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**PLANNING BETWEEN CULTURAL PARADIGMS:
Traditional Knowledge and the Transition to Ecological Sustainability**

By

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ABSTRACT

Our world is experiencing a crisis of unsustainability with ecological, socioeconomic, and existential dimensions. Thus, planning for the transition to sustainability is a challenge requiring transformation of the dominant cultural paradigm. I address this problem of planning between cultural paradigms by examining the discourse between First Nations Traditional Ecological Knowledge (TEK) and Western Science, and identify lessons that contribute to a sounder epistemological basis for planning theory and practice.

To link planning theory, sustainability and TEK, I combined literature reviews, interviews and lessons from my experience with First Nations. I derived a cross-cultural analytical framework based on epistemology, cosmology and ontology (ECO), and applied it to planning theory, case studies of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound and my own professional work. Planning for sustainability must address multiple dimensions. My approach includes biophysical, social and cultural capital, postulating that greater social and cultural capital could decrease consumption of biophysical capital. In this framework "ECO" addresses cultural capital.

My analysis of TEK reveals more than just "knowledge," rather a way of life which generates knowledge. I coined the term TEK-Systems (TEKS) to refer to the social and cultural capital, and methodological features of these knowledge-generating systems. Applying ECO reveals philosophical elements of TEK that are neglected in the literature. TEKS combine empirical knowledge with other ways of knowing offering alternative models of reality to the cultural mainstream.

The Scientific Panel recognized all significant features of TEKS and ECO in my framework, and employed Nuu-Chah-Nulth TEK protocol in their planning model. Various forms of knowledge from wholly different philosophical origins informed complex planning and decision-making process with consensus outcomes. Similarly, the most significant lessons from my professional application was that respect, cultural training, and community involvement are key professional tools.

Planning between cultural paradigms requires recognizing different knowledge systems; including different ways of knowing strengthens planning for sustainability. This approach establishes new terrain for planning theory. It requires inclusive planning and decision-making processes which foster caring, respect and commitment. Enhancing social and cultural capital provides community and spiritual resources for sustainability. Planners need specialized training to work in these areas.

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This dissertation is dedicated to the Great Mother, our Ancestors and

All My Relations.

Hishuk ish ts'awalk – Everything is One
Nuu-Chah-Nulth traditional ecological concept

Adopted by the Clayoquot Scientific Panel to describe the ecosystem management approach they recommend.

“Some type of holistic or participating consciousness and corresponding sociopolitical formation have to emerge if we are to survive as a species.”

Morris Berman, Historian,
From, The Reenchantment of the World

“Success in this endeavour will obviously require a rewrite of the prevailing environmental myth and humankind’s role in the scheme of things. People must acquire in their bones a sense that a violation of the biosphere is a violation of self.”

Dr. William Rees, Ecologist-Planner
School of Community and Regional Planning, UBC.

CHAPTER 1

INTRODUCTION

1.0 Problem Statement, Research Methods, Topic Background

This chapter introduces the topic. It presents a problem statement, methods, conceptual background, analytical framework and initial definitions of terms.

1.1 Crisis and Transformation: The Transition to Ecological Sustainability

The potential for ecological crisis, it seems, has become an inevitable condition of modernity. There has been a gamut of responses to this from denial to doomsday. One response is the popular concept of ecological sustainability. Sustainability, in turn, has also elicited a range of responses since its introduction to the mainstream debate as “sustainable development”. I am interested in the transition to ecological sustainability and in contributing to an holistic understanding of the concept. This dissertation examines the interface of First Nations Traditional Ecological Knowledge (TEK) and Western science in terms of its relevance for planning the transition to sustainability. As an example of “planning between cultural paradigms”, it asks what can be learned from this incipient discourse which can be useful for planning a transition within the cultural mainstream. The thesis contributes to appropriate planning theory and practice which can help make this transition towards an holistic, ecologically-based model of socioeconomic development.

People are increasingly aware that the current ecological crisis is not merely technical in origin. The issue is fundamentally one of perspective; arises from how we understand and experience our relationship with nature. The modern industrial worldview regards humanity as separate from non-human Nature. Human fulfillment is posited primarily in the material realm where the ecosystems which contain and sustain human life are considered to be an object of the human economy; they are an externality – the environment. The basic development scheme which arises from this belief is one which seeks to satisfy increasing human wants and needs through the “rational” exploitation of nature. Some have referred to this seemingly universal view of social progress based on expanding economic growth, increased urbanization and large-scale, capital intensive industry as “industrial progressivism”¹ or “technological expansionism”². This is the dominant paradigm of socioeconomic development for the cultural mainstream of Western modernity.

These cultural perceptions form the foundations of our current social institutions, political machinery and economic practices and are having an increasingly destabilizing impact on local and global ecosystems. At the centre of this worldview is the notion of the fundamental separation of mind and body, a “cognitive-dissonance” of thought and feeling, nature and cul-

ture, spirit and matter, the individual and the World.³ This dualism informs many collectively held beliefs about the Universe, society and ourselves, and constitutes an “a-priori” declaration on the nature of “reality” and how we “gain access” to it. A cognitive hierarchy characterizes the dualistic worldview. The reasoning faculties and rational thought are regarded as being more credible or “valid” than feelings and other “body-based” ways of knowing; “reason” is regarded as more valid than intuition, thought is more reliable than feeling. These binaries are founded upon the older theological separation which posits spirit “above” matter.⁴

This prevailing epistemological normativism carries with it a prescription for values which is evident, not only in human interactions, but also in our relations with non-human nature.⁵ For example, humanity is more highly valued than are other forms of life. Even though the primary ecological producers such as green plants are fundamental to the functioning of the life systems which sustain humans and other life forms, our basic development model has been to plan for maximizing short-term human economic gain over long-term systems stability. The living planet, its processes and components, are thus generally cast in mechanistic terms, and assumed to be characterized by smooth change over time, reversibility and predictability. This view not only ignores the intricacies and complexities of the ecological (and social) systems in which humans are embedded, but also assumes that we can control, manipulate and consume their products with impunity.

“It is this collective perception of reality which is the real problem.”⁶ We simply cannot expect to live in a healthy manner, physically or spiritually, while pursuing a course which regards “nature” as “external” to our model and as a backdrop to human affairs. A fundamental change in society’s cultural perceptions is required in order to face the biophysical and social realities of a contemporary ecological crisis. In coming to realize the perceptual origins of the ecological crisis, we are also learning more about the consequences of this perspective and its practices, both for ourselves and for the planet as a whole. One telling example of this impact is demonstrated in the loss of biodiversity. As a result of human intervention in the ecosphere, we are now witnessing, according to E.O. Wilson, the greatest rate of extinction of species in the last 60 million years.⁷ One can regard this as symptomatic of the unsustainable disposition of the current industrial cultural paradigm and one item in a growing litany of ecological concerns.⁸

Empirical indicators which seek to measure human impact on the ecosphere have been developed. One such concept is the *Ecological Footprint*. It models the human appropriation of carrying capacity in terms of the amount of ecologically productive land required by a given individual or aggregate of human population.⁹ Such analysis has revealed that cities in the northern hemisphere, and newly industrialized nations, typically appropriate the biophysical services of a land and water base some two to three orders of magnitude larger than their geopolitical boundaries. In other words, all ecologically productive “open space” on the planet is already fully employed in producing biophysical goods and services for humans. According to

Dr. William Rees who developed the ecological footprint, “[i]f the population were to stabilize at between 10 and 11 billion sometime in the next century, five additional Earth’s would be needed, all else being equal—and this is just to maintain the present rate of ecological decline.”¹⁰ Eco-footprint analysis thus indicates that the wealthiest quarter of the world’s population has already appropriated the entire long term carrying capacity of the Earth.¹¹ Some have tried to dispute the validity of such claims, yet the growing consensus within the international scientific community is to endorse that we are reaching the “limits to growth”.¹²

The globalization of the industrial economy is intensifying these trends and precipitating cultural and sociopolitical upheaval around the world.¹³ Erosion of the natural habitat has thus been attended by a dismantling of social landscapes, including economic and political stress at local and international levels, and a disintegration of traditional social institutions.¹⁴ Some of the world’s greatest challenges are of a demographic nature as rising populations strain the carrying capacities of both ecological and social systems. The political component of these issues is also daunting. Institutional and political barriers to social equity and the redistribution of wealth are driving a wedge between rich and poor both globally and domestically, while social welfare in the industrialized states is being dismantled piecemeal through an ongoing political and economic war of attrition.¹⁵ Economic expediency has become increasingly the basis for political decision making.¹⁶

There are other indicators of social dysfunction of a more psychological character. In the industrialized nations of the northern hemisphere, where one quarter of the world’s population consumes eighty per cent of global resources, we are experiencing social crises of a more existential nature. How is it, for example, that even in the materially wealthiest countries in the world, addictions are rampant, ethnic conflict is on the rise, and teenage suicide levels are so dramatic while sexual assault and violence against women is endemic?¹⁷ These symptoms of social stress betray a crisis of a deeper, more existential nature: a *crisis in meaning*. This is arguably why we have seen a resurgence in recent years of an interest in spirituality, ancient myths, cosmology and traditions from outside the cultural mainstream while ties to traditional Western religious institutions have declined steadily.¹⁸ Many of these so-called “New Age”, and other spiritual groups, are influenced by old spiritual and philosophical traditions from various cultures. A prevailing theme is the interest in Earth-based spirituality.

We have made great scientific advancement, amassed tremendous material wealth and technical expertise, yet we are challenged to develop the political will and infrastructural know-how to deliver equitably the benefits of these achievements. Moreover, we have impoverished ourselves spiritually. It seems the more entangled we become in the tar baby of our ecological and social undoing, the clearer it is that we may lack tools to find a way out. That is not to belittle the contributions of science, or dismiss the achievements of modern society. At the same time, it may be that we are perceiving the limits to disembodied reason as the sole effective means for grappling with “reality”. The looming crises affecting ecological systems, social

structures and the structures of meaning are intimately connected. Any viable model for sustainability and planning must address these three levels of challenge, and seek to integrate them in theory and practice.

What we perceive as the “ecological crisis” is bound intimately with the other major crises of modernity, including political and economic upheaval, and social-psychological dysfunction. These three levels of crisis—ecological, socio-economic, and the crisis in meaning—can be seen as different manifestations of one larger cultural experience. They are expressions of a way of thinking, of “doing” and “being”, that may be rendering itself obsolete—unsustainable. In the earlier stages of industrial development, such considerations may have not been evident. However, the sheer scale of industrial culture, and the pace of its growth, makes such an assessment tenable. We are at a critical juncture in history, not just for humanity but for the planet as a whole. Material economic growth cannot continue without threatening the health of the ecosphere.¹⁹ In light of this, the transition to ecological sustainability has become one of the most pressing issues of our time.

Even though public opinion in Canada and around the world has placed environmental issues increasingly at the forefront,²⁰ there is currently no consensus on the meaning of “sustainability”. Individuals and organizations from alternative to mainstream orientations, in both the public and private sectors, have adopted the term “sustainable development”. There seems to be a conceptual war of position to define the term. I will adopt the following definition offered by ecologist-planner William Rees (1989). Sustainable development is:

positive socioeconomic change that does not undermine the ecological and social systems upon which communities and society are dependent. Its successful implementation requires integrated policy, planning, and social learning processes; its political viability depends on the full support of the people it affects through their governments, their social institutions, and their private activities.

The transition to ecological sustainability, thus, rests on processes of social learning which can translate its knowledge, philosophy and practice into political-economic structures, and popular culture. In order for it to become a political and economic reality, sustainability will have to be understood and desired by those whose lives it will affect; it must have meaning. Rather than regarding sustainability merely as a choice amongst various trade-offs and policy options, we must come to perceive it as the **ground** in which decision making takes place.

According to Rees, “[s]uccess in this endeavour will obviously require a re-write of the prevailing environmental myth and humankind’s role in the scheme of things.”²¹ This process of mythic reconstruction is a necessary foundation for the transition to an ecologically sustainable culture. Through it we can give meaning to the concept of sustainability and seek successfully in its implementation. This requires finding connections between the biophysical and the spiritual, between ecology, economics and education, between nature, culture and the manner in which culture is transmitted. Our scientific research and public policies will need to be in-

formed by a larger, more holistic understanding of biological and social life. This would help to inspire the development of alternative technologies, including ones of social learning, personal, collective and ecological well being in order to address the psychic cleavages of the modern industrial paradigm and the patterns of behaviour they engender. This means, not that we rescind, but that we explore beyond the traditional rational empiricism of Western philosophy.

The transition to ecological sustainability therefore requires a profound conceptual and experiential shift in our discourse with nature—a transformation of the dominant cultural paradigm. Planning for this is a challenge, given that it is the same cultural worldview in which modern planning finds its philosophical origins. If it is to be viable, our model of sustainability must be holistic and address the integration of ecosystems, social systems and the non-material structures for the cultural production of meaning both in theory and practice. New conceptual and methodological tools are required in order to make this transition. While many agree on the paramount nature of the task, relatively few academics or professionals have broached the issue, fewer still from a planning perspective. This challenge is the focus of my endeavour.

The issues are profound yet broad; a research focus is required. Given that the transition to ecological sustainability will require a transformation of the dominant cultural paradigm, planning for this transition is a challenge. Perhaps it would be fruitful to examine a current dialogue of relevance to sustainability between two different worldviews as an example of “planning between cultural paradigms”. Do we have any examples of dialogue between two different epistemological models or cultural paradigms which can help transform mainstream planning theory, in particular, on the problem of sustainability? I believe that we do.

The example I provide is of a dialogue currently developing between First Nations Traditional Ecological Knowledge (TEK) specialists and Western natural and social scientists. The people of these communities represent two distinct epistemological paradigms, each with its own perspective on the nature of the “problem”. One is governed by strict rules of cultural protocol in oral traditions at local levels; the other is governed by the scientific rigour of an academic community in a literary tradition. The dialogue between these two knowledgeable cultures can be seen as part of a larger discourse between Western modernity and Indigenous peoples. Important things can be learned through this dialogue that will be helpful for planning the transition to a more ecologically sustainable culture in Western society.²²

1.2 Research Methods

Below is a research question I have crafted in response to the above problem statement. I provide a method for answering the question that addresses the problem in terms of theory and empirical research. This is followed by a broader discussion of methodology and epistemology relevant to the philosophical terrain of my thesis. I then pose an analytical framework which provides the conceptual foundation and starting point of analysis.

1.2.1 Posing the Question, Providing a Method

I pose the following research question:

What can we learn from the growing discourse between First Nations Traditional Ecological Knowledge and Western science which can contribute towards a sounder epistemological basis for planning theory and practice in the transition to ecological sustainability?

There are two foci of planning between cultural paradigms here. The first is the one between First Nations and Western culture, for which First Nations TEK systems (TEKS) and Western Science are icons. The second attempts to draw inference from what is learned at this first level of planning between cultural paradigms that is helpful for the problem of planning the transition to sustainability within Western society. In other words, what can we learn from this example of planning between cultural paradigms that can help us understanding planning's role in facilitating a transition within the cultural mainstream?

Implied in this question is an ancillary one which asks: what we can learn from studying this growing discourse of TEKS and Western science which can help foster planning between these two cultural paradigms? I must broach this question in order to answer the primary one. Before studying planning between cultural paradigms, however, I need some understanding of planning's cultural tradition, which is my own. A question here is: what do we need to know about the philosophical basis of planning to understand its cultural paradigm in order to re-think it along more sustainable lines? My method for answering these questions is presented in detail below, including the theory, empirical research details, and broader methodological considerations.

The method contains three main components. The first deals with theory. The second presents current empirical research materials, including a case study and a case application of my own work in the field. Some initial conclusions are posed following the summary conclusions of the case study. The last component of the thesis obtains final conclusions.

To answer the research question, I need to link theory from three substantive areas including planning theory, sustainability and the literature on TEK. A primary focus for tying these together is epistemological. The first task for answering the question is to present the broad spectrum of planning theory and its current epistemological challenges. After reviewing definitions of planning, I will reconsider the philosophical and historical origins of planning in modernity. From this point of departure, I can develop a broad epistemological analysis of the terrain of planning theory. I will be using three philosophical categories in order to do this: epistemology, cosmology and ontology (ECO). Based on this analysis, I can compose a broader analytical framework to problematize the concept of planning as "knowledge into action," and place planning theory within the context of the transition to ecological sustainability.

The next task of theory is to enter the debate on sustainable development in order to advance the concept. I need to review current literature on sustainability relevant to my problem

statement. I can then draw from the literature and build on the material of the previous chapter to construct an analytical framework for my holistic model of sustainability. The model encompasses biophysical capital, social capital, and cultural capital. In particular, I need to examine the concept of cultural capital to tie the epistemological material from planning theory into the discussion on sustainability.

The above material provides an analytical framework for examining the literature on TEK, which is a new concept for planning theory. It is necessary to develop the concept of TEK as a 'knowledge system'. This will allow me to elaborate a comparative analysis of traditional Western science and TEK-Systems (TEKS) in order to advance my perspective of the two as parallel and potentially complementary knowledge systems. I will need theoretical support in this effort and have identified relevant theoretical contributions from a particular scholar in cultural anthropology who is able to strengthen my analysis. Drawing on the work of S. J. Tambiah,²³ I can develop a metaepistemological setting to help concretize the discourse between these two knowledge cultures; one is based on a "causal" ordering of reality, and the other is of a more "participatory" nature. In this context, it will be possible to consider the potential for the translation of knowledge between these parallel and complementary epistemological paradigms. That is how I complete the conceptual framework for the case study.

Before moving to empirical research I want to consider barriers to the research and application of TEK, an element of which is critical analysis of a current professional debate on traditional knowledge. This gives an opportunity to problematize key barriers to the research and application of TEK and examine methodological implications for research. Then I can shift to my empirical research, specifically, a case study followed by a professional case application.

My analysis of TEK is supplemented by professional and personal experience gained from working and living in First Nations communities for ten years. I have maintained ongoing relationships with elders and other traditional knowledge specialists as well as educators, counsellors and community workers. My experience has involved extended periods of wilderness and community immersion, personal training and participation in cultural events.²⁴ It has provided the basis for experiential learning and skills in an area I call *cultural literacy*.

These skills – critical for my areas of academic interest and professional application – are not readily accessible to most researchers or academics. Such knowledge, learning and practice, is acquired almost entirely through experience and prolonged community immersion, and requires mentorship in the protocols of oral methods and traditional knowledge. Though it has important implications and applications for research, this type of *cultural learning* is of a largely personal nature. It is similar in character, but qualitatively different, from social learning. Social learning is generally understood to take place within culturally bounded terms of reference. Here, cultural learning requires one to think and act outside of one's own cultural context of origin.

I draw from this oral and experiential background both substantively and anecdotally. This serves two functions. One helps to achieve methodological consistency with the traditional knowledge systems that inform theoretical and empirical aspects of my dissertation. The other personalizes my conceptual material and makes it more accessible to the reader. Stories can often convey or illustrate conceptually difficult and unfamiliar ideas in a manner far less pedantic and convoluted than the analytical academic approach. If story is part of the method, humour, feelings and wonder are part of the story. Appropriate documentation is provided, where needed, for such oral and experiential data.

I have interviewed several experts in order to supplement my analysis of the TEK literature, including: i.) Dr. Jan Van Eijk, a linguistics professor of First Nations languages (Ph.D. – linguistics) from the Saskatchewan Federated Indian College, who is experienced in working with community-based language initiatives involving TEK specialists; ii.) Sequoya Trueblood, a spiritual elder with extensive Canadian-U.S. experience in working at the community level, with government, the private sector and non-governmental organizations; iii.) Thom Henley, an internationally renowned individual who holds several environmental awards for his work with Indigenous peoples around the world; iv.) Gordon Prest, a First Nations forestry professional who was the Coordinator for First Nations Forestry at the University of British Columbia; and, v.) Terry Alec, my adopted 'Nlaka'pamux brother who has worked extensively with elders and traditional knowledge specialists of his nation.

Interviews were of a generally open-ended and *discursive* format. A set of questions was prepared, yet was crafted to serve more as a guide than as a rigidly administered device. Questions were intended to stimulate discussion. One question may have stimulated answers of ten to thirty minutes length. Specific questions were also tailored for individual specialists. Each interview had its own character and was allowed to unfold spontaneously. Interviews were taped and transcribed by myself. I took great care to capture dialogue word for word. Interviewees were given the opportunity to make any changes to interview materials which appeared in text form in the thesis. All interviews followed this format which was most suited to the qualitative nature of the research as well as the cross-cultural nature of most interviews.

I have decided to include two cases of empirical research. One is the case study of an initiative with which I had no involvement, that of the *Scientific Panel for Sustainable Forest Practices in Clayoquot Sound*. The other case is an application of my own professional work in the field, and is contained in the document, *A Spirit of Understanding: Community Based Program and Curriculum Guidelines for the First Nations Integrated Resource Management Program*.

The case study is an example of the discourse between scientists and TEK specialists which occurred on the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound. The Scientific Panel was comprised of nineteen distinguished members: fifteen scientists appointed by British Columbia Government, and three Nuu-Chah-Nulth elders and a hereditary chief appointed by the Nuu-Chah-Nulth Tribal Council. All Panel members were recognized as experts

in their field. The Panel was convened by the Government of British Columbia to review forest practice standards in effect in Clayoquot Sound as of September 30, 1994. The goal was to develop world-class standards for sustainable forest management combining traditional and scientific knowledge. The focus of the case study is the Scientific Panel's third report entitled, *First Nations' Perspectives Relating to Forest Practices Standards in Clayoquot Sound* (1995).

I will apply the ECO-framework and criteria for TEKS developed in previous chapters to analyze the discourse between the Panel's TEK specialists and scientists, the planning process they adopted, and its outcomes. The purpose is to assess the extent of the recognition of social and cultural capital, and TEKS methodological features by the Panel, and the role each of the factors played in shaping the Panel's outcome. I ask to what extent the Panel recognized features of social and cultural capital, and methods, and how these informed their planning model and process. What role did these TEKS features play in shaping the planning model and in determining the Panel's outcome? I am similarly interested in what can be learned from the Panel about TEK and its interface with Western science, and what kind of learning took place on the Panel. Were there difficulties or tensions? How did Panel members overcome cultural and epistemological barriers? How did this process inform the recommendations they made for implementation? Finally, I consider what I learned from the case study to inform the concept of planning between cultural paradigms. Summary conclusions of the case study, thus form the basis for initial conclusions to the research question. I also assess my analytical criteria.

I have included other sources of primary and secondary research in addition to the Third Report of the Scientific Panel Clayoquot for Sustainable Forest Practices in Clayoquot Sound. Secondary sources include other materials, published and unpublished by the Scientific Panel, as well as government documents and press releases. I also conducted interviews with three Panel members, including: Co-Chair, Richard Atleo (Ph.D. Educational Studies), Nuu-Chah-Nulth hereditary Chief and Instructor at Malaspina University College; Nancy Turner (Ph.D. Botany) an ethnobotanist with extensive experience and training in working with First Nations elders and TEK specialists, and Professor of Environmental Studies at the University of Victoria; and Ken Lertzman (Ph.D. Ecology), Associate Professor at the School of Resource and Environmental Management, Simon Fraser University, a forest systems ecologist specializing in ecosystem-based management.

Interviews for the case study followed an open-ended format similar to those conducted with the specialists discussed above. The interviews are important for the case study. There is crucial information about the experience of the Panel and the exchange amongst its members which is not available in published reports. The interviews with Panel members also yielded information which was useful for my chapter on TEK. The members selected for interviews represent individuals I consider to be particularly important Panel members. They represent a spectrum of membership on the Panel from Dr. Lertzman who operates more fully within a science-based approach, to Dr. Turner who, while a scientist, has had her worldview affected both

personally and professionally through years of involvement with TEK specialists, to Dr. Atleo, who, while holding a Ph.D., is a Nuu-Chah-Nulth hereditary chief.

Interviews lasted approximately two to three hours and were followed up with phone calls. Interviewees were given the opportunity to remove, add and change information attributed to them. Examples of question include: what is your background?; what was your general experience of the Panel?; what most impressed you about the Scientific Panel?; what were some of the greatest challenges for the Panel?; what was the role of the Nuu-Chah-Nulth inclusive process?

It would have been worthwhile to have interviewed other Panel members. Most Panel members live outside of the Vancouver, some in remote places (e.g. Clayoquot Sound which requires two boat journies as well as extensive vehicle travel) and I had not the financial resources to cover the costs (my research is self-funded). I had especially wanted to interview Dr. Fred Bunnell who was the other Co-Chair and tried to contact him. He was away for the year and unavailable. Even still, my selection of the three members I did interview gave a good overview of the Panel. The small size of the sample should not drastically affect the validity of the interview results which are intended to supplement analysis of written materials.

Interviews were exciting to conduct and very informative. Having spent so much time with written materials, it was interesting to listen to Panel members speak about their experience. It was particularly interesting to learn about aspects of the Panel which were not evident, or less evident in the report, and to hear the perspectives of different individuals on the same experience. It was also somewhat intimidating at times, as the Panel members interviewed are all prominent individuals.

Another source of information for the case study is the recent Supreme Court of Canada decision on the Delgamukw case (December, 1997) which ruled that First Nations oral history is admissible as evidence and can be given full weight and used as a basis for land claims. The ruling also began to define Aboriginal Title. It came down as I was completing the section of the case study entitled, "Recognizing Oral Methods". I analysed the decision for its epistemological implications and political relevance to the Panel's work. This timely decision underscores the work of the Scientific Panel giving legal credence to its model and methods. It also supports my analytical framework, punctuating the relevance of epistemology.

The Scientific Panel deals with applied knowledge and philosophical issues making extensive recommendations for implementation, but is not involved with the implementation. I address implementation in the field of education, one of the substantive areas of the Scientific Panel's recommendations, in a different community (First Nations of north Vancouver Island). The case application forms a professional document I was contracted to write for North Island College in Port Hardy by the Centre for Curriculum and Professional Development (Province of B.C.). The document, *A Spirit of Understanding*, (Ministry of Education, Skills and Training, 1996), establishes community-based curriculum and program guidelines for a First Nations In-

tegrated Resource Management Program and serves as a model and protocol statement for other similar education programs. It was researched and written while I was living on site at T'sakis (Fort Rupert reserve) with extensive involvement of members from three local bands.

The goal of *A Spirit of Understanding* is to bring together traditional and Western science based knowledge to provide curriculum and program guidelines for education in First Nations resource management at the post-secondary and adult basic education levels. As an application of planning between cultural paradigms, the document contains important background information and puts forward a "bi-cultural" model and community-based tools to facilitate building bridges between the cultural authorities and traditional knowledge of local First Nations communities with Western academic institutions. The document embodies the idea that "to do the work you have to become part of the community" and is seen as a *living document*; that is, it was written with the intention of being shaped and updated by the communities who use it. It is a handbook for educators, administrators, facilitators, curriculum developers and program planners and is relevant to a variety of academic disciplines and professional fields.

As an application in my dissertation, *A Spirit of Understanding* provides experiential material for the research question. It demonstrates that I have tried to put knowledge into action. More importantly, it gives me the opportunity to reflect on what I have learned from doing this kind of intercultural work and allows me to address some professional implications for planning between cultural paradigms less developed in the case study of the Clayoquot Scientific Panel. For example, what does planning with cultural capital look like? or planning to enhance social capital? What kind of methods can be used for such planning? These are important features of my holistic approach to sustainability. As a case application in my dissertation, *A Spirit of Understanding* allows me the opportunity to begin thinking about such ideas in an applied way.

The case application is supported by two interviews with members of the Curriculum Committee who oversaw the *Spirit of Understanding* project. They provide further reflections on the process, help me assess my role in the community, and the ongoing usefulness of the project. Trish Rosborough holds a Master's degree in systems counselling and is the First Nations Counsellor at North Island College. Fran Hunt-Jinnouchi was the director of a local band-run college and is currently working on an M.A. in education. These women are active members of the local First Nations community and have served as Trustees on the local School Board. Trish Rosborough was my main advisor, yet both were essential support people for the *Spirit of Understanding*. The interviews help assess aspects of how the document was created, its strong and weak points, my role in the community and effectiveness as a planner. They also provide relevant information from after the time when my contract concluded. I want to know to what extent the document has been implemented and used, how and by whom.

The concluding section will consider what has been learned from theoretical analysis, case study and case application. There are two levels of conclusions to the research question.

The first must address my contributions to developing the concept of planning between cultural paradigms with First Nations. After this, I can turn to the next set of conclusions by drawing inferences to the problem of the transition to sustainability within the cultural mainstream. I will also consider the efficacy of my analytical framework. My analysis of theory and empirical research will thus become the basis for answering the research question allowing me to advance new planning theory and practice both for inter-cultural planning with First Nations and for the transition to ecological sustainability. A research agenda can then be proposed which explores further development and implementation of such theory and practice.

1.2.2 Methodology/Epistemology: Protocols of Learning and Respect

I have been privileged to live and work with First Nations people for some years. In being given the opportunity to participate personally and professionally with Native people on their healing journey, I have approached this involvement from the perspective of *my own learning*. I do not consider myself a specialist on someone else's culture, rather on my own, and the interface between them. The document, *A Spirit of Understanding*, is a culmination of ten years' involvement with First Nations. Most of my professional work has been in environmental and cross-cultural education, and community development, including: community-based program and curriculum design, implementation and evaluation; outdoor and class room education; leadership training; work with youth, elder's and other community groups; and performing and facilitating community through music and public celebration. Much, not all of this, has been through my involvement with a program called *Rediscovery*. *Rediscovery* is a community-based, cross-cultural wilderness program for youth which is run from a number of First Nations communities. There are about forty programs affiliated with *Rediscovery*, ten of which I have had some involvement with.

This professional context is part of a larger focus that is more of a spiritual quest which began at the outset of my master's degree, and has shaped profoundly my professional work and academic life. My desire—my quest—is to take what I have learned through experience with First Nations and use it to help heal the culture from which I come. This is the “spark” of my dissertation. It is also the impetus for the research question.

Other factors also contribute to the way my research is structured. These form objectives or outcomes for my dissertation. They are influenced by the professional context of my work with First Nations, by my academic pursuits, and my moral and spiritual principles. These objectives/outcomes are:

- *to make a contribution to planning theory and practice for work with First Nations and for the transition to ecological sustainability;*
- *to have something which is practical and usable towards those ends;*
- *for my academic life to be of service to my professional work;*

- *for my professional life to make a contribution to my academic career;*
- *to advance decreasing consumption of biophysical capital with the creation of social and cultural capital to enhance quality of life*

A number of sub-themes will come forward in the context of this research. These flow from the research question and are served by its method.

The topic of method is significant for research. The term “methodology” is often confused with “method”. Whereas method is *how* one intends to do something, in this case, answer a research question; methodology is “the study of method.” I use the term “methodology” because my approach to the dissertation involves and employs the study of methods.

Doctoral research demands certain methodological requirements which demonstrate that the dissertation is a valid contribution to knowledge. The protocol is established and governed by a community which has as its foundation a theory of knowledge based on a shared cultural paradigm. This protocol is to ensure that the thesis, as a contribution to knowledge – as a process of learning – respects the model of the cultural authority of the larger community. Other cultures, however, respect different models grounded in different protocols which have alternative theories. What ensues, then, when these models conflict or contradict one another? What type of model or protocol allows for different understandings on the nature of knowledge, its origins, and methods of transmission? These considerations are of concern where the intention of research is to explore the interface between paradigms, and the interstices of knowledge and learning which prevail within and between them.

In my work with First Nations, I have learned there are ways to approach knowledge other than those found in the academic community. These methods are no less rigorous than those required in an academic context. In some circumstances they can be even more demanding and less so in others. It takes as much time and effort to become literate and conversant in this cultural context as it does within the academic culture. In both, learning is ongoing. This kind of cultural education, however, is experiential, and is generally not learned in books. The school house is life itself. Learning takes place in community and in interpersonal relationship. Tuition fees are of a different order. Mistakes can be costly with lingering effects. Benefits can prevail through generations

It is mandatory that I demonstrate respect for the protocol requirements of both worlds. Thus, new terrain can be approached in a manner that has substantive merit, methodological wholeness and philosophical rigour. Respect and understanding for the methods of others, although different, can illuminate one’s own. Methodology provides an analytical basis for understanding the nature and purpose of “method”, its philosophical basis and institutional contexts, and the manner in which it is employed. Knowledge gained through culturally based

discourse can offer a different perspective on our own. It may even be the harbinger of change, enabling us to strengthen and redress our own methods, and develop new ones.

Epistemology—the theory or study of knowledge—is fundamental to the issue of method. Epistemology comes from the Greek –*epistémé* – for understanding, “to know”, hence, “knowledge”; *ology*, comes from –*logos* – for “word” referring to, “the explanation” or “study of”. Thus, we arrive at the term *epistemology* as “the study of knowledge”. As it pertains to the theory of knowledge, epistemology is chiefly regarded as an analytical discipline, and strictly speaking it is.²⁵ In this context, it is used only in the singular; there are not different epistemologies, just epistemology. Yet, the term is often used, somewhat more loosely, in reference to the *subject* of inquiry. That is, people often use *epistemology* to mean a *knowledge system*, or a certain position or perspective on knowledge. (e.g. “What is her epistemology?”) This is not unlike our use of the word *cosmology*, or *cosmogony*, which refers to a discipline, the “study of the cosmos”, and also to the scientific model or philosophical and mythological system which results.²⁶

Some use *epistemology* to describe a method for obtaining knowledge and how it is deemed legitimate or spurious. Even scholars will engage in such looser applications, “...the new epistemology renders old fashioned technocratic planning illegitimate...”. The concept can take on a prescriptive capacity to imply, “this is how knowledge is or *should* be obtained.” Thus, epistemology, although an analytical discipline, comes to entail values, methods, and even the context of values and methods. These broader, less precise uses can be an affront to academic philosophers. Nevertheless, they have entered common usage because of their ability to signal the social context of knowledge, and the manner in which knowledge is constructed as part of a philosophical paradigm or cultural worldview. There is a need to develop terms and theory which can help us to understand that there are different “ways of knowing” or knowledge systems, how these are culturally constructed, and how they interact.

Epistemology is central to my project of understanding knowledge systems and their methods. Worldviews, philosophies and paradigms are contextual. The question is one of learning about planning for the transition in one (the dominant cultural paradigm) through its interface with another (TEK). If, as Friedmann has said, planning is defined as “knowledge into action,”²⁷ then knowledge is the foundation of planning. An epistemological analysis of the terrain of planning theory exposes larger philosophical issues and the belief systems in which the theory and practice of planning are embedded. This illuminates the nature of planning as an epistemological exercise. At a deeper level, this larger philosophical and social context is what planning theory must address if it is to respond substantively and procedurally to the broader issues of sustainability. I will refer to this broader context of analysis as *social epistemology*.²⁸

This epistemological analysis is a doorway to many important issues. Yet, I will seek to avoid the deep philosophical impasses in which critics of modernity and their detractors are entrenched, along with the temptation to address fundamental issues of truth, meaning and

existence. Such questions, important as they may be, are not the focus of my dissertation. Yet the voices of many great thinkers haunt the pages of my text. I have attempted to respond, at least initially, to some of these larger questions and criticisms, and have referred to some distinguished thinkers who have made such topics their life's work.

But mainly, I argue that epistemology can play a less analytical, more creative role, that there can be "epistemologies", and, although different, they need not be hostile. These different approaches can actually strengthen our ability to plan for the transition to ecological sustainability. If planning is "knowledge into action", then it is necessary to address the application of knowledge. As a First Nations friend once asked about my academic work, "will it grow corn?" One of the problems with critical work in social and political thought is that it often deconstructs with little effort to reconstruct. While critical discourse is important, those actively involved in reconstructing society on more ecologically sustainable and culturally meaningful grounds need empowering theory and practice. It is my intention, therefore, to create meaning rather than just to deconstruct it. In gaining critical insight into the broader social and philosophical context of planning's own cultural paradigm, I hope to help planners enter into a meaningful conversation with those specialists from other cultural paradigms. In this way, we may be able to transform our own.

