from these negative feelings. Very often those secondary responses prevent us from pro-environmental behavior. Psychologists distinguish between different defense mechanisms. These include denial, rational distancing, apathy, and delegation.

(a) *Locus of control.* Locus of control represents an individual's perception of whether he or she has the ability to bring about change through his or her own behavior. People with a strong internal locus of control believe that their actions can bring about change. People with an external locus of control, on the other hand, feel that their actions are insignificant, and feel that change can only be brought about by powerful others (see paragraph on delegation). Such people are much less likely to act ecologically, since they feel that 'it does not make a difference anyway'.

(b) *Responsibility and priorities.* Our feelings of responsibility are shaped by our values and attitudes and are influenced by our locus of control. We prioritize our responsibilities. Most important to people is their own wellbeing and the wellbeing of their family. When pro-environmental behaviors are in alignment with these personal priorities, the motivation to do them increases (e.g. buying organic food). If they contradict the priorities, the actions will less likely be taken (e.g. living in a smaller house, even though one could afford to live in a big one).

To summarize, and reflecting the result of the comprehensive overview on barriers to pro-environmental behavior by Kolmuss and Agyeman (2002), one cannot attribute a direct relationship to environmental knowledge and pro-environmental behavior. Rather, environmental knowledge, values, and attitudes, together with emotional involvement are seen as making up a complex 'pro-environmental consciousness'. This complex in turn is embedded in broader personal values and shaped by personality traits and other internal as well as external factors.

## 2.6 Vision Quest (VQ) – key characteristics

Variations of wilderness-based fasting rites have been evidenced in many different nature-based cultures. Such rites of passage were enacted by individuals, who had reached a

particularly significant juncture in their lives such as the passage from adolescence into adulthood. The vision quest was enacted to provide a ritual container whereby the individuals ceremonially marked their transition through a major crossroads in their lives with the goal of deriving greater clarity around their own sense of purpose and meaning in the world. In industrial culture, initiation rites such as vision quests have not been so widely practiced (Plotkin, 2003).

However, over the last twenty years or so, practices have begun to be revived through the pioneering work of John P. Milton of The Way of Nature Fellowship, Steven Foster and Meredith Little at The School of Lost Borders, and Bill Plotkin and associates at the Animas Valley Institute. All these institutes are based in the US and have created models of practice derived largely from Native American customs, with the focal point being a 3-4 day fast based in a wilderness-based setting.

Universal elements of the Vision Quest include:

- A remote wilderness setting;
- Fasting from food and sometimes water;
- Solitude (no other human companions);
- Direct exposure to the forms and forces of nature (only enough clothing and shelter necessary for physical survival and basic comfort, and no items of entertainment, reading material etc);
- Attention – focusing on consciousness, shifting ceremonies, prayers and practices
- A significant period of time – at least a full day, but usually three or four days and up to as much as several weeks (in which case small amounts of food are eaten).

In pre-industrial cultures, the undertaking of a ‘vision quest’ was a journey of self-discovery and would typically involve an individual venturing into wilderness terrain far removed from human society. The term has its origins in Native American cultures where initiates, usually adolescents, would spend time in wilderness alone, fasting and praying for a vision for themselves and their people. Such a journey was designed to elicit a heightening of one’s inner processes and cause a shift in one’s consciousness induced by the effects of fasting and solitude (Milton, 2006).

Similar VQ practices have been documented in many different tribal cultures throughout the world including, for example, Australian aboriginal tribes and their year-long ‘walkabout’ and the Basques in the Pyrenees embarking on a ‘year-walk.’ Fast forward to more contemporary times and we find elements of the vision quest through the themes of wandering and searching in popular literature, such as Jack Kerouac’s ‘On The Road’ (1955), Peter Matthiesen’s ‘The Snow Leopard’ (1978) and Carlos Castenada’s ‘Journey to Ixtlan’ (1972). Regardless of length or form, the more formalized quest structure invariably follows the three-step process and it is this structure that is incorporated in the contemporary vision quest practices being run today (Forbes, 2008). These stages are typically named (1) the departure, (2) the initiation and (3) the return. This “hero’s journey” involves “giving up where you are, going into the realm of adventure, coming to some kind of symbolically rendered realization, and then returning to the field of normal life.”

The healthy ego’s initiatory task is to journey in to the world, allow itself to be transformed by the wild and bring its shape-shifted self back as a gift to others. The ego’s soul gift to society is also a gift to the entire more-than-human world because it supports the human

community in maintaining a balanced relationship with the rest of nature. Such a society coevolves with terrestrial nature rather than threatening the very fabric of the world, as our egocentric societies currently do (Plotkin, 2003).

VQ and the initiation rite imitation, can contribute to a “death” of the part of the old self to create a new self more aligned with your soul’s purpose. In that sense, this could be likened to “virtual death” experiences, which have been shown to cause more generous and less greedy behavior than did materialistic individuals who thought about more neutral topics.

## 2.7 Connectedness to Nature Scale (CNS)

In general, psychoanalytic developmental theory lacks a framework for understanding the role played by relatedness to the natural world for the emerging human self (Spitzform, 2000). More specifically, and as we saw in section 2.5, to construct a workable model for predicting or analyzing pro-environmental behavior seems to be a mission next to impossible – “according to the extensive review of the key models explaining/predicting/preventing pro-environmental behavior, any model applied in isolation is not comprehensive enough and a synthesis of several models produces an approach that is too complicated so as to be useful”(Kollmuss & Agyeman, 2002).

This section contains a short description and key results of studies on Connectedness to Nature Scale (CNS), which intend to provide a justification for the use of CNS as the approach and “framework” for this thesis study.

Connectedness to nature scale (CNS) is a measure designed to tap an individual’s affective, experiential connection to nature. The CNS follows from the contention that people need to feel they are part of the broader natural world if they are to effectively address environmental issues. This means understanding the extent to which people experientially view themselves as egalitarian members of the broader natural community; feel a sense of kinship with it; view themselves as belonging to the natural world as much as it belongs to them; and view their welfare as related to the welfare of the natural world (Myer & Franz, 2005).

According to the Sussex University research team, Connectedness to Nature Scale (CNS), which measures an individual’s emotional connection with the natural world, is an important predictor of ecological behavior, as well as of subjective wellbeing(Hine, Peacock, & Petty, 2008).

The CNS questionnaire typically consists of the following questions to be answered on a scale from 1 (strongly disagree) to 5 (strongly agree):

1. I often feel a sense of oneness with the natural world around me.
2. I think of the natural world as a community to which I belong.
3. I recognize and appreciate the intelligence of other living organisms.
4. When I think of my life, I imagine myself to be part of a larger cyclical process of living.
5. I often feel a kinship with animals and plants.
6. I feel as though I belong to the Earth as equally as it belongs to me.
7. I have a deep understanding of how my actions affect the natural world.
8. I often feel part of the web of life.
9. I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force”.
10. Like a tree can be part of a forest, I feel embedded within the broader natural world.
11. I often feel like I am only a small part of the natural world around me, and that I am no more

- important than the grass on the ground or the birds in the trees.
12. I am clear on my life's higher purpose.
  13. I consider myself a creative person.
  14. I am able to generate abundant internal power and vitality.
  15. I master profound relaxation and presence.
  16. I am able to open to my inner peace and tranquility.
  17. I have discovered my natural simplicity.
  18. I have realized my essence.
  19. I commune deeply with Nature.
  20. I experience the natural joy inherent within me.

Five separate studies (Myer & Franz, 2005) using community and college samples, confirmed three key hypotheses regarding CNS as a methodology:

1. Direct experience has significant impact on increasing attitudinal and behavioral consistency.
2. Affective relationship with nature has a stronger impact on ecological behavior than more knowledge-based information.
3. Ecological behavior is impacted by the degree of “we-ness” (oneness) that exists between a person and the object of concern.