1.3 Defining Terms, Establishing the Context: The Social Construction of Reality

The purpose of the following section is to help establish the philosophical context and theoretical field of inquiry for my dissertation. It also provides some definitions of crucial terms and concepts which I will be using throughout.

1.3.1 Defining "Holism": Planning as Healing

Holistic is a term which gets thrown around a lot. I want to contribute to clarifying and advancing our understanding and use of this word; leaving the term in an amorphous guise is a disservice and renders it less tenable for those who may find ideas associated with holism as less rigorous or credible.

In order to find an accepted scholarly use of the term, I searched all past doctoral dissertations from the School of Community and Regional Planning with the word "holistic" in the title. I found one. The author provided considerable empirical material and analysis, yet there was no definition of the term "holistic", or criteria as to why this example constituted an holistic planning model. This is indicative of the problem described above.

The word has two possible linguistic origins, one Greek, the other Saxon. I use both.²⁹ The Greek origin is *holos* meaning "whole". Here, *holistic* refers to a certain perspective, in my case, a certain approach to knowledge or "view of reality." An holistic approach is one which seeks to understand the parts on the basis of the whole; the whole is the starting point of analysis. This contrasts with the more common analytical approach of *reductionism* which seeks to

understand the whole by breaking it down to its constituent parts. Being “holistic”, or thinking holistically does not mean that reductionist thinking is “wrong”. It is to recognize other ways of structuring thinking and inquiry in a manner which accepts the roles of different types of knowledge and ways of knowing in achieving understanding.

An assertion of holism is that “the whole is greater than the sum of its parts.” For example, human beings, or ecosystems, are more than mere aggregates of individual biological mechanisms. System components interact and combine *synergistically* to create an aggregate of a qualitatively and quantitatively greater order of magnitude than the sum of individual components. The system behaves in ways and exhibits characteristics which may not be discernible or predictable based solely on analysis or knowledge of its constituent parts. These behaviours and characteristics are referred to as *emergent properties*. Holism is thus a different scope of understanding, with systems as the subject of study or field of inquiry. Ecosystems are my general field of inquiry; I focus on their human philosophical and material sub-systems.

The term “holistic” also has implications for the application of knowledge. The Saxon origin of the word is relevant here, from *hale*, the same root as “healthy” and “heal”. We can therefore think of holistic in an applied sense as meaning “to make whole” – to heal. So “being holistic” can mean: i.) thinking in wholes; ii.) acting from the perspective of the whole; iii.) it can imply being healthy or whole; and iv.) becoming healthy or “making whole”. Making whole implies the re-linking of things previously perceived or acted upon as separate. This connotation relates to the root of the word “religion” from the Greek *re-ligios* – literally, “to link”. The notion of wholeness, thus becomes connected with “holy” or “making sacred”.

This re-linking could pertain to the perceived separation of humanity and non-human nature; that is, a healing of our relationship with the Earth. (It may even involve a re-sacrelizing of the earth and our relationship to it.) It could also relate to a re-linking of the disparate functions of being and features of knowing referred to as cognitive dissonance—a healing of ourselves. If planning is to play a role in facilitating the transition to ecological sustainability, it is not a difficult conceptual leap to begin thinking about planning as healing. If planning is knowledge into action, then planning, as an holistic practice for the transition to ecological sustainability, would need to be grounded in an holistic perspective on knowledge. That would be one informed by an understanding of the whole “being of knowing” and experience encompassing the whole, not limited to any one way of knowing or aspect of knowledge. We will return to this discussion after theoretical analysis and empirical inquiry into the subject.

Additional terms will be defined throughout the text as they are introduced. I use the word “epistemological” where some analytical philosophers might use the word *epistemic* (see Harding, 1988 for a scholarly use of “epistemological” in this manner). Similarly, I use the word, “ontological” (defined below i.e. of or relating to the study of being) where some might prefer the word *ontic* (i.e. to refer to things “ontological”).

1.3.2 Worldviews, Knowledge Systems and Models of Reality

The Social Construction of Reality by Berger and Luckman (1967) is a notable treatise on the sociology of knowledge.³⁰ A curious student once asked, "is the title the most important part?". That "reality" is "socially constructed" is a profound insight. It seems a radical, almost dangerous proposition. From another point of view it is obvious. Yet, our construction of reality is generally taken for granted.

What we are talking about when we speak of reality is really "a model" of reality. The model is so basic to how we see things, so commonplace, that we tend to accept it as a fact of life. It becomes the background or context in which we view the world; it is the map for how we interact with the world as individuals and as a culture. That reality is socially constructed does not make it any more or less "real". The problem is that we come to believe in the model as reality itself. We come to think, both rationally and intuitively, of the map as the terrain.

Stafford Beer is an influential cybernetician who has contributed to systems theory since before the second world war. One important contribution is the idea of models as *self-referencing systems*. After research into a variety of cultural and cognitive fields, he extended the concept to epistemology, to ideas of knowledge and worldviews.³¹ According to Beer, worldviews, as systems of knowledge, are self referencing and constitute *models of reality*. He adopted the term 'autopoiesis' through his involvement with the research of Maturana and Varela into biological systems and cognition.³² Autopoiesis, a concept that has been adopted in ecosystem theory, is a frequent property of self-referencing systems.³³ It is the process whereby *a structure reproduces itself*. Autopoiesis is the structural property of systems wherein the relationships established among components are essential for the production of the components themselves. There is a circularity: components make relationships make components.

Beer, thus, offers what he refers to as the *autopoietic nature of cognition*, a "...powerful cybernetic introduction to a new biological approach to cognition..."³⁴ It describes the manner in which models of reality – as knowledge systems – serve to reproduce the cognitive boundaries of the epistemological terrain they inhabit. As a result, the system, on the one hand, includes only that information which either enhances or at least does not contradict the self-referencing system. On the other hand, the system *excludes* anything that can not be described within the *cognitive domain* of the self-referencing system:

An 'autopoietic system' specifies a closed domain of inter-actions that is its **cognitive domain**, and no interaction is possible for it which is not prescribed by this organization.³⁵

The system is self-referencing, firstly, in how it includes information: it processes information in a manner that enhances the structure. This can loosely be regarded as 'positive feedback'. Secondly, it is a closed system: it tends to exclude that which does not legitimate or fit within the dominant discourse. The critical element, then, is not just exclusion from a discourse, but

exclusion from so-called “reality”; or more correctly, the socially dominant discourse on reality – the “model”:

...we cannot regulate our interaction with any aspect of reality that our model doesn't include-whether as to its theoretical range or as to its observational facilities and resolution – because we cannot by definition be conscious of it.³⁶

This exclusion can be regarded as akin to ‘negative feedback’. Taken together, the model becomes a self referencing system when the cognitive structure reproduces itself both through positive and negative feedback. In its capability for both positive and negative feedback the model can be regarded as a *complex* system. Thus, the knowledge system is autopoietic in a third, more holistic sense: that of the synergistic combination of all the parts into a structural whole.³⁷ These critical insights help illuminate the nature both of worldviews as cognitive structures and paradigms as social structures.

The term paradigm, or paradigm shift, has become commonplace in recent years. Although often loosely employed, it has a specific origin and meaning. While not without critics, the concept of paradigm is a powerful and useful one. The late Thomas Kuhn literally wrote the book on paradigm shift, *The Structure of Scientific Revolutions* (1962).³⁸ In it, Kuhn describes how paradigms emerge as cognitive regimes, producing theory and organizing data to explain the anomalies which had precipitated crises in the previous model. The process is characterized by concerted resistance from the dominant community. Attempts to attack or invalidate the emerging paradigm are coupled with proliferating theories to justify the anomalies of the existing model. Eventually, the crisis leads to a revolution in thinking, producing a new “worldview” which then normalizes into an established paradigm followed by a period of stability. The new paradigm does not so much invalidate the old one as place it within a larger perspective that explains the anomalies previously irreconcilable from within the original paradigm.³⁹

Kuhn's ideas led to a fundamental revisioning of scientific “progress” which eventually extended to the social sciences.⁴⁰ Although his work focused on the transformation of thought within the physical sciences, Kuhn pointed to the embedded parallels between the structures of scientific and political revolutions, between the transformations of cognitive structures and social structures:

This genetic aspect of the parallel between political and scientific development should no longer be open to doubt. The parallel has, however, a second and more profound aspect upon which the significance of the first depends. Political revolutions aim to change political institutions in ways that those institutions themselves prohibit. ⁴¹

The potency of hegemonic structures is reinforced by the manner in which they reproduce themselves; they are autopoietic. Thus, “the model” is reproduced in both social structures and cognitive structures, in both the collectivity and the individual.

For example, as mentioned earlier, one of the central tenets of the Western industrial worldview is the separation of humanity from nature. This separation not only affects our personal interactions, but structures interactions with the planet as a whole. Until recently, the right to extract economic value from other species, whether flora or fauna, has been unquestioned. Many still resist efforts to curtail the harvesting of species such as salmon and grizzly bear or trees in old growth forests. In B.C., the protective tactics by environmentalists relating to forest issues led the current premier to dub them “enemies” of the province, although he claims to be sympathetic to the cause.⁴²

The perspectives of both the forest industry and Greenpeace are altogether different than that elucidated by a Hesquiaht political leader. He said that his people believe it is proper to use the forest for their prosperity; indeed, the prosperity of the forest, of the people and the sea, are bound together. He also described the planning model for forestry and economic development his community was trying to achieve based on the life cycle of the local Western red-cedar (about 1200 years) central to the Nuu-Chah-Nulth world-view.⁴³ This long term perspective is based in a different model of reality than the cultural mainstream. It would require different harvesting and silvicultural methods and planning process than those currently employed. Exposure to different models of reality can reconfigure our cognitive and material interactions with other species and systems in ways we may never come up with on our own. Not only can they structure social interactions, but also the institutions and methods they embody.

1.3.3 Social Structures, Paradigms and the Cultural Production of Meaning: Towards an Holistic Understanding

The concept of paradigm can be used in different capacities. One can speak of a paradigm of inquiry, say within a certain discipline. The very idea of a paradigm can itself be a paradigm of inquiry—a certain approach to a subject which structures our way of thinking, of asking questions and pursuing analysis. This can be referred to as a *pre-analytic vision*: the perspective pre-analysis, or out of which analysis comes. One can also speak of a paradigm in the larger cosmological sense, of a worldview, such as the ‘Cartesian-Newtonian paradigm’. Finally, one can speak in the broader social sense of a ‘cultural paradigm’, that is, of beliefs embodied institutionally and enacted through social practices; thus, individuals and cultures make meaning in and of the world.⁴⁴

As stated earlier, it is not the purpose of my dissertation to make a detailed study of the larger questions regarding truth and knowledge, being and existence. However, there are three analytical categories derived from philosophical inquiry which help to structure my general discussion. These are:

1.) The Epistemological

How do we know what we know? Epistemology refers to the study of the origins, meaning and limits of knowledge. From this theory methods can be developed. Things epistemological, thus, relate to “how we know what we know” based on certain methods and beliefs about how knowledge is obtained, verified and transmitted. The generally socially accepted model of this belief is what I call *social epistemology*.⁴⁵

2.) The Cosmological

What do we know? If our social epistemology is a comment on the manner in which we create knowledge, then we require some picture, model or belief about the nature of the world we know. Embedded in epistemology is, thus, a picture of the universe we seek to describe, this is the “what it is” we know: our cosmology.⁴⁶

3.) The Ontological

Who/what is it that knows? If we have *how* we know *what* we know, there must also be a knower who is the *being* that knows. Inquiry into the nature of being is ontology. Epistemology, thus, pre-suppose a belief or assertion about the nature of being, the “who” it is that knows.⁴⁷

These three categories represent, for me, basic constituents of a knowledge system or worldview as a model of reality. Thus, there is another level in which all three are taken together as whole. I refer to this meta-level by the acronym—ECO. As a cultural self-referencing system, these components of the worldview, or model of reality, are mutually congruent and congruent with the ECO-system as a whole.

The ECO-system model establishes a basic framework for understanding key aspects of the social construction of reality, and the definition and regulation of the social discourse on reality. As a heuristic method, ECO reveals components of worldviews which are key organizing features of how we make meaning in and of the world. It is a *meaning-producing system*. I will deploy this concept and its three components as a framework of analysis and as a heuristic device throughout my dissertation. It aids in understanding, not only the social and philosophical context of knowledge, but also planning as part of a larger cultural paradigm. It also helps in developing substantive analysis of traditional knowledge and understanding of TEK-Systems. I will eventually discuss the methodological features which operate in such knowledge systems, and how these different knowledge systems order their model of reality on the basis of different principles. At least two sets of principles can be seen to govern how models of reality are ordered; one is *causal*, the other is *participatory*.⁴⁸

One last point is that a meaning-producing system is not separate from a culture’s social structures. Indeed, they are intimately linked, and can be seen to reinforce one another. I will eventually be discussing the former as being ‘cultural capital’ and the latter as ‘social capital’. Both play a role in providing an interface with ‘biophysical capital’, with its appropriation, transformation and distribution. This whole material and non-material assemblage of human

culture is a subset of a larger system, an ecological one. Therefore, the structures within which meaning is culturally constructed and materially reproduced are a sub-system of ecosystems.

NOTES CHAPTER 1

¹ See Colin Fry, "Marxism Versus Ecology", *Ecologist*. Volume 6, Number 9; Michael Clow, "Alienation From Nature: Marx and Environmental Politics", *Alternatives*, Volume 11, Summer, 1982; see also "The Impasse of Economics" and "The Dark Side of Growth" in Capra, *The Turning Point*. 1982.

² From William Rees, "Achieving Sustainability," *Journal of Planning Literature*, Vol. 9, No.4, 1995.

³ This line of analysis is extensively researched and documented in the literature. A great deal of effort has gone into historically contextualizing the roots of the modern industrial-scientific paradigm and its epistemological norms. One of the more popular and comprehensive historical reviews of the old (Cartesian) paradigm and introduction to a new (holistic one) is Fritjof Capra's book, *The Turning Point*, Toronto: Bantam Books, 1982. Morris Berman's work, *The Reenchantment of the World*, Ithica: Cornell University, 1981 is another standard text. Lewis Mumford wrote in the area much earlier, see *The Myth of the Machine*, Vol. 1, *The Pentagon of Power* ; Harvest, 1970.

⁴ Feminists have convincingly argued that the attributes on the upper end of the cognitive hierarchy are associated generally with the "masculine" domain while the "lower", less desirable ones are akin to the feminine. The contributions of feminist theory and inquiry (e.g. analysis of epistemology, history and political economy) are crucial to understand the origins and development of the modern industrial paradigm. See Carolyn Merchant *The Death of Nature, Women, Ecology and the Scientific Revolution*, Toronto: Harper and Row Publishers, 1983; Rosemary Radford Ruether, *Sexism and God-Talk, Towards a Feminist Theology*, Boston: Beacon Press, 1983; Susan Griffen, *Woman and Nature, the Rearing Within Her*, Toronto: Harper and Row, 1980; Riane Eisler, *The Chalice and the Blade, Our History Our Future*, San Francisco: HarperSan Francisco, 1988; and "The Burning Times: A Crucial Period of History" in Starhawk, *Dreaming the Dark, Magic, Sex and Politics*, Boston: Beacon Press, 1982.

⁵ The belief structure serves as a template of experience, both materially and in the subjective realms of culture. For example, Western theology generally devalues the realm of the body and things associated with it. Emphasis is placed on transcendence and a flight from the "material plane" towards the disembodied realm of spirit. Blended with various Greek influences, this becomes the quest of "reason" to escape the entrapments of the sensual world (see Radford Reuther and Berman above). This manner of theological cosmology set the stage for the epistemological breakthroughs of the Scientific Revolution and the Cartesian-Newtonian paradigm wherein "man" is the sole, divine arbiter of reason (cf. *logos*) in the brutish world of nature. Denial of the body is thus projected onto the ecosphere. It also came to be projected upon other colonized cultures. See, for example, Robert F. Berkhofer Jr., *The White Man's Indian*, New York: Vintage Books 1979.

⁶ William Rees, "The Ecological Meaning of Economy-Environment Systems Integration", *UBC Planning Papers*, School of Community and Regional Planning, University of British Columbia, 1989, p.4.

⁷ See the lead chapter to E.O. Wilson in *Biodiversity* , E.O. Wilson ed., Washington, D.C., National Academy Press, National Academy of Sciences (US), Smithsonian Institution, 1986.

⁸ Including: global warming and a variety of other climate changes; vast loss of habitat at an alarmingly increasing rate in a variety of aquatic and terrestrial locations; rising loss of soils; loss of gene pools; desertification; ozone depletion and reduced efficiency of photosynthesis; rising levels of radioactive and other toxic wastes in the atmosphere, on land and water; amongst others. Perhaps even more disturbing are the infinite number of possibilities for the synergistic interplay amongst these phenomena. This could precipitate a "flip" in the global system to a qualitatively different ecological scenario on the planet to which we and other species may be unfamiliar and ill adapted.

⁹ both in terms of "resources consumed" i.e. inputs as well as those required to assimilate waters i.e. output.

¹⁰ William Rees, "Revisiting Carrying Capacity: Area-Based Indicators of Sustainability." *Population and Environment*, 17 (1996): p.210.

¹¹ See William Rees, "Is 'Sustainable City' an Oxymoron?", in *Local Environment*, Vol.2, No.3, 1997, pp. 303-310; and "Revisiting Carrying Capacity: Area-Based Indicators of Sustainability" in *Population and Environment*, Vol. 17,; 195-215.

¹² See, for example, the *World Scientists' Warning to Humanity*, sponsored by the Union of Concerned Scientists, signed by many renowned scientists, including over 20 Nobel laureates. For a contrary opinion see Julian Simon, "Living Without Limits", interview by Frank Miele, in *Skeptic Magazine*, Vol.5, No.1 Some, such as the Fraser Institute, have tried to dispute the anthropogenic nature of factors such as global climate change. Most scientists, while recognizing the role of biogenic factors, have refuted this.

¹³ This has been in the making since the massive demographic and socioeconomic upheavals which attended the Industrial Revolution were exported through colonialism. Whilst occurring in Europe mostly over the 18th and 19th centuries, the process has quickened dramatically for most of the world, especially since WWII.

¹⁴ Indicators of social stress and potential for crisis at international and domestic levels can be seen in the worldwide loss of Indigenous cultures, a widening gulf between rich and poor in the global community and the dismantling of social welfare in northern industrialized nations. Possible breakdown of regional and international political economic structures threatens in the recent "Asian crisis", the resurgence of fascism in Europe, rising world poverty and displaced peoples, socially created famines, the phenomenon of so-called "ethnic cleansing" and the inability of the international community to respond effectively. British Prime Minister Tony Blair cites one of the greatest global challenges to be addressed at the 1998 G8 Summit is that of "trans-national criminal gangs" (see "What the G8 Summit hopes to achieve" *The Globe and Mail*, May 12, 1998, p.A21) saying much of the impetus for this is the drugs trade, second only to oil trade in international value. Disintegration of traditional social structures can be seen in the decline of mainstream religion (see below), prevalent homelessness, divorce and family violence, teenage suicide, drug addiction and other substance abuse. Some of these trends may be attributed to rising population and population density, some are per capita.

¹⁵ A recent annual report, *Poverty Profile 1996*, from the National Council of Welfare cites "shocking" poverty statistic in Canada which show that poverty has risen steadily since the last recession ended in 1991. Vice-chairman, Armand Brun, states "We expected that poor people would share in the return of prosperity; instead we found that poverty rates crept up after the recession." See "Poverty rates rising, report says", *The Globe and Mail*, May 12, 1998, p.9. Poverty rates rose for all people, for children, seniors, and especially single mothers which were "incredibly high." Child poverty is at a record year high, 1.5 million children lived in poverty in 1996-20.5%. More than 5 million Canadians live in poverty. A major factor cited were cuts to government programs, "...the reality that they have gutted the social-support system..." These are the highest poverty rates in 17 years. The World Health Organization released its report, *Life in the 21st Century: A Vision for All*, showing that, while global life expectancy has risen, its director-general Dr. Hiroshi Nakajima cautions that increased longevity without quality of life "is an empty prize". Quoted in *The Globe and Mail*, May 11, 1998, p.1 "Canadians will live long, prosper", see, "WHO urges action on growing rich-poor gap", p.9.

¹⁶ There are many domestic examples of this; on a larger scale, one sees sit in attempts to restructure international trade and curtail the scope of government decision-making authority in environmental policy, labour law and cultural institutions with the Multi-lateral Agreement on Investments.

¹⁷ Many of these problems are linked to family violence. *Changing the Landscape: Ending Violence Achieving Equality*, Final Report of the Canadian Panel on Violence Against Women, Ministry of Supply and Services, Canada, 1993, documents the ubiquitous nature of the problem. Statistics Canada indicates that as many as half of all Canadian women over the age of 16 have experienced at least one incident of violence. Between 1974 and 1992 a married woman was nine times as likely to be killed by her spouse as by a stranger (source: Statistics Canada, "Spousal Homicide", March 1994, Vol 14. No.8, Wilson and Daly). One in five Canadian men living with a woman admitted to using violence against her (Eugen Lupri "Male Violence in the Home", *Canadian Social Trends*, Autumn, 1989, p.20). A national study revealed that over 50% of all wife assaults are not reported; over half felt police could not do anything and feared re-

venge (*Female Victims of Crime, Canada Urban Victimization Survey, Bulletin 4*; Ottawa: Research and Statistic Group and the Communications Group, Programs Branch, Ministry of the Solicitor General, 1985, p.4). 40% of wife assault incidents begin during the time of a woman's first pregnancy; wife assault may be a learned behaviour, studies indicate 40%-60% of all assaultive men witnessed wife assault in childhood (*Fact Sheet on Wife Assault in Canada, Toronto: Education Wife Assault, 1985*). A Canada wide study of assaulted women reported 26% of their partners physically abused their children, 48% emotionally and 7% sexually (Linda MacLeod, *Battered But Not Beaten: Preventing Wife Battering in Canada, Ottawa: Canadian Advisory Council on the Status of Women, 1987, p.32.*). Serious child behaviour problems are linked statistically to wife battering (D.A. Wolfe et. al. "Children of Battered Women: The Relation of Child Behaviour to Family Violence and Maternal Stress", *Journal of Clinical and Consulting Psychology, No.53, 1985, p.657*). While not limited to the industrialized world, one must ask why such dysfunction is so prevalent if our material standard of living was really meeting all our basic needs.

¹⁸ While ties with traditional Western religious institutions have declined steadily since WWII (from 60% of Canadians to 25%) there has been a dramatic upsurge in preoccupation with spirituality. The October 10, 1994 issue of *MacLeans* devotes a nine pages cover story to "The New Spirituality: Mainstream North America Searches for the Meaning in Life". This article contains discussion on yoga, First Nations and other earth based cosmologies, meditation and the joining of world religions as mainstream North America (from academia, to business, to government officials, even military officers) turns to spirituality, "for the psychological assurances that materialism has failed to provide." See also Eugene Taylor Ph.D., "Desperately Seeking Spirituality", *Psychology Today, Nov./Dec., 1994*.

¹⁹ Research through econometric forecasting based upon ecological models of carrying capacity reveals the conservative estimate that it would take two more planet Earths to bring the rest of the world up to Western industrial society's standard of living. See Rees and Wackernagel in *Investing In Natural Capital: The Ecological Economics Approach to Sustainability*, ed. by A-M. Jansson, M. Hammer, Carl Folke, Robert Castanza, Washington, D.C. Island Press 1994. See also Wackernagel and Rees, *Our Ecological Footprint*, New Society Publishers, Gabriola Island B.C. and Philadelphia PA, 1996. See also Herman Daly, "From Healthy World to Full World Economics: Recognizing an Historic Turning Point in Economic Development" and Robert Goodland, "The Case That the World has Reached Limits: More Precisely That Current Throughput Growth in the Global Economy Cannot be Sustained" in *Environmentally Sustainable Economic Development: Building on Brundtland*, Goodland, Daly, Serafy and von Droste, eds., Paris: UNESCO, 1991.

²⁰ See the article in *The Globe and Mail*, Monday, June 23, 1997, p.4, which reports the completion of a five year study on global and domestic public opinion.

²¹ From William Rees, *Defining "Sustainable Development,"* UBC Centre for Human Settlements, CHS Research Bulletin, University of British Columbia, 1989, p.3.

²² There is a growing body of literature on the subject of TEK with case studies from various parts of the world. See for example the collection of articles in, *Traditional Ecological Knowledge: Concepts and Ideas*, Julian T. Englis, International Program on Traditional Ecological Knowledge, International Development Research Centre, Ottawa, 1993. The idea of learning from TEK for application towards sustainability in the Western cultural mainstream is less common in the scholarly and professional literature. However, the following sources either make reference (e.g. Boothroyd), are engaged at the governmental (i.e. the Clayoquot Panel), local (e.g. Lertzman) or philosophical (e.g. Suzuki) levels. See: *Traditional Ecological Knowledge and Environmental Impact Assessment*, Sadler and Boothroyd, eds., Canadian Environmental Assessment Agency, International Association for Impact Assessment and the Centre for Human Settlements, University of British Columbia, 1994; *The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, Report 3, First Nations Perspectives, plus Appendices V and VI*, March, 1995; David Lertzman, *A Spirit of Understanding: Community Based Program and Curriculum Guidelines for the First Nations Integrated Resource Management Program*, Ministry of Education, Skills and Training, Province of British Columbia, 1996; also Peter Knudtson and David Suzuki, *Wisdom of the Elders*, Toronto: Stoddart Publishing Co. Limited, 1992;.

²³ Stanley Jeyaraja Tambiah, *Magic, Science and the Scope of Rationality*, Cambridge: Cambridge University Press, 1990.

²⁴ As mentioned, much but not all of this experience has come through my involvement with the Rediscovery program, a community based cross-cultural wilderness program for youth run from a number of First Nations communities in Canada, the United States and other countries. I have been involved with this program in several communities as an outdoor educator, trainer and wilderness leader, consultant, and program director. I sat on the Council of Directors for the Rediscovery International Foundation (a non-profit foundation which provides support for programs and serves as an institutional focus for the broader community). I have been involved in other cultural and professional activities with First Nations people in other communities from Ontario to British Columbia.

²⁵ Charles Landesman, *An Introduction to Epistemology*, Cambridge MA: Blackwell, 1997, provides an introduction to the theory of knowledge based in sense perception. A more advanced treatment can be found Robert Audi, *Epistemology, A Contemporary Introduction to the Theory of Knowledge*, New York: Routledge, 1998.

²⁶ For example, according to the *Dictionary of Philosophy*, *cosmogony* is, "a scientific or mythic account of the origin of the Universe"; *cosmology* describes "the Universe as a totality of phenomena, attempting to combine metaphysical speculation and scientific evidence within a coherent framework." Antony Flew, ed., London: PAN Books, 1984.

²⁷ John Friedmann, *Planning in the Public Domain*, Princeton: Princeton University Press, 1987.

²⁸ The nature of science as a social enterprise brings up many issues. Robert Audi writes that the field of epistemology is traditionally concerned with individuals. The bearing of the social character of science on the justification and knowledge it generates is a major focus of *social epistemology*. "If individual epistemology is roughly the theory of knowledge and justification as applied to individual persons ...social epistemology is roughly the theory of knowledge and justification as applied to groups of people." From Audi, 1998, p.256, see above. There is actually a journal called *Social Epistemology*.

²⁹ David Bohm, in *Wholeness and the Implicate Order*, London: ARK Paperbacks, 1983, provides a discussion on linguistic origins of the word *holism*.

³⁰ See Berger and Luckmann, *The Social Construction of Reality*, Garden City, New York: DoubleDay & Company, 1967. A dense, important piece of work, this book is reputed as the next major contribution to foundations for the sociology of knowledge since Max Scheler and Karl Mannheim. Friedmann (1987) provides topical background discussion on Mannheim and planning in "The Theme of Rationality".

³¹ See Stafford Beer, "I Said You Are Gods", London: Third Annual Teilhard Lecture, The Teilhard Centre for the Future of Man, 1981. Stafford Beer did much of his work before and with the British army during the Second World War. He made a number of contributions to high level government agencies and in the corporate sector as a systems theorist and policy analyst. Beer became increasingly radical in his politics, advocating social change and critical epistemological discourse with the New Physics, breakthroughs in neurophysiology and mathematics, ancient Eastern and Western philosophy, Yoga and sexuality.

³² See Humberto Maturana and Francisco Varela, *The Tree of Knowledge*, Boston: Shambhala, 1992.

³³ Autopoiesis is a profound concept. Its ecological implications are serious in that a disturbance of autopoiesis in global systems is potentially devastating, not only for a great many life forms, but for the system as a whole. The outcome of such a prospect is unpredictable.

³⁴ *Ibid.* p.10. See also Maturana and Varela above.

³⁵ *Ibid.* p. 10. Emphasis added.

³⁶ *Ibid.* p.9.

³⁷ Systems theory is developed from quantifiable data. It is important to understand that what is presented here is a structural metaphor. Rather than being a system in the mathematically rigorous sense of quantitative systems theory, the knowledge system is a system in the *qualitative* sense.

³⁸ A second, enlarged edition of this influential work was released in 1970, Thomas Kuhn, *The Structure of Scientific Revolutions*, USA: The University of Chicago Press, 1962, 1970. The notion of paradigm is explored as an organizing cognitive regime for the development of theory in science, yet he also discusses the connection with political revolution and the concept of world views. These ideas were popularized and taken further by others. Capra is particularly notable amongst them. In his work, *The Turning Point*, he takes this manner of inquiry into scientific thought and generalizes it to the notion of a cultural paradigm. A worthwhile critique of Kuhn and the use of his ideas can be found in Sandra Harding, *The Question of Science in Feminism*, Ithica: Cornell University Press, 1987; see chapters 8, 9.

³⁹ The process can take place in a localized capacity, such as in a certain discipline, or be more broadly sweeping. The classic example is the revolution in physics. The New Physics did not invalidate the old Newtonian physics, yet a whole new paradigm was required to deal with the information gleaned through research at the sub-atomic level.

⁴⁰ Fritjof Capra, a theoretical physicist, is probably the most influential person to have popularized the concept of paradigm shift as a social phenomenon in *The Turning Point*, Toronto: Bantam Books, 1982 (Capra is most famous for his controversial and influential work, *The Tao of Physics*, Shambala, 1975, 1993). The historian Morris Berman has been influential, particularly in his examination of the impact of the scientific world view on Western consciousness, in his seminal work, *The Reenchantment of the World*, Ithica: Cornell University, 1981, which was followed by *Coming to Our Senses*, Toronto: Bantam Books, 1990. Lewis Mumford, a planner by trade, is notable in that his work anticipated that of Berman's and Capra's; see, *The Myth of the Machine, Vol. 1, The Pentagon of Power*; Harvest, 1970. Drengson provides a topical application of the paradigm approach in "Shifting Paradigms: From Technocrat to Planetary Person", in Drengson and Inoue, *The Deep Ecology Movement*, Berkley: North Atlantic Books, 1995, and an applied version in the introduction to *Ecoforestry, the Art and Science of Sustainable Forest Use*, Drengson and Taylor eds., Gabriola Island: New Society, 1997.

⁴¹ Op. Cit. p.93

⁴² See "Enviro-wars heat up on West Coast", front page in the Globe and Mail, Monday, June 9, 1997.

⁴³ *Rediscovery International Community Development Training, Hesquiaht* (Hot Springs Cove) B.C., September 1996. Though I was working as a facilitator/trainer I learned more than I taught.

⁴⁴ There is a body of literature which addresses the nature of cultural paradigms as social and political institutions, and as socioeconomic modes of development based upon a cosmological concept of paradigm. Berman is seminal, Capra is notable, as is Mumford. See footnote 40 above.

⁴⁵ See Audi above. Although he does not use the term, Berman's discussions in, *The Reenchantment of The World* provides a worthwhile discussion of the development of current social epistemology.

⁴⁶ Mumford's term "world picture" is a useful term. See also Capra's discussion in *The Turning Point*.

⁴⁷ *A Dictionary of Philosophy*, Mautner, ed., Cambridge, MA: Blackwell 1996, p.304, defines ontology as "inquiry into, or theory of, being *qua* being." Ontology is important. In *Steps to an Ecology of Mind*, New York: Ballantine Books, 1972, p.314, Gregory Bateson writes that epistemology and ontology are so intertwined, "it is incorrect to suggest that they are inseparable in human natural history." Ontological analysis is at the heart of the *postmodern* (post-structuralist) critique of modernity. The postmodern deconstruction of Western philosophy comes primarily through the line of Nietzsche, Heidegger and Derrida, and typifies the impasse Western thought has reached with regards to the idealist-positivist debate. It turns upon the ontological deconstruction of Western epistemology, and seems to remove the legitimizing theoretical basis for rationality, and objectivity, conceived through both idealism and materialism. From this particularly disarming ontological perspective, Derrida launches his deconstructive project. Here, both idealism and materialism are seen to be founded upon a *binary* metaphysics of subject/object or

self/other. The argument is that, whether from the idealist position of transcendental reason/spirit (logos cf. being as presence) revealed historically, or from the positivist view of empirical laws revealed through reason (logos) and scientific method, both are founded upon "ontological declarations which are more the result of philosophical assertions than of theoretically demonstrable hypotheses...Both result in a subjectively imposed or assumed rather than demonstrated objectivity." From Bennington on "Deconstruction" in Outhwaite & Bottomore, eds., *The Blackwell Dictionary of Modern Twentieth-Century Thought*, Cambridge Massachusetts: Blackwell, 1995.

⁴⁸ The most rigorous scholarly treatment I have encountered of this material can be found in the work of Stanley Jeyaraja Tambiah, *Magic, Science and the Scope of Rationality*, Cambridge: Cambridge University Press, 1990.

CHAPTER 2: EPISTEMOLOGY AND THE TERRAIN OF PLANNING THEORY

This chapter presents an overview of planning theory from the perspective of the transition to ecological sustainability, as outlined in the problem statement above. I am particularly interested in presenting my understanding of planning as an epistemological exercise within this larger social and philosophical context. Friedmann (1987) defines planning as *knowledge into action*, thus, he provides a good place to start. Several steps must be taken first, however, in order to analyse the epistemological terrain of planning theory, including a review of main currents in planning. This includes both theoretical and historical review. As a professional field relevant to many disciplines of academic theory, planning theory is known to have its own complications. Some (e.g. Friedmann, 1987; Alexander, 1984) suggest that planning theory needs to address *meta*-theoretical problems. While prominent planning theorists seem to agree that the discipline of planning and planning theory is facing significant challenges and is in the midst of radical change, there is less agreement about where such changes are leading.

I first present the general subject of planning theory. This includes an introduction on the nature of planning theory and some of the difficulties and opportunities it faces in establishing its theoretical domain. A brief review of the main models and trends in planning theory leads into a discussion distinguishing current arenas of epistemological challenge facing planning and planning theory. These include ecological thought, feminism and postmodernism. I look at how planning is defined in the literature and raise initial questions with regard to the topics of knowledge paradigms in planning and possible future directions.

I then examine the philosophical and historical origins of modern planning to develop a general epistemological analysis of the terrain of planning theory using the ECO-model I introduced above. Based on this analysis, and building on the material in planning theory presented earlier, I compose a broader philosophical framework in which to contextualize planning as “knowledge into action.” I appeal for a *meta-epistemological* approach to planning in the transition to ecological sustainability.

2.1 Introducing The Spectrum of Planning Theory

It can be argued that planning is more of a vehicle for theory than a producer of it. Rather than its source, planning is an *agency* of social and political thought. Much of the debate around and within planning theory is a reflection, not so much of “pure planning theory”, but of issues that are generally endemic to the various disciplines of social inquiry. One can see the development of thought in planning as a reflection of developments in political economy and social-political thought in general.¹ Some have questioned whether it is even possible, or legitimate, to speak of “planning theory” as such.²

Faludi (1973), a seminal contributor to planning theory, poses the theoretical distinction between “theory of planning” and “theory in planning”.³ Thomas (1987) takes issue with this substantive-procedural distinction arguing that it de-politicizes planning, obfuscating both its social context and content.⁴ Paris (1987), thus asserts that planning itself is ideological, and the development of meaningful planning theory must take this critical point of departure as a starting point. Both the critical approach and the procedural approach to planning have made contributions to planning theory and establish general parameters of debate.

Planning theory can, thus, be seen as generally distinguished by two main currents. On the one hand, are those endeavours in planning theory which tend to be more functionally oriented, those which are descriptive and prescriptive *vis* planning and planning practice. On the other hand, are endeavours in planning theory which are more critically oriented; their focus is on planning as embedded in social structures and relations of power. The first is more or less preoccupied with enhancing the discipline and practice of the profession of planning. The other, more critical focus, is on deconstructing planning and understanding it as a function of political economy.

The dominant paradigm in planning has been described as the ‘rational model’ (Alexander, 1984), ‘rational-comprehensive’ (Lindblom, 1959), as ‘rational-choice’ (Friedmann, 1987), and ‘synoptic’ (Friedmann, 1987; Barclay 1979). It is generally associated with neo-classical and institutional economics, public administration theory and organizational development. The main thrust of critical discourse in planning theory has drawn largely from elements of Marxist analysis, anarchism and “Left theory” in general.⁵ Critical Theory has been influential (e.g. Habermas, the Frankfurt School) and Forester’s work is a good example of this.⁶ It is safe to say that these represent the “old guard” of challenge to planning theory and its analysis of planning’s role in the spatial and social transformation of the state. Friedmann (1987) provides a comprehensive treatment of both these poles of planning theory. Though inspired by different political agendas and economic goals, they all share common philosophical and historical origins in Enlightenment thought. I will be considering this in some detail below.

While both of these currents in planning theory (functionalist and critical) are important, it is necessary to develop the critical aspect to better understand what kind of planning theory and practice to develop. In light of current challenges, there is an arguably justifiable need to re-think aspects of the larger philosophical basis for both ends of the spectrum which has dominated planning theory. My chief interest in this critical discourse is in exploring how knowledge is constructed and, in particular, the nature of the larger social and philosophical context in which it and planning operate.

2.1.1 An Amorphous Discipline/An Illusive Profession: A General Challenge in Planning Theory

There is less in the critical planning literature that deals with the broader philosophical and cultural context of planning.⁷ Weaver, Jessop and Das (1983) approach knowledge from three heuristic categories of “personal knowledge”, “sociological knowledge” and “positive knowledge”. Although they do not deal as explicitly with the cultural basis of knowledge paradigms, it is at least recognized. The paper is helpful because it recognizes that there are different types of knowledge and that these can help provide the basis for a planning paradigm.⁸ Theirs is the closest that I have found to my own meta-epistemological approach. It is also the only planning paper I have come across which begins to raise the subject of ontology, which for them, is mapped onto a grid of individual and collective aspects of public interest.

In their recent text, *Readings in Planning Theory*, Campbell and Fainstein assert that planning theory “is an elusive subject of study.”⁹ Their approach to planning theory is a consideration of planning’s role in developing the city or region within the constraints of a capitalist economy and a democratic political system. Campbell and Fainstein write that it is not easy to define planning theory, “the subject is slippery, and explanations are often frustratingly tautological or disappointingly pedestrian.”¹⁰ They cite four main reasons as to why this is the case. The first fits with what I have already said, that many of the fundamental questions of planning theory are part of a much broader inquiry into ‘the role of the state in social and spatial transformation’. Thus, planning theory tends to cross over social sciences theory in general making it hard to “limit its scope or stake out a turf specific to planning.”¹¹ This is a problem to which I will eventually return.

Another reason for the seemingly nebulous nature of planning theory cited by Campbell and Fainstein is that the boundary between planning and other related professions is fuzzy. “[P]lanners don’t just plan and nonplanners also plan.”¹² The third reason they cite is that the field of planning is divided into two seemingly fundamental conceptual orientations, and the people who follow them, “those who define it according to its object” (i.e. land-use patterns of the built and natural environment) and “those who do so by its method” (i.e. the process of decision making).¹³ Their fourth reason is that, while many fields are defined by “a specific set of methodologies” planning typically, “borrows the methodologies from many different fields, and so its theoretical base cannot easily be drawn from its tools of analysis.”¹⁴ While Campbell and Fainstein do not point it out, this is a problem common to many interdisciplinary fields and seems to be on the rise. For planning, as an eclectic and applied field, this is especially the case.

Most scholars can agree on what the economy is or on the nature of polity, thus, the nature of economic or political theory is not really in question; yet, there is ample disagreement on the nature of planning and planning theory. Campbell and Fainstein therefore conclude that the considerable disagreement over the scope and function of planning, and the problems in defining who actually is a planner, “obscure the delineation of an appropriate body of the-

ory.”¹⁵ As with many other academic disciplines adjoined to a professional field, the amorphous nature of planning theory often results in its disregard by practitioners.

Distinguishing planning from its interdisciplinary professional practices and the amorphous nature of planning theory is a challenge for addressing the role of planning in the transition to ecological sustainability. An insight can be gleaned from Campbell and Fainstein. As a field of practical endeavour, they assert that planning differs from others in the claim of its ability to predict the outcome of its actions. Many professional planners tend to look upon academic planning theory as “inert and irrelevant”, opting instead for a kind of “homespun, in-the-trenches pragmatism.”¹⁶ While practising planners may rely more on “intuition than explicit theory...this intuition may in fact be assimilated theory.”¹⁷ Theory, then, can be seen as “cumulative professional knowledge”.¹⁸ Therefore, whether it is assimilated and applied intuitively, or addressed from an academic standpoint, planning theory is a basis for professional knowledge.

Epistemology lurks beneath the subject of planning theory. I am speaking, in particular, of social epistemology as introduced above. Epistemological issues are embedded in the larger philosophical assumptions and social structures of a cultural paradigm or worldview. This is the analytical assumption I will take into planning theory to help problematize the field which seems illusive when approached as a theoretical enterprise.

2.1.2 Reviewing Basic Planning Models

Barclay (1979) presents a concise yet comprehensive overview of current planning theory orientations. He puts forward an “heuristic rubric” as a professional typology under the acronym ‘SITAR’, including: Synoptic, Incremental, Transactive, Advocacy, and Radical schools of planning thought.¹⁹ He refers to the dominant, rational-comprehensive approach as ‘synoptic planning’. Barclay suggests that this is the major point of departure for most planning orientations. Most planning orientations constitute either modifications or reactions to the rationality of this model.²⁰

The synoptic approach to planning is seen as constituted by four basic components including: goal-setting, policy alternatives identification, evaluation of means versus ends, and decision implementation.²¹ It relies heavily on quantitative features including forecasting, cost-benefit analysis, operations and systems analysis. The comprehensive model is prone to significant elaboration and methodological refinement; however, Barclay argues that its real strength is in its simplicity.²² Other models and their proponents have taken issue with this dominant approach, with the political and economic ends to which it has been put, to its methodological limitations, and the rationale which informs it, yet it is generally regarded as a stalwart model which addresses the practical exigencies most commonly associated with planning.²³

Incrementalism arose as a critique of the rational-comprehensive model. Also known as ‘disjointed incrementalism’, or the “science of ‘muddling through’”, it is associated with its

major proponent, Charles Lindblom, who argues that it is a more accurate depiction of institutional development and decision-making.²⁴ Lindblom describes incrementalism as “the method of *successive limited comparisons*.”²⁵ Incrementalism takes issue with synoptic rationality as unrealistic and generally insensitive to the limits of decision makers, to the evaluation of alternatives in defining problems, solutions, and in implementation in favour of central control.²⁶ It can be seen as the anti-thesis to comprehensive planning; here, decision-making is based on short term rationality and incremental adjustments within a limited scope. Policy is “made and remade endlessly.”²⁷ Incrementalism has been criticized both on empirical and theoretical grounds, and some, such as Etzioni (1967), have drawn from this debate to propose a “third” approach to decision making which is a mix of both the rational-comprehensive approach and incrementalism.²⁸

Whereas incrementalism is oriented more to the rationality of short term economic logic and individual self-interest, the transactive approach orients to the dialogues of individuals embedded in larger socially circumscribed circumstances; ideas are validated through action. Transactive planning is associated with its main proponent John Friedmann. It “focuses on the intact experience of people’s lives revealing policy issues to be addressed.”²⁹ Therefore, while transactive planning is sensitized to the social context and content of planning, it is process oriented. It is *effectively* pre-occupied in that attention is placed upon processes of personal and organizational development and social learning. Trust, dialogue and interpersonal transactions are seen as the basis of radical planning practice.³⁰

Advocacy planning actively involves the planner in “taking sides” as an advocate for groups and causes. The professional is identified with clients’ values and objectives in processes which often pits planners on opposite sides of issues. Davidoff writes that, “[p]luralism in support of political contention describes the process; advocacy describes the role performed by the professional in the process.”³¹ Based on adversarial procedures modelled from the legal profession to defend the interests of “the weak against the strong”, advocacy planning came to prominence in the 1960’s. Substantive outcomes of such initiatives include the impetus for impact assessments to accompany large scale project proposals, a greater emphasis on the normative features of planning, increased visibility of planning to public scrutiny, and proactive social planning initiatives on issues of race, gender and the environment, to name a few.³² Barclay points out that the advocacy approach has been criticized for “posing stumbling blocs without being able to mobilize equally effective support for constructive alternatives.”³³ This planning style has contributed notably to issues of social justice.

The radical planning approach is ambiguous according to Barclay. He sees two streams that often flow together. One is of a more add-hoc, grass roots nature and tends to be of a short term, issue-and-action orientation. These are often eclectic and decentralized, drawing on a diversity of philosophical inspiration.³⁴ Planning tends to take the form of group processes around collective actions for immediate results. The other approach is of a broad orientation to

large-scale social change and seeks to understand planning issues in their larger context of historical dynamics and social movements, including such features as race, class and gender, in theories of the modern state.³⁵ Friedmann offers worthwhile and more extensive discussion of the radical model, its theory and practice.³⁶ He writes that radical planning must be “saturated” with theory, whose central task is the *mediation of theory and practice in social transformation*.³⁷ Where advocacy planning represents the interests of disempowered groups in pluralist political processes, radical planning seeks to open the process or transform the structure all together.

It should be evident that these various planning orientations overlap. While they are not mutually exclusive, some go better with others. One could be an activist planner, involved largely in advocacy work, engaged in comprehensive planning with a transactive style. One could be an advocate who uses incrementalist methods. It would be hard to be a comprehensive incrementalist, yet such an approach has been proposed. Barclay compares the SITAR taxonomy to the Indian instrument the ‘sitar’; each approach is like a string that, in the right hands, can be perform well in solo with even more possibilities in harmony.

The rational comprehensive model of synoptic planning has established the overall terrain by precipitating either modifications of itself or reactions to it; this is concurred by others in the literature besides Barclay (e.g. Alexander, 1984). There seems to be a dialectic at work between synoptic planning and its various compeers, “neither side...feels comfortable...yet they cannot do without each other. Each helps define the other...”³⁸ These various orientations of planning theory and practice seem to cover a wide spectrum, yet they share common cultural and historical origins (Friedmann, 1987). While respecting their substantive differences, it is this broader spectrum in which I am interested. I will use this insight to help focus my discussion on the body of planning theory as whole, which is arguably facing challenges.

2.2 Paradigmatic Crises In Planning Theory: Arenas of Challenge and Opportunity

Rather than thinking of various paradigms within planning, it may be more accurate to approach the topic as various models competing within the context of a broader paradigm. Such a pluralist perspective would not rule out the substantive differences, both in theory and practice of different models, but place them all in a broader framework of the body of planning theory and practice as whole. Could this pluralist spectrum be the dominant paradigm in planning? It is at this level that the focus of my analysis will continue, with a focus on the challenges to this more broadly conceived spectrum of planning models, both from within and outside the planning literature.

Alexander (1984) begins to broach the subject of “paradigm breakdown” in planning from the point of view of responses to it. He explores ‘choice theory’ and the ‘rational model’ as the dominant paradigm in planning, and in other fields, suggesting that the rise of anomalies in this paradigm are indicative of broader paradigmatic breakdown affecting many disciplines. (Friedmann (1987) refers to this as the ‘rational-choice’ model.) Responses to this broader para-

digmatic breakdown include everything from "avoidance" to outright "rejection", and the search for new ones.³⁹ He suggests that ecological, along with systems-based approaches, may "have the robustness of rationality as a normative model, but like the rational model, they ignore the constraints on applying their prescriptions in a real-world environment."⁴⁰ Ostensibly, he must be referring to political impasses and economic barriers to implementing ecologically-based planning models.

Alexander suggests that John Friedmann's 'transactive planning' model has also come forward as a considerable choice, but this, and other social learning approaches, have not been adopted or "perceived as the answer to the anomalies threatening the rational paradigm."⁴¹ According to Alexander, a more general social learning approach breaks down in the specificity of its application. Friedmann's transactive approach "while admirably detailed...is informed by a set of assumptions about the nature of society and the feasibility of radical social change that may not conform well enough to the world as it actually is."⁴² He seems to be reacting to neo-Marxist and anarchist orientations to social transformation which, while offering a viable model of radical planning theory and practice, may not appeal to the mainstream. He reviews other alternatives, including: modifications of the rational model (e.g. strategic planning assumptions; planning and design approach); those informed by critical theory and phenomenology; those which reject looking for any universal decision making model and opt for incremental, contextual, and other "contingency" models (e.g. SITAR). However, he surmises that none of these are sufficiently developed or generate enough interest to the point of adoption in replace of the mainstream rational-choice model.

Alexander's conclusion is that, while planning is in the midst of a "radical change", planners are still generally committed to the comprehensiveness and rationality of the ongoing dominant paradigm, even though some of its associated ideas of scientific objectivity and political neutrality seem to be breaking down. He suggests that a 'contingency' approach is, in the meantime, perhaps the best way to go. He seems to borrow somewhat from critical theory in order to pose a 'meta-theoretical approach' from which contingencies can be developed in order to foster "a normative decision making model" which is operationalized into "real-life problem solving and decision making situations" yet is abstract enough to apply to a range of substantive contexts.⁴³ Innes (1995) makes the suggestion that "communicative action" may be a new emerging paradigm in planning theory which closes the gap between theory and practice. This approach is of a similar vein to Forrester's work and is similarly influence by Habermas' theory of communicative action.⁴⁴ Be that as it may, it is evident that significant searching for alternatives is taking place and that, while discussion is being fostered, the search continues. It also seems evident that there has been challenge enough to inspire the search for alternatives to what has been the dominant rational model. This kind of searching seems to be afoot in many disciplines.

There are three areas of thought which I think provide the main thrust of a broader paradigmatic challenge. One is of *postmodernism*, another *feminism*, the third is usually referred to as *environmentalism*. The last term, while useful enough, is conceptually misleading; I prefer the term *ecological*, for reasons which will become apparent. All three can be mainstreamed enough to offer no substantive challenge to the dominant planning paradigm as I have presented it. In their more radical forms, however, all three are arenas of challenge; all share a common theme of epistemological contention, if perhaps for different reasons. Rather than perform an extensive analysis of each of these three arenas of challenge, I will provide an overview.⁴⁵

Postmodernism has begun to make its way into the planning literature. Some examples of planning theorists who have begun to broach issues of modernity and postmodernism include Milroy (1991), Thomas and Stein (1995), and Beauregard (1996).⁴⁶ There is no question that the "problem of modernity" and postmodernist thought is currently a tenacious fount of discourse in academia having garnered considerable input in cultural and literature studies, history, social and political thought as well as philosophy. One focus for debate which might be of interest to planners is the topic of science and technology. Postmodernism can generally be seen to hail an epistemological shift towards a more socially constructed view of knowledge and a rejection of positivism, objectivity, foundationalist philosophy and universalism, in favour of more open-ended, deconstructive and discursive approaches.⁴⁷ As a discipline whose ideological roots are in modernist philosophy, Postmodernism is therefore important for planning theory. I should also point out that postmodernism is not the only challenge to the rationalist assertion of objectivity.⁴⁸ There are also postmodernist influences in architecture.

The feminist challenge to dominant paradigms in planning is growing. It is important that men, or women for that matter, do not dismiss its critique or relegate its contributions as relevant to women or feminists alone. Feminism garners broad and diverse sources of input and is not a unitary body of theory; there are many *feminisms*. All share in offering a critique of the culture, perceptions and power relations of patriarchy, in particular in its Western mode of development. All offer important insights into the nature of Western culture and modernity. Some examples of those who have approached planning and planning theory from a feminist perspective include: Boucher (1997), Sandercock and Forsyth (1992; 1996), MacGregor (1995), Ritzdorf (1996), Liggett (1996), Fainstein (1996), Milroy (1996). Many address epistemological dimensions of both the critique and practice of planning, including aspects of its methodological implications. Some, such as Sandercock and Forsyth (1996), and Friedmann (1996), focus primarily on epistemological issues.⁴⁹ The *ecofeminist* approach is particularly of note in that an explicit connection is made between feminism and ecological issues in both theory and practice. One prevalent theme in such work seems to be an emphasis on ethics in planning.⁵⁰

The feminist critique explores issues of gender, power and knowledge.⁵¹ In application it tends to move towards redefining power, inspiring and implementing process of

empowerment. As mentioned, feminism is not a single body of theory but is quite diverse, propagating issues of gender, race, class, ethnicity and spirituality especially amongst eco-feminists. A considerable cross-fertilization has occurred between feminism and postmodernism as well as a growing area of social theory loosely referred to as *postcolonialism*.⁵² The topic of epistemology, the subject of “nature” and culturally constructed perceptions of it are common themes.

There are some issues of epistemological import underneath a feminist challenge to the planning mainstream. These include a rejection of the dualistic social epistemology which I have outlined in my problem statement as cognitive dissonance. Not only have feminists helped to develop a critique of this approach, both philosophically and in terms of the power relations in Western patriarchy, they have given epistemological recognition to the body as a basis of knowledge—body-based knowing—and the need also to recognize other devalued ways of knowing, such as feelings and intuition.⁵³ Consequently, feminism is helping to foster a more holistic approach to knowledge towards integrating various ways of knowing and experience.⁵⁴

Feminism thus offers a fairly generalized critique of the dominant cultural paradigm from within. By broaching such issues as spirituality, knowledge, power, aesthetics and practice, feminists are in many ways at the leading edge of cultural transformation. This is especially powerful when linked with issues of ethnicity, race, class and ecology. The question of ‘being’ is pivotal; instead of ontology, the debate tends to centre on ‘identity’. This is an area where feminism has also come under attack. It is argued, both by men and women, that feminism has propagated a different sort of gender bias by constructing essentialized categories of male and female, or displacing male gender bias with female; yet some of the most insightful debates on these topics come from within feminism itself. This includes developing theory and analysis which challenge the heteroism of a masculine-feminine gender duality.⁵⁵

In all events, the epistemological lessons offered by the critique and practice of feminism is pertinent for academics and people of any gender. For planning, this challenge is relevant, not only to a critical analysis of planning theory and dominant power structures. Feminist theory has practical contributions to make in developing equitable planning practice which can offer alternatives to the hierarchies of social power. Looking at the planning literature, it seems that feminists have been the most active in raising and addressing some of the issues of epistemology and planning. These are fairly recent developments in planning theory and we can expect to see important contributions here in the search for new planning theory and practice.

The third challenge comes from the ecological perspective. I do not like the term “environmental” as it obfuscates a pivotal insight of ecological thought which posits humanity as a subsystem of the larger ecosystem. The term “environment” is really a reversal of this, it is used to construct a meaning of “that which is outside”; thus, it re-states the perspective of the domi-

nant cultural paradigm which sees ecological systems as externalities, or even as subsets of the human socioeconomic enterprise. This is the basic insight of *shallow* versus *deep ecology*. The term deep ecology movement (DEM) was coined by Norwegian philosopher Arne Naess.⁵⁶ He established the philosophical terms of reference for debate on the subject of “environmentalism”, often referred to as “shallow ecology”, which is a human oriented, or *anthropocentric* approach, and “deep ecology” which is ecological or *ecocentric* in orientation. In its mainstream guise, “environmentalism” does not constitute a substantive epistemological challenge to the dominant cultural paradigm; the ecological perspective does.

Many (e.g. Jacobs, 1995) use the common term “environmental philosophy”. I prefer *ecological thought* for the above reasons, and because it inculcates more accurately the essential teaching of this perspective: human systems are embedded in ecosystems. This distinguishes its analytical character, philosophical spirit, and the central challenge it poses to current thinking. It establishes more accurately the context of thinking and planning as the basis of a general model. That ecological science has spawned philosophical offspring and others in the social sciences can be regarded as a shift in thinking.⁵⁷ It is also important to be aware of the distinction between work which is “scientific” and that which is a response to science. There are considerable political, philosophical and religious responses.⁵⁸ The term “ecological thought” is, thus, a more useful and sounder analytical context for problematizing a general field of thought, inquiry and action which entails a diversity of perspectives within it, including its more scientific, political and spiritual elements.

The issues are not uncontentious. Indeed, there have been debates within the scientific field of ecology between reductionists and systems ecologists who are more holistically minded. Many academic bioecologists still separate humans from non-human nature—human systems from ecosystems. The ecosystem approach has begun to influence resource management sciences with the development of ‘ecosystem-based management’.⁵⁹ While still in development, it can arguably be seen as a shift in paradigm from previous management models, such as ‘multiple-use’ which arose in the 1970’s and its later version of ‘integrated resource management’, in that the ecosystem is the general field of inquiry and subject of management. The *Report of the Ecological Society of America on the Scientific Basis for Ecosystem Management* states that “humans are ecosystems components”.⁶⁰ Ecosystem-based planning is a nascent field that is being adopted increasingly by the U.S. Forest Service; a Canadian example is the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound which is dealt with in my dissertation.⁶¹

Where does epistemology come into the discourse on ecology? The answer to this question is broad and potentially time consuming. First and foremost, the most substantive philosophical challenge of ecological thought to the dominant paradigm is of an ontological nature. Yet the topic is connected with epistemology. Aside from ecofeminism, mentioned above, others who have attempted to address this are Bateson, Abram, Capra, Berman, Griffen,

Devall and Sessions, LaChapelle, to name a few.⁶² Much of this work is directed at the larger social and philosophical contexts of knowledge which I have referred to as 'social epistemology'. Bateson specifically explores issues of epistemology in *Steps to an Ecology of Mind*, and *Mind and Nature*. His thinking is also influenced by cybernetics.⁶³ Abram makes contributions in his work *Spell of the Sensuous*, both at the level of scholarly critique and in fostering an embodied epistemology (similar to Berman's term "somatic"). The terrain he winds in up is akin to some feminists and postmodernists but from an approach influenced more by phenomenology. His work furthers epistemological discourse both in its critical and creative capacities.

Writers such as Berman and Capra approach their critique of the dominant rational model from the larger context of the philosophical and socioeconomic transformations of the scientific revolution, the Enlightenment, and the advent of industrial culture.⁶⁴ Berman explores explicitly the historical transformations of mind and meaning; Capra links the rise of science with classical political economy, and the philosophy and psychology of the mechanistic-rational view of the world. Berman's work is seminal in popularizing ideas on the philosophical origins of the ecological crisis in the rise of modernity. Capra has been seminal in popularizing the idea of paradigm shift and its broader social applications, in particular the term 'Cartesian-Newtonian paradigm'.⁶⁵ (Lewis Mumford explored aspects of this topic much earlier. ⁶⁶) Capra is the one to have described the ecological crisis as "a crisis in perception".

The above approach often leads into the topic of the development of new paradigms within the Western sciences, in particular physics, ecology, biology, chaos theory and the like, whose proponents have challenged some of the philosophical sources and conclusions of cognitive dissonance and the rational model. Some such as Capra, Griffen and others, have tried to tie these developments to modern social movements. Capra, whose academic letters are in high energy physics, published his seminal treatise, *The Tao of Physics*, in 1975 which led to a popular ground swell in the dialogue between science and spirituality. Griffen is notable because he ties such discussion into postmodernism, accepting the critique of rationality and objectivity while de-emphasizing its deconstructive features in favour of a more *constructivist* approach. His edited collection, *The Reenchantment of Science, Postmodern Proposals*, includes work by eminent scholars in physics, cosmology, biology and theology.

The constructivist postmodern approach addresses the problem of modernity from a broad perspective bounded by such issues as anthropocentrism, patriarchy, individualism, economism, mechanization, nationalism and militarism.⁶⁷ Griffen writes that constructive postmodern thought "provides support for the ecology, peace, feminist and other emancipatory movements of our time, while stressing that the inclusive emancipation must be from modernity itself."⁶⁸ Its thrust is essentially revisionist in that it seeks to overcome the problem of modernity by fostering a postmodernism through the reconsideration of modern ideas in light of pre-modern concepts.⁶⁹ This perspective is helpful and engaging for those students of sustainability who, while respecting the critical contributions of deconstructive postmodern-

ism, have the constructive goals of fostering a meaningful path for the transition to ecological sustainability.

A central theme here is on broaching a philosophical rapprochement between science and spirituality. Underneath much of this is a re-assessment of ideas germane to the realm of ontology, and an attempt to foster a discourse on the subject in a manner which can serve as a basis for creating meaning in people's day to day life. Such *ontological* questions of who and what we are as beings, our place in the world, our relationship with other species and the planetary system as a whole, are in my opinion the most fundamental issues in the broader problem of sustainability. Some scientists have also put forward such ideas, such as Wilson's concept of *biophilia*, Bohm's ideas on wholeness, Capra, Sheldrake, Suzuki and Peat.

Many, academics, however, are uncomfortable with this spiritual proclivity, its connection to science and the sheer grandness of the enterprise. This is where the constructive approach breaks away from most of postmodernism, but moves closer to ecofeminism and the deep ecology movement. There have been some negative reactions within the natural sciences, not only to this philosophical thrust, but also aspects of the science with which it is linked. At the same time there is a robustness here which is refreshing. Interestingly, many academics, both modernist and postmodernist, seem to abhor a substantive consideration of spiritual questions outside of its place in theology; yet, introducing spirituality into the ecological-social discourse has given this type of approach an appeal in popular culture, to activists, some scientists and other people who are re-thinking core modernist assumptions.

Philosophically, these efforts can be seen as a potential context for developing a theoretical basis for integrating the growing propagation of alternative medicine, folk knowledge, TEK, personal and community health in a manner which is linked to the scientific community. These are issues which are currently under discussion in medicine and could have an affect in community and public health planning in the future.⁷⁰ Such efforts will require an approach to knowledge and research which can bridge between different but complementary epistemological perspectives.

How has this begun to make its way into planning; why does it constitute a challenge to the wisdom of the dominant paradigm? Neither the dominant rational approach nor the Marxist and other Left theory orientations have the philosophical perspective and analytical tools to get beyond the anthropocentrism inherent in Enlightenment thought. Some might be inclined to disagree; however, the problem becomes increasingly complex when considering the broader issues of sustainability as I have outlined them.⁷¹ It is not simply a matter of feeding more data into a range of choices in a rational model of decision making, nor is it simply a question of how wealth is distributed.

Issues of power and capital control play a determining role in structuring the economic processes that drive ecologically unsustainable practices. They also incur a justifiable scrutiny on questions of distributive and social justice. Ecological systems are the basis of material flows

in political economy; critical social discourse helps us understand this. Thus, critical analysis of the structures of political economy is important for sustainability on both human and non-human accounts, as is the role of radical and advocative planning practice. Yet there is more at stake than radicalizing the structures which distribute wealth. We need to re-think, not only how wealth is created, but what the measures of wealth and quality of life are, and could be. The search for epistemological alternatives does not jettison the role of rationality in devising compelling reasons and strategies for moving towards more ecologically sustainable and socially equitable economic practices.⁷² However, it may affect the scope of rationality, the processes of decision making, and the context and content of critical discourse. The issue is more of a fundamental restructuring of our very sense of rationality and the context of decision-making, of the values and goals which drive decision-making and our perceptions of wealth.

While such considerations have been afoot for some years, these insights are just beginning to make their way into planning and planning theory. In response to this, Jacobs reviews three main currents of environmental philosophy, including deep ecology, ecofeminism and bioregionalism, and their relevance to planning.⁷³ The first point he makes is of the connection between planning theory and environmental thought in their mutual preoccupation with action. He points out that writers associated with the DEM have been influential in inspiring grass roots activism, having some roots in the naturalist tradition of North America and early efforts of John Muir. Its affiliation with a strong, growing core of natural scientists has also helped to bring it credibility and make such ecological thought relevant to planning.⁷⁴

In sharing a critique of the inability of shallow ecology to develop a credible response to the ecological challenge, as well as in its appeal for a shift in values with an inwardly looking quest for answers, Jacobs recognizes that the DEM and ecofeminism have much in common. There are also differences. Whereas the DEM is much inspired by Eastern religions and Native American philosophy, ecofeminism is more actively engaging a critical analysis of power and social structures. Jacobs recognizes the role that spirituality plays in the ecofeminist approach; however their perspective is based fundamentally upon the recognition that the oppression of women (of people) and of nature are inextricably linked. The debate between feminism and the proponents of the DEM has at times been considerable, yet both are essentially perception and value based; both argue for the need to re-think critically the "scientific-technological-industrial paradigms" which are the basis of current planning models and resource management.⁷⁵

Bioregionalism, Jacobs argues, is distinct from both ecofeminism and deep ecology in some fashion. Chiefly, it does not come from a quest in philosophical re-thinking of humanity's relationship with nature and an impetus for changes in worldview to achieve environmental change. Rather, it starts with the practical issues of how people live in a certain place and learning from that experience. "Rather, bioregionalism originates through observation of the earth, its patterns, and the ways people accommodate and become part of those patterns."⁷⁶

There are strong ties between bioregionalism and systems ecology. At the same time, bioregionalism recognizes that the central concept of the *bioregion* “refers to a geographical terrain and a terrain of consciousness”.⁷⁷ While it is not mentioned by Jacobs, another important, related model is *permaculture* – literally “permanent agriculture”. This is an approach to planning human systems as whole communities based on an ecosystem model of the material flow, nutrient recycling and hydrological cycles in a bounded geographical domain.⁷⁸

While bioregionalism has some important distinguishing features both from ecofeminism and the DEM, Jacobs also points to commonalities. He suggests that proponents of bioregionalism agree with both ecofeminism and those of the DEM that changes in our self-perceptions and relationship with the earth are “at the root” of solving environmental problems. He also points out that, like the DEM, bioregionalism places a strong emphasis on decentralization and the importance of local autonomy admiring “the wisdom of more nature-based human societies.”⁷⁹ Akin to ecofeminism, bioregionalism is anti-hierarchical. Similarly to both deep ecology and ecofeminism, bioregionalism also places an emphasis on the need to re-integrate spirituality into people’s day to day life. Another important point Jacobs makes is that bioregionalism has also been the subject of criticism by ecofeminists on grounds similar to their critique of the DEM. This is that bioregionalism tends to see all people the same and has fostered little inquiry into issues of gender, race and class in the bioregionalist vision.⁸⁰

I agree with Jacobs’ overall presentation and comparative analysis. These various streams of ecologically inspired thought have much to offer each other and it is important to follow the debates between them and necessary to consider what each has to offer planning. While at times being accused of romanticism, deep ecology’s ties to North American (as well as European) traditions of both Western conservation and Indigenous philosophies lends it an air of domesticity and historical grounding which is relevant to cultural discourse. Its radical commitment to biocentricity pushes discussion towards a strong ethical reconsideration of non-human life forms and “non living entities”, and places the exigency of local and planetary ecosystems as the central limiting factor in any planning model. Its radicalism, and at times cavalier downplaying of human concerns, is also a political liability and a constraint on addressing core issues of equity in sustainability.

Ecofeminism, on the other hand, can balance these tendencies with a strong regard for the sanctity of human life. Its link to feminist theory provides an entrance point into critical analysis of the hierarchy, power structures and social relations which constrain not only ecosystems, but shape structures of social power and the equitable distribution of wealth. It also fosters contributions to models of community-based involvement and planning processes which seek to empower equitable participation of a variety of actors and the consideration of a variety of values. This is underscored by an attention to race, ethnicity, gender and the diversity of human cultural and political pursuits. For all these areas of ecological thought, such topics need to be addressed more substantively, in particular in terms of equity, race, ethnicity and a

general Western orientation or bias.⁸¹ Yet, all offer a wealth of philosophical material and generate important theoretical discourse and action oriented strategies.

Both the DEM and ecofeminism share the liability of being at times too theoretical and abstract to the point that those not familiar with their ideas can be alienated or feel preached at. This can be balanced by the practical orientation of bioregionalism and permaculture, and their ability to help establish a tangible geographical foundation for linking natural sciences, philosophy and infrastructure in a context which is accessible to planners. Both bioregionalism and permaculture are theoretically amenable to ecosystem-based management. They offer conceptual and technical insights for mapping, zoning and the development of sustainable land-use scenarios which are localized yet comprehensive. Moreover, bioregionalists often support the platform of the DEM, as do many ecofeminists who often raise issues missed by the others. All three areas of environmental thought contribute to holistic models of human habitation and cultural patterns of development which integrate political, economic and spiritual concerns in an ecological context. This is commensurate with challenges of sustainability as I have outlined in my problem statement.

What I find most helpful in Jacobs' treatment is his presentation of the dominant approaches in planning theory and what "an ecoview of planning theory" has to offer in light of the substantive challenges it poses to mainstream planning. Jacobs thus provides a worthwhile link between ecological thought and mainstream planning theory. His analysis of planning theory, which is amenable to much of the prior discussion (e.g. Alexander), is a three-pronged typology including: the comprehensive-rational school of thought, the incrementalist, and the advocate-progressive orientation. He also posits the comprehensive-rational approach as the foundational planning paradigm, where the planner is the classic "neutral technician, whose method is the systematic application of scientific-rational techniques" working on behalf of the greater public good.⁸² (e.g. using economic and population forecasting, land use analysis, etc.)

Jacobs submits, as do Barclay and Alexander, that incremental planning arose out of a response to the perceived shortcomings in theory and practice of the comprehensive-rational model. It has been argued (e.g. Meyer and Branstein's "classic" study of the Chicago Housing Authority; 1955)⁸³ that there are major obstacles to the implementation of the comprehensive-rational planning ideal. These include practical political issues in planning and organizations along with issues of a more theoretical nature in regarding the problem of rationality and decision making from the standpoint of taking low small risk steps over larger high risk steps.⁸⁴ The alternative model posed by incrementalists, Jacobs suggests, "is almost the opposite to that of comprehensive-rational planners."⁸⁵ As we have seen, the approach here is that planning should be limited in its scope and area, specific in its content and short-range in time frame.⁸⁶

The role of the planner as incrementalist, however, is notably similar to that of the comprehensive-rationalist, yet for quite different reasons. They both pose the planner as a neutral technician. According to Jacobs, the difference here is that it is functionally impossible to define

the greater public interest, thus “planners end up using their own values, or their sense of what the public interest should be, as the basis for planning.”⁸⁷ This is underscored by the insight that planners really have no legitimacy for imposing their values upon situations in planning, a privilege to be reserved for politicians. Thus, “the best planners can do” is to serve as “technical advisors” who provide focused analysis for decision makers to lend assistance in understanding planning problems.⁸⁸ This is a divergent ethical posture from that adopted by planners who follow the “advocate-progressive” model.