The following section summarizes the findings from the five studies (Myer & Franz, 2005):

- The CNS measures one’s experiential, emotional connection to nature
- More time spent in nature should be associated with a greater sense of connection to it, whereas time spent in nature will not impact individuals’ estimation that humans can upset the balance of nature, their sense that there is a limit to growth of human societies, or their views of domination
- If individuals’ sense of connectedness to nature is based on their direct experience of being in nature then CNS scores should be more strongly associated with actual ecological behavior since a variety of studies have demonstrated the impact that direct experience has on increasing attitudinal/behavioral consistency.
- An affective relationship with nature may have a stronger impact on ecological behavior than more knowledge-based information.
- Ecological behavior is impacted by the degree of ‘we-ness’ that exists between a person and the object of concern. Given this relationship, the CNS should clearly be a better predictor of ecological behavior for the CNS is fundamentally a measure of the ‘we-ness’ that individuals experience in their relationship with nature.
- Biospheric values correlate with the CNS, while the more human centric altruistic and egoistic values would not.

A general perspective of the five studies is that if people feel connected to nature, then they will be less likely to harm it, for harming it would, in essence, be harming their very self (Myer & Franz, 2005).

### 3 Case studies

As was summarized in the previous section, affective relationship – as measured by CNS – has direct positive correlation with environmental behavior. The seven case studies are divided into three clusters according to the motive for which they were selected for a closer look into:

4. Case studies 1 and 2: Ascertain the level post nature experience affective link to nature of modern humans' using CNS as the key methodology;
5. Case studies 3, 4 & 5: Gauge the impact of VQ experience on modern human in general, and whatever direct relevance that may have on environmental consciousness;
6. Case studies 6 and 7: Come up with empirical findings on VQ's impact on participant's affective relationship to nature and – due to assumed causality – on participants' environmental behavior.

#### 3.1 Case 1: Environmental volunteering

**Introduction**–The University of Essex performed research to investigate the impact of environmental volunteering on behaviors and attitudes to the environment. The two-stage evaluation process aimed both at obtaining baseline data for a longitudinal study and at providing stand-alone findings for a snapshot survey. A total of 403 volunteers from 28 different volunteer groups, took part in the research by completing a composite questionnaire. Of these 403, 18 participants were subjected to longitudinal comparison (Hine, Peacock, & Petty, 2008).

**Methodology** - The connectedness to nature scale (CNS) - considered by the research team to be an important predictor of ecological behavior and an affective relationship with nature - was used to assess whether volunteering and being exposed to nature increases an individual's sense of feeling connected to nature.

**Key findings** - Results showed that with an increase in connectedness to nature (CNS score), there is an increase in environmental awareness and responsibility and also an increase in environmentally friendly practices - lowering carbon emissions, switching to a less resource-intensive lifestyle, recycling and reducing waste, and choosing public transport.

The results of the direct longitudinal study also supported the snap-shot findings and showed that the increase in all three variables (connectedness to nature, environmental awareness and environmentally friendly behavior) over time is more pronounced, showing statistically significant results.

The actual numbers show significant changes: 88% of participants saw increases in their connectedness to nature score, 94% saw a rise in environmental awareness and responsibility scores and 71% saw increases in environmentally friendly behavior over the 8-9 months that they were volunteering.

Even when volunteers had no previous connection with the environment, their engagement was often sustained. Seven out of ten volunteers said they had actively found out more about the environment as a result of volunteering. The same number had given advice to others about being environmentally friendly, and had also increased the amount of household waste

they recycled. A number of volunteers had even gone on to start an environmental project of their own.

This research also found that women volunteers – and both female and male volunteers over 30 years of age - had higher connectedness to nature and awareness of environmental issues and displayed more environmentally friendly behavior than volunteers on average.

### 3.2 Case 2: Wilderness therapy for troubled youth

**Introduction** - Wilderness therapy is an emerging ‘green care’ intervention, which uses a systematic approach to work with adolescents with behavioral problems. Wilderness therapy programs typically provide hiking and physical activity, including opportunities for solo time in nature and reflection of challenges resulting from ‘back-to basics’ living. The rationale for these interventions involves separating disaffected young people from daily negative influences and placing them in safe outdoor environments. Spending time in a natural setting enables participants to access those aspects of their self that may elude them in more conventional personal development or therapeutic settings.

**Methodology** - The TurnAround 2007 project was a nine-month intensive personal development project, which ran between November 2007 and July 2008 with the objective of encouraging disaffected young people to make long-term positive changes. The project took the young people out of their urban environment – out of their familiarity and comfort zones - to a remote and uninhabited area of Scotland, to get them to question their values and way of life. The group was taken on a wilderness trail where a sense of solitude and natural exposure was experienced. Nature was used as a catalyst for change, enabling the young people to re-evaluate their destructive lifestyles and to give them the self-assurance to take personal responsibility for the outcome of their future by bringing about a change in outlook, foster self esteem, social ability and life skills.

A multi-method approach was used to assess the change in the behavior, attitudes and emotional states of troubled youth, after participating in the pilot project. Amongst other measurement tools, CNS was used to explore whether the program could act as a positive intervention in enhancing self-esteem and changing behavior.

**Key findings** - Participating in the wilderness therapy program led to significant increase in participants’ self-esteem over the duration of the trip (see Figure 3-1). Due to the bonding with the environment, both the young people and the coaches experienced an increase in connectedness to nature (CNS) (see Figure 3-2). Major differences in behavior were observed between and beginning and end of the program.

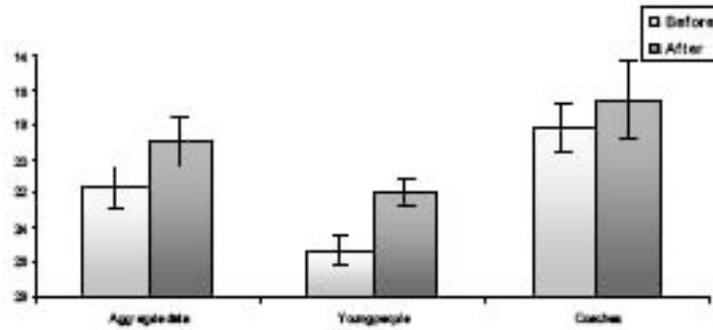


Figure 3-1: Change in self-esteem after participating in wilderness trail (Peacock, Hine & Petty, 2007)

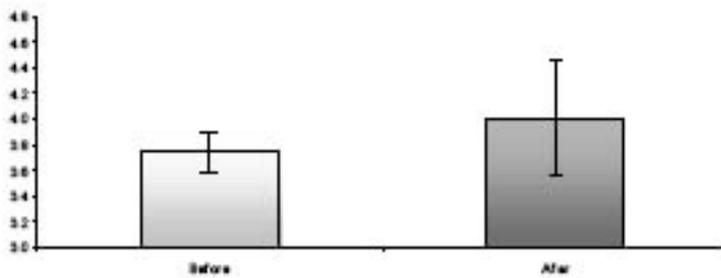


Figure 3-2: Changes in CNS after participating in the wilderness trail (Peacock, Hines & Petty, 2007)

### 3.3 Case 3: Short contemporary Vision Quest

**Introduction & methodology-** In 1990, John Suler, a practicing psychotherapist and associate professor of psychology, presented research based on a vision quest of his own design. The quest was four hours in duration and participants were given the following instructions that highlighted the key aspects of traditional practice: (1) Solitariness – they had to do it alone; (2) A wandering away from their usual environment, allowing intuition to carry them somewhere; (3) A wandering of thoughts and emotions to accompany the physical wandering; (4) Self-reflection and self-questioning: posing to oneself a specific question about issues in one’s life, or a more open-ended question of an existential or spiritual nature; (5) An attitude of searching and looking, expecting a solution or insight into the question proposed, perhaps in the form of a purely internal realization or perhaps in the form of a ‘sign’ or ‘vision’ from the world around them.

**Key findings** - With an initial roll-out of the exercise proving to be effective, Suler went on to accumulate data from over fifty quest participants. Four main themes emerged: (1) a loosening of the self, (2) a reciprocal paralleling of internal and external worlds, (3) the receipt of a sign from the surrounding environment and (4) individuation and union. The research produced remarkably positive results with the majority of participants reporting insights into themselves either through self-reflection or through receiving a sign from the world around them. Suler concluded “the vision quest offers the opportunity to tap into an archetypal form of consciousness that fosters individuation and activates the subjective experience of unity with the transcendental realm that nourishes the self.”

### 3.4 Case 4: Phenomenological inquiry on wilderness effects

**Introduction** -This study was an investigation by Scott Taylor (1999) into the psychological effects of being in wilderness for extended stays. It examined the wilderness experiences of twelve individuals and sought to determine any possible lasting psychological effects and life changes that these experiences may have had. The study did not focus specifically on vision quest experiences, but of the twelve people interviewed seven spoke from the context of having been on a vision quest.

**Methodology** -Four themed clusters were formed from the qualitative data retrieved from the interviews. These were as follows:

1. “Attuning, opening, entering wilderness, including: reduced mind chatter, slowing down, getting in synch with nature, surrendering and lessened need for control, sense of simplicity and feelings of peace and serenity.
2. Oneness with nature, including: feeling at home, free, safe, part of nature, communication with nature, i.e., animals and plants, self expansion.
3. Self-awareness, internal and external process, including: self-confidence, self-awareness, inner and outer process/dialog, messages as lessons and/or guidance, anxiety, love, acceptance, heart expansion and connecting with other people.
4. Perspective, perception and consciousness shift, including: life-changing experience, purpose in life, bringing back gifts/insights, lasting changes/effects and temporary effects and the difference.”

**Key findings** -Similarly to Suler, Taylor found that the majority of his interviewees experienced a loosening within themselves. Through this loosening of the psyche, all of Taylor’s interviewees spoke in varying degrees of feeling at home and experiencing a oneness with nature which subsequently helped to facilitate a heightened observing awareness of both their own inner processes and, externally, of the world around them. Interviewees spoke of periods of self-reflection leading to sometimes-intense emotions, the receiving of messages and guidance from their environs and of gaining insights into the purpose and the direction of their lives. Taylor writes, “wilderness appears to provide (with the right attitude and intention) the fertile ground for people to go deep into their inner selves and as one vision quester put it ‘focus intensely on psyche and on what my life is about.’”

Distinction was found between temporary and lasting effects of wilderness experiences stating, “the short term psychological wilderness effects of serenity, calm, peacefulness and openness can be sustained for a time while the more lasting changes affect sense of purpose, self-confidence, self-awareness, feelings of compassion and an acknowledgement that one has been through something profound, important and highly valued.”

The research showed that profound and lasting changes can occur particularly for those who are genuinely open and receptive to their experience as it unfolds, acknowledging that “not everyone who goes into wilderness for extended stays will experience all of these effects but there is a great likelihood that with intention and receptivity they will experience some aspect or sub-theme of these four clusters.”

Taylor concluded of his research, “I believe that the results of this study show that the beneficial effects of wilderness experiences can add a missing piece to our lives and mark pivotal points on a life journey toward wholeness. The wilderness process has the potential

to put us more in touch with our wholeness as organism/environment, and with who we truly are underneath layers of acculturation.”

### 3.5 Case 5: Wilderness groups

**Introduction** -Dr Greenway, psychologist, professor and wilderness group leader, began incorporating wilderness experiences into Peace Corps training programs in the 1960' as a retreat from cultural dominance. Greenway believes "that a marriage of the two fields (education and wilderness experience) was essential for an understanding, if not a healing, of the human-nature relationship". As a psychology professor at Sonoma State University, Greenway implemented, taught and led a wilderness experience course over a period of several years. In Greenway's own words, "...the escape to wilderness became a very self-conscious study of the dramatic changes people go through during extended (and carefully structured) stays there." Greenway's thoughtfully planned trips were "designed to encourage participants to leave behind the props of culture and enter fully into wilderness".

**Key Findings** -According to research by Greenway and based on more than 1,380 persons, 700 questionnaires, 700 interviews, 52 longitudinal studies, the following statistics emerged:

- 90% of respondents described an increased sense of aliveness, wellbeing, and energy.
- 90% stated that the experience allowed them to break an addiction.
- 77% described a major life change upon return (in personal relationships, employment, housing, or life-style).
- 38% of those changes "held true" after five years.

In interpreting his findings, Greenway wrote that:

“In general, we think we are seeing the wide divergence between Western culture and pristine wilderness writ vividly on the psyches of those experiencing extended stays away from "cultural reinforcement" and "vulnerable" to the natural dynamics of wilderness. We would infer from this that small, tribe-like communities, sitting around fires at night, intimacy with celestial events, and the like are indeed familiar to us, are experiences not that far "below" our cultural programming.”

### 3.6 Case 6: Advanced Awareness in Nature (AAT)

**Introduction** -This Advanced Awareness Training (AAT) explored a variety of ways to deepen the experience of unity with all life. Modern VQ pioneer John P. Milton taught a variety of principles and practices the purpose of which was to lead to direct experience of inner and outer Nature and to provide powerful “keys” to experience oneness with Nature. One of the goals of this training was to help support the training and certification of new guides in the global growth of Nature/Vision Quests. This weeklong AAT was held in Vålådalen in June 2009 in the mountain wilderness area of Sweden close to the Norwegian border in June. The week consisted of covering – or re-capping for some - the basic theory and philosophy of Nature / Vision Quest and have a direct nature experience and opportunity to practice the key supportive rituals and exercises within group and solo settings in the nature.

**Methodology** -A pre- and post experience questionnaire was filled out by each of the seven co-participants. The questionnaire was a slightly modified version of the of the CNS questionnaire used by Essex university in the above presented case studies. According to John Milton's website, participating in a Vision Quest provides the participant with means to develop certain mental and spiritual capacities. Additional questions were included to test these claims.

The demographic profile of the sample was as follows:

- Gender : 2 x female, 5 x male
- Age group : 4 x 31-50 years, 3 x 19-30 years
- Main activity : 5 x full-time employed, 1 x student, 1 house person
- Contact with nature : 4 x daily, 1 x (2-3 times/week), 2 x (once/week)
- Where grew up : 1 x large town, 3 x village, 3 x remote rural area
- Where live now : 4 x city, 1 x large town, 1 x village, 1 x remote rural area

The CNS portion of the pre-experience questionnaire consisted of the following questions that were to be answered on a scale from 1 (strongly disagree) to 5 (strongly agree):

1. I often feel a sense of oneness with the natural world around me.
2. I think of the natural world as a community to which I belong.
3. I recognize and appreciate the intelligence of other living organisms.
4. When I think of my life, I imagine myself to be part of a larger cyclical process of living.
5. I often feel a kinship with animals and plants.
6. I feel as though I belong to the Earth as equally as it belongs to me.
7. I have a deep understanding of how my actions affect the natural world.
8. I often feel part of the web of life.
9. I feel that all inhabitants of Earth, human, and nonhuman, share a common "life force".
10. Like a tree can be part of a forest, I feel embedded within the broader natural world.
11. I often feel like I am only a small part of the natural world around me, and that I am no more important than the grass on the ground or the birds in the trees.
12. I am clear on my life's higher purpose.
13. I consider myself a creative person.
14. I am able to generate abundant internal power and vitality.
15. I master profound relaxation and presence.
16. I am able to open to my inner peace and tranquility.
17. I have discovered my natural simplicity.
18. I have realized my essence.
19. I commune deeply with Nature.
20. I experience the natural joy inherent within me.