Jacobs cites Davidoff’s “seminal article” in 1973 as providing “a wedge” which began to open an approach to planning theory that emphasises the need to place planning action in its larger structural context. According to Jacobs, this hails a shift in emphasis from how a plan is prepared and what are its contents to how a planner *should* function.⁸⁹ Rather than a neutral-technician, as I raised earlier, this is the politicised planner. The questions asked here entail political and economic vectors: “Whose interests are served by planning?”; or “How does planning as a profession and a social action relate to other social and economic forces in society and history?”⁹⁰ Thus, in starting with similar questions to the incrementalists about identifying the “public good”, the argument is to work with multiple, focused public interests in promoting a participatory and highly pluralized planning process.

Therefore, in the advocate-progressive planning model is the attempt to use a critical approach in order to inform a basis for action towards more socially equitable planning processes and the promotion of social justice.⁹¹ As I mentioned earlier, Friedmann provides a theoretical context for this material. Jacobs puts advocacy and radical planning together. While they are closer on the spectrum, it should also be pointed out that one can be a liberal planner who advocates for a plurality of view-points without posing a substantive challenge in terms of restructuring the political and economic discourse. Similarly, mainstream environmentalists could achieve a great deal of their goals within the given political structures whereas more radically oriented ecofeminists, bioregionalists and supporters of the DEM arguably could not.

The above discussion boils down to the following question: How do contemporary strains of ecological thought inform the planning theory debate? It is here where I think that Jacobs makes his contribution, for while various schools of ecological thought each have their own implications for planning theory, the important point is that there are some “general direct observations and indirect speculations” which can be made.⁹² The first point he makes is that the literature of environmental philosophy challenges the validity of incrementalists in regard to the perspective and process of planning.

Whereas incrementalists seek to narrow the scope of planning, the common thrust of ecological thinking is that long term substantive success will come from a broadening of the scope of analysis and recommendations. Jacobs is saying here that the message for planners is that it is not useful to make little or limited plans. “Not only will they not stir peoples souls, ultimately they will be counterproductive by delaying an examination of the underlying and

fundamental causes of problems. *It is within this examination that lies the basis of long-lasting, sustainable solutions.* ⁹³ While this is an important insight, he does not address the challenges raised by the incrementalist critique of the comprehensive-rational planning model for a comprehensive approach informed by environmental philosophy. Indeed, there could be a place for a mixed planning model that incorporates incremental implementation of comprehensive plans which have been recalibrated within broader ecological parameters. 'Adaptive assessment and management', for example, takes system behaviour into account to "proceed slowly" and "manage for surprise" as part of a pluralistic, comprehensive incrementalism.⁹⁴

His next direct observation is that environmental philosophy can lend some validity both to progressive planning and to the comprehensive rational approach. He points out that environmental philosophy, as noted above, poses a set of questions which reveal the "structural origins that underlay the world" (he does not mention cognitive structures). These conditions are understood in their "long-term systemic context" and require that we "think about responding to these conditions with a comprehensive (*though not solely rational*) strategy."⁹⁵ I would like to flag here the parenthetical insight about "not solely rational" to pick up later, it is reminiscent of Weaver, Jessop and Das. The comprehensive nature of Jacobs' approach is underscored by influences of ecological science on environmental philosophy which tend to approach subjects from a *systems* point of view, which as Jacobs points out, is comprehensive when viewed from planning. This may be what Alexander was hinting at when he admired the "robustness" of an ecosystems approach for a normative model.

Although he doesn't use the term, Jacobs speaks to the *holistic* character of an ecological approach which recognizes that all aspects of a system are connected; when one component of system is affected so are others. Analysis is, thus, comprehensive in both form and function:

The implication of all this for planning is to suggest that environmental philosophy establishes the basis for a critical comprehensiveness. This critical comprehensiveness will differ from both comprehensive-rational planning and progressive planning in two ways: first by drawing on the critical perspective of progressive planning as the basis for comprehensive analysis; and, second, by utilizing the rational mode of analysis that is the explicit foundation of comprehensive-rational planning, and the barely disguised basis of progressive planning as only one of several systems of informing and knowing.⁹⁶

Several insights are made here. One is that ecological based planning, linked with the critical features of the progressive-advocacy approach, can help establish a planning model which is not only critical in analysis of the material structures of society but also, by implication, of its philosophical features. The next point is that it offers a comprehensive nature to critical analysis which is lent to a comprehensive character for action orientation. These insights need to be tempered with my above discussion on a comprehensive model mixed with incrementalism. They also need to be appended by the analysis I offered of Jacobs' use of "progressive-advocacy" in that it covers a fairly broad chunk of political orientations and analytical postures

within the planning spectrum. What is most insightful for my work, however, is the final point, which is that, while there is a rational feature in the model, it is only one of several systems for knowing and generating information.

This last point is perhaps the most radical and potentially contentious. While Jacobs mentions that the rational approach is only one way of knowing and system for generating information, he goes no further. He does not suggest what other ways of knowing there may be or information systems to which he is referring. Yet from an epistemological perspective, this is one of the most intriguing and compelling aspects of the entire discussion. It is similar to the discussion proffered by Weaver, Jessop and Das and the idea that there are different types of reason. The whole question of alternative epistemological systems is an important topic for the subject of Traditional Ecological Knowledge (TEK). In terms of Jacobs' discussion, I might fill in some of the blanks and suggest that some answers can be found in the spiritual elements of ecological thought, in the intuitive and body-based ways of knowing found in ecofeminism, and in the discursive features pointed to in aspects of postmodernism, transactive planning and the ecofeminist approach. This may begin to broach the problem of cognitive dissonance.

Before returning to the above discussion, I would like to quickly consider the more indirect points to which Jacobs refers which are also important from the point of view of challenges to planning theory. Here Jacobs suggests that a number of points are pressed on planning theory in the environmental philosophy literature. These include: the general anthropocentric orientation of planning theory and practice; the relationship between means (processes) and ends (outcomes); the legitimacy of an abstract or contextless planning theory; the loss of "place" as a specific basis for planning.⁹⁷ Another argument put forward by Jacobs is that ecologically-based planning offers a concrete subject for planning theory in the face of what seems to have become an abstract "discourse absent a subject".⁹⁸ The question of achieving sustainability thus brings a measure of credibility to planning and planning theory.

I agree with the overall thrust of Jacobs' analysis. The various currents of ecological thought he reviews have individual substantive contributions to make. Supporters of the DEM challenge the anthropocentric foundations of planning with a shift of emphasis towards a comprehensive, ecological systems-based model. Eco-feminism contributes alternative agendas for planning process, similar in character to that of Forester.⁹⁹ As Jacobs puts it, "the very nature of the means permeates the very quality of the solution that results."¹⁰⁰ Means are ends in themselves; process and content must be congruent. These insights are informed by a critical view of power, hierarchy and social relations with an agenda to democratize the planning process. Jacobs goes so far as to suggest that such an approach to planning process can have more enduring results because those involved and affected will have a vested interest in both the process and the outcome. While corresponding to the pluralistic initiatives sparked by Davidoff in the 1960's, Jacobs argues that this is of a different character because the planner is not so

much a neutral expert as a facilitator. This also entails a democratization of the concept of knowledge.¹⁰¹

Bioregionalism makes two chief contributions. Bioregionally-based planning establishes the imperative of bringing into all planning analysis a specific spatial element. Secondly, it draws on this to both ground and free planning theory.¹⁰² I appreciate that Jacobs also finds a connection between the bioregionalist vision and elders in planning such as Mumford, who emphasized physical regionalism, or Odum and Moore whose outlook was of a sociocultural regionalism.¹⁰³ Doing so grounds these alternative visions into planning as a tradition and serves to make ecological thinking more accessible to professional planners. In posing challenges, ecological thought may have answers to the soul searching through which planning has been undergoing. Jacobs cites Brooks¹⁰⁴ who also suggests that twentieth century transformations of planning have pursued an ongoing "search for relevance and influence in the decision-making process"¹⁰⁵ and suggests that what planning has lost is its visionary tradition. Environmental philosophy can help planning recover this by posing fundamental questions and acting on their implications.

On the broader scale, the arguments put forward by Jacobs also concur with my general discussion. The ecological challenge to planning aims at the foundation of knowledge and belief structures in which planning operates. The critical insights it offers pose questions of a fundamental nature, not just to planning paradigms, but to the larger cultural paradigm which informs them as a model of reality. Yet one of the most encouraging insights here is that this is why ecologically-based planning, as I have constructed it (and as has Jacobs), has the potential to re-vitalize planning theory and practice. The questions of why, what, how and with whom we plan are given not only a normative injection, but also a critical one, with both procedural and technical implications.

Looking more specifically at the epistemological challenge offered by a holistic ecological perspective, we see that our perceptions of knowledge and how it is generated is broadened in theory and practice. The topic of different kinds of knowledge is raised, as is the subject of knowledge *systems*; there may be different criteria for knowledge which can inform planning and shape planning processes. The question of rationality is not so much lost as it is seen in a new light. As Weaver, Jessop and Das suggest, in "the world view of the New Rationality there is an acceptance and validation of the different myths and social histories that explain reality."¹⁰⁶ This opens the topic of discussion to a question on the possibility of the multiple orderings of reality which will be revisited in the chapter which deals with TEK. I can then ask, how do such insights shape the manner in which we approach knowledge and its implications for planning between cultural paradigms?

These broader philosophical and social issues of epistemology are just barely making their way into the planning literature. One current example can be found in the work of William Rees, a planner with a scientific background in ecology. As a scientist, his work is

particularly focused on material flows and energy throughput in human systems. His approach to planning between paradigms is one which attempts to integrate economic models with ecological systems. Here, the dominant development paradigm is seen to have constructed a model of the "environment" which does not fit with the view that emerges from the ecological sciences. The mainstream development perspective sees the environment as stable, predictable and controllable, and characterized by smooth reversible change over time. The model arising from systems ecology is of a complex, self-organizing system characterized by unpredictable, discontinuous, even chaotic behaviour which defies accurate prediction and control.¹⁰⁷

Rees also compares the "epistemological and scientific origins" of these two paradigms. The former is rooted in the modernist philosophy of the Enlightenment. Along with Newtonian analytical mechanics, he cites Galileo, Bacon and Descartes, from the 16th to 18th Centuries. The latter is rooted in 20th Century physics and biology, Prigogenian self-organization and dissipative structures, non-equilibrium thermodynamics, complex systems theory, deterministic chaos and systems ecology.¹⁰⁸ These two contrasting epistemological models are arguably the basis for two different worldviews or models of reality. Rees explores these two and their implications for planning in detail. In other papers, he recognizes "the cultural roots of reality" and "worldview as social myth."¹⁰⁹ He also offers a "Framework for Holistic Environmental Planning" including a comparison of "the planner/technologist" and "the ecologist/planner" based on the two models. ¹¹⁰

Rees' work has been most influential in proffering a critique of the dominant development paradigm in planning. He has also contributed to the advancement of ecologically-based benchmarks (e.g. ecological footprints, ecological deficits) which reveal the unsustainable character of industrial urban and regional development. His critical approach is founded upon epistemological challenges to the mainstream rational planning model from a scientific ecological perspective. There has been cursory work in attempting to foster holistic planning models for sustainability. These are based on the examination of material flows and energy throughput in a broader, yet less developed, philosophical and social context.

Rees provides a credible basic framework of analysis. The model has both critical and action oriented implications, yet the bulk of his work has remained as a critique. Many of the questions that I have raised above on such topics as knowledge systems, different ways of knowing, on spirituality, being, and a general shift in cosmology are recognized, yet are less explored. I will draw on his basic framework to investigate these areas of inquiry in order to advance this scientifically grounded ecological model into a more holistic contribution to planning theory and practice. In looking at questions which challenge the spectrum of planning models, I hope to contribute to this spectrum, to helping shift it, or some part of it.¹¹¹

2.3 Defining Planning: Knowledge Into Action

Friedmann provides a worthwhile entrance point for an epistemological discussion of planning theory. He locates planning as an applied field that is embedded in various intellectual traditions with both philosophical and practical outcomes. His major work, *Planning in the Public Domain: From Knowledge to Action*, is one of the most comprehensive scholarly treatments on planning and planning theory. His overall perspective on planning theory is helpful for gaining insights on some of the problems raised above.

Friedmann recognizes that the major areas of planning all draw on special theories to inform their work, including such fields as urban design, national defense, health planning, social planning, economic development (I would include natural resource planning). From this point of view, each can be seen in the context of their specific tasks, including different planning objectives and concerns, as well as different academic backgrounds and professional training. At the same time, he notes there are specific applications all planners share which face common methodological problems. Friedmann suggests, therefore, that all planning “*must confront the meta-theoretical problem of how to make technical knowledge in planning effective in informing public action.*”¹¹² He asserts that the major object of planning theory is to solve this meta-theoretical problem. If left unsolved, planners will end up talking only to themselves and eventually become irrelevant.¹¹³

This level of a *meta-theoretical* perspective is the one that I will adopt in my approach to planning theory. It is conducive to my epistemological orientation. The broadest definition that Friedmann can offer in this context is that “planning attempts to link scientific and technical knowledge to actions in the public domain.”¹¹⁴ Here, Friedmann points out that planning is not wholly concerned with knowing or acting but in providing a link between the two. He goes on to suggest, however, that a more precise definition is needed, and offers two more. “Planning attempts to link scientific and technical knowledge to processes of societal guidance”, is the first; the second is, “Planning attempts to link scientific and technical knowledge to processes of social transformation.”¹¹⁵ The operative terms are *societal guidance* and *societal transformation*. These two definitions are in accordance with the discussion I have presented above referring to other theorists in the planning literature.

For Friedmann, these two poles of planning are necessarily in conflict. One, societal guidance, is articulated largely through the state and is concerned chiefly with systems change; whereas, the latter of social transformation is focused on political practices aimed at systems transformation. The conflict is reflective of the larger one between the interests of a bureaucratic state and the interests of political community. The bulk of public planning, however, takes the course of the state’s interests, The pressure for system-wide transformation is intensified when the legitimate authority of the state declines.¹¹⁶ Friedmann also points out that each of these definitions has roots in different intellectual traditions. Societal guidance draws on neo-classical

and institutional economics, public administration and organization development; whereas, social transformation comes largely from Marxist and anarchist origins.¹¹⁷

Friedmann therefore suggests that a comprehensive exploration of the terrain of planning theory “must cull from all the relevant disciplines those elements that are central to an understanding of planning in the public domain.”¹¹⁸ The theory of planning is therefore eclectic; it is bounded by such fields as political philosophy, epistemology, sociology, economics, public administration, to name a few. These are all informed by a diversity of political persuasions. Yet underneath all of this is the quintessential nature of planning: *planning is knowledge into action*. As Friedmann points out, questions of knowledge are central here: “This...concerns what we can and cannot know about. Are there different forms of knowledge, and are some forms inherently superior to others? How does knowledge come to be validated?”¹¹⁹ These are some of the questions he raises.

Friedmann suggests that planners make the claim that their advanced degrees in relevant disciplines and professional fields confer upon them privileged access to scientific knowledge and technical know-how. Furthermore, they claim that this knowledge is generally “superior” to knowledge gained in other ways (e.g. from experience):

...In this respect, they speak as true heirs of the Enlightenment, the age in which central authorities in the secular world began to base their decisions on science and its technical correlations rather than on divine inspiration. In the Enlightenment tradition, two crucial assumptions are made. The first is that the world is objectively knowable through the instruments of positive science. The truth of the world...is validated by becoming the basis for the mastery of the world. The second assumption is that there is an unbroken line of evolution between the physical or natural world and the human or socio-cultural world.¹²⁰

If there is one theme that underlies all of this, it would be the application of reason to human affairs. This is the definition of planning provided by Thomas who writes that the “essence of planning is rationality or the application of reason to human affairs.”¹²¹ Friedmann says as much in the conclusions of *Planning in the Public Domain*.¹²² It should also be pointed out that this not just any kind of reason; it is a rationality conceived of in a very specific way. I will return to this discussion in the historical section that follows. Before doing so, I would like to consider some initial questions about knowledge raised by Friedmann and respond by posing some questions of my own. The questions are in italics to set them off from the main text which focuses on Friedmann’s discussion. I will then discuss the “Epilogue” at the end of *Planning in the Public Domain*, where Friedmann presents material consequential for my dissertation.

2.3.1 Some Questions on Knowledge, Planning Paradigms and Possible Directions: An Examination of Friedmann’s Epilogue

Friedmann considers the possibility that there can be forms of knowledge other than that which is scientifically based and technically active. For example, he suggests that *apprecia-*

tive knowledge is pursued “primarily for the worldview that it opens up...Contemplation and the creation of symbolic forms continue to be pursued as ways of knowing about the world”. He adds, however, that because such knowledge forms “are not immediately useful, they are not validated socially.” What is socially validated is *manipulative* knowledge. “The social validation of knowledge through mastery of the world puts the stress on *manipulative* knowledge.”¹²³ He then enters into a series of questions about knowledge which are inspired by their relevance to planning as knowledge into action. I have posed some of my own reflective questions in italics.

What is the “value” of knowledge? Why is “appreciative knowledge” seen as less useful? Is it useful in ways less important for enhancing the quality of life? Are there other features of knowing or knowledge that are not adequately addressed by such terminology? Is there a better way to approach the inter-face of knowledge systems, such as with TEK? Why and how is “mastery of the world” a social criterion for the validation of knowledge? Is this perspective most conducive to sustainability? Does “manipulative knowledge” constitute a superior form of knowledge to others? Is it the only credible type of knowledge which should inform planning theory and practice? If there are different forms of knowledge, are there then different “ways of knowing” and do these know about different things? Are they substitutable, exclusive, or complementary?

When Friedmann puts forward questions on the nature of knowledge, and his perspective on planning as the linkage of knowledge-to-action, it is important to capture the spirit in which he does this. There are “no easy answers”, he states; indeed, there may be no definitive answers at all. Moreover, it is “precisely this quality which makes them intriguing.”¹²⁴ Friedmann considers the nature of scientific and technical knowledge *vis-à-vis* how it is generated through controlled research along with issues of its implementation, which are less controllable. He entertains the possibility that “[r]ational actions must be based on holistic analysis of specific historical situations” and queries whether knowledge loses its “objective” character when “the assumptions under which it is claimed to be true are relaxed so that more and more variables can interact with the endogenous variables of the model in ways that cannot be calculated with precision?”¹²⁵

What does Friedmann mean by “holistic”? By what criteria can we consider analysis or knowledge to be holistic in nature? Can knowledge which is holistic be founded entirely upon rationality? Are there different types of reason or rationality? If so, do they inform technical knowledge in different ways, or could they inform technical knowledge of a different sort? What is rationality and why does it provide a basis for truth? Are other criteria for truth, or different truths? Does reason ever constitute an impediment to knowledge or truth, if so, under what circumstances? What is the nature of wisdom and its relationship to knowledge?

Friedmann takes the above discussion further and re-states the question. He queries whether “the scientist-planner who is forced to engage in holistic analysis” produces knowledge which is of a nature “superior to the hopes and expressions of ordinary people...?” I am

curious about his understanding of the term holistic, and “ordinary people”. Yet, it leads him to a line of questioning that constitutes what he seems to see as the greatest epistemological challenge. That is the *communicative* basis of knowledge, which I call its *discursive* feature. (By discursive I mean characterized by intensive dialogue, communication and interaction embedded within social relations and historic forces.) This interpretation, Friedmann argues, “challenges the claims to objectivity made for science and minimizes the differences between scientific, technological and personal knowledge.”¹²⁶ Here, knowledge is constituted by a social process. This represents a movement away from the more rigidly posited idea of “objective knowledge” of “reality” towards knowledge as a socially constructed proposition. This fits with the contextual material I introduced earlier on the social construction of reality and Rees’ point about “the cultural roots of reality” and “worldview as social myth”.

Why or how does knowledge seen as a discursive phenomenon impinge on the objectivity of scientific knowledge? Is such an understanding more valid? Does it render scientific knowledge any less credible? How do such insights serve science, or the application of scientific and technical knowledge? If knowledge is a social process, do different types of dialogue constitute different ways of knowing? How does a discursive approach to knowledge come to bear on claims of truth? Are there some circumstances where different knowledge claims and their criteria are more or less “useful” than others?

Friedmann’s position thus evolves to an arguable epistemological shift in perspective from the dominant rational point of view. Friedmann evidently concurs in the line of questioning which follows where he asks, if knowledge is a social, open-ended process, “on what grounds shall planners argue that their view of the world ought to prevail? Can we assume that their knowledge is always more reliable than personal knowledge? Do the conditions of knowing require at least a dialogue between planner and actor? If they do, how can such a dialogue be structured? And by whom?”¹²⁷ Such questions are reflective of epistemological debates which prevail in the areas I raised earlier, including the postmodern, feminist and ecological approaches. I should mention that there are other fields of inquiry where such questions have been entertained.¹²⁸ Friedmann does not return to these kinds of questions until the epilogue at the end of his book, yet they are relevant to my work, particularly to planning and the interface between Western, science-based knowledge paradigms and Traditional Ecological Knowledge systems.

2.3.2 Friedmann’s Epilogue

Friedmann’s epilogue at the end of *Planning in the Public Domain* is a rather extraordinary statement on the future of planning in terms of the epistemological challenges it faces. While planning seems to have come a long way from its origins in Enlightenment philosophy and mechanistic thought, “it is to a large extent still practised in the Comtean manner.”¹²⁹ The theoretical sureness, technical precision, predictability and control of planning as a “scientific endeavour”, however, is being increasingly challenged. Friedmann writes about what he refers

to as the imminent “change in the epistemological paradigm” that is affecting contemporary planning. He mentions the work of the physicist Werner Heisenberg in the 1920’s and the precedent it set for the “de-objectification” of knowledge, towards re-establishing the subjective features of epistemology and the “inter-subjectivity” of knowledge.

Friedmann raises explicitly the issues of epistemology and paradigm change. He suggests that the ramifications of these are of a cross-disciplinary nature, they are precipitating a re-integration between human and social sciences, and possibly even the natural sciences. Yet “sporadic efforts along these lines have tended to be viewed with a certain indifference if not outright hostility and have been pushed to ... the far periphery of the social scientific establishment.”¹³⁰ He tells us that the implications for planning of this, “new, holistic, dialogical science are not yet fully understood” and adds that the two levels of understanding of the “theoretical and the experiential” have not yet been successfully brought together.¹³¹

Friedmann does not go into great detail regarding the nature of this “new epistemology.” However, he offers insights into its primary social mediators and the methodological directions in which they seem to be headed. “These shock troops of a social scientific revolution,” are in agreement that, “the world is real, and that it can only be known—to the extent that it can be known—through a form of empathic inquiry...”¹³² He adds that fields such as mythology, folklore, history and linguistics offer essential insights, seen as methodological components or investigative tools of the “new epistemology” and as expressions of a socially mediated system of knowledge.

...given the growing conviction that Popper’s world of theoretical objects is taking us nowhere—the far periphery is staging a comeback, laying siege to the Establishment under the fluttering multicoloured banners of hermeneutics, structuration theory, phenomenology, ethno-methodology, universal pragmatics, and similar movements...Along with this is a gradual rapprochement with the human sciences as such cognitive fields as mythology, folklore, history and linguistics are seen to provide important pointers for the *proper understanding of observed phenomena*.¹³³

He punctuates these remarks by placing them in the social context of a “worldwide structural crisis that presents us with challenges of unprecedented magnitude” and adds that “our environments—political, economic, social, and physical—have suddenly become unglued. Most of what we thought we knew has lost its validity; it no longer leads to a satisfactory understanding of reality.”¹³⁴ He states that the crises facing contemporary society and planning is as significant as the revolutions in politics, economics and philosophy from which planning was born:

I am convinced that we face the most profound crisis since the world was overturned by the triple revolution of the eighteenth and nineteenth centuries: the political revolutions in America and France, the revolution in science, and the industrial revolution. That magnificent era bequeathed to us the several forms of

rational planning we have discussed...The changes which we are now passing – as revolutionary as any of those that had their origins in the Enlightenment, and which may take several generations to fully work themselves out – will also surely transform the nature of the basic relation of knowledge into action. In the present transition, however, we stand especially in need of planners...¹³⁵

What Friedmann describes here is congruent with my problem statement of three levels of potential crisis, including social systems, meaning systems and ecological systems. Thus, my work, in some sense, takes up where he leaves off.

Friedmann does risk three “preliminary conclusions”. The first is that “the new epistemology renders old fashioned technocratic planning illegitimate” adding that knowledge is “perspectivist and provisional.”¹³⁶ The second point, “on the positive side” is that “the new epistemology turns both scientific and planning inquiries into a dialogic process between the researcher/planner and the subject/actor...”¹³⁷ (His use of the word *dialogical* is akin to my use of *discursive*) And, finally, that “the language of scientific/planning discourse is changed into one capable of expressing subjective realities, a search for meaningful action, and the integration of the human with the social sciences.”¹³⁸ Aside from pointing to these directions, he goes no further. It is therefore up to us to explore these avenues for ourselves.

2.4 Recognizing Our Ancestors: The Historical Origins and Philosophical Roots of Planning Theory

A well known Stla'tl'imx TEK specialist, Morgan Wells, with whom I worked in the Stein Valley Rediscovery program, once remarked to me that the reason, “we don't get lost in the bush is because we're not always looking forward, we look back; we know where we come from.”¹³⁹ I have reflected and pondered upon this for eight years. He was making a comment, not just on bush craft, but on cultural orienteering skills, while offering a critique of modern society. He was also making a comment on *ways of knowing*. How can we know where we're going if we don't know where we're at? How can we know where we're at if we don't know from where we've come? In this next section, I present a brief review of planning's philosophical and historical origins. It is a way of honouring our ancestors.

I will not explore in detail the development of phases in planning and planning theory; enough has already been covered. I will instead seek to paint a picture of the world from which the philosophy that shaped planning emerged. In reviewing the origins of thought which have shaped the field of planning, we get a sense of where we come from. This helps us understand where we are now. I can then consider where it is we wish to go, and how we might get there.

2.4.1 From Ancient Origins to Modern Times: A Broad Overview of Planning History

While the beginning of planning's professional practice lies in the early Twentieth century with the industrial developments leading up to the First World War, its roots are older. On the origins of the city, Lewis Mumford tells us that there are three major elements which seem

to have been the original impetus for drawing people together: the burial ground; the ritual centre—caves, shrines groves; practical needs, for hunting, fishing, water, and eventually, agriculture.

So we see that two of the three original motives for temporary settlement had to do with *sacred* things, not just with physical survival. These *life-enhancing elements* carried over through the village into the city, gave it unique potency in the minds and spirits of men (sic). Always, man keeps hold of his past, in order to give continuity to his future.¹⁴⁰

The presence of cities has been documented in various ancient centres of civilization, including Mesopotamia in the fertile crescent of the Tigris and Euphrates, ancient China, in the Indus Valley (Mohenjodaro—Dravidian peoples), Meso-America, the Nile River basin, Neolithic Old Europe (e.g. Anatolia—Catal Haiyuk, Hacilar; Crete, Malta). The need for planning is evident in these great structural achievements of the so-called “pre-scientific” world, including such places as Giza, Teotihuacan and Stone Henge. Amongst other things, such built cultural centres are notable for their calendrical features, cosmological orientation and astronomical predictability. Although evident of substantial skills in mathematics, astronomy, engineering and a criteria of aesthetics, these were planned from worldviews, cultural beliefs and organizing principles of a different nature than that of planning as it is today.¹⁴¹

Modern planning, as we understand it to be, is founded in the application of scientific methods and technical reason to the human social domain. Thus, Faludi defines planning as “the application of scientific method—however crude—to policy making.”¹⁴² Therefore, when we speak of planning as “knowledge into action”, we are, for the most part, not just speaking about *any* kind of knowledge; we are speaking of a certain type of knowledge, that which is technical in the scientific sense. As I noted earlier, Friedmann writes that planning is “to a large extent still practised in the Comtean manner...it is a “scientific endeavour.”¹⁴³ It is necessary to consider the historical and philosophical origins of planning in this light.

As *the application of reason to human affairs*, the ideological spectrum of planning is rooted firmly in modernity. In other words, the origin of planning’s general philosophical terrain is established within the development of the Cartesian-Newtonian paradigm and the mechanistic worldview which gained its chief theoretical articulations and social expressions through the philosophy of the Enlightenment.¹⁴⁴ This forms the philosophical foundations for early industrialism and the modern era. The basic issues and dilemmas of planning theory are really those germane to the theory and practice of social philosophy in general, and of Enlightenment and post-Enlightenment thinking in particular. As we have seen, this basis of modern thought is under scrutiny from several key points of view; aspects of it can be considered in question. For staunch philosophical postmodernists, the entire project of reason is untenable.

Campbell and Fainstein write that “the first question of theory is of identity, which in turn leads to history.”¹⁴⁵ For them, the “traditional story told of modern city planning” is that it

arose from several separate movements at the turn of the century including “the Garden City”, “the City Beautiful”, and public health reforms. They suggest three basic periods of development that can be seen to characterize the history of planning which has ensued. These include: a formative period where the “pioneers” were not fully self-identified as planners; a phase of institutionalization and professionalism which saw planning’s self-recognition, along with the advent of regional and federal planning initiatives; and, the postwar (i.e. WWII) era which was attended by standardization, crisis and the diversification of planning.¹⁴⁶

Campbell and Fainstein cap the above overview with the insight that, while it depicts planning’s emergence in its modern professional form as a Twentieth Century public sector response to the Nineteenth Century industrial city, this view is also problematic. There needs to be critical analysis which reflects a subtle and reflective understanding of contemporary planning practice.¹⁴⁷ I have mentioned that the thrust of my contribution to the critical discourse in planning theory, while sensitive to ongoing analysis of state control and the force of capital, is levied more broadly at the philosophical foundations of modernity which have shaped the general spectrum of planning theory.

Friedmann examines in detail the origins and development of planning and planning theory.¹⁴⁸ His analysis reveals a central dialectic in the current planning discourse founded upon, on the one hand, planning as oriented towards market rationality and societal guidance; and on the other hand, planning as aligned with social rationality and social transformation. (Jane Jacobs offers her allegory of the “two syndromes”, including what she refers to as the “commercial syndrome” and the “guardian syndrome”).¹⁴⁹ These are generally seen as forming the ends of the political spectrum of planning and planning theory from right to left. Both poles of planning theory arise within the same basic cultural paradigm of modern industrial society.

In its mainstream mode of societal guidance, planning endures as an agency of what is regarded as the more conservative political and administrative tendencies of the state and neo-classical economic thinking. Most of planning’s professional practice remains in this form. The other strains of thought which have made their way into critical planning discourse, taking such forms as social learning and radical planning, seeking to alter the mainstream or openly clash with it through social mobilization, advocacy and transformative planning. Some regard these as the more humanistic and socially progressive strains of planning as an endeavour of social rationality. Even still, Friedmann tells us that:

...what we have described as radical planning has little in common with the traditions of policy analysis or social reform. And yet, in the attempt to guide the course of human destiny through reason ... there is a common root. Both transformative planning and societal guidance are born of the Enlightenment.”¹⁵⁰

Friedmann’s own orientation is of social learning and transformation. An advocate of radical planning practice, he is most well known for having developed the *transactive* approach.

Nevertheless, these two modes of reason in political economy, of theory and practice—of knowing and acting—are a function of essentially the same cultural paradigm and broadly shared epistemological normativism. They are a product of the same basic worldview: that of the Cartesian-Newtonian paradigm and modern industrial culture. In this broader social discourse, one can but hear the echoes of the thinkers who have historically shaped it. We attend daily the enduring influence of Auguste Comte’s positivism and progressivist scheme of social development, along with Adam Smith’s reproach of Comte’s structuralist constraints on individual liberty.¹⁵¹ One can mark the persistence of social democracy as advocated by such proponents as Bernstein and Kautsky. One can descry the revolutionary impetus of Marx, his comrades and their anarchist detractors, such as Bakunin and Kropotkin.

All these traditions of Enlightenment thinking and their spawn are evident in the dominant discourses of planning theory. Yet the current wisdom of our day which teaches that these ideas are the result of a bold triumph of reason over the misguided superstition of a pre-scientific era may not be an accurate depiction. In light of the challenges discussed earlier, we need to re-think the cultural roots of current reality and the dominant worldview which gave us this social myth. It is to this task which I shall now turn.

2.4.2 From Magical Arts to the Mechanistic Mind: Rethinking the Origins of Science and Modernity

In *Cosmopolis, The Hidden Agenda of Modernity*, Stephen Toulmin offers a readable and studied analysis of “the problem of modernity”. He writes that “The picture our teachers gave us of 17th-century Europe was a sunny one.”¹⁵² Humanity had finally been able to cast aside the ambiguities and doubts “about its capacity to achieve its goals on Earth” in favour of the rational project of modernity.¹⁵³ This optimism led to major advances, not only in the natural sciences, but also in moral, political and social thought. “In retrospect...if we take seriously the other things that historians of early modern Europe have shown us...A realistic picture of 17th-century life must now include both brilliant lights and dark shadows; both the successes of the new intellectual movements, and also the agonies of the religious wars that were its background.”¹⁵⁴ There is a need to re-think the historical and philosophical origins of modernity.

Toulmin points out that we have generally come to assume the modes of life and thought (e.g. modern science, medicine, engineering and institutions) in modern Europe from the 17th-century on “to be more *rational* than those typical of medieval Europe, or those found in less developed societies and cultures today.”¹⁵⁵ Underlying these modes are the “uniquely rational procedures” for handling the intellectual and practical problems of any field of study. They are available to anyone “who sets superstition and mythology aside, and attacks those problems in ways free of local prejudice and transient fashion.”¹⁵⁶ These assumptions were extended to people in all walks of life and are the bedrock of “modern ways of thinking about the world.”¹⁵⁷ Yet such assumptions have come “under damaging fire”; indeed, the critique of

modernity has increasingly broadened into one of rationality itself (in the modernist sense). Toulmin concludes:

If the adoption of “rational modes” of thought and practice was the crucial new feature of Modernity, then the dividing line between Medieval and Modern times rests more on our philosophical assumptions than we had supposed. Now that rationality too is open to challenge, the traditional picture of a medieval world dominated by theology yielding to a modern world committed to rationality must be reconsidered.¹⁵⁸

Toulmin writes that, after the deconstructive efforts of certain 20th century philosophers (e.g. Dewy, Heidegger, Wittgenstein, Rorty), “philosophy has limited options.”¹⁵⁹ These boil down to three possibilities: (i) we can cling to the “discredited research program of a purely theoretical ... philosophy” (i.e. “modern-rational”); (ii) we can look for “new and less exclusively theoretical” ways of working and develop the practical methods of a “post-modern” agenda; or, (iii) we can reconsider pre-17th-century traditions and “try to recover the lost (“pre-modern”) topics that were sidetracked by Descartes” that can be usefully taken up for the future.¹⁶⁰ Though Toulmin raises the third option, it remains undeveloped; it is to this option that I turn.¹⁶¹

Often referred to as the “Age of Reason”, the Enlightenment was a time of immense conceptual transition.¹⁶² It was a kind cognitive revolution from the older organic worldview of medieval Europe to the rational empiricism of the modern era. Some have described the old cultural paradigm as “participating consciousness” or a “participatory” worldview.¹⁶³ The new scientific paradigm and the mechanistic worldview it fostered is generally attributed to Sir Francis Bacon (1561-1626), Galilee Galileo (1564-1642), Johannes Kepler (1571-1630), Rene Descartes (1596-1650) and Sir Isaac Newton (1642-1727). Owing to their pivotal contributions, many have referred to this as the Cartesian-Newtonian paradigm, or Cartesian worldview.¹⁶⁴ It was the mission of the founders of the philosophy of the Enlightenment to translate this model and its approach to knowledge into social philosophy and political economic practice. Some notables amongst these would include Thomas Hobbes (1588-1697), John Locke (1632-1704), David Hume (1711-1776), Adam Smith (1723-1790) and John Stuart Mill (1806-1873).¹⁶⁵

It is worthwhile to get a sense of the participatory mode of reality which was eventually superseded by scientific reason as the two are intimately connected. The dominant worldview prior to the Scientific Revolution, we are told, was the one purveyed by the Church. The commonly held view is that this was replaced by the mechanistic vision of reality guided by the champions of scientific reason. While this may, in a general sense, present a credible enough depiction of what eventually came to pass, historical research has shown that the process was not so simple or straight forward. This process of the “disenchantment of the world”, as Weber put it, was shaped by a number of critical factors, including politics, class, gender, economic transformations and a broad range of theological and philosophical debate.

The so-called “pre-scientific” worldview of Europe was a mixture of Christianity and old European nature religion with a wide variety of local variations in a broader, shared, organic cosmology. It was in this context which alchemy flourished and gave birth to modern science. The Church came to achieve hegemony of the common folk of Europe – of what eventually came to be Christendom – through a theological colonialization of local peoples. Building on the institutional base of the Roman Empire, the Church was able to successfully absorb a broad diversity of “pagan” cultures.¹⁶⁶ Some scholars, especially ecofeminists and certain archaeologists, maintain that these nature-based traditions have roots in the Neolithic (agrarian, sedentary, Goddess worshipping) civilization that vastly pre-dated Indo-European bronze and iron age (pastoralist, nomadic, sky-god worshipping) cultures who conquered Europe migrating from the steppes of Russia.¹⁶⁷ Aspects of this may go as far back as the Paleolithic, extant even into the Twentieth Century.¹⁶⁸ Elements can be seen, for example, in Teutonic and Celtic cultures.¹⁶⁹

The older pagan cultures were very rooted in place. Their calendars tended to be lunar-based and engendered a cyclical vision of mythic time. The central theme of cosmology is one of birth, growth, death, regeneration and renewal.¹⁷⁰ These ideas were enacted in community-based celebrations which served as a means for re-affirming the place of humans and their geography in greater cosmological dramas. The ontology is founded largely on ideas of the imminent spiritual presences of all material phenomena, biological and inorganic. These teachings were passed in general through oral traditions which involved years of study, rigorous training and extraordinary feats of memory.¹⁷¹ Some oral traditions had their own academies which served a number of vital social, political and religious functions, such as the Druid college wiped out by Caesar in 61 A.D. at the Isle of Mona.¹⁷²

What had existed in much of Christendom up to the scientific revolution was largely a mixture of Christianity and paganism (e.g. the Celtic Church). It was not until the latter part of the medieval period that the notorious holocaust of the “Witch craze” was initiated which was to eventually all but wipe out the vestiges of pagan beliefs and practices. Anderson traces the survival of pagan iconography in Church architecture. He writes that pre-Christian, pagan celebrations and continued well into the Middle Ages. Some were re-interpreted by the Church and connected to saints; other practices, such as tree worship, were repressed. Why, in the face of brutal repression did such practices persist? Anderson explains:

...whether or not the Church approved, the rituals had to be performed because they were a means of *bonding small communities together* and also of *educating new generations. Actions ritually performed or marked by ceremonies become memorable: the ritual sets a pattern in the memory for the timing and due sequence of tasks and actions. They impressed on the young essential knowledge of the phases of the moon, of gauging when to plough, when to sow, when to cut hay, when to scythe the corn, and how long to let it stand in stocks, and when to kill the cattle before the winter set in.*¹⁷³

Such activities provide the weaves of social fabric: binding people together around the seasons and cycles, bringing continuity to the community with ecosystems and socioeconomic practices. These are akin to what will be seen as social and cultural capital in the following chapter. There is also a notable historical correspondence between the birth of science and the height of the witch craze. This repression came to curtail what remained of such community-based practices, yet some of the old ideas did transfer to the propertied classes.

What is perhaps even more extraordinary is the relationship between science and alchemy.¹⁷⁴ Many notable founders of modern science were actively involved with the Hermetic tradition that combined Judaic mysticism (Kaballah) and other Middle Eastern mystical traditions with European paganism, Egyptian and Greek Mystery schools in a loosely held together Judeo-Christian framework. Sir Isaac Newton had a huge alchemical library and was active both as a practitioner and in secret societies, as was his friend Robert Boyle and, with some controversy, Johannes Kepler¹⁷⁵. The prominence of alchemy in gentlemen's circles was of such a height that some historians, such as Yates, refer to a *Rosicrucian Enlightenment*.¹⁷⁶ We are used to thinking of the Royal Academy as the focal institution of science in England, which it was, yet it was also the social crucible of many noted alchemists.¹⁷⁷

Berman tells us that, at the time of Newton's life, interest in alchemy and mysticism had reached such intensity that from 1650-1660 more alchemical and astrological texts were translated into English than in the entire previous century. A significant impetus for this was political. The British Civil War is an archetypal image of the transition from aristocracy to democracy and laissez faire capitalism, yet there was a strong religious aspect. Aside from the dominant Puritanism of the day, there were a plethora of mystical political groups whose alchemical and animistic views held that God was present in everything, matter was alive, change occurred via dialectical reason and any individual could have direct experience of God and obtain enlightenment. Their attack on poverty, mechanism, clerical hierarchy and original sin while advocating sensual pleasure was regarded by the Church and its political supporters as a dangerous conspiracy.¹⁷⁸ Tambiah provides excellent academic discussion of the political and philosophical alliance of the mechanistic worldview and the Protestant Reformation.¹⁷⁹

The more sober proponents of the mechanistic view eventually gained the upper hand amongst the propertied classes and Church of England. This was a challenge for Newton who saw himself as the inheritor of a sacred tradition. "What Newton did, then, was to delve deeply into the Hermetic wisdom for his answers, while clothing them in the idiom of mechanistic philosophy."¹⁸⁰ Berman writes that gravitational attraction, "the centrepiece of the Newtonian system" was in actuality the Hermetic principle of sympathetic forces.¹⁸¹ Such historical data is generally not considered relevant to students of modern science, they are a mere footnote in the history of ideas. In light of the current epistemological challenges to objectivity and the scope of scientific rationality discussed in the prior section, there is arguably a need to re-consider the origins of modern science.

Karin Johannisson, associate professor of History of Science and Medicine at Uppsala University in Sweden writes that the relation of science and magic must, thus, be seen as reciprocal.

Magic and mysticism have long been excluded from the history of science as being irrelevant to the development of modern science. But Frances Yates and others in a series of brilliant studies in recent decades have shown that science and mysticism are not antipodes. Rationality cannot unequivocally be placed in opposition to irrationality, nor progress to superstition. On the contrary – mysticism within the framework of the Hermetic tradition played a decisive role in the conception of modern science as a social activity and institution.¹⁸²

Basic ideological tenets of current scientific practice and technical knowledge, such as that science must be carried out collectively, communicated transnationally and connected to utilitarian purposes, are the result of the magical scientific practices of the Seventeenth and Eighteenth Centuries.¹⁸³ The same is due for experimentation:

To summarize, magic as a scientific activity builds on a defined conception of knowledge—derived from the Hermetic tradition—stressing experiments and rationality in a mathematical sense, together with a visionary utopianism aiming at practical results.¹⁸⁴

Johannisson demonstrates that magic is not regressive but progressive, not so much in the quantitative sense, but in the qualitative sense. It stresses that science is also a force of change. She concludes that magic is built on values emphasizing the conviction that science can never be disconnected from certain purposes, “an important reminder in a time when the possibility of an objective, value-free science is more and more being questioned.”¹⁸⁵ Her point is well taken. This leads hardly to a rejection of the validity or practice of science, but rather, to a more complete understanding of it. I will now turn from the philosophical level of historical analysis to the social, which leads back into the origins of planning.

2.4.3 Disenchantment of The World and Technologies of Control: Rational Ordering of the Natural and Social Worlds

One can discern in current planning theory various contributions, themes and positions forwarded by the proponents of the Enlightenment and their scientific forebearers. Friedmann writes, for example, that a “full century of material and perceptual changes had to pass before planning emerged as a distinctive practice, with its emphasis on technical reason and social rationality.”¹⁸⁶ Planning is a true “child of the Enlightenment”. I have briefly looked at aspects of the historical philosophical context from which the disenchantment of the world was begun. We will return to examine its outcome; now, I would like to quickly review some of the historical social and economic factors which shaped the ideological roots of modern planning.

The time of the Enlightenment was one of tremendous social upheaval. It was a period of great political change with an attack on the old aristocratic political structures and birth of

the ideas and ideals of democracy. It was a time of economic transformation from the older systems of feudal agrarianism to the new economics of early capitalism. With the early colonial expansion of mercantilism the seeds of the current global economy were planted along with the beginning of Western world hegemony and eventually of industrial culture.

This process was furthered through the spread of Christianity in the colonial drive to subjugate conquered lands and peoples to the political and economic goals of European conquest. The human and natural capital drained through colonialism was, thus, the material basis for the industrialization of Europe. This was visited as a holocaust upon Indigenous peoples around the world, in Africa, Asia, Australia/New Zealand, and the Americas. In Europe, a similar process had already taken place with the brutal repression of its own Indigenous or pagan cultures.¹⁸⁷ This process was essentially completed with the massive demographic upheavals which dislocated countless rural people, often forcibly, from their traditional land base to foster a growing labour pool of urban poor.¹⁸⁸ Urbanization, private property, and industrialism became the hallmarks of a new age—modernity. The conceptual engine of this social machine was the mechanistic worldview, its power, the force of reason.

For the new industrial capitalist class, this was an age of great opportunity and bold optimism. It held the promises of new political freedoms, rapid technical advancement and vast economic wealth. It was in this context that the democratic tradition of political Liberalism and the laissez faire economics of market rationality were born. These social developments were philosophically guided by the ideals of rugged individualism and the triumph of human reason in the rational ordering of the natural world and its application to the human economy through the powers of manipulative science. Comparing science to the methods used by inquisitors to extract confessions from women accused of witchcraft, Bacon called for an “inquisition of nature”; “she” was to be “bound into service”, made a “slave,” put “in constraint” and “moulded” by the mechanical arts.¹⁸⁹ The Cartesian vision and Newtonian laws made this possible and saw the proliferation of technologies which could control and harness a world of dead matter now devoid of being. The Baconian mission exhorting to ‘torture nature’s secrets from her and use them against her’ became realized. Yet the laws of nature, and the rules and techniques of science also found application to the human social realm.

The social sciences thus evolved in their quest to bring the human enterprise under scientific scrutiny. Building upon the contributions of their forerunners in the British empiricist tradition, such thinkers as Claude Henri de Rouvroy-Comte de Saint Simon (1760-1825) and his student, Auguste Comte (1798-1857), were able to extend further the methods of science into the social arena. Saint Simon is seen as the ‘father of scientific planning’¹⁹⁰ and a forerunner of socialism. Yet it was his secretary, Comte, who took the work further. Inspired by Newton, he fostered ‘social physics’ which became sociology. His approach was based on experimentation and observation. He coined the term *positivism* seeking to uncover the laws of nature which govern social development. The first goal of this method is prediction¹⁹¹ and could be imple-

mented in planning.¹⁹² His development of social science influenced Adam Smith (and thus Ricardo) who showed how the laws of nature were revealed to operate in the rationality of the market. Smith's *Wealth of Nations* thus initiated classical political economy.¹⁹³ Yet a different type of reason was afoot to inspire the social rationality which became the inspiration of an emancipatory, revolutionary strain of Enlightenment thought (and eventually radical planning).

Indeed, the golden promise of the philosophy of the Enlightenment held hope for those socially disposed in the transition to industrialism.¹⁹⁴ Under the same banner of empirical reason and the scientific method, a new order of social philosophy and political platform was proffered. Thus, in the Dickensian sweat houses and philosophical libraries of Europe the socialist ideal was born. The wiles of the capitalist market were seen to be superseded by an even greater force of reason, that of social rationality and the logic of history itself.¹⁹⁵ Building on the works of such thinkers as Comte and Proudhon, and other German philosophers such as Hegel and Fierbach, Karl Marx (1818-1883), and his friend Frederick Engels (1820-1895), are regarded as the most influential founders of socialism and its method of dialectical materialism. The socialist political agenda solicited the triumph of the "grave diggers of Capitalism",¹⁹⁶ and the rise to power of the working class through socialist revolution, yet it was still entrenched in the same basic paradigm of the very society for whose demise it so vehemently aspired.¹⁹⁷

The early twentieth century saw further articulation of the scientific ordering of the modern world. With continued rationalization and mechanization of the industrial economy, industrialists such as Henry Ford became influential social visionaries. Engineering began to take on the character of the mega-project and cities required an increasing degree of technical, infrastructural and design expertise. In the context of all these factors, modern professional planning came into being. As Friedmann points out, for those appealing to the guidance of market rationality and for those seeking to enhance the logic of social rationality, planning remains as *the attempt to link scientific and technical knowledge to processes of societal guidance and transformation*. This is social technology in true Comtean fashion. The rational ordering of the natural world had, thus, led to the rational ordering of the social world. Technologies of observation, measurement, prediction and control are the mainstream today. Planning is one of the main agencies for this in the social domain.

2.4.4 Epistemology, Cosmology, Ontology: Mapping the Model of Modern Reality

Let us then briefly summarize some key elements of the modernist model of reality which eventually resulted from the political, economic and philosophical transformations discussed above. Supportive material is presented in footnotes to help source key ideas and contributions, and to fill in the gaps of historical and philosophical analysis.

Provided below (Figure 1) is a mental map of the mainstream, modern view of "reality" based on the ECO-model I introduced in the first chapter, with the three categories of 'episte-

mology', 'cosmology' and 'ontology'. One must keep in mind that what is presented here is a *general overview* of the mainstream model which dominates most academic and technical pursuits in Western society. It is not intended to deny the diversity and pluralism which does occur amongst scientists and scientific practice. Nor does it rule out the possibility that such ideas may be in transition. The model is rather to be seen in a heuristic sense which depicts, in broad terms, the dominant meaning-producing system underlying modern industrial society. Thus, it is a fair depiction of the positivism which informs the broad spectrum of planning theory.

Figure 1

ECO Analysis of "MODERN REALITY"

EPISTEMOLOGY Causal Reductionist Empiricism	<ul style="list-style-type: none"> • Subject-object separation as a basis of knowing • Objectivity in the "value free" rigour of the scientific method: reductionism, measurement falsification, replication • Knowledge is largely quantitative
COSMOLOGY Mechanistic Materialist	The universe is formed of inert matter, governed by independent, mathematically verifiable principles
ONTOLOGY Truncated Anthropocentric	<ul style="list-style-type: none"> • Mind and matter are separate • Being is exhibited by cognitive functions of the brain, the apex of which is human reason

Epistemologically, the central feature of the model turns on the subject-object separation. While having older roots in aspects of Greek philosophy, likely Hebraic theological influences, grammatical structures, and a borrowed *Aleph-Beth* Semitic script, the greatest modern impetus for this is in the precedent set by Descartes.¹⁹⁸ He divided the world into the *res-cogitans* and the *res-extensa*; the realm of thought and the realm of matter.¹⁹⁹ This sets up the duality of the knowing subject and the empty or lifeless object. Building on Bacon's and Descartes' contribu-

tions, Newton put this together in the reductionist methodological model: knowledge is realized through empirical observation, measurement, and deductive reasoning, replication and falsification.²⁰⁰ The result of this knowledge is largely quantitative. This is how we know what we know – if it can't be measured, it can't be known, thus, it does not exist.²⁰¹ That is the trajectory of the knower/known, subject/object, self/other binary.

The cosmology in which this is embedded has the same basic origins.²⁰² That is the *what* that we are knowing – the model. Here we see the mechanistic universe described by Descartes: the world is like a great clock, set into motion by the Creator. It runs on its own independent laws governed by mathematically verifiable principles. It was Newton who realized this view of the world in a mathematically and empirically verifiable *paradigm* in the grand sense.²⁰³ Now we can speak here in terms of “absolute time and space”. Matter itself is atomized, lifeless, devoid of spirit or soul. It is thus evident that statements are being made on the nature of *what* is known, *how* it is known, and *who*, or what it is that knows, i.e. on the nature of being.²⁰⁴

Ontologically speaking, the Cartesian model of the *res-extensa/res-cogitans* binary is a tremendous precedent setting feature, as is the mechanistic cosmology. As Descartes was wont to say, from this perspective plants and animals are machines as is the human body a biological machine.²⁰⁵ The difference between humans and all other biological machines is the inhabitation of the human body by a rational soul. Thus, not only is this something which is a feature only of humanity, but it relates only to the rational or reasoning aspects of human cognition.²⁰⁶ This is truncated from all the other cognitive aspects of human experience, in particular emotions, feelings and all things associated with the body. Eventually soul was dispensed with all together, to be replaced by the mind or physical brain.²⁰⁷ So here we see that being is essentially physically reducible, reason-based and the propriety only of humans.²⁰⁸ Also embedded within this model is a series of gendered interpretations.²⁰⁹ The end result is the reduction of being to reason and the denial of this to anything other than human: a veritable banishment of soul from the world.²¹⁰

The modernist mythology of the birth of science as the victory of rationality over superstition and knowledge over belief is both an historical and philosophical disservice to the ancestors of its own tradition. The dominant cultural view of scientific reason as the purveyor of dispassioned objectivity, political neutrality and universal truth is substantively in question. The mechanistic mindset that eventually superseded the magical arts of alchemy was more the result of political and economic processes than it was the triumph of pure reason. Another aspect of this which Toulmin points out is that there are four fundamental ways in which the philosophers of the scientific revolution and the Enlightenment retreated from what he refers to as “the long standing preoccupations of Renaissance humanism”. They disclaimed the validity of four different realms of practical knowledge (and also meaning): the oral, the particular, the local and the timely.²¹¹ This will come back as a challenge for science in its discourse with TEK.

Although my treatment of the subject is cursory, it is enough to demonstrate: i) that our generally held views of the origins and nature of science are historically transitive; ii.) the importance of the larger cultural context in which modern science is founded; iii.) the need to inform any critical re-thinking of the dominant cultural paradigm based on these insights, and the imperative for further research on the topic; iv.) that our culturally held myth of the origins science is incomplete; v.) that science as we currently understand it to be may be incomplete and inquiry into its origins may help to fill in some of the missing pieces of the dominant model.

There is considerably more that could go into filling out this overview and considerable discussion which could ensue. Suffice it to say, here we see a completion of the disenchantment of the world and the epistemological negation for seeing it otherwise. What I would like to do now is build on the above discussion by applying it to planning. How can such an approach help to understand the epistemological terrain of planning theory in its larger philosophical, historical and cultural contexts?

2.4.5 Gaining a New Perspective: Epistemology and the Terrain of Planning Theory

As a “child of the Enlightenment”, planning is founded within the Cartesian paradigm described above. As a theoretical endeavour, and as a technical discipline, it is thus bounded by the epistemological challenges raised earlier and the problem of cognitive dissonance. It is an expression, not only of the philosophy of modernity, but of the dominant industrial-growth model and its development practices. Even in its more radical forms, planning is bound by these problems. This is why Rees has described mainstream planning as a “moribund discipline”, one which can be seen as, “contributing to (current practices of) ecological impoverishment.”²¹² Therefore, if planning is to play a meaningful and substantive role in the transition to ecological sustainability, it will need to respond to the challenges I have raised. We will have to re-think some of these ideological origins and develop appropriate theoretical and practical tools.

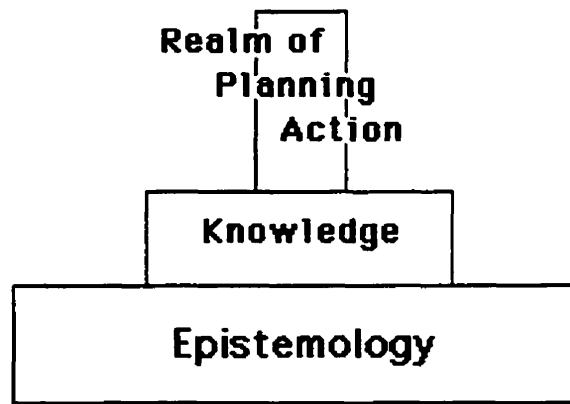
As I have already suggested, Friedmann offers a definition of planning which provides an optimal entrance point into an epistemological analysis of the terrain of planning theory. In all of its various forms, the essence of planning is *knowledge into action*. This surely begs the question of ‘what knowledge’ or ‘what nature of knowledge’, even of the nature of knowledge itself. By the same token, one is further compelled to ask, through what process is knowledge obtained and by what criterion is it recognized or deemed valid?

The vision of knowledge scopes the vision of action; the nature of knowledge shapes the nature of action. The scope and nature of knowledge is determined by its context, both historically and culturally, as a function of a knowledge system embedded in social forces. These become issues of epistemology. The essential question of planning, in this sense, is really one of knowledge revolving around the manner in which knowledge is obtained and transmitted.

This will shape fundamentally the form and intention of its application. Taking Friedmann literally then, the foundation of planning is, or *should be* epistemology. Apropos to this is a recognition of the social construction of reality. I am speaking here about what I have referred in the broader sense of social epistemology.

From the above discussion, there appear to be at least three levels of analysis or domains of interaction. Founded upon one another, they comprise, as it were, the building blocks of planning as *knowledge into action*. These are: the 'realm of planning action'; the 'realm of knowledge'; and the 'context of knowledge', i.e. epistemology. These give rise to or are outcomes of one another. Action is an outcome of knowledge; knowledge is an outcome of a certain approach to or model of knowledge. One could represent visually the building blocks of planning, as action founded on knowledge, founded upon epistemology in the following manner:

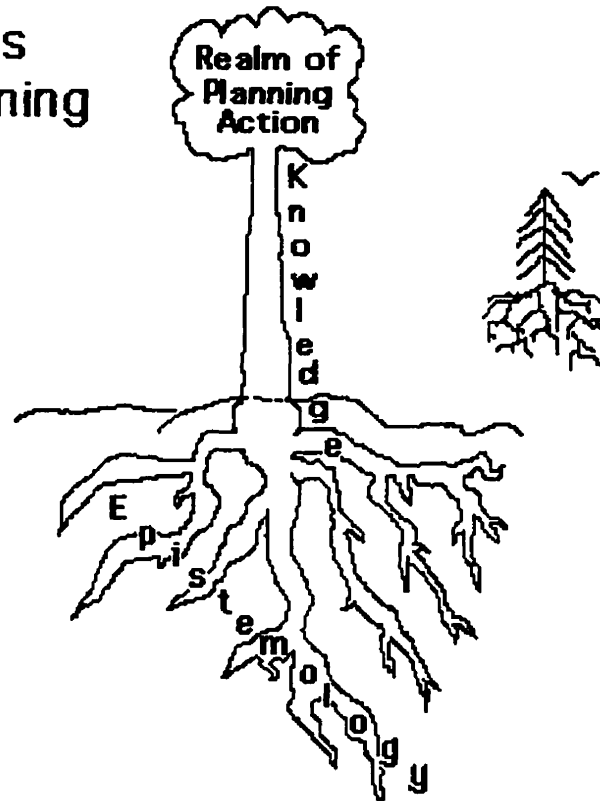
Figure 2
The Building Blocks of Planning



Another, more dynamic way to represent this concept visually is by making use of an ancient, organic symbol found in many cultures around the world – the tree. The main productive activity takes place in the leaves through photosynthesis, yet the trunk of the tree is its body. Its strength and support is in the roots, which while usually unnoticed, bring nourishment and grounding or stability to the system as a whole. Similarly, in planning the focus of professional activity is in the public domain. Yet this action rests upon a body of professional, methodological and theoretical knowledge which is the basis for action. The whole body of knowledge is itself grounded in a certain historical, philosophical and social context, along with the methodological logic of the self-referencing system.²¹³ Thus, epistemology is the generally unseen foundation in which the whole discipline is rooted.

Figure 3

The Roots of Planning



One should also note that the roots are often as deep as the tree is tall. In many forests, such as those in temperate regions, the bulk of the biomass is actually in the forest floor. When the roots of a tree are weak, it is unstable and unable to draw nourishment from the soil. When its roots are strong, not only is the tree more stable, it is able to draw on renewed sources of nourishment to continue to thrive, adapt and grow. It can spawn new trees and interact within a larger system.

With planning, similarly to the tree, when the roots of a discipline are weakened due to an inability to adapt to changes in the terrain of knowledge, such as the challenges raised in the earlier section, the discipline may become rigid and dry, unable to adapt and grow. When a discipline is able to vitalize itself by putting out roots into broader discourses, into new and deeper sources of knowledge, it is able to adapt to the changes of a changing world. This is especially critical for a discipline such as planning whose mandate is to be an instrument of the "social good". As knowledge is applied, refined and interpreted through experiences in the social domain, these experience solidify to form and develop the body of knowledge—the trunk—as well as new branches.

It may be that some of the richest sources for planning theory can be found through exploring questions of epistemology in the larger philosophical and social terrains it inhabits. However, this is territory which has remained largely untapped in the field of planning. What

implications are there of such insights for planning theory and practice? In particular, what are the implications for planning in the area of sustainability? An obvious one is that it serves, not only to gain insights into the nature of planning as an epistemological exercise, it also helps to re-think some of planning's ideological and philosophical foundations, thus fostering new ideas. Before proceeding in this direction, I would like to point out two more insights from the tree motif.

One may ask, what is the role of the sun? The sun provides the energy that powers photosynthesis. In my model, I shall choose to see the sun as experience—the uncontrollable, energizing feature which invigorates our thinking, knowing and action.²¹⁴ The other point is that we, as terrestrial beings, are inclined to see things from the perspective of the surface. The soil, however, offers a different perspective. Indeed, it is possible to look at the leaves as the root's way of accessing the sun. From this perspective, the emphasis is shifted deeper into the dark realms of the structure within which the tree is rooted. Action becomes a realm for confirming knowledge, and the larger model in which knowledge is generated. It is to this topic which we shall now turn.

In advancing further our understanding of such concepts and contexts of knowledge, we can come to a deeper understanding, not only of planning, but also of the concept of paradigm shift as a social phenomenon. I will be responding to the three levels of crisis outlined in my problem statement to advance further the concept of sustainability and develop appropriate theory to help guide its practical implementation in the field of planning.

2.4.6 The Transition to Ecological Sustainability: A New Terrain For Planning Theory

We have already discussed how the development of thought in planning is a reflection of more general developments in political economy, social thought and political philosophy. What then of ecological thought, which is a shift in the field of inquiry and application? It is a potentially *cosmological* shift. As the “application of reason to human affairs” we have also seen how planning theory is an outflow of the Scientific Revolution and philosophy of the Enlightenment. The inception of planning is, thus, in its scientific epistemological and cosmological origins. It was new knowledge, new approaches to knowledge, and a new view of the world which eventually gave birth to the modern discipline of planning. A profound cosmological transformation had taken place which altered, not only the manner in which knowledge was perceived but in how it was acquired. Our view of “nature”, and our relationship to it, mediated by knowledge, was altered; the “social process” of knowledge had changed.²¹⁵ The new cosmology eventually became a fundamental restructuring of the containers of perception and meaning formation in people's day to day lives.

I have also illustrated how planning action is based on a body of knowledge, and that this knowledge is itself grounded in a certain philosophical vision and methodological approach of ‘how we know what we know’: epistemology. ‘How we know what we know’ is

mediated by philosophical assumptions which represent, not only 'how we know what we know', but also 'what it is' that we are knowing. It is shaped by a 'model of reality' which it seeks to describe. The rational approach to knowledge of Descartes, for example, is inspired by the very mechanistic vision of reality he sought to uncover. Married to Bacon's empiricism, this vision was affirmed by Newton. The positivism of Comte helped make the model extant in its social construal. We have inherited this model of reality, and the closed perceptual domain it describes. In other words, when we talk about 'how we know what we know', we are also talking about the 'what it is' that we are knowing—our model of reality. What we really know, is not so much the reality but the model. This is the broader cosmological terrain of our knowledge (depicted below).

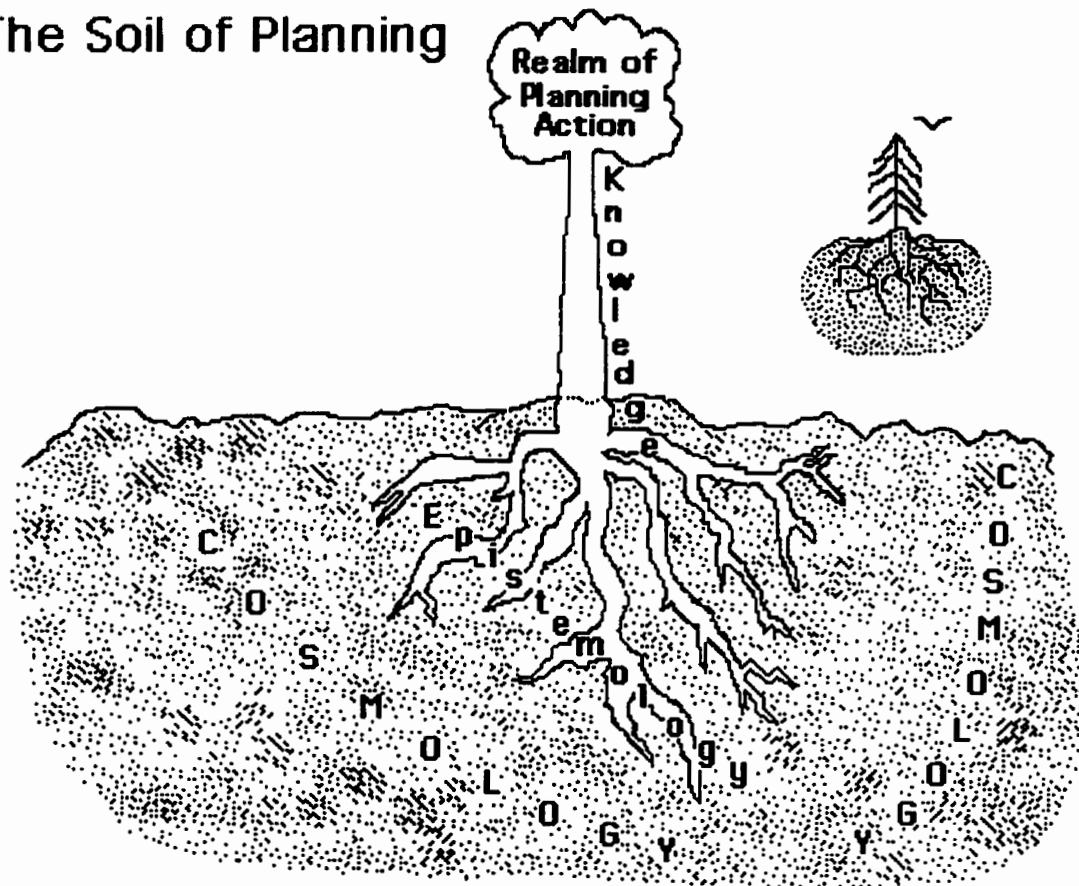
Yet that ground is changing; how shall we as planners respond? The genesis of ecology is heralded as signifying a shift in the manner in which the Western world sees nature and our place within it. Models of complexity have combined with dynamical systems and chaos theory, along with applications of thermodynamics in ecology, giving rise to such constructs as Lovelock's GAIA hypothesis.²¹⁶ We can now speak of the planet like an organism. Some, such as Joseph Campbell, see GAIA as the basis for a new planetary mythology.²¹⁷ Others see the idea as scientific support for ancient, spiritual traditions which regard the Earth as a living being.²¹⁸ Although most scientists do not subscribe to the consciousness and causality that others ascribe to Lovelock's work, the modified version of GAIA is recognized as a model of biophysical inquiry for the complexity of planetary ecological systems.²¹⁹

We are only just beginning to grasp the political and economic implications of this paradigm, and its applications in the social sciences.²²⁰ This is where some of our greatest challenges and opportunities lie. A task for planners is to translate this emergent meta-disciplinary perspective into current social thought, political practice, economic structures, and popular culture. We need to help develop a paradigm in the social sciences which can give us practical understandings of the relationship between ecological systems, social systems and meaning systems, the three areas outlined in my problem statement. Rees has asserted that the transition to ecological sustainability will require *a rewrite of the prevailing environmental myth and humankind's role in the scheme of things*. This implies a fundamental shift in our perceptions, in our cultural model of reality. We are talking thus about cosmological change and planning's role in affecting it.

This cosmological shift is a change in the context or terrain of our knowledge. Planning and epistemology are situated within this broader cosmological terrain. Therefore we must focus our analysis at this level in order to understand the current situation ecologically, socially and existentially, and to address the social applications of such knowledge in terms of planning theory and practice. Returning then to our tree metaphor, the insight is depicted visually below:

Figure 4

The Soil of Planning



The ground of our knowledge is how we see the world—our cultural myth or model of reality. This feeds or starves us depending on how well our perceptions can map the terrain. The roots of a tree, no matter their depth or breadth, will be unable to provide nourishment within depleted soils; as soils become tapped out, a desolate landscape will foster increasingly competitive and barren endeavours which will eventually die out. Rich soils, however, can foster much. As the terrain of our knowledge and understanding shifts, we can tap new sources of knowledge and generate new theory to map our model of the landscape more effectively. In this way, we establish a new terrain for planning theory, having recontextualized the discipline within the larger context. This larger cosmological context is the terrain in which issues of sustainability and planning are shaped. Within it, our discipline can adapt to relevant issues and needs within a changing world.

2.4.7 Finding Meaning and Self in the World: Towards A Postmodern Ecology of Being

Earlier, I offered a discussion of current challenges in the planning literature. I mentioned that the greatest philosophical challenge of ecological thought to the dominant paradigm is of an ontological nature. This section addresses the topic of being in the world. By drawing on an ecologically informed ontology, I consider ways in which we can think about the nature

of beings as part of an ecological system. I have suggested that there are three levels of crisis existent today—ecological, social, existential—which are all attributes of the unsustainable nature of the current model of industrial expansionist development. Solutions may be found in a perspective which unifies these domains.

Although ecological sciences have been developing for close to a century, their intersection with the social sciences is incipient. Yet the connection is growing. One example is ecological economics which attempts to ground economic theory in ecological systems based on applications of the laws of thermodynamics.²²¹ Through such efforts, our understanding of the concept of sustainability is being advanced. The need for research in this area is underscored by the political, educational and psychological challenges for the implementation of ecological knowledge and ideas of sustainability.

At the outset of his seminal work, *The Reenchantment of the World*, Morris Berman writes that he does not regard consciousness as, “an independent entity, cut off from material life.”²²² Why, then, does he devote his efforts almost entirely to transformations of the human mind?