The demographic questions were omitted from and slight temporal adjustment introduced to the post-experience questionnaire. The full pre- and post-experience questionnaires are provided as **Annexes 1 and 2**.

### Key findings

- Pre-experience questionnaire score (base line): 564 out of 700 (81%)<sup>22</sup>
- Average participant score: 81 out of 100<sup>23</sup> (max 91, min 66)

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<sup>22</sup> Total Maximum points per questionnaire: 7 participants x 20 questions x 5 points/question = 700

<sup>23</sup> Maximum individual score: 20 questions x 5 points/question = 100 points

- Top three scoring questions:
  1. “I think of the natural world as a community to which I belong” (34/35).<sup>24</sup>
  2. “When I think of my life, I imagine myself to be part of a larger cyclical process of living” (33/35).
  3. “I recognize and appreciate the intelligence of other living organisms” (32/35).
- Total point difference between pre- and post experience:  $\Delta 15 = \Delta 2$  percentage points (individual participant max 6, min -6).
- Six out of seven (86%) participants reported higher post than pre-experience PNS score.
- Top three questions with biggest change:
  1. “I often feel part of the web of life” ( $\Delta 3 = 19\%$ ).
  2. “I have a deep understanding of how my actions affect the natural world” ( $\Delta 4 = 15\%$ ).
  3. “I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force” ( $\Delta 5 = 11\%$ ).

The table with scores from the AAT pre- and post-experience questionnaires as well as a table of variances presented in **Annexes 3, 4 and 5**, respectively.

### 3.7 Case 7: Vision Quest – an ancient rite of passage for modern people

**Introduction** - The six-day event in July 2009 in Vålådalen nature reserve (same location as AAT) consisted of a 2-day preparatory phase followed by a three-day solo Visions Quest in the wilderness and one-day post-experience wrap-up. The quest created a setting for the participants to establish a deeper sense of interconnectedness with nature and a deeper connection to the natural world. It essentially followed the principles, structure and content as explained in case 5 and under the header ‘Vision Quest – key characteristics’, i.e. the removal of participants from their regular life situation leaving all possible distractions behind. Preparations were made to go out alone, with very limited amount of nutrients and a bare minimum of equipment, into the heart of wilderness, for four days and nights.

**Methodology** - Seven VQ participants – representing half the number of total participants - were asked to fill out the pre- and post-experience questionnaires identical to the ones used in AAT (annexes 1 & 2). Unlike in AAT, no semi-structured interviews were conducted at the July event. The sample was intentionally limited to seven with two females and five males, to allow for easy comparison with AAT. Otherwise the sample selection was random. The demographic profile of the sample was as follows:

- Gender : 2 x female, 5 x male
- Age group : 4 x 31-50 years, 3 x 19-30 years
- Main activity : 4 x full-time employed, 3 x student
- Contact with nature : 3 x (2-3 times a week), 3 x (once a week), 1 x fortnightly
- Where grew up : 2 x city, 2 x large town, 2 x village, 1 x rural environment
- Where live now : 6 x city, 1 x large town

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<sup>24</sup> Maximum points per question: 5 points per question x 7 participants

## Key findings

- Pre-experience questionnaire score (base line): 468 out of 700 (67%).<sup>25</sup>
- Average participant score: 67 out of 100<sup>26</sup> (max 72, min 60).
- Top three scoring questions:
  1. I think of the natural world as a community to which I belong (30/35).<sup>27</sup>
  2. I consider myself a creative person (30/35).
  3. I recognize and appreciate the intelligence of other living organisms (29/35).
- Total point difference between pre- and post experience:  $\Delta 55 = \Delta 8$  percentage points (individual participant max 16, min 3).
- All seven (100%) participants reported higher post- than pre-experience CNS score.
- Top three questions with biggest change:
  1. “Right now I feel as though I belong to the Earth as equally as it belongs to me”( $\Delta 8 = 36\%$ ).
  2. “I master profound relaxation and presence”( $\Delta 7 = 41\%$ ).
  3. “Right now I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force”( $\Delta 8 = 25\%$ ).

The table with scores from the VQ pre- and post-experience questionnaires as well as a table of variances presented in **Annexes 6, 7 and 5, 8** respectively.

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<sup>25</sup> Total Maximum points per questionnaire: 7 participants x 20 questions x 5 points/question = 700

<sup>26</sup> Maximum individual score: 20 questions x 5 points/question = 100 points

<sup>27</sup> Maximum points per question: 5 points per question x 7 participants = 35 points

## 4 Analysis

### 4.1 Linkages between approaches to human-nature relationship

There appears to be precious little, if any, literature available that is truly cross-cutting and that provide synthesis between the various approaches looked into in this thesis. While many of them discuss the same issues, they almost seem to make a point of not stepping onto each others' toes regardless of how closely related the approaches might be. One of the reasons may be the fact that these research disciplines are carried out in separate institutions and faculties, which may generate more competition than cooperation. Also, it is difficult to form a hierarchy among various approaches, making apples-to-apples comparison a challenge, if not unfair (e.g. systems theory vs. eco-spirituality).

That stated, the literature review revealed some important similarities and discrepancies, which are captured in the Figure 4-1 using the typology presented earlier in section 2.2 as the framework.

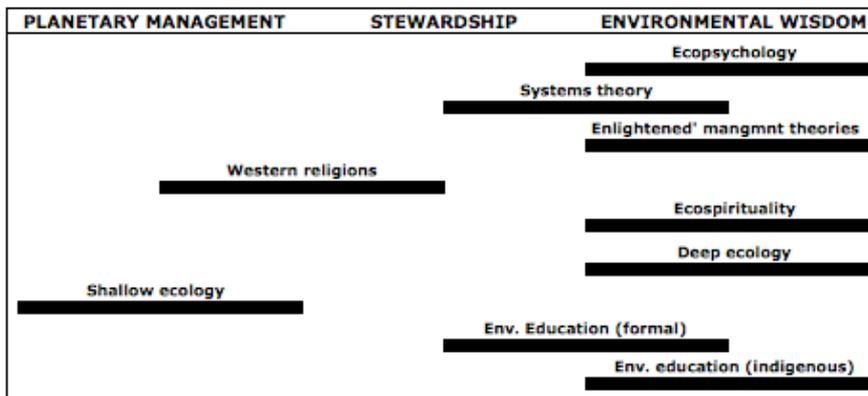


Figure 4-1: Similarities and discrepancies between environmental approaches.

The approaches to human-nature relationship that are solidly in the 'Environmental Wisdom' (EW) category, and in addition to the characteristics presented in table 1 (section 2.2), not only recognize the importance of direct experience with nature as well as the concept of oneness, but, also, send out a warning that the current dominant paradigm is a ticket for destruction. According to section 2.7 on CNS, "direct experience has significant impact on increasing attitudinal and behavioral consistency."

Shallow ecology vs. deep ecology dichotomy is related to the "socially complex" problem category as defined by Kahane in section 2.1. Given that deep ecology proponents are advocating much deeper level of transformation than those who represent shallow ecology – the current paradigm –who, at best, put their faith in technical innovation. The environmental problems have therefore become polarized and stuck due to differing assumptions, values, rationales and objectives and, while the urgency may be recognized by majority in both 'camps', the resources – mental and otherwise – may get too dispersed and diluted so as to be effective in terms of the called-for timely fundamental change in values and behaviors.

This said, deep ecology is not about negating the need for technical progress. What it *is* suggesting – and this is where it gets backed up by systems thinking – is that we should take the foot off the gas (i.e. the general ‘growth is good’ obsession, positive loop) so that the best of technical solutions - representing shallow ecology and negative loops - have time to kick in and have impact. The technical solutions alone will not provide the solution for the immediate gap between what the reality is on the ground, where we’re headed, and what needs to be accomplished. We’re running out of time.