*This emphasis stems from my conviction that the fundamental issues confronted by any civilization in its history, or by any person in his or her life, are issues of meaning. And historically, our loss of meaning, in an ultimate philosophical or religious sense—the split between fact and value which characterizes the modern age—is rooted in the Scientific Revolution of the sixteenth and seventeenth centuries.*²²³

What we see as the crisis of meaning in modern society is very much a response to these developments. Joseph Campbell is one of the most influential mythologists of our time and makes a similar point. He explains that social structures and moral order are founded on the structures of myth. He examines the influence of scientific thinking on the mythic structures of Western social-psychology. Science has “unsettled” the old myths and religious institutions of Western culture, yet it provides only partial answers in their place.²²⁴

*And in this there is serious danger. For not only has it always been the way of multitudes to interpret their own symbols literally, but such literally read symbolic forms have always been—and still are, in fact—the supports of their civilizations, the supports of their moral orders, their cohesion, vitality, and creative powers. With the loss of them there follows uncertainty and with uncertainty, disequilibrium, since life...requires life supporting illusions; and where these have been dispelled, there is nothing secure to hold on to, no moral law, nothing firm.*²²⁵

When the mythic structure is in peril so are the moral and social orders they buttress. Science has, in a sense, become our new religion and its practitioners our priests. While we often turn to science and scientists to tell us what we know and what is true, “good” scientists will tell us that it is their place only to answer certain kinds of questions, about only certain things (i.e. that which can be measured in time and space).²²⁶ Science tore down our myth but replaced it with

only a partially complete model. This, in part, is what Nietzsche meant when he said that “God is dead”²²⁷ and sparked a trend in Western thought which is in large part the origin of philosophical postmodernism.

Indeed, the above is underscored by the challenges to planning theory that I raised earlier. Postmodernism questions, and seeks to destabilize positivism, as do others. While the result may not be as complete as some would like to think, we can see that the philosophical foundations of modernity have been rattled. One aspect is the rejection of any foundation for philosophy. Much of the impetus for this has come from French post-structuralism, in particular the deconstructive trend of Jacques Derrida. Inspired by Nietzsche’s assertion that underneath reason is the will to power, Michael Foucault sought to reveal the arbitrary nature of “reality” and the construction of meaning by linking the relationship of power and knowledge.²²⁸ The deconstructive thrust seeks to undercut modern thought as predicated on dualistic ontological assumptions which are revealed as dogmatic ethical assertions.²²⁹ One outcome is not just an attack on modernist ontological assumptions, but a serious questioning of any basis of meaning for the self. Yet the subject of ontology is an area of which has largely been excised from the philosophical mainstream of modernity.²³⁰

Still, there is a different postmodernism seeking to transform modernity from another perspective. This is the *constructive* postmodernism posed by Griffen. This approach, while also critical of modern premises, seeks to salvage positive meaning for the self. In *The Reenchantment of Science, Postmodern Proposals*, Griffen writes that *deconstructive or eliminative* postmodernism, while often motivated by an ethical rejection of totalitarian thinking and attempts to forestall authoritarian systems, “this type of postmodern thought issues in relativism, even nihilism.”²³¹ This can result in carrying modern premises to their ultimate conclusions:

It overcomes the modern worldview through an anti-worldview; it *deconstructs or eliminates the ingredients necessary for a world view* such as God, self-purpose, meaning, a real world, and truth as correspondence.²³²

What are the necessary elements of a worldview? Which features are vital for the cultural production of meaning? What perennial, existential questions have people asked from cultures around the world and throughout time? In what ways have we sought answers? Griffen offers a direction that such lines of inquiry could take for the transition to sustainability.

Whereas modern science has led to the disenchantment of the world and itself, a number of factors today are converging toward a postmodern organicism in which science and the world are re-enchanted. Besides providing a basis for overcoming the distinctive problems of modernity that are due primarily to disenchantment, this postmodern organicism gives science a better basis than it has heretofore had for understanding its own unity.²³³

This should not be construed with anti-modernism and similar movements of the past that have rejected Western science. It does not look backward to a romanticized vision of the past. It

also sees a positive role for science. This perspective draws upon the natural sciences to witness the inadequacy of the modern worldview (c.f. Rees, Lovelock, Sheldrake, and Wilson).²³⁴

...This constructive or revisionary postmodernism involves a new unity of scientific, ethical, aesthetic, and religious intuitions. It rejects not science as such but only that scientism in which the data of the modern natural sciences are alone allowed to contribute to the construction of our worldview...

...Through its return to organicism and its acceptance of non-sensory perception, it opens itself to the recovery of truths and values from various forms of pre-modern thought and practice that had been dogmatically rejected by modernity. This constructive, revisionary postmodernism involves a creative synthesis of modern and premodern values.²³⁵

This has epistemological implications which I will deal briefly with in the next section. The basic insight is that we may need to expand the dominant epistemological model to include various types of knowledge and different ways of knowing. That is *meta-epistemology*.

Thus, through a critique of modern premises and a revision of pre-modern concepts, in recognition that modernity now stands as a threat to planetary health, this form of postmodernism attempts to construct a postmodern worldview. The dualism we have inherited from the modern model of reality is evident in all levels of our current means for creating meaning in the world. We experience it as the cognitive dissonance within our own internal processes; it informs the basis of the nature-culture split, and the various binaries of self and other: in gender, race, class, and culture. Constructive postmodernism endeavours to transgress these anomalies of dualism and cognitive dissonance central to modernity by asking what are key, positive features of meaning, which aspects of worldview are perennial and necessary, and what of those are retrievable from both modern and other sources.

As part of this inquiry, I have offered the ECO model as a contribution to help establish some criteria for the components of a meaning-producing system. To sum: we have seen how epistemology—how we know what we know—is part of a larger model of reality which includes cosmology—our view of the world that we know. Adding the ontological feature to the model we see that, not only are cosmology and epistemology mutually affirming enterprises, they form parts of a system which also entails assumptions on the nature of being—the what or who it is that knows—which is ontology: inquiry into the nature of being. These concepts are embedded within one another; they are parts of a self-referencing system.

Gregory Bateson has been an influential thinker in the areas of epistemology, ecology and cybernetics. As an interdisciplinary trail blazer, he published a leading work on the subject entitled *Steps to an Ecology of Mind* in 1972. On the subject of epistemology and ontology, he wrote that “in the natural history of the living human being” ontology and epistemology cannot easily be separated :

It is awkward to refer constantly to both epistemology and ontology and incorrect to suggest that they are separable in human natural history. There seems to be no convenient word to cover the combination of these two concepts...I shall therefore use the single term "epistemology" in this essay to cover both aspects of the net of premises which govern adaptation (or maladaptation) to the human and physical environment.²³⁶

As I have mentioned, this is contrary to the modernist position which tends to see the two as separate domains, or excludes the topic of ontology altogether.²³⁷ Even still, there is a modernist theory of being. Let me describe this ontological model.

In the Cartesian-Newtonian system, *res cogitas*, the stuff of thought, mind or consciousness, exists independent of the body and the rest of the material world; *res extensa*, the stuff of matter, is devoid of life and has no consciousness or spirit in and of itself. The physical universe and all it contains is like a machine set in motion by the Creator to run perpetually according to the mechanical laws of nature. The way of knowing this "reality" is through the application of empirical reason governed by the scientific method. A human being is ontologically constructed as a kind of biological machine inhabited by a rational soul or mind; other, non-human entities, are excluded.²³⁸ That is the ontological basis of modernity. It has spawned research into cognitive science, philosophy and areas of technical application, but has left much open for debate. It is a fundamental cause of the crisis of meaning in modernity.

Bateson provides the basis for an organic, or ecological ontology that can support an approach to sustainability which unifies scientific, social, and existential lines of inquiry. It is not cast in the dualism which structures a subject-object basis of knowing, nor in the 'self-other' distinction that is a basis for social hierarchies. It also helps to ease the "problem" of God for those less deistically inclined:

The individual mind is immanent but not only in the body. It is immanent also in the pathways and messages outside the body; and there is a larger Mind of which the individual mind is only a subsystem. This larger mind is comparable to God and is perhaps what some people mean by "God," but it is still immanent in the total interconnected social system and planetary ecology.²³⁹

The operative word here is *immanent*. Mind—or being—does not exist independently from the rest of material reality; yet, it is not entirely reducible to some biophysical process or algorithmic function of the brain. The nature of being, described here as immanent in the planetary ecosystem, is similar to what I referred to in the first chapter (at 1.3.1) as an *emergent property*. (This may be consistent with some ideas arising from the new physics, ecology, systems and information theory.)²⁴⁰

Thus, in this *ecological ontology*, being can be seen as an emergent property of ecosystems.²⁴¹ All organisms are interdependent and *participate* as beings within a larger living system of ecological processes: an ecology of being. All are in process as part of a greater being which is the system itself. This establishes a basis of connectivity between the individual components

and the system as a whole. The cosmology here is organic and holistic. The epistemological model which ensues is *participatory* and posits connectivity, involvement and relationship as a basis of knowing.

I can now put the pieces together to complete the ECO-model. Epistemology operates in the context of a larger system of meaning which includes cosmology and ontology. Taken altogether, these form the framework for knowledge, meaning, their reference and application. I have called this a *meaning-producing system* or ECO-system. How is it different from the terms "paradigm" or "worldview"? Both have merit, worldview in a general sense, paradigm more analytically (i.e. denoting a specific analytical regime and interpretative posture for developing theory). The ECO-system model refines further the analysis of a worldview as a knowledge system with reference to the philosophical features that inform the production of meaning in a cultural paradigm. It denotes the components of a meaning-producing system: ontology gives a vision on the nature of being; epistemology describes the manner in which beings create cognitive intercourse with and within the Universe; cosmology describes the structure of the Universe in which those beings exist and know.

Bringing the focus back to our ongoing discussion, we can add the ontological feature and complete the picture of our metaphor of the tree. Ontology here is intended to depict being as an immanent, emergent property of the system. Our vision of ourselves is based upon how we see the world; our vision of the world is based upon how we see ourselves. Our experience reflects these perceptions back to us; through this experiential process we know and grow. The concept of planning situated within the ECO-system model of the meaning-producing system is illustrated in Figure 5.

Posing being(s) as an immanent, emergent property(s) of the system is tantamount to saying that human beings are part of the system, connected with all beings that are aspects of the system, and the system as whole. An ecological sense of being—of self—tells us that our larger self is the system. Life flows through the system and we are part of that life, both as individuals and as a species.

From this perspective, the possibility of ecological sustainability hinges on an ontological insight. We have already encountered this manner of organic, postmodern ontology from Rees. Arguing that ecological sustainability is unlikely to arrive from the dualism inherent in the rational empiricism of industrial culture, he posits that as a precondition for sustainability: *People must acquire in their bones a sense that a violation of the biosphere is a violation of self. This insight is more than an idea; it is an experience, a feeling, or "sense", which obviously involves a range of ways of knowing.*²⁴²

specting the more narrow idea of epistemology as 'theory of knowledge', I should remind us that my analysis is largely in the category of social epistemology as I have introduced it.

In as much we have been engaged in a discussion of the "knowledge of knowledge" we could say that the perspective emerging here is one of *meta-epistemology*. *Meta* comes from the Greek for "after" or "with". The *Oxford Dictionary* defines *meta* as "denoting a nature of a higher order or more fundamental kind." *Meta* can denote position: (a) behind, after or beyond (as in *metaphysics*); and, (b) that of a nature of a higher or second-order kind (as in *metalanguage* or *metatheory*). *Meta* can also denote "a change of position or condition" (as in *metabolism*).²⁴⁴

There is a brief discussion of *metaepistemology* in the *Cambridge Dictionary of Philosophy* in the entry on *Metaphilosophy*. The authors write that the study of first order philosophical inquiry raises the discipline of inquiry to that of a higher level. This higher order inquiry is the domain of metaphilosophy. Each branch of metaphilosophy, "studies the goals, methods, and fundamental assumptions of a first order discipline."²⁴⁵ Whereas, the first-order discipline of epistemology has the study of the nature of knowledge as its main focus, *metaepistemology* deals more with the conditions under which claims are considered epistemological and those under which epistemological claims are either meaningful, true or warranted. This latter inquiry—the study of the study of knowledge—yields a type of *metaphilosophy* called metaepistemology. Other prominent types of metaphilosophy are *metaethics* and *metaontology*. Epistemology, therefore, can itself be the focus of higher philosophical inquiry.

This manner of higher-order, metaepistemological perspective is necessary for my project of coming to understand how different types of knowledge, particularly *knowledge systems*, can contribute to our understanding of a planning problem and inform our action within it. From one perspective, it is easy to see how different assumptions or perspectives on the nature of knowledge, indeed on the nature of reality, may appear irreconcilable. However, when viewed from a certain *meta* perspective, this may not be the case. Indeed, different types of knowledge may have their greatest significance or utility *because* they come from varying "pre-analytic visions"²⁴⁶, or *epistemologies*.²⁴⁷ There is also supportive material emerging in the literature which is supportive to such a perspective. Sandra Harding's recent work, *Is Science Multi-Cultural? Postcolonialisms, Feminisms and Epistemologies*, is an excellent example of such an approach. She develops the idea of Western science as a "local knowledge system."²⁴⁸

In light of our previous discussion on constructive postmodernism, it makes sense that the epistemological perspective for sustainability would be characterized by diversity or pluralism. We are talking about legitimizing different knowledge systems for the planning process. Because we seek to validate and employ varying or contending forms and sources of knowledge, it is not so bold a claim to talk about a 'metaepistemology'. We are involved in an inquiry, not just into the nature of knowledge, but the nature of epistemology. I deal with the conditions under which claims are considered epistemological and how epistemological claims are meaningful. We are looking at the social context and philosophical features of 'knowledge systems'

to arrive at a higher order level of analysis which can negotiate between the domains of different epistemological models. Not only is this thinking from a higher order level of analysis, I am advocating working beyond formal epistemology into fields of practical application. This has implications for the interface of scientific knowledge and TEK.

One way of looking at metaepistemology is as a vantage point from above or below.²⁴⁹ This is parallel to the idea of *metatheory* as being a theoretical vantage point on a certain topic or discourse which allows one to see competing theories as part of a larger problematique within a certain discipline or paradigm. It aids in identifying points of convergence and divergence, what is common and what is concealed. With metaepistemology, in my case, the attempt is to obtain a perspective which can help access, assess and validate differing epistemological perspectives. It may help inform planning, both as an inter-cultural practice, and as an intra-cultural practice for the transition to sustainability.

What is the relevance of epistemology for planning in the transition to ecological sustainability? The application of knowledge into action is the essence of planning, but theories of knowledge, meaning and knowledge systems have remained largely peripheral if not absent from most planning theory and practice. This is unfortunate because different approaches to knowledge enable us to ask different kinds of questions and pursue alternative methods for seeking answers. They enable alternative analytical techniques and means for their application in the field. In this light, I offer the following epistemological definition of planning:

*Planning involves the practical articulation and application of knowledge gained through the inter-subjectivity of various pre-analytic visions.*²⁵⁰

(by intersubjectivity I am referring to the shared or agreed upon meanings that exist between members of a discourse) Here we see how planning may play a role in: (i) soliciting knowledge from various actors with various perceived needs and means for achieving those needs based on their own vision of the issue or "problem"; and (ii) establishing a context for knowledge and discourse which can also provide a legitimizing function; then (iii) synthesizing or harmonizing these inputs for constructive action in the social domain. The term "pre-analytic visions" could relate to various actors' perspectives on the planning problem in terms of vested stakeholder interests, political agendas or professional backgrounds. An example could be a logging company executive, workers, the Department of Fisheries, environmental impact consultants, tourism professionals, and wildcraft entrepreneurs in consultation on a land-use plan.

Yet what of the case where pre-analytic visions are founded in views of a planning problem based on knowledge which is of a substantively different nature? What if a view of the problem, and the knowledge which informs it, it is of an order so qualitatively distinct that it constitutes a wholly different view of reality? For example, the case of scientific knowledge specialists and Traditional Ecological Knowledge specialists of First Nations? This is a case for planning between cultural paradigms; it is a situation which *requires* a metaepistemological ap-

proach. What does this require in terms of planning models and process? What does it require from planning theory or planners? ²⁵¹ Such questions must be posed through empirical research. Yet the primary question remains, what can we learn from an example of planning between cultural paradigms that could be useful in facilitating the transition to a paradigm of ecological sustainability within the cultural mainstream?

As we begin to see planning in a new light, we make new demands upon it. We can re-contextualize planning in current ecological reality and social need in order to facilitate a transition to sustainability. I believe this requires a *metaepistemological* approach. From it, we can generate theory and methods to inspire and guide the practice of sustainability. I have already introduced the idea of different worldviews as being different knowledge systems or maps of reality. By overlaying these different perspectives, we can start to create a *metamap*—a map of maps—which can help chart the larger domain. A metaepistemological approach helps to create a legend or guide for reading a map which uses different types of knowledge. It can be a basis, not only for understanding a problem, but for planning and implementation.

There are many ways of experiencing the Earth and many ways to describe it. There are also a variety of means for communicating such knowledge and understanding. It may be that by fostering a diversity of ways of knowing and means for communicating that we strengthen our ability to understand and to act sustainably. This is the metaepistemological perspective. Do we have any examples of two different epistemological paradigms coming together in order to broach issues of relevance to sustainability in the social domain? The growing dialogue between Western scientists and First Nations TEK experts is a good example. The knowledge of these two communities comes from very different cultural paradigms or perspectives on the nature of the problem in question. One is governed by the scientific rigour of an academic community in a literary tradition. The other is governed by strict rules of cultural protocol at the community level in oral traditions. This dialogue is part of a larger discourse between Western modernity and Indigenous peoples. There is much to be learned here.

NOTES FOR CHAPTER 2

- ¹ See , "The Terrain of Planning Theory," in Friedmann's book, *Planning in the Public Domain* , Princeton: Princeton University Press, 1987.
- ² Chris Paris, "A Critique of Pure Planning", in Paris, ed., *Critical Readings in Planning Theory*, New York: Pergamon Press, 1982.
- ³ See the editor's introduction to, *A Reader in Planning Theory*, Toronto: Pergamon Press, 1973, Andreas Faludi, ed. This is considered a classic text in planning theory.
- ⁴ See Michael J. Thomas, "The Procedural Planning Theory of Thomas A. Faludi" and also Faludi's response, "Towards a Combined Paradigm of Planning Theory", both in Paris, ed., *Critical Readings in Planning Theory*, New York: Pergamon Press, 1982.
- ⁵ Lindblom's critique is of a different nature; see below.
- ⁶ See his work *Planning in the Face of Power* , Berkeley, University of California Press, 1989.
- ⁷ Most fit within the context of planning as a "child of the Enlightenment", see Friedmann below.
- ⁸ Clyde Weaver, Joanne Jessop, Veechibala Das, "Rationality in the Public Interest: Towards a New Synthesis" in Breheny and Hooper, *Rationality in Planning: Critical Essays on the Role of Rationality in Urban and Regional Planning* , London: Pion, 1983.
- ⁹ "The Structure and Debates of Planning Theory" in *Readings in Planning Theory*, Scott Campbell and Susan Fainstein, eds., Cambridge, MA: Blackwell, 1996, p.1. (the most recent planning theory textbook)
- ¹⁰ Ibid. p.2
- ¹¹ Ibid.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Ibid.
- ¹⁵ Ibid.
- ¹⁶ Ibid.
- ¹⁷ Ibid.
- ¹⁸ Ibid.
- ¹⁹ Barclay M. Hudson, (with comments from Galloway and Kaufman), "Comparison of Current Planning Theories: Counterparts and Contradictions", in *Journal of the American Planning Association* , Vol. 45, No. 4, 1979.
- ²⁰ Ibid. p.388.
- ²¹ Boothroyd offers a useful presentation of this method in "Developing Community Planning Skills: Applications of a Seven-Step Model." *CHS Research Bulletin*. Vancouver: Centre for Human Settlements, University of British Columbia, 1991.
- ²² Op.Cit.. p.388.
- ²³ Ibid. p.389.
- ²⁴ Lindblom's famous article, "The Science of 'Muddling Through'", from the Spring 1959 issue of the *Public Administration Review* is reprinted in Andreas Faludi, ed. *A Reader in Planning Theory*, Toronto: Pergamon Press, 1973. Lindblom may also have coined the term 'rational-comprehensive'.
- ²⁵ Ibid. p.154.

- ²⁶ Op. Cit. p.389. Some have referred to disjointed incrementalism as the “science of muddling through”.
- ²⁷ Op.Cit. p.164. While Lindblom refers to “non-comprehensive analysis” he does see achieving a “degree” of comprehensiveness. p.162.
- ²⁸ See Amiai Etzioni, “Mixed-Scanning: A “Third” Approach to Decision-Making”, reprinted from the *Public Administration Review*, December, 1967, in Faludi ed., 1973
- ²⁹ Op. Cit. p.389.
- ³⁰ See Friedmann for greater details. Friedmann, who is responsible for the transactive model writes that most planners did not know how to respond to the idea of dialogue in planning when he put this forward in the 1970’s. Friedmann also recognizes that his approach has short-comings which may include some of the personal conflict, unwarranted trust and the cliquish nature of radicalism which could run contrary to the very principles which are the impetus for this model.
- ³¹ Paul Davidoff, “Advocacy and Pluralism in Planning”, in Campbell and Fainstein, eds., p.309.
- ³² Op.Cit. p.390.
- ³³ Ibid.
- ³⁴ An example might be ecological activism to prevent clear-cut logging in Clayoquot Sound.
- ³⁵ Ibid. p.390.
- ³⁶ See “The Mediations of Radical Planning” *Planning in the Public Domain*.
- ³⁷ Ibid. p.391.
- ³⁸ Ibid. p.389.
- ³⁹ “After Rationality, What? A Review of Responses to Paradigm Breakdown”, Ernest R. Alexander, *Journal of the American Planning Association*, Vol. 50, No.1, Winter, 1984.
- ⁴⁰ Ibid. p.65.
- ⁴¹ Ibid.
- ⁴² Ibid. p.66.
- ⁴³ Ibid. p.67.
- ⁴⁴ See Judith Innes, “Planning Theory’s Emerging Paradigm: Communicative Action and Interactive Practice”, *Journal of Planning Research*, Spring 1995, Vol.14, No.3; pp.183-189. It would be worthwhile to examine her claim more closely. Whether or not this approach breaks out of the broader parameters of the dominant paradigm in planning remains to be seen, yet it certainly is an important development and does help close the gap between theory and practice.
- ⁴⁵ I would not like to rule out challenges which have come up already in planning theory, particularly in the work of Friedmann, and the critical “old guard”.
- ⁴⁶ See: Beth Milroy, “Into Postmodern Weightlessness”, *Journal of Planning Education and Research*, Vol. 10, 1991; Thomas L. Harper and Stanley M. Stein, “Out of the Postmodern Abyss: Preserving the Rational for Liberal Planning”, *Journal of Planning Education and Research*, Vol. 14, 1995; and Robert A. Beauregard, “Between Modernity and Postmodernity: The Ambiguous Position of U.S. Planning” in Campbell and Fainstein, 1996. Milroy’s treatment is a fairly refreshing embrace of the epistemological challenges of postmodernism. While Harper and Stein concur with key aspects of the postmodernist critique, they are dubious towards “full blown” postmodernism. Beauregard’s work attempts to harmonize postmodern calls for openness and flexibility with the “modernist quest” for democratic and reformist planning and a commitment to the city.

⁴⁷ The philosophical discourse and social critique of postmodernism has become a huge area. A easy but simplistic overview can be found in *Introducing Postmodernism*, by Richard Appignanesi and Chris Garrat, New York: Totem Books, 1995. One of its greatest critical detractors is Jurgen Habermas from Frankfurt School, see *The Philosophical Discourse of Modernity*, Cambridge, MA: MIT Press, 1985, 1988. A good academic reader can be found in *From Modernism to Postmodernism: An Anthology*, ed. by Lawrence Cahoon, Oxford: Blackwell, 1996.

⁴⁸ For example, in *Spell of the Sensuous*, New York: 1997, Vintage Books-Random House, 1997, David Abram states that phenomenology "is the Western philosophical tradition that has most forcefully called into question the modern assumption of a single, wholly determinable, objective reality." p.31.

⁴⁹ See Priscilla Boucher's Doctoral Dissertation, *Ecology Feminism and Planning: Lessons From Women's Environmental Activism in Clayoquot Sound*, School of Community and Regional Planning, UBC, 1997; Leoni Sandercock and Ann Forsyth, "A Gender Agenda, New Directions for Planning Theory", *Journal of the American Planning Association*, Vol. 58, No.1, 1992 and also "Feminist Theory and Planning Theory: The Epistemological Linkages" in Campbell and Fainstein, 1996; Sherilyn MacGregor, "Deconstructing the Man Made City: Feminist Critiques of Planning Thought and Action" in Margrit Eichler, ed. *Change of Plans: Toward a Non-Sexist Sustainable City*, Toronto: Garamond Press, 1995; Marsha Ritzdorf, "Feminist Thoughts on the Theory and Practice of Planning", Helen Liggett, "Knowing Women/Planning Theory", Susan Fainstein, "Planning in a Different Voice", Beth Milroy, "Some Thoughts About Difference and Pluralism", John Friedmann, "Feminist and Planning Theory: The Epistemological Connection, all in Campbell and Fainstein, 1996. Boucher ties together planning, feminism and ecological issues. Leacock and Forsyth (1992) provide an overview of gender issues including epistemological and methodological considerations and their implications for research, ethics and education in planning. MacGregor makes feminism relevant to planners, offering critiques of the planned environment and planning process; she also cites the need for changes in planning education. The material on gender issues in planning presented in Campbell and Fainstein is notable; the articles are cursory but help stake out issues of increasing importance for planning theory. That two articles deal explicitly with epistemological linkages between feminism and planning is noteworthy.

⁵⁰ See Boucher above and Janis Berkeland, "An Ecofeminist Critique of Mainstream Planning" in the *Trumpeter*, Spring, 1991. Berkeland's article offers worthwhile introductory material on ecofeminism, tying together gender, power and ecology; a rigorous critique of planning from this perspective makes a case for the ecofeminist contribution to planning ethics. Boucher similarly addresses ethics in planning. Ecofeminism, while active at grass roots levels, particularly in "environmental" issues, seems to have been less adopted by academic feminists. This is likely because it has come under criticism for its "gender essentialism" in drawing connections between women and nature. The debate is important yet may not be entirely warranted. While intellectuals react to the spirituality in ecofeminism, this is exactly why it has such an impact at the grass roots and is an issue which needs to be addressed. For ecofeminism see: *Healing the Wounds, The Promise of Ecofeminism*, Judith Plant Ed., Santa Cruz, New Society Publishers, 1989, a collection of articles providing an overview; Starhawk, *Dreaming the Dark, Magic, Sex and Politics*, Boston: Beacon Press, 1982, 1988 is an ecofeminist primer, her other book, *The Spiral Dance: A Rebirth of the Ancient Religion of the Great Goddess*, San Francisco: Harper and Row, 1979, is a popular "how to" on pre-Christian nature religions of European and ecofeminist spirituality; Rosemary Radford Ruether, *Sexism and God-Talk, Towards a Feminist Theology*, Boston: Beacon Press, 1983, provides a scholarly treatment of relevant philosophical and historical issues; Spretnack, *Politics of Women's Spirituality*, Garden City, New York: Anchor Books, 1982, is a compilation of writings on the subject and presents debate on the topic.

⁵¹ One of the most worthwhile feminist deconstructions of science and epistemological critiques of the academic approach can be found in Sandra Harding, *The Science Question in Feminism*, Ithaca: Cornell University Press, 1987.

⁵² There are often tensions between these areas. The most recent book on the subject relevant to my area is Sandra Harding, *Is Science Multi-Cultural? Postcolonialisms, Feminisms, and Epistemologies*, Indianapolis: Indiana University Press, 1998. See also see Trinh T. Minh-ha, *Women, Native, Other, Writing Post-*

Coloniality and Feminism, Bloomington: Indiana University Press, 1989; Nicholson and Frazer, *Feminism/Postmodernism*, An excellent introduction to the theoretical issues can be found in Diane Fuss, *Essentially Speaking, Feminism Nature and Difference*, New York: Rutledge, 1989.

⁵³ Some of the earlier debates in this area led to adopting the body as the sole source of knowledge while others seek a more integrated approach; see Elizabeth Grosz, *Volatile Bodies, Towards a Corporeal Feminism*, Bloomington and Indianapolis: Indiana University Press, 1996, in particular, the introduction which provides an overview of important material. The spirituality of knowing is less developed in the academic literature. "Herstory" is an interesting field of feminist historical inquiry, accused at times of being revisionist; see Reuther, Starhawk and Spretnack above; and especially Riane Eisler, *The Chalice and the Blade, Our History Our Future*, San Francisco: HarperSan Francisco, 1988.

⁵⁴ I think it is safe to say that such synthesis is "in process". See Harding, 1998 above.

⁵⁵ 'Identity Theory' is one arena where this has come about, see for example, Judith Butler, *Gender Trouble, Feminism and the Subversion of Identity*, New York: Routledge, 1990. For issues of identity, race ethnicity, gender and development see Minh-ha above. For issues addressing some of the debates on lesbian/gay theory, see Eve Kosofsky Sedgwick, *Epistemology of the Closet*, Berkeley, University of California Press, 1990, for its discourse with feminism see *Feminism Meets Queer Theory*, Weed and Schor, eds., Bloomington: Indiana University Press, 1997.

⁵⁶ See "The Shallow and the Deep, Long-Range Ecology Movement: A Summary", in Drengson & Inoue eds., *The Deep Ecology Movement, An Introductory Anthology*, Berkeley: North Atlantic Books, 1995. This is a good text. When Naess first presented his ideas in 1970's, he was speaking specifically about social movements; a worthwhile philosophical overview can be found in George Sessions, "Shallow and Deep Ecology: A Review of the Philosophical Literature" in Schultz and Hughes, *Ecological Consciousness*, Washington D.C.: University Press of America, 1981; see also John A. Livingston, *The Fallacy of Wildlife Conservation*, Toronto: McClelland and Stewart, 1981.

⁵⁷ For example, a term associated with deep ecology is *ecosophy*. which is a contraction of ecology and philosophy. The idea is that ecology is science, ecosophy is a type of wisdom. See "Appendix A: Ecosophy T, Arne Naess" in Devall and Sessions, *Deep Ecology*, Salt Lake City: Gibbs Smith, 1985.

⁵⁸ The philosophical, political and religious response to the field of ecology and its implications is vast and varied, from deep ecology, ecofeminism, green politics and social ecology, to aboriginal ecology, ecological economics, Christian ecology and industrial ecology. Eugene Odum's work, which has long been a standard scientific text, has been re-written as *Ecology and Our Endangered Life Support Systems*, Massachusetts, Sinauer Associates Inc., 1989. A book with contributions by scientists and other scholars that deals with broader implications raised in modern scientific paradigm change is *The Reenchantment of Science, Postmodern Proposals*, David Ray Griffen ed., Albany: State University Press, 1988. Peter Knudtson's and David Suzuki's *Wisdom of the Elders*, Toronto: Stoddart Publishing Co. Limited, deals with Indigenous knowledge and presents a juxtaposition of "sacred ecologies" and scientific work. David Abram, *Spell of the Sensuous*, brings much this together.

⁵⁹ A seminal article on ecosystem-based management is R. Edward Grumbine, "What is Ecosystem Management?", in *Conservation Biology*, Vol. 8, No.1, March 1994; see also the sequel, "Reflections on What is Ecosystem Management", *Conservation Biology*, Vol.11, No.1, February, 1997; also Ronald D. Brunner and Tim W. Clark, "A Practice-Based Approach to Ecosystem Management" in the same issue.

⁶⁰ *The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management, "Executive Summary,"* Washington D.C.: the Ecological Society of America, 1996, p.2, from the "8 Elements of Ecosystem Management", point 7.

⁶¹ Ecosystem-based management is still a human "management" of nature which is used as a basis for resource extraction. Not all versions would fit within what I refer to as ecological thought, yet, as a model, it is moving increasingly in that direction and can be seen as a shift in pre-analytic vision.

⁶² see various references in footnotes.

- ⁶³ See Gregory Bateson, *Steps to an Ecology of Mind*, New York: Ballantine Books, 1972. Stafford Beer has pursued questions of a similar nature. Maturana and Varela approach the topic from a biological perspective in *The Tree of Knowledge*, Boston and London: Shambala, 1992.
- ⁶⁴ Morris Berman's work, *The Reenchantment of the World*, Ithica: Cornell University, 1981, became somewhat of an underground classic; he followed it with *Coming to Our Senses*, Toronto: Bantam Books, 1990. Fritjof Capra's book, *The Turning Point*, Toronto: Bantam Books, 1982 was one of the earlier comprehensive works to tie the idea of paradigm shift to current social movements and paradigm shifts in science to larger cultural transformations. His most well known work, however, is still probably *The Tao of Physics*, Shambala, 1975, 1993 which is considered by many to be a classic.
- ⁶⁵ See *The Turning Point*, above.
- ⁶⁶ See "The Crime of Galileo" in *Myth of the Machine, Vol. 1, The Pentagon of Power*; Harvest, 1970, wherein he gives analysis of Galileo's "world picture".
- ⁶⁷ The topic of race needs to be addressed more explicitly as does class.
- ⁶⁸ David Ray Griffen ed., *The Reenchantment of Science, Post-Modern Proposals*, Albany: State University of New York Press, 1988, p.xi.
- ⁶⁹ Griffen admits that many self-styled postmodernists would regard this approach as "hopelessly wedded" to outmoded concepts because it seeks to salvage a positive meaning for such ideas as the human self, historical meaning and truth which were central to modernity, as well as fostering concepts from pre-modernity, such as enchanted nature, divinity and cosmic meaning. Yet this is exactly what makes the approach so interesting, creative and constructive in fostering a critical, yet positive dialogue on meaning and postmodernity. Griffen argues that deconstructive postmodernism actually results in carrying many modern ideas to their ultimate conclusion and thus is not really postmodern at all.
- ⁷⁰ See "Alternative therapies gain ground: Medical establishment taking notice as Canadians turn to naturopathy, homeopathy" in *The Globe and Mail*, Dec. 28, 1996. The burgeoning of alternative medicine is well known. What is more interesting for me are examples of its interface with mainstream science and education, for example the Traditional Chinese Medicine research program at the Vancouver General Hospital, the plan to develop an Institute for Aboriginal Health Care at UBC and the Centre for Holistic Health Care Studies at Langara College.
- ⁷¹ This is a rather deep subject of debate. I have deal with it elsewhere in a working paper written as part of my Masters degree, entitled, "Towards a Re-Coherence of Humanity and the Planet Earth: A Green Critique of Socialism and Marxist Thought" Department of Political Science, York University, 1987. See also See Colin Fry, "Marxism Versus Ecology", *Ecologist*. Volume 6, Number 9; Michael Clow, "Alienation From Nature: Marx and Environmental Politics", *Alternatives*, Volume 11, Summer, 1982.
- ⁷² Weaver, Jessop, and Das provide some worthwhile discussion of this via their concept of a "new rationality". Interestingly, they recognize the work of Capra, in particular, the introduction of Taoist philosophy into current epistemological debates in planning.
- ⁷³ See Harvey M. Jacobs, "Contemporary Environmental Philosophy and its Challenge to Planning Theory", in Hedler, ed., *Planning Ethics: A Reader in Planning Theory, Practice and Education*, New Brunswick, New Jersey: Centre For Urban Policy Research, 1995. As mentioned, while he uses the term "environmental philosophy" I prefer *ecological thought*.
- ⁷⁴ Ibid. p.86. The first standard textbook on deep ecology is the one by Devall and Sessions, *Deep Ecology*, Salt Lake City: Gibbs Smith, 1985. See also Drengrson & Inoue above.
- ⁷⁵ Ibid. p.89.
- ⁷⁶ Ibid. p.91.
- ⁷⁷ Berg and Dasmann, 1978 in Jacobs.

- ⁷⁸ See Bill Mollison's "bible" on permaculture, *Permaculture: A Designer's Manual*, Tyalgum Australia: Tagari Publications, 1988.
- ⁷⁹ Ibid. p.92.
- ⁸⁰ Ibid. p.92.
- ⁸¹ One of the best treatments of this subject can be found in Ramachandra Guha and Juan Martinez-Alier, *Varieties of Environmentalism, Essay North and South*, London: Earthscan, 1997. This is an important book. Guha is a foremost writer on the social implications of environmentalism from a non-Western perspective, yet he has contributions to make to North American environmentalism. His discussions on Lewis Mumford and Georgescu-Roegen's contribution to ecological economics are particularly worthwhile.
- ⁸² Ibid. p.93.
- ⁸³ Ibid. p.93.
- ⁸⁴ Ibid. p.93.
- ⁸⁵ Ibid. p.93.
- ⁸⁶ Ibid. Jacobs cites Lindblom (1973).
- ⁸⁷ Ibid. pp.93-94.
- ⁸⁸ Ibid. p.94.
- ⁸⁹ Ibid.
- ⁹⁰ Ibid.
- ⁹¹ Ibid.
- ⁹² Ibid. pp.94-95.
- ⁹³ Ibid. p.95; emphasis added.
- ⁹⁴ See C.S. Holling, "The Resilience of Terrestrial Ecosystems: Local Surprise and Global Change," in *Sustainable Development of the Biosphere*, W.C. Clark and R.E. Munn eds. N.Y. Cambridge University Press, 1986.
- ⁹⁵ Ibid.; emphasis added,
- ⁹⁶ Ibid. p.95.
- ⁹⁷ Ibid. p.95-95.
- ⁹⁸ Ibid. p.96.
- ⁹⁹ Ibid. p.97. See Forester, 1989, above.
- ¹⁰⁰ Ibid. p.97
- ¹⁰¹ Ibid.
- ¹⁰² Ibid. p.98.
- ¹⁰³ Ibid. p. 98. He is referring specifically to Lewis Mumford, *The Culture of Cities*, New York: Harcourt Brace and Company, 1938; H.W.Odum and H.E.Moore, *American Regionalism: a cultural-historic approach to national integration*, New York: Henry Holt, 1938.
- ¹⁰⁴ M.P. Brooks, "Four Critical Junctures in the History of the Urban Planning Profession: an exercise in hindsight", *Journal of the American Planning Association*, No.54, 1988.
- ¹⁰⁵ Ibid. p99.
- ¹⁰⁶ Weaver, Jessop and Das, 1983, p.8.

- ¹⁰⁷ See William Rees, "The Dialectic of Denial" paper presented at CANSEE Meetings, 1997.
- ¹⁰⁸ From William Rees, 'Comparing Competing Paradigms', in "Planning Sustainability: Reform or Transformation", *Journal of Planning Literature*, Vol. 9, No.7; pp.343-361. See Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos*, New York: Bantam, 1984.
- ¹⁰⁹ William Rees, "The Ecological Meaning of Economy-Environment Systems Integration", *UBC Planning Papers*, School of Community and Regional Planning, University of British Columbia, 1989, p.3. See also "Sustainable Development and the Biosphere." *Teilhard Studies* 23, 1990.
- ¹¹⁰ William E. Rees, "Toward a Framework for Holistic Environmental Planning", Planning 504 Notes, School of Community and Regional Planning, University of British Columbia.
- ¹¹¹ Jayne Jacobs, possibly the singlemost influential Canadian planner, sees the influence of ecological thinking as the most exciting intellectual development of our time. CBC-1, evening special, 4/20/98.
- ¹¹² *Planning in the Public Domain*, Princeton: Princeton University Press, 1987, p.36; emphasis his.
- ¹¹³ Ibid.
- ¹¹⁴ Ibid. p.38.
- ¹¹⁵ Ibid.
- ¹¹⁶ I think this insight is based on critical theory, particularly that of Jurgen Habermas (i.e. his book *Legitimation Crisis*) whose work has influenced aspects of planning theory.
- ¹¹⁷ Op.Cit. p.39.
- ¹¹⁸ Ibid.
- ¹¹⁹ Ibid. p.40
- ¹²⁰ Ibid. pp.40-41.
- ¹²¹ Michael J. Thomas, "The Procedural Planning Theory of Thomas A. Faludi" in Paris, ed., *Critical Readings in Planning Theory*, New York: Pergamon Press, 1982, p.14.
- ¹²² See p.413. It is also worth looking at the discussion on the "Theme of Rationality", pp.97-105.
- ¹²³ Ibid. p.41.
- ¹²⁴ Ibid. p.42.
- ¹²⁵ Ibid. p.42.
- ¹²⁶ Ibid. p.44
- ¹²⁷ Ibid. p.44. It seems to me that Friedmann is responding to some of the debates which have been raised, amongst others, by postmodernists.
- ¹²⁸ For example phenomenology, hermeneutics.
- ¹²⁹ Ibid. p.413. I discuss briefly below the influence of Auguste Comte on the origins of planning.
- ¹³⁰ Ibid. p.414.
- ¹³¹ Ibid. p.415.
- ¹³² *Planning in the Public Domain*, p.415. This is quite an astounding little epilogue. Freedman is a stalwart scholar whose political sentiments are clearly towards the social mobilization/transformation end of the planning traditions. It would seem that new epistemological precedents towards socially based knowledge are attractive to him.
- ¹³³ Ibid. pp. 414-415; emphasis added.

¹³⁴ Ibid. p.416.

¹³⁵ Ibid. pp.416-417.

¹³⁶ Ibid. p.415. This is an arguably postmodernist position.

¹³⁷ Ibid. p.415. He adds that the subject/actor, "typically proceeds on the basis of unarticulated, tacit knowing." (an apparently phenomenological perspective)

¹³⁸ Ibid. p.415. (an apparently hermeneutical perspective)

¹³⁹ This was in the summer of 1990. Morgan is one of the most knowledgeable "bush professors" I have ever encountered. Although he denied it, he seemed to know almost every plant in the valley by name in Stla'at'imx and many in 'Nlaka'pamux'cheen, also English common and Latin. He could figure out something for just about any physical problem we encountered and had an uncanny sense of things from the weather, to bears and even, at times, to what was going on in my head.

¹⁴⁰ From *Lewis Mumford on the City, Part 1: The City-Heaven and Hell*, National Film Board of Canada, Ian MacNeill and Guy Glover, Producers, order # B0163 031, 1963.

¹⁴¹ The ancient Chinese art of *Feng Shui* is a living example of the geomancy which may have informed such traditions, see Terah Katheryn Collins, *The Western Guide to Feng Shui*, Carlsbad, CA: Hay House Inc., 1996. Liangyong provides a look at ancient Chinese planning in, *A Brief History of Chinese Planning*, source: course readings for Planning 502-History and Theory of Planning, School of Community and Regional Planning, University of British Columbia. Sjoberg, *The Preindustrial City, Past and Present*, provides a detailed overview of cities and other quasi-urban forms in the ancient world. A worthwhile study of the Anatolian and other examples of Old Europe can be found in the work of Lithuanian archaeologist Marija Gimbutas, *The Civilization of the Goddess, the World of Old Europe*, San Francisco: HaperSanFrancisco, 1991 and *The Language of the Goddess*, San Francisco: Harper and Row, 1989. Friedmann notes that in the ancient world "a different sort of planning had prevailed." He mentions several of the civilizations that I have above, and also the impetus of the Euclidean order in a proto-rational design style he refers to as *orthogonal* design. p.22.

¹⁴² From *A Reader in Planning Theory*, Toronto: Pergamon Press, 1973, p.1.

¹⁴³ *Planning in the Public Domain*, p.413.

¹⁴⁴ As mentioned, this line of analysis has been extensively researched and is well documented in the literature. One of the more popular and comprehensive historical reviews of the old paradigm and introduction to the new is Fritjof Capra's *The Turning Point*; Morris Berman's *The Reenchantment of the World* presents another critical treatment in a standard text. Lewis Mumford's also wrote earlier in the area, see *The Myth of the Machine, Vol. 1, The Pentagon of Power*.

¹⁴⁵ Campbell and Fainstein, 1996, p.5.

¹⁴⁶ Ibid.p. 5.

¹⁴⁷ Ibid. p.6 This is an obvious allusion to the critical discourse in planning. They suggest Richard Fogsong's, *Planning the Capitalist City* (1986), and Robert Fishman's *Bourgeois Utopias: the Rise and Fall of Utopia*.

¹⁴⁸ See "The Terrain of Planning Theory," in Friedmann's book, *Planning in the Public Domain*, Princeton: Princeton University Press, 1987.

¹⁴⁹ From Jane Jacobs, *Systems of Survival*, New York: Random House, 1992.

¹⁵⁰ Freedman, p.412.

¹⁵¹ Smith had been a strong proponent of Comte's ideas, but eventually recanted at the spectre of infringements on personal liberty by the vast and sweeping powers of the state advocated by Comte.

¹⁵² Stephen Toulmin, *Cosmopolis, The Hidden Agenda of Modernity*, New York: The Free Press-Macmillan Inc., p.ix.

¹⁵³ Ibid.

¹⁵⁴ Ibid.

¹⁵⁵ Ibid. p.11.

¹⁵⁶ Ibid.

¹⁵⁷ Ibid. p.12.

¹⁵⁸ Ibid.

¹⁵⁹ Ibid. p.11.

¹⁶⁰ Ibid.

¹⁶¹ I think that this option and the second one are not necessarily mutually exclusive. That is the basic point made by Griffen in *The Reenchantment of Science*.

¹⁶² Some find it fruitful to pursue a more analytically pluralistic view of the Enlightenment. There were several critical phases, or even "Enlightenments". For example, a nationalized analysis speaks of the "Scottish Enlightenment" and "French" or "German Enlightenment." Nevertheless, it is generally accepted that "The Enlightenment" covered roughly from the late 16th to early 18th centuries.

¹⁶³ Berman gives good context and discussion in *Reenchantment of the World*; Tambiah provides a more academic presentation of the participatory ordering of reality from the perspective of cultural anthropology in *Magic, Science Religion and the Scope of Rationality*.

¹⁶⁴ The references in footnote 3 are all relevant. Berman refers generally to the 'Cartesian Paradigm' while Capra popularized the term 'Cartesian-Newtonian paradigm'. Others have made contributions to social and historic analysis based on this and similar lines of analysis, Lewis Mumford is notable amongst them. See "The Crime of Galileo" in *Myth of the Machine, Vol. 1, The Pentagon of Power*; Harvest, 1970. Rather than using the word paradigm, he spoke of a change in the "world picture". wherein he gives analysis the Scientific Revolution as the basis for current socioeconomic development.

¹⁶⁵ As with those mentioned as founders of science in the same paragraph, there are many other notable individuals who could also be mentioned. These would easily include Nicolaus Copernicus, Gottfried Leibnitz, Robert Boyle, Jeremy Bentham, David Ricardo and others.

¹⁶⁶ Pagan is from the Italian-pagani-meaning 'of the countryside'.

¹⁶⁷ This is a further reference to "Old Europe". Both this term and "Civilization of the Goddess" were coined by Lithuanian Archaeologist Marija Gimbutas. Although the premise is not without controversy, a great deal of research has been done with an overwhelming amount of evidence for the existence of a peaceful, earth-based agrarian civilization in ancient Europe which persisted for several thousand years. See *Language of the Goddess*, and *Civilization of the Goddess* above, as well as *The Gods and Goddesses of Old Europe: 7000 to 3500 B.C.: Myths Legends and Cult Images*, Berkeley: University of California Press, 1974. Gimbutas' work was popularized Riane Eisler who gives further commentary and historic context in her well known text, *The Chalice and the Blade, Our History Our Future*, San Francisco: HarperSan Francisco, 1988. Anne Baring and Jules Cashford, *The Myth of the Goddess*, Toronto: Penguin Books, is one of the more comprehensive and easily read scholarly treatments on the history and evolution of the myth of the Goddess; 1991. Critical debate can be found in Spretnack, *The Politics of Women's Spirituality*.

¹⁶⁸ See *Language of the Goddess* above, as well as an extraordinary anthropological study by Evans Wentz *The Fairy Faith in Celtic Countries*. It contains an anthropology of living oral cultural traditions (e.g. Britain, Scotland, Ireland, Wales, Manx, France) done at the turn of the century. This includes a philosophical/methodological discussion on his findings in relation to science.

¹⁶⁹ See Ralph Metzner's insightful, popular work on the myth of Indo-European and Nordic-Germanic peoples in *The Well of Remembrance*, London: Shambala, 1994; two scholarly treatments can be found in Jean Markale, *The Celts, Uncovering the Mythic and Historic Origins of Western Culture*, Rochester, VT: Inner Traditions International, 1993; and H.R. Ellis Davidson, *Myths and Symbols in Pagan Europe, Early Scandinavian and Celtic Religions*, Syracuse: Syracuse University Press, 1988.

¹⁷⁰ See Gimbutas as well as Baring and Cashford.

¹⁷¹ For example, Phillip Carr-Gomm, in *The Druid Tradition*, Shaftsbury: Element Books, 1991, writes that the Bards as "custodians of the sacred word" were the keepers of tradition and memory of the tribe. The Bard is the first level of training for the Druidic order. There were regional variations in the curriculum of study (e.g. between Ireland, Scotland and Wales, the general model was similar.) In Ireland, it is recorded that this first level of initiation covered twelve years, broken into demanding grades of study: the first year included three grades and basic arts including grammar, 20 stories, the Ogham tree-alphabet (an oral mnemonic and heuristic device); the next four years involved 10 stories a year, 100 Ogham combinations, 12 philosophy lessons, and various poems, along with diphthongal combinations, the Law of Privileges and uses of grammar; by the sixth year, another 48 poems and 20 stories; the next 3 years included another 195 tales, as well as prosody, glosses, prophetic invocation, types of poetic composition, specific poetic forms and the place-name stories of Ireland; the final three years conferred several more titles and grades, the tenth year including further poetic forms and composition, in the eleventh 100 more poems, and in the twelfth 120 orations and four arts of poetry. The style of training was largely through extensive mentorship, isolation and sensory deprivation. This was the first level, followed by the Ovate, then Druid. pp.44-45. David Abram provides worthwhile discussion of relevant material in *Spell of the Sensuous*. Robert Graves, *The White Goddess*, London: Faber and Faber, 1948, also provides relevant material.

¹⁷² Markale gives an account of this.

¹⁷³ William Anderson, *Green Man, the Archetype of our Oneness With the Earth*, London and San Francisco: HarperCollins, 1990, p.54, emphasis added. Many myths and legends are commensurate with these themes, some have political significance such as Robin Hood, the "Royal Oak" and Merlin.

¹⁷⁴ Although scientific proponents of alchemy did face challenges from the Church, most were not the subject of persecution as with so many so-called witches. This was likely due to issues of gender and class. The notable exception is the rational philosopher and magician Giordano Bruno who was a supporter of Copernicus' model of heliocentricity (based on the idea that a living earth must move) and was burnt at the stake. See Francis Yates's scholarly work, *Giordano Bruno and the Hermetic Tradition*, Chicago: University of Chicago Press, 1962, 1991; also Estes and Johannisson in Merkel and Debus below.

¹⁷⁵ See Ingrid Merkel and Allen G. Debus, eds. *Hermeticism and Renaissance, Intellectual History of the Occult in Early Modern Europe*, Toronto: Associated University Press, 1970. This is a detailed collection of scholarly articles. See in particular B.J.T. Dobbs, "Newtons Commentary on the Emerald Tablet of Hermes Trismegistus: Its Scientific and Theological Significance"; also Karin Johannisson, "Magic Science, and Institutionalization in the Seventeenth and Eighteenth Centuries"; also Leland L. Estes, "Good Witches, Wise Men, Astrologers, and Scientists: William Perkins and the Limits of the European Witch Hunts". For an account of Newton's and Boyles involvement with secret societies, see also Baigent, Leigh and Lincoln's extraordinary book, *Holy Blood Holy Grail*, New York: Delacorte Press; while this is more of journalistic than scholarly work, the amount of research impressive. The controversy around Kepler is complex. Frances Yates writes on this in *The Rosicrucian Enlightenment*, (see below) and suggests that the topic requires more research. The focus of the controversy is between Kepler and the influential hermeticist Robert Fludd. That Kepler was intimately involved is incontrovertible. What is less clear is what precipitated the break, yet there seems to have been a falling out, or disagreement at least, over issues of mathematics. Some have used this occurrence as exemplary of the allegory of pure science casting off its alchemical chrysalis.

¹⁷⁶ See Frances Yates' detailed historical study of this overlooked but influential period between the Renaissance and the scientific revolution of the seventeenth century, *The Rosicrucian Enlightenment*, London: Routledge 1972, 1993.

¹⁷⁷ See Johannisson above.

¹⁷⁸ See Berman, *Reenchantment of the World*, pp.113-115. See also Griffen, *The Reenchantment of Science*.

¹⁷⁹ See Tambiah, 1-31.

¹⁸⁰ Op.Cit., p115.

¹⁸¹ Ibid.

¹⁸² Ibid. p.251 in Ingrid Merkel and Allen G. Debus, eds.

¹⁸³ Ibid. p.260.

¹⁸⁴ Ibid. p.253.

¹⁸⁵ Ibid. p.260.

¹⁸⁶ Ibid. p.21.

¹⁸⁷ The violence of the European "Witch Craze" is well known and well documented. To see it as a purely religious fervour is to miss entirely the political, economic and ideological factors at play in this dark corner of the European cultural shadow which witnessed the murder and torture of millions. Most were women, many practising a mixture of Christianity and pre-Christian nature religions having roots as far back as possibly the Paleolithic. See Appendix A, "The Burning Times: A Crucial Period of History" in Starhawk, *Dreaming the Dark, Magic, Sex and Politics*, Boston: Beacon Press, 1982. See also H.R. Trevor-Roper, *The European Witch-Craze of the Sixteenth and Seventeenth Centuries*, Markham, Ontario: Penguin, 1967, 1990 as well as the film, *The Burning Times*, National Film Board of Canada, 1990, Read (director), Armstrong and Pettigrew (producers),

¹⁸⁸ E.P. Thompson presents relevant historical materials in *The Making of the English Working Class*, Harmondsworth, Penguin, 1968; and *Whigs and Hunters*, New York: Pantheon Books, 1975. In *Customs in Common*, London: Merlin Press, 1991, he offers a worthwhile look at local resource institutions.

¹⁸⁹ From Carolyn Merchant, *The Death of Nature, Women, Ecology and the Scientific Revolution*, Toronto: Harper and Row. 1983, p.169.

¹⁹⁰ From Freedman, *Planning in the Public Domain*, Princeton: Princeton University Press, 1987, p.67. Friedmann writes that, while the practice of planning, in the modern sense, began in the early decades of the 20th century, "to trace its ideological roots, we must go back to the early nineteenth century, to the work of Henri de Saint-Simon and August Comte, in which the vision of a science working in the service of humanity first took shape." p.21.

¹⁹¹ *The Cambridge Dictionary of Philosophy*, Robert Audi, ed., New York: Cambridge University Press, 1996, p.147, describes 'positivism' as "a method of study based on observation and restricted to the observable." Comte proffered a developmental vision of society which saw culture as going through three successive stages, including a primitive/theological stage, an intermediate/metaphysical stage, and eventually arriving at the positive/scientific.

¹⁹² Friedmann provides an interesting discussion of Comte saying that his "naive" view of the role of social sciences within the scientific undertaking "did untold damage to the cause of planning." p.69.

¹⁹³ See Capra "The Impasse of Economics" in *The Turning Point* for worthwhile discussion. See also the following chapter, "The Dark Side of Growth".

¹⁹⁴ This liberation applied chiefly to those of European origin, not to Indigenous peoples dispossessed by colonialism. Even Karl Marx himself lauded the "civilizing influence" of capital in its mission to tear

down all previous social forms which appear as "mere local developments and nature idolatry". From the Grundrisse, *The Marx-Engels Reader*, Tucker ed., New York: W.W. Norton & Co. 1978, pp.409-410.

¹⁹⁵ Much of this can be attributed to German idealist philosophers, in particular Kant and Hegel.

¹⁹⁶ Marx's famous reference to the proletarian working class is in the Communist Manifesto. According to the development of Marx's historical eschatology, the seeds of each successive social formation are held within the contradictions of the productive relations of its predecessor. These social constraints of the *forces of production* by the *relations of production* take the form of class struggle which is the "engine of history." In this way, the Capitalist Revolution was born from the class contradictions and hindrances on the forces of production in feudalism. Those same social antagonisms in capitalism made it the necessary precursor to socialism, thus revealing the "civilizing mission" of capital as it tore down all prior cultures.

¹⁹⁷ I developed this analysis in detail in a paper for my Master's Degree, entitled, "Towards a Re-Coherence of Humanity With the Planet Earth, A Green Critique of Socialism and Marxist Thought", Department of Political Science, York University, 1987. There are moments, arguably, where Marx's dialectical materialism pushes and almost transcends the epistemological discourse of the Cartesian paradigm. Yet, he could be accused of "fetishizing" industrial productive forces. He is a true modernist.

¹⁹⁸ For a brief discussion of these older roots see LaChappelles discussion of Havelock's work, "The Greek Language Problem" in Deloris LaChapelle, *Sacred Land, Sacred Sex, Rapture of the Deep*, Silverton Colorado: Finn Hill Arts, 1988; for a discussion of the Greek philosophical roots and Hebraic influence, see Rosemary Radford Ruether, *Sexism and God-Talk, Towards a Feminist Theology*, Boston: Beacon Press, 1983; the most current work in this area which is quite extensive is the recent one by David Abram, *The Spell of the Sensuous*, Toronto: Random House & Vintage Books, 1997, he traces the origins of the current ecological crisis, particularly in the loss of participatory consciousness, to issues of language (and others) using linguistics, phenomenology and his work with Indigenous peoples.

¹⁹⁹ Berman writes that there are some diametrically opposed view points in Bacon's *New Organon* and in Descartes *Discourse on Methods*, yet they possess a commonality which sharply distinguishes them both from the Greek and Medieval worlds. This is the pivotal insight of the scientific revolution that there is no clash between rationalism and empiricism (especially evident in the work of Newton and Galileo). "The former says that the laws of thought conform to the laws of things; the latter says, always check your thoughts against the data so that you know what thoughts to think." The operative mode of question about the universe has shifted here from "why" to "how". (*Reenchantment of the World*, p.14). Reason and method is the tool to answer.

²⁰⁰ Falsification is a later Popperian development in advance of Logical Positivism's position of "verification". *The Cambridge Dictionary of Philosophy* states that, "Popper brings to the central problems of Kant's philosophy an uncompromising realism and objectivism, the tools of modern logic, and a Darwinian perspective on knowledge, thereby solving Hume's problem of induction without lapsing into irrationalism." p.631.

²⁰¹ Berman writes, "Descartes showed that mathematics was the epitome of pure reason, the most trustworthy knowledge available." From *The Reenchantment of the World*, p.14. Capra writes that the man who realized the Cartesian dream was Newton. He provided "grand synthesis" of the works of Copernicus, and Kepler, Bacon, Galileo and Descartes. His grasp of mathematics was unequalled. He went further than Galileo and Descartes and invented differential calculus! (which Einstein described as perhaps the greatest advance in thought "a single individual was ever privileged to make."). Newton combined Kepler's discoveries on planetary motion with Galileo's work on falling bodies. From Capra, *The Turning Point*, p.63.

²⁰² See sources on Ruether above, also "The Newtonian World-Machine" in Capra, *The Turning Point*; and "The Birth of Modern Scientific Consciousness" in Berman's *Reenchantment of the World*. The idea of the atom goes back to the Greek philosopher Democritus of Abdera.

²⁰³ Newton published this in his *Principia*. Capra writes that he also went beyond Bacon's systematic experimentation and Descartes mathematical analysis. He unified Bacon's empirical inductivism with the rational deductive method of Descartes; the outcome was to show that neither experiments without systematic interpretation nor deduction from first principles without experimental evidence leads to reliable theory. "Newton unified the two trends and developed the methodology upon which natural science has been based ever since." From *The Turning Point*, pp.63-64.

²⁰⁴ In *Spell of the Sensuous*, Abram writes that by "apparently purging material reality of subjective experience, Galileo cleared the ground and Descartes laid the foundation for the construction of the objective or 'disinterested' sciences, which by their...forceful investigations have yielded so much of the knowledge and...technologies which have today become commonplace in the West" p.32.

²⁰⁵ Capra describes how Descartes went to great lengths to describe living organisms as nothing but automata. "I do not recognize any difference between the machines made by craftsmen and the various bodies that nature alone composes." Quoted in *The Turning Point*, p.61.

²⁰⁶ Capra provides some worthwhile discussion of how this model has formed the basis of modern psychology. See "Newtonian Psychology" in *The Turning Point*.

²⁰⁷ The distinction of mind and brain is becoming a source of debate in scientific and other fields, burgeoning into a general area of consciousness studies. There are those hard line materialists (who could be referred to as computationalists) who argue that consciousness is reducible to the algorithms of brain function, as well as the old guard of dualists (the traditional schism, both of whom regard human consciousness as little more than a biological computer). A smaller, more heretical faction are the phenomenologists who set themselves off from both, arguing that, "there is something scientifically significant about the irreducible, first-person nature of consciousness". Quoted from the Master's Thesis of Janet Atkinson-Grosjean M.B.A., C.G.A., *First Person/Present Tense: Conjugating A Postmodern Science of Consciousness*, from the Simon Fraser University Master of Arts in Liberal Studies, British Columbia, 1996, p.23. See also *Descartes' Error*.

²⁰⁸ While this is currently of increasing dispute, there are older debates which are of import. In particular are those amongst the pre-Socratic philosophers, amongst whom the current anthropocentric position is only one of many positions debated; yet that position eventually won out and was taken up by modernity (again, an arbitrary philosophical distinction). The topic is in many ways an ethical one and far too complex to go into in detail, but I urge those seriously interested to see the scholarly work of Richard Sorabji (professor of Ancient Philosophy at King's College London), *Animal Minds and Human Morals, the Origins of the Western Debate*, Ithica: Cornell University Press, 1993. A less philosophical but just as engaging piece of popular scientific literature is Jeffry Moussaieff Massa and Susan McCarthy, *When Elephants Weep: The Emotional Lives of Animals*, New York: Dell Publishers, 1995.

²⁰⁹ Again, this is under attack, but still persistent. An easy to read, scholarly introduction to the topic can be found in Radford-Reuther's *Sexism and God-Talk*.

²¹⁰ And arguably from culture. In the introduction to *Refiguring Bodies, Toward a Corporeal Feminism*, Grosz writes that what Descartes accomplished was not so much the separation of mind from body – which goes back to Greek philosophy, in particular Plato – but the separation of soul from nature. She points out that Descartes distinguished two substances, thinking and extended, of which only the latter could be considered part of nature, governed by its physical laws and "ontological exigencies". The body is thus a "self-moving machine, a mechanical device functioning according to causal laws...the mind, the thinking substance, the soul or consciousness, has no place in the natural world. This exclusion of soul from nature, the evacuation of consciousness from the world, is the prerequisite for founding a knowledge, or better, a science, of the governing principles of nature, a science which excludes and is indifferent to considerations of the subject." p.6

²¹¹ From *Cosmopolis*, p.30. I would like to go more deeply into this, yet must be judicious with an already lengthy text. I refer readers to Toulmin's book, it is lucid and easy to read. See pages 30-40.

²¹² Personal communication; August 9, 1996 at the School of Community and Regional Planning.

²¹³ Please see relevant material in "Definition of Terms", section 1.3.

²¹⁴ We could see this as akin to what Edmund Husserl, the founder of phenomenology, referred to as the *Lebenswelt* or 'life-world'. Abram describes this as "the world of immediately lived experience, as we live it, prior to all our thoughts about it...reality as it engages us, before being analysed by our theories and our science." It is the corporeal dimension between seemingly a "transcendental consciousness", and the seemingly "objective matter" assumed by the natural sciences. From *Spell of the Sensuous*, p.40.

²¹⁵ The 'social process' of knowledge changed from a form of participation with nature and the larger cosmos, to one of objectivity and detachment in order to know the universe through empirical laws of causal relationships that could be used to subdue nature through technical prowess.

²¹⁶ For a basic primer on the GAIA Hypothesis, see J.E. Lovelock, *GAIA, A New Look at Life on Earth*, Toronto: Oxford University Press, 1979, 1987. As well as being a scientific model, there are also more philosophical (ontological and even cosmological) implications of the GAIA Hypothesis.

²¹⁷ In response to GAIA, Joseph Campbell, possibly the greatest mythographer of the modern era, tells us that, "...the only myth that is going to be worth talking about in the immediate future is the one that is talking about the planet..." From, *The Power of Myth*, Toronto: Anchor/Doubleday, 1988. p.41.

²¹⁸ See Griffen's introduction to *The Reenchantment of Science*, and Knudtson's and Suzuki's, *Wisdom of the Elders*, Toronto: Stoddart Publishing Co. Limited, 1992.

²¹⁹ In *The Reenchantment of Science*, Griffen advocates the "causal heresy". See Griffen's introduction and especially Willis W. Harmans, article "The Postmodern Heresy: Consciousness and Causation". In the same collection is a short version of Rupert Sheldrake's 'hypothesis of formative causation' in his article, "The Laws of Nature as Habits: A Postmodern Basis for Science." For a scientific application of GAIA as a paradigm of inquiry into global systems, biogeochemical cycles and planetary anthropogenic disturbances, see the academic textbook by A.M. Mannion, *Global Environmental Change*, 2nd. edition, Essex: Longman, 1997, especially pp.4-6.

²²⁰ One of the more novel examples of this can be found in Ralph Abraham's treatment, *CHAOS GAIA, EROS*, New York, HarperSanFrancisco, 1994. Abraham is a mathematician and pioneer of dynamic systems and chaos theory. In this astounding work, he traces three currents of human consciousness and social formation, revealed first in the Orphic mysteries of ancient Greece as a unified system of mathematics and religion manifesting itself in historical 'meta-patterns' and culminating in modern sciences with the GAIA Hypothesis, Chaos Theory and Erodynamics. His analysis of history is based upon the mathematics of dynamical systems and chaos theory. On political implications of the new biology see the collection edited by William Erwin Thompson, *GAIA, A Way of Knowing*, Hudson, New York: Lindisfarne Press, 1987. One popular writer who has been working in this area since the 1960's is Theodore Roszack, well known for his *Person/Planet*, his recent work is *The Voice of the Earth, An Exploration of Ecopsychology*, Toronto: Touchstone, 1992, 1993. A somewhat dated yet still applicable piece is Mark Satin's, *New Age Politics*, Canada: Whitecap Books, 1978, 1979 as well as Capra and Charlene Spretnack, *Green Politics*, Santa Fe: Bear and Co., 1983, 1986. An interesting approach is also offered by Peter Russell in, *The Global Brain: Speculations on the Evolutionary Leap to Planetary Consciousness*, Los Angeles: J.P. Tarcher Inc., 1983.

²²¹ The work of Dr. Rees is the best example of how this has made its way into planning.

²²² *The Reenchantment of the World*, p.2 (emphasis added). Indeed, his following book, *Coming to Our Senses*, is devoted entirely to the idea that we are not "out of our minds" but "out of our bodies".

²²³ *Reenchantment of the World*, p.2; emphasis added.

²²⁴ See "The Impact of Science on Myth" in Joseph Campbell, *Myths To Live By*, Toronto: Bantam Books, 1972-1988. Campbell has traced the Paleolithic origins of myth, its development through the Neolithic revolution, Oriental and Occidental cultures, Greek philosophy, the Medieval period through to the Sci-

entific Revolution and the modern era. For Campbell, science has been able to replace only one of substantive feature of myth: its cosmological function.

²²⁵ Emphasis added, from the, "The Impact of Science on Myth" in one of his popular published works, *Myths To Live By*, Toronto: Bantam Books, 1972-1988, pp.8-9. Campbell is widely published and read in both academic and popular circles and too prolific to list his works. His interviews with Bill Moyers are most well known, based on Campbell's famous series, *The Power of Myth*. If there is one theme that seems to predominate his work, it is to make myth alive and compelling for the individual in the modern age. A good impression of Campbell's approach can be quickly found in the Shambala Pocket Book, *The Way of Myth, Talking With Joseph Campbell*, Fraser Boa, ed., Boston: Shambala Publications Inc., 1994.

²²⁶ I do not want to give the impression that I am trying to "bash science" or scientists. There are many scientists who find ways to live spiritually fulfilling lives. Science can even be seen as spiritual.

²²⁷ The *Cambridge Dictionary of Philosophy* (Robert Audi, ed. USA: Cambridge University Press, 1995) writes that Nietzsche was speaking, not just of the philosophical development which was his point of departure. He was referring to " a cultural event.. a phenomena to be reckoned with and a source of profound concern; for he feared a 'nihilistic rebound' in its wake, and worried about the consequence for human life and culture if no countermovement to it were forthcoming." p.533. For Nietzsche, it was modernity – reason – which killed God. Few people are aware of the fact that he cried.

²²⁸ This is a huge and challenging area. Primary source reading is arduous (e.g. Derrida, Foucault, Lacan) and very time consuming. The language is jargonized and alienating; the concepts are often difficult; yet important things are being said. Much of my reading has been secondary source materials; I enter at the risk of "sophistry", yet it is too important to leave out. The major detractor is Habermas. Habermas takes up his critique with the main currents of postmodernism as they are sourced back to Nietzsche, one lineage through Heidegger and Derrida, the other in Foucault. All of these levy a tenacious critique of reason. As I understand, the former strain deals more with the arbitrary nature of reason based on its ontological assertions which are founded originally in Plato (logos); the latter deals more in revealing the will to power which reason serves (e.g. history is written by the conquerors; as is reality defined). In the introduction to Habermas' *The Philosophical Discourse of Modernity*, Thomas McCarthy exposes Habermas' position on both strains: to the problem of being, going back to Heidegger, Habermas rejects the paradigm of consciousness and shifts the emphasis from being to beings, the ongoing problem of subjectivity becomes inter-subjectivity in a paradigm of "communicative action"; to the challenge of reason in knowledge and power, Habermas, does not reject the configuration of knowledge and power, what he objects to is "the totalization of critique". Here he seems to be saying that the problem is not in the deficiency of reason, but that we don't have enough. Habermas may be the last philosophical bastion of modernity with a social conscience. Challenging but worthwhile background reading can be found in Outhwaite & Bottomore, eds., *The Blackwell Dictionary of Modern Twentieth-Century Thought*, Cambridge Massachusetts: Blackwell, 1993, 1995. *from Modernism to Postmodernism: An Anthology*, ed. by Lawrence Cahoon, Oxford: Blackwell, 1996 is a good reader.

²²⁹ From Bennington on "deconstruction" in *The Blackwell Dictionary of Modern Twentieth-Century Thought*, pp.138-140.

²³⁰ Again, the material here is difficult, but important. In *The Blackwell Dictionary of Modern Twentieth-Century Thought*, Roy Bhaskar writes that Kant and Hume criticized such enquiries as meaningless and outside the realms of experience, and thus posed a general rejection of ontology (even beyond that of Locke and Leibnitz). "In the mainstream of analytical philosophy the prohibition on ontology has been generally upheld in the twentieth century." p.429. See the section on "ontology".

²³¹ *The Reenchantment of Science, Postmodern Proposals*, David Ray Griffen ed., Albany: State University Press, 1988, p.x. As I pointed out earlier, this important book is contributed to by notables such as Bohm, Sheldrake and Swimme. It presents a scholarly overview of *constructive* postmodernism. and contains thoughts on postmodern science in physics, biology and cosmology, medicine, ecology and theology. For

a counter to Griffen's critique of postmodernism, see Bennington on "deconstruction" in *The Blackwell Dictionary of Modern Twentieth-Century Thought*.

²³² Page X; emphasis added. Griffen locates philosophical postmodernism as being related to literary and artistic postmodernism, citing Wittgenstein, Heidegger, and Derrida and other French thinkers.

²³³ *The Reenchantment of Science*, p.30.

²³⁴ For example, E.O. Wilson has posited a philosophy of *biophilia* which advocates the love of other species and systems as a basis for social policies supported by ecological sciences.