Systems theory, while promoting the interconnections between humans and the environment, falls short of directly acknowledging the importance of direct nature experience to generate behavior change. The same is true of formal environmental education, where the typical curricula touch upon the ‘right’ issues but the effect on behavior is limited - it is like reading a travel brochure on your couch but never taking the trip.

Environmental attitudes usually have only a very small impact on pro-environmental behavior but they can indirectly influence it indirectly. As presented in section 2.5, those who believe technology and growth will solve environmental problems are less likely to make personal sacrifices indicating that people with a strong belief in growth and technological solutions might not see the need and will be less willing to engage in pro-environmental behavior with the implicit lifestyle changes. This, while not directly supportive of, is still in line with the shallow ecology contention that nature has only instrumental value and that scientific knowledge and technological progress is the aim, which rests on the anthropocentric and mechanistic worldview.

The CNS related research in Section 2.7 demonstrated that affective and direct relationship with nature has a stronger impact on ecological behavior than more knowledge-based information, which lends support to the Section 2.5, which exposed the weakness of the mind-focused model in predicting behavior.

Possibly the most encouraging phenomenon is the cutting-edge science (quantum physics) that provides scientific backing for the concept of oneness, a concept which traditionally has belonged to the spiritual domain and provided an excuse for many not to pay heed to the fundamentally transformational potential that exists in the concept.

Also encouraging for the proponents of a new paradigm is the appearance of a new ‘enlightened’ management consultant generation on the scene (section 2.4). Under their guidance and leadership, many top-notch organizations are putting into practice key elements of a new paradigm with the support of concepts of direct experience and oneness. Several of the phases in Theory U speak to the basic principles of “deep ecology”. For instance, “Co-sensing the field of change: Go to the places of most potential and listen with your mind and heart wide open” is what nature connection is about – mindful awareness and direct sensing at a deeper level. “Presencing inspiration and common will: Go to the threshold and allow the inner knowing to emerge”, in turn, is about “letting go” everything that is not essential. This, amongst other things, addresses consumption and excess clutter in our lives and in organizations that is not bringing us happiness; and “letting come” of new transformational experience manifested in alternative values and priorities. Lastly, “Co-evolving through innovation ecosystems that facilitate seeing and acting from the whole” has clear links to the systems thinking, the concepts of interconnectedness and that of oneness.

Interestingly, and perhaps not surprisingly, many of the cutting edge management experts are involved and have participated in intense direct nature experiences in form of a VQ, or similar.

As pointed out in Section 2.1, most environmental problems are intricate and immensely complex. Yet we are often unable to comprehend such complex systems and tend to simplify them and think linearly. This prevents us from a deeper understanding of the consequences of natural destruction. It might also lead to underestimating the extent of the problem. Overall, our cognitive limitations to understanding environmental degradation seriously compromises our emotional engagement and our willingness to act. This bears out what Kahane says about tough problems (section 2.1) and the three ways in which they are complex: (1) *dynamically* complex, i.e. cause and effect are far apart and so are hard to grasp from firsthand experience (low if rules and solutions from the past work in the future); (2) *generatively* complex, i.e. they unfold in unfamiliar and unpredictable ways; (3) *socially* complex, i.e. the people involved see things very differently, and so the problems become polarized and stuck (low if involved parties have common assumptions, values, rationales and objectives).”

The non-immediacy and non-tangibility of many ecological problems and slow and gradual ecological destruction, in particular, correspond to the characteristics of ‘dynamic complexity’ as suggested by Kahane (section 2.1), where cause and effect are far apart physically and time-wise and are therefore hard to grasp from firsthand experience. We cannot perceive nuclear radiation, the ozone hole, or the accumulation of greenhouse gases in the atmosphere, nor slow and incremental changes. We can only experience the effects of pollution and destruction, which implies a time lag: very often, we only perceive sudden and drastic changes once the human impact has already caused severe damage. Also, more subtle changes and changes in remote areas escape our awareness.

The section 2.5 also talks about resistance against non-conforming information. According to the theory of dissonance we unconsciously seek consistency in our beliefs and mental frameworks and selectively perceive information. Information that supports our existing values and mental frameworks is readily accepted whereas information that contradicts or undermines our beliefs is avoided or not perceived at all. We tend to avoid information about environmental problems because they contradict or threaten some of our basic assumption of quality of life, economic prosperity, and material needs. This speaks to the contention that, inasmuch as we perceive a threat due to the degrading environment, our actions are likely to revert to what is habitual when we are in a state of fear or anxiety (section 2.5). Collective actions are no different leading, at best, to “reactive” learning, discounting interpretations and options that are different from those we know, and act to defend our interests thereby reinforcing pre-established mental models and the current paradigm (section 2.5). At worst, and not uncommonly, stress, trauma, and fear often lead people to treat themselves, others, and the environment in more damaging ways. Experiments show that when people are led to think only superficially (instead of deeply) about grave threats, they become more defensive, more focused on consumption and acquisition, more greedy, and more negative in their attitudes toward wilderness and environment.

Although most of the discussed approaches are clearly in the “environmental wisdom” category, the problem for introducing new paradigm is difficult and most of the resources are with ideas that are supported by currently dominant institutions - businesses, governments, religions, and universities. It is even argued that current institutions with the values that they

represent – and in comparison with the cutting edge science that some of them do promote – are, overall, an impediment to the development of a paradigm that acknowledges environment as the context, which all other human endeavors will have to respect and accommodate (section 2.3).

## 4.2 Advanced Awareness Training vs. Vision Quest

Overall, the short-term impact of the AAT and VQ experience appears relatively modest: only two and eight percentage point rise in the CNS score from pre- to post-experience in AAT and VQ, respectively (see Figure 4-2 for the baseline and post-experience aggregate scores). Even there were differences between individual participants, based on the total scores, one can hardly speak of a ‘transformational’ experience.

Most of the AAT participants had already taken one or more VQs previously, which probably explains not only the difference in the base line score but also the bigger impact of the VQ compared to AAT. Also, the fact that VQ constitutes a more intense direct wilderness experience probably led to a higher reported change in the VQ score. The pre-experience difference of 96 in the score between AAT and VQ was reduced to 56 in the post-experience survey.

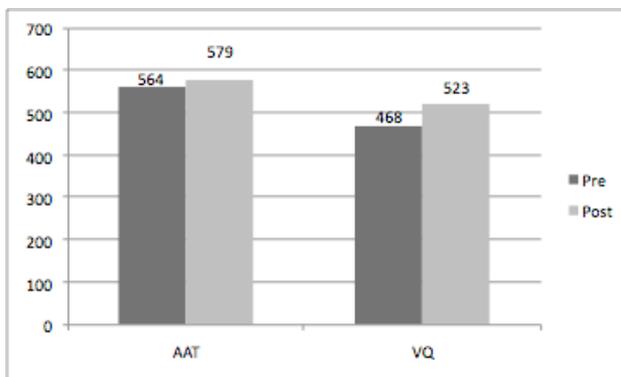


Figure 4-2: AAT & VQ baseline and post-experience aggregate scores

Some of the demographic differences between the AAT and VQ groups may offer some help in explaining the differences in results. All but one of the VQ participants live in cities which contrasts more with a direct nature experience than having domicile in areas with more access to nature, which is the case with most of the AAT participants. The less regular contact with nature of the VQ group in the daily life should increase the perceived contrast and, hence, the impact of a direct wilderness experience.

Some of the demographic differences

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Although the AAT group was older and had more mid-career people than the VQ participants, it remains a moot point whether this had any influence on the differences in the base line scores or the self-recorded impact of the respective experiences.

The following statements represented the top three differences in the base-line score between AAT and VQ (in favor of AAT):

1. “I often feel a sense of oneness with the natural world around me.”
2. “Like a tree can be part of a forest, I feel embedded within the broader natural world.”
3. “I am able to generate abundant internal power and vitality.”

In turn, the most significant differences in the post-experience score – in favor of AAT – were reflected in the responses to the following statements:

1. “Like a tree can be part of a forest, I feel embedded within the broader natural world.”
2. “I consider myself a creative person.”
3. “I experience the natural joy inherent within me.”

The ‘promised’ impact of the VQ/AAT<sup>28</sup>, reflected in the questions 12 to 20, proved in this study to be 0 % in case of AAT, but a somewhat significant 15% in the case of VQ where the score for the statement “I master profound relaxation and presence” stood out by going up by 41%. This is particularly relevant as the ability to master relaxation and presence is the necessary foundation for further personal development (Milton, 2006).

### 4.3 Advanced Awareness Training & Vision Quest vs. Literature case studies

While the cases found in the literature pertaining to CNS lend support to establishing a link between a CNS score and post nature experience affective link to nature, direct comparison and analysis *vis-à-vis* the empirical data of the study was not possible, as the studied literary cases did not provide the same level of detail. The same goes for the comparisons and analysis of VQ – the literature establishes general impact of the experience on participants but does not provide the necessary detail to allow for meaningful comparisons. Some observations can, however, be made:

Case 1 (“Environmental volunteering”) reports 88% of participants having increased post-experience feelings of connectedness to nature with 71% reporting increased environmentally friendly behavior. This compares with 100% and 86% with AAT and VQ, respectively, which may be a reasonably good proxy indicator of increased pro-environmental behavior as well. The findings of the study on the role of age and gender bear out in the empirical study – older age and being a female are linked with affective relationship to nature and environment.

Case 2 (“Wilderness therapy for troubled youth”)– the role of solo time in wilderness has impact on CNS score, as is the case in the VQ case. Although the circumstances and methodology are markedly different, both cases arrive at approximately 15% increase in CNS in the post-experience score, which, according the researchers of case study 2 is “significant”.

The approaches and methodologies in cases 3-5, in their own markedly different ways, demonstrate that given the right framing conditions and personal intent, individuals can experience profound shifts in perspective and insights into themselves and that of the world around them.

### 4.4 Case studies vs. literature review

In the following, selected key statements from the literature review are compared with the findings of the case studies that either support or challenge the said statements.

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<sup>28</sup> See: [www.sacredpassage.com/](http://www.sacredpassage.com/)

Table 41: Comparison between selected statements in the literature and results from the case studies

Literature reference	Correspondence with case studies (for or against)
<p><b>Section 2.7:</b> “Connectedness to Nature Scale (CNS), which measures an individual’s emotional connection with the natural world, is an important predictor of ecological behavior, as well as of subjective wellbeing.”</p>	<p><b>Case 1:</b> “increase in environmental awareness and responsibility and also an increase in environmentally friendly practices - lowering carbon emissions, switching to a less resource-intensive lifestyle, recycling and reducing waste, and choosing public transport. 88% of participants saw increases in their connectedness to nature score, 94% saw a rise in environmental awareness and responsibility scores and 71% saw increases in environmentally friendly behavior over the 8-9 months that they were volunteering;</p> <p><b>Case 7:</b> Top three questions with biggest change: (i) “Right now I feel as though I belong to the Earth as equally as it belongs to me” (<math>\Delta 8 = 36\%</math>), (ii) “I master profound relaxation and presence” (<math>\Delta 7 = 41\%</math>), (iii) “Right now I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force” (<math>\Delta 8 = 25\%</math>).</p>
<p>The deep ecology framework in general and the ‘three deeps’ approach in particular (<b>section 2.2.1</b>) which question the fundamental assumptions of our culture and contrast markedly with the mainstream shallow or reform approach, which tries to ensure the continuance of business-as-usual. Key aspects: (1) shift in context; (2) deep questioning of both oneself and society to articulate an ethical standpoint to guide life-style choices; (3) feeling of deep commitment to bringing about change in peaceful and democratic ways to minimize harm to nature whilst enhancing one’s own feelings belonging; <b>Section 2.6:</b> VQ characteristics - focus on consciousness shifting ceremonies, prayer and practices.</p>	<p>(1) <b>Case 5:</b> A universal elements the Vision Quest include a remote wilderness setting; <b>Case 3:</b> “‘celestial’ events are not far below our cultural programming; (2) <b>Case 4:</b> Experience of oneness with nature which subsequently helped to facilitate a heightened observing awareness of both own inner processes and, externally, of the world around them; <b>Case 5:</b> 77% described a major life change – including life-style - upon return; 38% of those changes “held true” after five years; <b>Case 6:</b> top three questions with the biggest change between pre and post experience: (i) “I often feel part of the web of life”, (ii) “I have a deep understanding of how my actions affect the natural world”, (iii) “I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force”.</p>
<p>Non-immediacy &amp; non-tangibility of ecological problems (<b>Section 2.5</b>): Because most environmental degradation is not immediately tangible, the information about environmental</p>	<p><b>Case 2:</b> young people and the coaches experienced an increase in connectedness to nature; <b>Case 4:</b> experiencing oneness with nature which subsequently helped to facilitate a</p>

<p>damage has to be translated into understandable, perceivable information (language, pictures, graphs). Most of the time this information will further our intellectual understanding without making a link to our emotional involvement. The reliance on secondary information about environmental destruction removes us emotionally from the issue and often leads to non-involvement; CNS research (<b>Section 2.7</b>): “if people feel connected to nature, then they will be less likely to harm it, for harming it would, in essence, be harming their very self.”</p>	<p>heightened observing awareness of both their own inner processes and, externally, of the world around them; <b>Case 6</b>: The top three statement evidencing dramatic attitudinal changes were: (i) “I often feel part of the web of life”, (ii) “I have a deep understanding of how my actions affect the natural world”, (iii) “I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force”; <b>Case 7</b>: Top two statements with dramatic change: (i) “Right now I feel as though I belong to the Earth as equally as it belongs to me”, (ii) “Right now I feel that all inhabitants of Earth, human, and nonhuman, share a common “life force”;</p>
<p><b>Section 2.5</b>: “women usually have a less extensive environmental knowledge than men but they are more emotionally engaged, show more concern about environmental destruction, believe less in technological solutions, and are more willing to change.”</p>	<p><b>Case 1</b>: “women volunteers – and both female and male volunteers over 30 years of age - had higher connectedness to nature and awareness of environmental issues and displayed more environmentally friendly behavior than volunteers on average”</p>
<p><b>Section 2.2.1</b>: “We are not being challenged, not asked to reform our personal ways” – development is “incrementalism” though we are invited to take an evolutionary leap. The shallow ecology framework does not, therefore, provide either a sound basis for a deep sense of personal meaning or a path forward toward sustainability.</p>	<p><b>Case 7</b>: A remote wilderness setting; Fasting from food and sometimes water; Solitude (no other human companions); A significant period of time – at least a full day, but usually three or four days and up to as much as several weeks (in which case small amounts of food are eaten); <b>Case 4</b>: Interviewees spoke of periods of self-reflection leading to sometimes-intense emotions, the receiving of messages and guidance from their environs and of gaining insights into the purpose and the direction of their lives”...“wilderness appears to provide (with the right attitude and intention) the fertile ground for people to go deep into their inner selves and as one vision quester put it ‘focus intensely on psyche and on what my life is about.’...” the more lasting changes affect sense of purpose, self-confidence, self-awareness, feelings of compassion and an acknowledgement that one has been through something profound, important and highly valued.” ...”the results of this study show that the beneficial effects of wilderness experiences can add a missing piece to our lives and mark pivotal points on a life journey toward wholeness. The wilderness process has the potential to put us more in touch with our wholeness as organism/environment, and with who we truly are underneath layers of acculturation.”; <b>Case 5</b>: 90% of respondents described an increased sense of aliveness,</p>

	<p>wellbeing, and energy; 77% described a major life change upon return (in personal relationships, employment, housing, or life-style); 38% of those changes "held true" after five years.</p>
<p><b>Section 2.4.1:</b> Theory U advocates direct experience, acknowledges the interrelationships and sees the process of inner work as key for transformation of individuals and organizations alike.</p>	<p><b>Case 4:</b> “Through this loosening of the psyche, all interviewees spoke in varying degrees of feeling at home and experiencing a oneness with nature which subsequently helped to facilitate a heightened observing awareness of both their own inner processes”...“wilderness appears to provide (with the right attitude and intention) the fertile ground for people to go deep into their inner selves and as one ‘vision quester’ put it ‘focus intensely on psyche and on what my life is about.’; <b>Case 6:</b> “A variety of principles and practices taught the purpose of which was to lead to direct experience of inner and outer Nature and to provide powerful “keys” to experience oneness with Nature”...“direct nature experience and opportunity to practice the key supportive rituals and exercises within group and solo settings in the nature.”; <b>Case 7:</b> “The quest created a setting for the participants to establish a deeper sense of interconnectedness with nature and a deeper connection to the natural world.”</p>
<p><b>Section 2.5:</b> ...”very detailed technical knowledge <i>per se</i> does not foster or increase pro-environmental behavior although other incentives (economic advantages, taxes etc) and cultural values can motivate people to act pro-environmentally without doing it out of environmental concern. The downside is that such unconscious pro-environmental behavior is fickle and can easily be reversed or changed to a more unsustainable pattern because it is not based on any fundamental values...”</p>	<p><b>Case 1:</b> “The results of the direct longitudinal study also supported the snap-shot findings and showed that the increase in all three variables (connectedness to nature, environmental awareness and environmentally friendly behavior) over time is more pronounced, showing statistically significant results.”...”71% saw increases in environmentally friendly behavior over the 8-9 months that they were volunteering”...”even when volunteers had no previous connection with the environment, their engagement was often sustained.”; <b>Case 4:</b> “profound and lasting changes can occur particularly for those who are genuinely open and receptive to their experience as it unfolds”. <b>Case 5:</b> “38% of the changes "held true" after five</p>

	years”
<p><b>Section 2.2</b> on oneness/we-ness/unity: “Solidarity based on a sense of oneness with other-than-humans and with nature is a basic condition for creating a world that is peaceful and sustainable.” By seeing ourselves as part of nature, and by indentifying more closely with it, to the extent the other (nature) becomes part of our self, a self-realization emerges upon which we can develop obligations to non-human nature. Put simply: “by developing ecological consciousness by changing the way we perceive and think about nature we can overcome the ecological crisis.”; <b>Section 2.7:</b> “Ecological behavior is impacted by the degree of “we-ness” (oneness) that exists between a person and the object of concern.”</p>	<p><b>Case 3:</b> “the vision quest offers the opportunity to tap into an archetypal form of consciousness that fosters individuation and activates the subjective experience of unity with the transcendental realm that nourishes the self.”; <b>Case 4:</b> Through this loosening of the psyche, all interviewees spoke in varying degrees of feeling at home and experiencing a oneness with nature which subsequently helped to facilitate a heightened observing awareness of both their own inner processes and, externally, of the world around them.</p>

## **5 Discussion**

This section is dedicated to summarizing the answers to the original research questions developed by this thesis author through the literature research and case studies. The questions aimed to examine key environmental worldviews and the linkages among them to help us understand the human-nature relationship; as well as ascertain any effects that humans' contact with nature might have on their pro-environmental behavior.

Proponents of sustainable development have traditionally been advocating changes based on improved environmental management and eco-efficiency, making the technological fix the default option. However, the new century demands a new direction, and the technological approach has proven difficult to implement effectively on a global scale, as it does not delve into the root causes – the values and ethics underlying the decisions that are made – of the environmental (and social) crisis that faces humanity. A technological approach also fails to engage the human spirit, as it is essentially amoral in character. The limited success of such an approach calls into question what should be obvious – we each need to change ourselves to be able to make fundamental and lasting changes to the world that we have created.

Humans tend to muddle along, making decisions in a form of disjointed incrementalism, while all around us the problems increase in magnitude. The currently predominant shallow ecology framework does not provide either a sound basis for a deep sense of personal meaning or a path forward toward sustainability. Such efforts need not be abandoned, but they do need to be brought into a wider personal and philosophical framework to become more effective.

As the Interfaith Declaration on Climate Change (2009) recognizes, “the climate change is not merely an economic or technical problem, but rather at its core is a moral, spiritual and cultural one.” Solutions, therefore, need to be sought also outside the current dominant paradigm with a prerequisite transformation of values and priorities on personal and collective level to create change.

Examining systemic failures and global inequities is not sufficient. Psychological, philosophical and spiritual roots need to be explored as well, so as to get beyond our societal denial and force an evaluation as to why such problems persist. In other words, without addressing the cultural cause of the present crises facing society - the values inherent to the dominant paradigm itself - the crises cannot be adequately resolved, and sustainability will not be reached.

The transformation of society, based on a different worldview, is advocated by many theorists to address systemic issues, but we cannot escape the fact that we each need to personally change for any such a transformation to occur and for this it is direct experience that counts.

Reconnecting with nature is nothing new; it is about re-discovering our roots. Being connected to nature – to feel part of it, live in harmony with it and to treat it with reverence – is ancient and something that indigenous people – current and historical – do not question. Yet, given the paradigm of the western industrialized nations based on consumerism and the striving for more of everything, finding solutions near-by – in our own hearts and souls -

constitutes a revolutionary paradigm in today's consumer society. It represents a different dimension.

Though most of us value nature, few of us actually enjoy a deep connection with it. We live separate from nature, we seldom learn that it is the personal and collective relationship of our mind with nature that determines our sanity, our future and the future of the earth. The natural environment helps us recognize our oneness with the life process and takes us beyond our limited and linear view of life.

Eco-psychologists argue that modern Western culture undermines our sense of belonging and a sense of being in community with nature, and that modern life has led to a greatly decreased self-nature overlap. This fundamental change in our relationship to nature explains, at least in part, our slow response to the modern environmental crisis.

Despite a remarkable global public consensus regarding the value of environmental protection, the current human-nature relationship is clearly unsustainable. Global environmental values exist and are heading in the right direction but remain low priorities relative to other values, such as economic growth.

Will humanity wait for a natural or man-made catastrophe that kills millions to come up with the will to change? It may then be too late. We must, and still can, head toward a timely shift in values, vision and behaviors.

What we need to acquire is a new set of values, beliefs and meanings, a fundamentally new narrative of what it means to be a civilized human, a narrative that promotes growing as people rather than the current dominant one that is obsessed with acquisition, self-enhancement, and profit.

A convergence is emerging between systems thinking, various environmental worldviews, modern science and cutting edge management philosophies stating that we need to dig deeper into our souls to find balanced and timely solutions for our environmental challenges.

Our biophilic tendencies draw us to natural diversity and are important for optimal emotional and psychological development. In other words, embracing our connection to nature makes our lives richer and more meaningful. As individuals become more related to nature, they may feel more positive emotions that correlate with more pro-environmental behaviors. If people feel good about their natural environment, value and care about it, they are more likely to behave in ways that respect and protect it.

In the spirit of interweaving pragmatism and spirituality, the current pioneers that have introduced Vision Quest to the Western world echo the message from contemporary spiritual teachers and mystics of all major religions by stating that it is not just our inner afflictions that arise from soul loss, the crises of outer world can be traced there as well. When we become alienated from soul – or inner nature – we lose respect for outer nature, resulting in degradation of the environment.

The process of journeying towards our authentic selves offers a compelling alternative to more effectively tackle the current and yet-to-emerge ecological and social challenges of the 21st century. It is only in enacting change at the level of the individual that true and lasting positive change can be achieved at a wider societal level. This thesis shows that the formalized container provided by nature/vision quest experiences is one effective means of

transforming and empowering individuals. They can catalyze foundational shifts in the worldview of individuals and lead them to live their lives closer and truer to their own set of values rather than those espoused by the prevailing industrialized status quo, which are ultimately damaging to both people and the planet. The implications for wider society are therefore compelling.

It is crucial not to underestimate the importance of a shift toward intrinsic values as a way of helping humans avert ecological catastrophe. For just as scientific research has documented that materialistic, self-enhancing values contribute to climate change, the pursuit of intrinsic values has been empirically associated with more sustainable and climate-friendly ecological activities. Both the literary review and the case studies of this thesis indicate that self-transcendence is positively correlated with self-reported environmental behavior.

One conclusion that can be drawn from this thesis research is that, while we need to generate a higher level of ecoliteracy - understanding the principles of organization that sustain the web of relationships called 'life' - it cannot compensate for direct nature experiences to generate affective feelings toward nature, which are known to have positive relationships with pro-environmental behavior. Concepts alone will not do the job. One is even tempted to argue that reconnecting with nature ought to be the priority, which, once established, would then motivate the search for knowledge and practical tools to facilitate the adoption of more sustainable behaviors.

It is hoped that the results and deliberations presented in this thesis add substance, persuasiveness, and clarity to the argument made by others that many of our modern values and aspects of our life-styles are out of sync with those principles that sustain life on earth. The problem remains: as long as we do not fully comprehend where we are headed with the current paradigm, we might just get there.

There is a gap between many people's feelings and attitudes about environmental problems and their own actions. A way to shrink this gap and to transform concern for the environment into environmentally responsible behavior needs to be found. As this thesis has hopefully shown, increasing nature-relatedness may be one effective way to accomplish this.

Ultimately, however, reconnecting with nature is a non-sense phrase, for people and nature are not different things, and cannot be taken apart. The problem is that we haven't yet figured that out. Or as one Sierra Club flyer states: "This is not about getting back to nature. It is about understanding we've never left."

## 6 Conclusion

There is growing concern that disconnection from the natural world may be contributing to our planet's destruction. The condition that most of the environmental worldviews discussed in this thesis see as lying at the very foundation of the ecological crisis is the prospect that most of the world's population will not know nature in any direct way.

'Shallow ecology' solutions, as useful and necessary as some of them may be in the medium-long term, will not alone be able to provide the answer in time to deal with an immediate threat of environmental collapse. We have come to the end of the road in the human evolution where it seems that nothing less than an evolutionary leap is required of us, individually and collectively, that belongs to the realm of 'deep ecology'.

The current key institutions – government, established religions, universities and businesses – are holding on tightly to the current 'growth is good' paradigm, which has led to over-exploitation of the environment and made maximum materialism the ultimate goal to strive for. The task to remove this bulwark against the emergence of new paradigm has proven a tough task and, while progress in values have been and is taking place, overcoming the individual and collective trade-offs regarding our environmental behavior seem insurmountable.

Dynamically complex problems – of which environmental challenges are a prime example - can only be understood systemically, taking into account of the interrelationship among the pieces and the functioning of the system as a whole. None of these problems could be solved alone through ordinary, established processes.

The key insight coming from the new paradigm is not technological. It is the confirmation of something people have always felt but could not give a rational explanation for: our close connection to each other, the nature and the cosmos. Traditional people have known it and have lived it, but modern civilization has first neglected and then denied it. Yet genuine spiritual experience offers direct evidence of our links to each other and to all creation, and now even science confirms the validity of such intuitions, which are being applied successfully by new emerging management and leadership practitioners.

Tapping into the human desire to *directly* explore and to learn, may be more effective in inspiring concern for nature than dictating behavior or passing knowledge. This may explain why people are often unmotivated to comply with governmental initiatives, but may be more responsive when their own personal relationship with nature is involved.

Systems thinking and deep ecology proponents suggest we take the foot off the gas pedal – reduce consumption and the burden on the environment. As long as this feels like a sacrifice for us, we may not want or be able to generate the cultural change we need. On the other hand, understanding and knowing at a deeper level that we are in this together – that harming others equals harming oneself, the necessary transformation is not only possible, but it can also be fast, as not only 'negative' developments can be non-linear. History has shown 'positive' developments also can take sudden leaps to a whole new level. When embarking on them with the right attitude and intention, direct nature experience in general, and Vision Quest in particular, have been shown to be an efficient facilitating "tools" in the necessary transformation to more pro-environmental behavior.

Ultimately, all behavioral motives can be traced back to either love or fear. In case we see us on a fundamental level as one not only with other humans but also with more-than-humans and nature (the concept of ‘oneness’), we will act out of love and protect it (‘do unto others that you want to be done unto you’). Else, out of fear and in a state of anxiety, we resist against non-conforming information and our actions are likely to revert to what is habitual, reinforcing the current dominant paradigm of exploitation of the environment – and ourselves.

The oldest Chinese symbol for “mind” is a picture of the heart. Maybe it is time we become more human, not just more clever, and start striving for a creative human community grounded in a genuine sense of connectedness and possibility, rather than one based on fear and dogma. The stakes are high and the time is short. We have to explore new ways and we have to start now.

## 6.1 Recommendations

*“Don’t wait to touch bottom before you start swimming”*

– Luis Gamez, advisor to Costa Rica’s minister of Environment and Energy

The research for this thesis revealed several interesting – and arguably necessary – measures to be taken and topics for further research to be conducted to facilitate a change for a more sustainable paradigm. However, in order not to dilute the intent and divert focus from something that is readily implementable within the context of the IIIIEE, this thesis author focuses on one single recommendation with an expected favorable input/output ratio.

The annual popular two-day “Kullen exercise” for the Institute’s Master’s students during the early days of the on-campus component of the Environmental Management & Policy program is a cherished tradition that combines the building of team spirit with some educational input in the beautiful natural setting in Western Skåne of Sweden. In line with earlier studies and the findings from this thesis, it is suggested by this thesis author that the Kullen experience is appropriate and ripe to be leveraged by extending the excursion by one or two days by introducing a mini Nature/Vision Quest component to it. There are ‘off-the-shelf’ expert resources available in Sweden to help the Institute tweak the Kullen experience accordingly.

As the IIIIEE’s current paradigm is heavily geared toward the understanding and dealing with eco-efficiency issues and challenges related environmental policies, the Kullen experience could help provide students/faculty and the staff a useful and important philosophical framework and a ‘deeper’ ecological perspective so as to bring, in a complementary manner, the Institute’s educational program into a wider personal and philosophical framework to help all to become more ecologically and ethically effective.

Once established, the revised Kullen experience could provide further and continuous useful learning opportunities for the students and educators for pre and post experience research, and would provide excellent chances for relevant longitudinal inter and intra class follow-up on the impacts of the VQ experience without jeopardizing the popular and valuable current components of the Kullen experience.

Also, once properly up and running, the new concept could be offered to other faculties, initially at Lund University, but, later on, also to other learning institutions in Sweden and

beyond, which would contribute not only toward creating a new, exciting and relevant profile for the Institute, but, also, toward actualizing the ‘caring revolution’, globally.

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## **Abbreviations**

AAT	Advanced Awareness Training in Nature
CNS	Connection to Nature Scale
COP 15	UNFCCC 15 <sup>th</sup> Conferences of the Parties, Copenhagen, Dec 2009
EMP	Environmental Management & Policy
EW	Environmental Wisdom
IIIIEE	International Institute for Industrial Environmental Economics
IPCC	International Panel on Climate Change
NGO	Non-governmental Organization
UNFCCC	UN Framework Convention on Climate Change
VQ	Vision Quest
WDR	World Disaster Report
WMO	World Meteorological Organization