²³⁵ *Ibid.*

²³⁶ Gregory Bateson, *Steps to an Ecology of Mind*, New York: Ballantine Books, 1972, p.314.

²³⁷ See Roy Bhaskar on "ontology" in *The Blackwell Dictionary of Modern Twentieth-Century Thought*, above. A respected professor of analytical philosophy candidly told me that the subjects of ontology and epistemology "should never go together"; in that viewpoint, Bateson is practising sloppy philosophy.

²³⁸ Capra gives a brief discussion of this in *The Turning Point*. In *The Reenchantment of the World*, Berman covers it in greater detail. Griffen provides analysis in his article, "Of Minds and Molecules" Modernist ontology has left open much for debate. According to this model, things like rocks, plants, even animals have no consciousness, spirit or soul. This is in stark contrast to the pre-Scientific vision of Medieval Europe. During colonialism, some Europeans actually questioned whether the darker skinned people they encountered had souls. Some posed similar questions about women! Now, we tend to exclude the idea of soul all together; please see the footnotes 206 and 209.

²³⁹ From *Steps to an Ecology of Mind*; Quoted in Berman, *Reenchantment of the World*, p.140.

²⁴⁰ One example of such thinking (although still somewhat dualist) is David Bohm's idea of the undivided "holomovement" wherein consciousness and matter are *enfolded* within one another as part of a deeper level of reality which he calls the *implicate order*. See David Bohm, *Wholeness and the Implicate Order*, London: ARK Paperbacks, 1983. See discussion of Bohm's work and his own article, "Postmodern Science and a Postmodern World" in, *Reenchantment of Science*: see also Sheldrake, as well as Griffin's introductory piece, "Of Minds and Molecules" which includes references to research in biology. Capra also discusses Bohm's work. Bateson draws on epistemology, ecology and systems theory and states a case for the *immanence* of mind in matter in *Steps to an Ecology of Mind*, see in particular, "The Epistemology of Cybernetics". Broader implications of ecology are also significant for the re-integration of being and matter, not just the human being, but for the idea that all aspects of a system are part of the life of a system. Maturana and Varela give an interesting discussion on autopoiesis and conditions for life which is of relevance.

²⁴¹ If we were to consider this ecological ontology from a theological point of view, we might see it, in a sense, as a kind of *animism*. But it is not just animistic, it is also a form of *pantheism* or perhaps *panentheism*. We will return to this in the chapter on TEK.

²⁴² Naess' "Ecosophy T" offers relevant material in terms of the concept of "self-realization"; see Naess in Duvall and Sessions and in Drengron and Inoue; see also Warwick Fox's response to Naess in *Toward a Transpersonal Ecology*, Boston: Shambhala, 1990.

²⁴³ From *Steps to an Ecology of Mind*, p.396.

²⁴⁴ Definition provided from a combined reading of both, *The New Shorter Oxford English Dictionary*, Oxford: Clarendon Press, 1993, Lesley Brown, Ed., p.1753; and *The Pocket Oxford Dictionary*, Toronto: Oxford University Press, 1992, Della Thompson, 8th. Edition Ed., p.588. A good illustration of the concept is offered in the example of *metacommunication* as "communication taking place with or underlying a more obvious form of communication; principles or theories about communications derived from the study of communication."

²⁴⁵ p.487. I have come across little on the subject of metaepistemology. Of what I have found, most is descriptive (i.e. something is referred to as metaepistemological).

²⁴⁶ Please see the definition of 'pre-analytic vision' in sub-section '1.3.2 Social Structures, Paradigms and the Cultural Production of Meaning: Towards an Holistic Understanding' in the first chapter.

²⁴⁷ There may be different domains of experience that engender or are described by different types of knowledge, accessed through alternative methods of inquiry and modalities of experience. See for example Weaver, Jessop and Das (1983). Another issue to consider is how different cultures construct and offer theories of knowledge.

²⁴⁸ (publication information given above). This book has only recently come into print; while I have only had an opportunity to peruse it, I can see that it would have been a supportive document for the chapter on TEK. It also opens up the area of postcolonial theory which would have been a helpful body of theory on which to draw. She looks quite closely at how different cultures around the world, and particularly feminists, have incorporated modern science which she sees as "culturally located".

²⁴⁹ (refer to last diagram) I think of it like this: viewed from above, we are dealing with the 'realm of planning action'; hence, the focus is on the 'application of knowledge'. Viewed from below, we are looking at the larger context in which knowledge is grounded. In that sense, we are dealing with what is *implied* in knowledge as part of a larger construction of reality i.e. ECO – the meaning-producing system. The point is that we are thinking in ways which serve our ability to think about and work with different types of knowledge, their origins, and application as aspects of planning process for planning between cultural paradigms, and the transition to sustainability.

²⁵⁰ The planner's job may be to focalize inter-subjectivity, and facilitate a context for it. Of course, that would depend on the actors involved.

²⁵¹ The planner/metaepistemologist may become a nodal point for the interface of knowledge systems.

CHAPTER 3:

PLANNING FOR THE TRANSITION TO SUSTAINABILITY: TOWARDS AN ECOLOGICAL-HOLISTIC PARADIGM OF CULTURAL DEVELOPMENT

This chapter links my ECO criteria to the notion of cultural capital in order to contribute to the concept of sustainable development by advancing an holistic model of sustainability that includes ecological systems, social systems and meaning systems. These three domains of theory correspond to biophysical capital, social capital and cultural capital (This model will be refined when applied to the study of TEK.) I consider the hypothesis that an increased supply of meaning generated through social and cultural capital could help to decrease our demand on biophysical capital.

3.1 The Sustainable Development Debate: The Meaning of Sustainability and the Sustainability of Meaning

The concept of "sustainable development" came increasingly into vogue in the 1990's. Much of the impetus for this is owed to the Brundtland Report of the United Nation's *World Commission on Environment and Development* which was first published in 1987 as *Our Common Future*. This is seen by many as marking the popularization of "sustainable development" and is a good point of departure in depicting the perspective of sustainability adopted by the mainstream paradigm. *Our Common Future* was touted as "the most important document of the decade on the future of the world."¹ Its authors claimed that it "serves notice that the time has come for a marriage of economy and ecology, so that governments and their people can take responsibility, not just for environmental damage, but for the policies that cause the damage."² *Our Common Future* is an attempt to reconcile regional and global environmental concerns with international and local interests in issues of economic development and disparity.

In its effort to find solutions for problems within the dominant cultural paradigm, whilst seeking answers which lay outside of that model, the Brundtland Commission is a fitting case study of the mainstream problematique of "sustainable development". On the one hand, its authors recognize a gamut of environmental issues facing the world, including examples such as acid rain, global warming, ozone depletion, widespread desertification and species loss which are caused by economic activity; yet on the other hand, the World Commission recommends a five to ten fold increase of industrial activity in the global economy as an answer to the world's ills.

If large parts of the developing world are to avert economic, social, and environmental catastrophes, it is essential that global economic growth be revitalized. In practical terms, this means more rapid economic growth in both industrial and developing countries, freer market access for the products of de-

veloping countries, lower interest rates, greater technology transfer, and significantly larger capital flows, both concessional and commercial.³

It is notable that the Brundtland Report offers little critical analysis of the political and economic mechanisms of distribution for this increased wealth, even though these are the same political and economic structures which are a causal factor in global and regional economic disparity. Those same productive forces whose rapid expansion is lauded as a means to avert environmental catastrophe, are similarly the cause of the very crisis they seek to forestall.

The goal of balancing equity within the equation of sustainability is admirable and necessary.⁴ Sustainability is meaningless and unachievable if it is reserved only as a privilege for the rich nations of the world. Yet the report lacks critical analysis of global and regional political economy regarding the mechanisms of distribution and sources of structural inequity. The World Commission poses the typical modernist program of industrial expansion. *Our Common Future* tells us the “overall assessment” of the World Commission is that “the international economy must speed up world growth while respecting the environmental constraints”.⁵ We are told to expect a, “five-to-ten fold increase in industrial output by the time the world population stabilizes over the next century.”⁶ The prospects are myopic if we begin to consider what we know about the productive capacities of the ecosphere.⁷ The root of this myopia, however, is in the equation of material wealth with quality of life, and better welfare with industrial growth.

We tend to think of *production* as a human capacity. Substantive analysis of the concept from an ecological perspective is founded on the insight that the only real form of material production on Earth is in photosynthesis.⁸ Photosynthesis is the source of all productivity and available energy in the ecosphere (except for solar energy which is the source of photosynthesis and chemo-synthesis in deep ocean vents). All else can be regarded as forms of consumption, whether in human or non-human form, whether more or less trophically or thermodynamically efficient. A continued geometric growth pattern in the global industrial economy means that we will see a level of consumption of the productivity of the ecosphere in the next thirty years greater than all of that since the beginning of the industrial revolution.⁹ Given current population and technology, *Ecological Footprint* analysis reveals that it would take at least two and one-half more planet Earth's to bring the rest of the world to the ecological and economic standard of living of the Northern industrialized nations¹⁰

In equating the meaning of sustainable development with *sustainable growth*, the World Commission has fallen into the perceptual lens-trap of the modernist view of reality and the economic model of social development based on expanding industrial growth. This is the basic model of Western industrial development, both in its free market and socialist forms.¹¹ The development scheme of modernity posits human fulfillment—the social good—predominantly in the material realm, seeking to satisfy increasing human wants and needs through expanding techno-industrial development founded upon the rational exploitation of nature. This seem-

ingly universal view of social progress based on expanding economic growth, increased urbanization and large-scale, capital intensive industry has been referred to as “industrial progressivism”¹² and also “technological expansionism.”¹³ Here, the meaning of development is analogous to material growth. Whether or not this is sustainable is seriously in question, yet it characterizes the mainstream position on sustainable development.

There is a substantial difference, however, between a model informed by an ethic of growth versus one which is founded upon “development”. Growth is a matter of material change, an increase in size and scale. Development, on the other hand, can be understood as *qualitative* change, described by capacity building and systems enhancement. According to Rees, systems (or organisms or populations) characteristically go through two phases. The first is one of physical growth with development. Following this, growth stops and the development phase continues. This is not unlike the process of maturing from an adolescent period of intense physical change, to a mature phase of personal “growth” and enhancement, which is one of qualitative change.¹⁴ I am particularly interested in helping to foster a *qualitative* model of sustainable cultural development (to be discussed below).

If the meaning of sustainability or sustainable development is marked with considerable debate, then the process of the transition to sustainability is even less clear. Certainly, such a transition will have to be active at all levels of society from personal awareness to mass consciousness, from individual action to the collective political will. Rees offers a definition of sustainable development that provides a statement on both its substantive meaning as well as features of its implementation. As quoted in the first chapter, sustainable development is:

...positive socioeconomic change that does not undermine the ecological and social systems upon which communities and society are dependent. **Its successful implementation requires integrated policy, planning, and social learning processes; its political viability depends on the full support of the people it affects through their governments, their social institutions, and their private activities.**¹⁵

One can regard this definition as an attempt to push the discourse on the meaning of sustainability into greater clarity as to its fundamental components and practical requirements. It notably ties together ecological systems and social systems; meaning systems are left out but implicated in the social learning feature.

I will adopt this definition of sustainability while adding the stipulation of the necessity to address the three aspects of the problem I have outlined: ecological systems, social systems, and meaning-producing systems. In other words, holistic critical analysis must address the unsustainability of our current model in terms of these three criteria. (Another stipulation which I discuss below introduces the notion of “strong” versus “weak” sustainability.) The theory and practice of sustainability must be founded on the unity of these three variables in its definition

and implementation: i.e. sustainability of ecological systems, social systems, and meaning. All are necessary ingredients for the sustainability of human culture.

The above definition makes a statement on the integrated nature of social systems and ecosystems (belief systems are my inclusion for the existential/meaning aspect) that is reflected in the integrated nature of policy and planning. There is sense of totality to the concept which dictates integrative features based on an ecological "bottom line" yet sensitive to issues of social equity. This is reflected in the totalized nature of sustainability as an ecological and social concept along with the holistic character of implementation in public and private life and at all levels of society. This seems to take two forms, one of a more material nature, the other of a more qualitative or non-material character. The material component is fairly obvious. It includes such elements as manufactured capital, infrastructures and institutions as a subset of ecosystems. The other, while no less indisputable, is of a subtler character. It includes philosophical and theoretical foundations, political viability social learning, and other process oriented features of implementation.¹⁶ Implicit but not mentioned is the capacity to address existential needs, which I refer to as the *sustainability of meaning*.

The Brundtland Commission served to introduce sustainable development to the cultural mainstream, and thus defined its terms of reference. Although the World Commission recognized the need for alternative technologies and efficiency gains, in advocating growth in the very structures and process responsible for both ecological and socioeconomic impoverishment, it is an internally contradictory undertaking. Its major flaws are an insufficient critique of the causes of ecological degradation and poverty, and the equation of welfare with the growth in GDP. If sustainable development can mean sustainable growth, it is no wonder that governments and business have stepped onto the band wagon.

However, we must not sceptically write-off all such efforts. Many can be seen as signs of change, or at least as steps in the right direction. Although it may have diluted the substance and obfuscated the meaning of sustainable development, *Our Common Future* has brought the concept to the fore and stimulated discussion and debate. It is our responsibility to enter the process of creating the meaning of sustainability from a deep, rather than shallow ecology. Part of this involves a recognition of not only our material needs, but also the need to sustain our non-material ones.

To become a political and economic reality, sustainability will need to be understood and desired by those whose lives it will affect; in other words, it must have meaning. Rather than regarding sustainability merely as a choice amongst various trade-offs and policy options, it must become the ground or context in which decision making takes place. Thus, the transition to ecological sustainability rests significantly on processes of social learning which can translate its philosophy, knowledge and practice into political-economic structures and popular culture. To be viable, our model of sustainability must be holistic enough to address in both theory and practice the integration of ecosystems, social systems and the non-material struc-

tures for the production of meaning. In coming to understand the meaning of sustainability, we may thus find keys to the sustainability of meaning which is as much a need as is food, clothes and shelter.

3.2 Towards an Holistic Model of Sustainability: Biophysical Capital, Social Capital and Cultural Capital

Reviewing the theoretical literature on sustainability, there are three concepts which help address the substantive components of an holistic model. These include: natural capital, social capital and cultural capital. They correspond generally to the three features of analysis and implementation I have suggested are necessary components for an holistic treatment of sustainability, namely ecological systems, social systems, and meaning systems.

The concept of 'natural capital' has garnered ample attention in the literature. It has achieved much of its theoretical elaboration in the growing field of ecological economics.¹⁷ One intriguing idea is that of "investing in natural capital", which is the central theme of a collection of works edited by A.M. Jansson, *et. al.*, *Investing In Natural Capital: The Ecological Economics Approach to Sustainability*, that includes contributions from a number of prominent authors in the field.¹⁸ Folke, Hammer, Costanza and Jansson relate that ecological economists speak of natural capital, human capital (and/or cultural capital), and manufactured capital, in order to categorize the different kinds stocks that produce the range of ecological and economic goods and services used by the human economy.

Daly writes that *natural capital* "is the stock that yields the flow of natural resources ...The natural income yielded by natural capital consists of natural services as well as natural resources."¹⁹ Human-made capital is understood to include stocks of both producer and consumer goods. ²⁰ According to Daly, there are two kinds of natural capital: renewable (e.g. forests, fish); and non-renewable (e.g. petroleum). However Rees suggests three classes of natural capital: *renewable*, such as living species and ecosystems that are self-producing and self-maintaining (i.e. autopoietic) using solar energy and photosynthesis and yield marketable goods such as wood fibre, as well as unaccounted essential services when left in place (e.g. climate regulation); *replenishable*, such as ground-water and the ozone layer which, while non-living, are similar to living forms of natural capital in that they are often dependent on the "solar engine" for renewal; and, *non-renewable*, such as fossil fuels and minerals which are like "inventories" in that any use amounts to a liquidating of stock.²¹ (one could consider another category of *recyclable* which is a connection between renewable and replenishable)

Therefore, as Rees points out, natural capital stocks provide a flow or harvest that is potentially sustainable year to year. These flows are akin to "natural income," such as with forests or fish stocks. The services produced by natural capital are also a form of income. We could think of the ozone layer, for example, as a natural capital stock and protection from ultra-violet rays as income. Similarly, waste assimilating services of ecosystems, as well as soil erosion and

flood protection, could be seen as natural income.²² Berkes and Folke provide other examples such as maintenance of the quality of the atmosphere and climate, operations of the hydrological cycle which includes flood controls and the supply of drinking water, nutrient recycling, soils generation, the pollination of crops, and provision of food from the sea.²³

Natural capital is thus an important concept. Amongst other things, it helps us to characterize some central features of sustainability. A pivotal insight hinges on the idea of *substitutability*. Pearce *et. al.* suggest two general interpretations of the meaning of sustainability in the Brundtland Commission report that recommended that a stock of "quality of life assets" should be left to the next generation, no less than that which we have inherited. This theme of *intergenerational equity* can be taken to mean that each subsequent generation should inherit a stock, no less than that of the previous generation, of: (i) wealth comprising human made and environmental assets; or, (ii) environmental assets alone. The difference is that, in the first version, there is an implicit assumption that natural capital and human-made capital are substitutes. This may seem ridiculous, but it can make sense from a purely monetary metric. Turner, Doktor and Nager have characterized this distinction as "weak" (the former) and "strong" (the latter) sustainability.²⁴ The term "weak sustainability" seems an oxymoron; I stipulate for a version of "strong sustainability" (i.e. a constant natural capital stocks criterion).

I will be using the term *biophysical capital* instead of the term natural capital. "Natural" is a nebulous concept and lends itself to broad interpretation. The word "natural" could be construed to mean that humans are not natural, thus perpetuating the human/nature duality. Is human capital any less "natural" than the capital of ecological systems? Is not the creation of social capital a "natural propensity" for humans, or even animals? Is it not "human nature" to construct meaning, or an inherent feature of human systems to be used to do so? Using the term *biophysical* lends greater conceptual precision and analytical clarity to the concept in a manner which grounds it in the biophysical sciences. Biophysical capital seems a more conceptually accurate and philosophically consistent term.

Social capital is a concept which has come from outside of the sustainability field. It comes from social theory and political thought. Coleman (1990)²⁵ provides a theoretical basis for social capital, Putnam (1993) offers supportive and extensive empirical applications of the concept.²⁶ According to Coleman, the impetus for the concept comes from a response to what he sees as a preponderant fiction coming from neo-classical economics and other commensurate intellectual developments going back to the seventeenth century. "This fiction is that society consists of a set of independent individuals, each of whom acts to achieve goals that are independently arrived at, and that the functioning of the social system consists of the combination of these actions of independent individuals."²⁷ For Coleman, this is expressed most notably in Adam Smith's theory of "perfect competition" and the "invisible hand". It is exemplary of the social application of the atomized view of nature inherited from the Enlightenment.

Coleman extends the idea of physical capital (e.g. tools, machines, productive equipment) to human capital. (physical capital here is akin to manufactured capital or human-made capital). He notes that while physical capital is wholly tangible, human capital is less so, and social capital even less; yet all facilitate productive activity. "Physical capital is wholly tangible, being embodied in the observable material form; human capital is less tangible, being embodied in the skills and knowledge acquired by an individual; social capital is even less tangible, for it is embodied in the *relations* among persons."²⁸ The creation of physical capital is through making changes to materials such that they facilitate production. Whereas human capital is created by changing persons in a manner in which they acquire new skills and capabilities which enable them to act in new ways; social capital "is created when relations amongst individuals change in ways that facilitate action."²⁹ In its relationship to action and its role in community-based resources, the concept of social capital is a notable one for planners.

Coleman describes social capital as "social structural resources" which are a capital asset of individuals. "Unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons."³⁰ It is defined by its function. As in other forms of capital, social capital is productive; it makes possible the achievement of certain ends that would not be attainable in its absence. Social capital is inherently based on relations:

It is not a single entity, but a variety of different entities having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be obtainable in its absence...It is lodged neither in individuals nor in physical implements of production.³¹

The function of social capital is as a "resource" inherent in social structure, available to actors that can be used to realize their interests.³² Social capital is a "public good" and is distinguishable from the "private, divisible, alienable goods treated by neo-classical economic theory", particularly in its "practical inalienability".³³ It has use value but cannot be easily exchanged; in other words, it is not private property.³⁴ It is thus akin to the domain of civil society. Moreover, there is a degree of "fungibility" to social capital with respect to certain activities.³⁵ Coleman also discusses *trust* as social capital. Putnam places considerable emphasis on trust, on its productive, organizational and effective features as a "qualified" or justified function of social intimacy.³⁶

For my purposes, therefore, I will understand "social capital" to refer to the resource base of relations, norms, trust and institutions upon which communities are based. When referring to social capital, as such, I am referring to the general concept, functions and features of social capital in the abstract theoretical sense or in society at large. I may also refer to "community capital" as the base of social capital within a specific community. Social capital is an important aspect of the qualitative features of sustainability. It might be useful to develop the

concept further in the way that ecological economists have with biophysical capital to include valuing the services or “products” of social capital (i.e. as “social income”); however, this is not my focus and would require some empirical research.³⁷ While Coleman’s work on social capital is oriented around its instrumental value in providing services of a productive nature, there are some other features and services of social capital that I will raise below (i.e. what I refer to as its identitive value).

Cultural capital can be seen as an even more qualitative – less-material – yet substantive “stock” or base of community resources. It has been attributed originally to Bourdieu.³⁸ The concept is introduced to sustainability literature by Berkes and Folke, who suggest that current models fall short in providing essential analytical elements of sustainability. “A more complete conceptualization of the interdependency of the economy and the environment requires attention to social, cultural and political systems as well.”³⁹ They recognize that natural capital, human capital and cultural capital are linked. Natural capital is seen as the basis of human capital; human capital is generated through interactions between natural and cultural capital; and cultural capital determines how a society uses natural capital to create human capital.⁴⁰ For them, cultural capital refers to the factors that provide human societies with “the means to deal with the natural environment and to actively modify it.”⁴¹ Their insights offer contributions to the analytical tools of sustainability, yet require some examination.

Berkes and Folke provide a discussion of the range of concepts using the “capital” motif, of their relevance and analytical usefulness in advancing our understanding of the relationship between human cultural systems and ecological systems and their mutual sustainability. They recognize the recent attention given to TEK, punctuated by the insight that the degradation of these social institutions which have traditionally provided for the use of natural resources has also been a contributing factor in the degradation of natural systems.⁴² Berkes and Folke also discuss institutions of “common property” as well collective action, cooperation models such as “game-theory” and other factors of institution building. Based on an analysis of the illusory view of unlimited material development inherited from the Industrial Revolution—a “very thin slice” of human history—they offer their vision of a “prosperous way down to sustainability” founded on social learning, collective action and cooperation, institutional adaptability and the ethics of sustainability as a basis for “social self-organization”.⁴³

The central thesis presented by Berkes and Folke is that investing in cultural capital is a key to sustainable use of natural capital.

Institution-building, collective action, cooperation, and social learning towards a new environmental ethic are some of the ways in which social self-organization may help us adapt rapidly enough to meet the constraints of sustainability... Cultural diversity and traditional ecological knowledge are part of the cultural capital into which society needs to invest to provide the raw materials for the process of sustainable development. Successful transition to sustainability re-

quires building the capacity for the environmental/socio-political system to change.⁴⁴

In implicitly recognizing the three elements of sustainability upon which I base my general analysis, Berkes and Folke offer helpful contributions in problematizing the larger conceptual terrain of sustainability. While their approach is sympathetic to mine, the concept of cultural capital needs further refinement.

In their review of concepts of cultural, social, human and “adaptive” capital, Berkes and Folke make the point that, while all these are worthwhile for different substantive reasons, they are also problematic. “No doubt all of the above terms, including cultural capital are inadequate. But it is difficult, if not impossible to find a term that would sufficiently cover all aspects of the human societal/ethical/political dimension.”⁴⁵ This is underscored by the insight that these areas are bounded by a number of fields in social sciences, including philosophy, theology, anthropology, sociology, geography and political science. Moreover, there is no technical literature which brings them all together. From a systems point of view, these are all related in that they pertain to the adaptations that deal with the ecological systems of which humans are a component. They all play a role in shaping the way human systems interact with ecosystems, and define and use natural capital.⁴⁶ Berkes and Folke posit cultural capital as the *interface* between natural and human-made capital.

The definition of cultural capital offered by Berkes and Folke provides a good starting point for analysis. They write that “[c]ultural capital, as used here, includes factors such as social/political institutions, environmental ethics (worldview), and Traditional Ecological Knowledge in a society.”⁴⁷ There seem to be two elements that can be analytically separated: one is a social-political/institutional feature; the other is the knowledge/ethical/worldview aspect. The first is of the relational-institutional domain, akin to what I have discussed above as “social capital” (a concept which is recognized by Berkes and Folke); the other is of a more ideational and philosophical character. The second is substantively in the theoretical terrain of what I have referred to as the meaning-producing system. It is analytically helpful to separate these two components of what Berkes and Folke refer to as cultural capital. This can be underscored by the theoretical and analytical complexity of the topic, which they have rightly pointed out.

Separating out the two elements of cultural capital in the definition offered by Berkes and Folke, we are left with ‘social capital’ and ‘cultural capital’. Thus, social capital remains as it is defined above, based on Coleman’s theoretical contribution. A literature has already developed around this concept which has garnered empirical research and further refinement. (Berkes and Folke source Coleman in their bibliography). Now we can hone the concept of cultural capital more specifically as the terrain of knowledge, beliefs, values, philosophy and methods which inform a certain cultural paradigm as a model of reality. This can be built on further, to include the three components I have mapped out in the ECO model. In other words,

cultural capital also includes the shared knowledge, beliefs, values and perceptions about the nature of the world, who we are as beings and the manner in which we create and transmit that knowledge. The ECO criteria of meaning-production can be seen as an aspect or refinement of the concept of cultural capital.⁴⁸

There is one further refinement of the model I would like to make which takes up where the last point leaves off. The manner in which we create and transmit knowledge is based on our epistemological model, but is of a more active nature. It relates to the *methods* of how we know what we know, but also plays a role in the manner in which knowledge is transmitted and put into action. I see this as the methodological feature of cultural capital. Methods can be seen to have two functions here, one relating to the generating of knowledge; the other to methods of application and transmission. Both aspects are part of a knowledge system (cultural capital), as well as the social/institutional factors we now associate with social capital. Social capital and cultural capital, taken together, provide what Berkes and Folke demonstrate as the interface of natural and human-made capital. Since the methodological feature integrates knowledge with social capital and cultural capital for the transformation of biophysical capital to create human-made capital, it deserves substantive treatment in its own right.

It is also important to allow for the fact that there are different models of reality and ordering principles upon which those models are based. For a model of sustainability founded on biophysical capital, social capital and cultural capital to be holistic, it must be stipulated that there can be different types of knowledge, different types of methods and different visions of the world. These may include different beliefs about the nature of being, and the origins and structure of the universe that have merit in their own right. This does not require the members of one cultural paradigm to necessarily "believe" as do the members of another; it does mean that one respect the nature of those beliefs. This requires a degree of sensitivity to different ways of knowing and the merit of other cultures' models of reality. A metaepistemological approach is thus required for an holistic model of sustainability and cultural capital.

Another topic of discussion relates to the relationship of social and cultural capital. (That there are important connections between the two may be why Berkes and Folke collapse social and cultural capital into one concept.) The perspective of social capital we get from Coleman is largely of its productive nature. "Social capital is created when relations amongst individuals change in ways that facilitate action"; it is "productive, making possible the achievement of certain ends that would not be obtainable in its absence." The action-orientation, or "*instrumental value*" of social capital is in its productive capacity. Yet there are other aspects to social capital that are of a more *identitive* nature in the re-production or regeneration of community. While Coleman does not go into this, he does provide a discussion of identity and the nature of "self" as a social actor.⁴⁹ Social capital is, thus productive in another capacity; social capital produces meaning.

When I say that there is *identitive* value in social capital, I am referring to the shared relationships, institutions and practices that make up and transmit or facilitate the identities of a community and its members. This includes family systems, cultural practices and other socio-economic and political features. So we can see an obvious connection to forms of social capital. For example, many cultures or communities can identify their history in certain songs, dances, and art forms. Long standing social institutions that are a focus of community celebrations and other cultural activities may not be seen as “productive” in a strict economic sense, yet are vital to community and individual life. Here, social capital is seen as an instrument for the flow of cultural capital; there is a service provided, but in a different sense than a materially productive capacity. Whereas the instrumental value of social capital is in its action orientation, its identitive value is in its regenerative capacity. Moreover, cultural activities often bring people together; they focus, facilitate, even create social capital. Relationship, identity and social reproduction are profound sources of meaning.⁵⁰

There is one last point to make. The model of social, cultural and biophysical capital is useful, yet has inherent cultural bias that needs to be flagged. The concept of capital as income producing wealth is a Western, modernist concept that belies our overemphasis on material production as the basis of human fulfillment i.e. “the social good.” It is also an anthropocentric concept and lend itself to objectifying individuals, cultures, species and ecosystems. It constructs meaning from ecological systems and organisms, including humans, solely on the basis of their availability, use and transformation for the human economic agenda. This does not invalidate the model. Rather, it responsibly flags bias, recognizes the limits of its application both for analysis and implementation, and opens the possibility to alternatives.

The above having been said, I can now lay out the general model of sustainability I propose. It addresses ecological systems, social systems and meaning-producing systems (the three areas of my problem statement which sustainability must address) based on biophysical, social and cultural capital (see Figure 6). In this overall framework, ECO addresses cultural capital. One can also see that it moves from the more physical tangible (biophysical) and quantitatively researchable to the less physically tangible, more subtle or qualitative. I will now draw on this framework to put forward what I propose as a *qualitative* path to development.

3.3 The Economy of Meaning: Towards a *Qualitative* Model of Development

The following section begins to explore the connectivity of ecosystems, social structures and the production of meaning. Its purpose is to introduce the idea of the *substitution of material consumption with the production of meaning* (via social and cultural capital). I regard this as a foundation for a *qualitative* model of sustainable development.

hegemony is legitimized. A *legitimation crisis*, therefore, is a crisis in the ideological apparatus which legitimizes state hegemony “resulting from the displacement of tendencies to economic crisis into the spheres of state policy and individual motivation.”⁵⁴ While I may not entirely subscribe to the materialist determinations of Habermas’ neo-Marxist epistemology, he gives us important insight into the relationship of crisis in social structure and meaning systems.

Habermas writes on the manner in which current social formations are able to stave off systemic political and economic crisis through a complex ideological and material process of internalized contradiction. The impacts of fundamental contradictions in political economy are diffused through a translation to structures of *legitimation* founded on career, leisure and consumption, on the one hand, and the ideology and structures of democratic elitism on the other. For example, advanced capitalist democracies can be seen to diffuse fundamental contradictions of social production through elaborate mechanisms and spending in the welfare state. Public discourse is, thus, shifted from a focus on primary conflict to a series of secondary ones. A variety of scattered secondary conflicts are “palpable” because, “they do not appear as objective systemic crisis.”⁵⁵ These secondary conflicts can, but may not necessarily lead to a crisis in legitimation.

Habermas does not probe too deeply into the production of meaning. His ideas are tied to Marxist concepts of political economy founded on socioeconomic pre-determinations and materialist epistemology.⁵⁶ Even so, his contributions are invaluable. One such notable insight is his analysis of meaning as a “resource”, one he sees as becoming increasingly scarce. There is a *problematique*⁵⁷ afoot in modern industrial society to which I already referred when I mentioned Joseph Campbell in the last chapter. Campbell describes the way in which science destabilized the old myths and religious institutions of Western culture, while being able to provide only partial answers to our existential questions in their place.⁵⁸ In a similar vein, but from a different perspective, Habermas writes on the difficulty of the modern state in taking over “cultural activities”. The expansion of state planning into these areas makes troublesome matters which formerly were culturally taken for granted:

...Meaning is a scarce resource and is becoming ever scarcer. Consequently, expectations oriented to use values—that is, expectations monitored by success—are rising in the civil public. The rising level of demand is proportional to the growing need for legitimation. The fiscally siphoned-off resource “value” must take the place of the scanty resource “meaning.” Missing legitimation must be offset by rewards conforming to the system. A legitimation crisis arises as soon as the demand for such rewards rises faster than the available quantity of value, or when expectations arise that cannot be satisfied with such rewards. ⁵⁹

For Habermas, this legitimation crisis, which is based upon economic contradiction and political structure, is further founded upon what he calls a *motivational crisis* in citizens’ private and civil lives.⁶⁰

What Habermas has provided for us here is an illumination into one of the fundamental problematics of mass consumer society in modern culture. This is the substitution of subjective meaning with material consumption. As it becomes increasingly scarce, meaning must be increasingly replaced with values derived through material consumption. As the economic system becomes increasingly taxed to deliver these, the political structures are pushed towards a crisis in legitimation. In Habermas' system, the decreased ability of the economic delivery of "use values" is due to the "super concentration" of capital in advanced capitalism as an expression of fundamental economic contradiction. There is a widening cleavage between the structures of material production and the production of meaning. Systemic crises in state socio-economic structures, thus, result in a breakdown of the subjective arenas of social structures.⁶¹ We might extrapolate a similar legitimation crisis due to scarcity caused by increased human intervention in the biosphere.⁶²

Therefore, we can see one aspect of the role of the production of meaning in structures of political economy. The meaning-producing system and the material structures of political economy are really a function of one another. The meaning-producing system legitimates the political-economic system; the political-economic system validates the meaning-producing system. Each attempts to re-balance the other in the event of a crisis. In other words, they are autopoietic features of a larger system of state material and non-material capital. There is even a relative degree of *substitutability* between meaning and material production or consumption. The non-material social structure and the material social structure form a greater order of structure which is made up of both. I will refer loosely to this larger system as culture. This whole cultural system is a sub-system of local and global ecosystems. I want to explore the implications for sustainability of this idea of substituting meaning and material consumption.

3.3.2 The Economy of Meaning: Substitution of Consumption With Meaning

Habermas' notion of meaning as a resource (a scarce one in his figuring) is of great interest. Even more intriguing is the idea of the *substitutability* of meaning with material production and consumption. What if we were to reverse Habermas' insight in terms of sustainability? This raises the inspiring idea of *substituting material production and consumption with the production of meaning*. It would contribute to the development of a model of ecological sustainability founded upon less material, more qualitative modes of development, ones which foster social and cultural capital. I call it 'qualitative development'. This seems rather more characteristic of the bulk of history of human cultural patterns.⁶³

For the dominant mode of socioeconomic development, the so-called "environment" is considered as an *externality* to the market model. This is based on the nature/culture duality; the human economic system is seen as separate from the ecological system of which it is a subset. This fashion of thinking poses a static view of "nature" versus the nested hierarchy of dynamic equilibria which comes from ecology. In the ecological view, the human economy is a

sub-set of the ecosphere. All energy and material used in human social systems is appropriated from the ecosphere, the source of which is photosynthesis.⁶⁴ We have seen where the former view has taken us. What are some implications of latter?

Ecological economics tells us that: *continuously increasing internal order of the human economy can occur only through increasing disorder in the ecosphere of which it is a part. This is not a problem so long as the rate of creation of energy in the parent system is at least as fast as the consumption of energy in the smaller one.*⁶⁵ The situation is grave when human intervention in the ecosphere results in a rate of consumption of biophysical energy that supersedes the net output of energy in the parent system.⁶⁶ It would be a dreadful error to pursue a path of socioeconomic development which is oblivious to this fact. Unfortunately, this is exactly what we are doing.

How can we bring the rate of human consumption of biophysical energy to lower than the rate of production of energy in the ecosphere? However we do this, it will require a significant reduction of human demand on the net productivity of the ecosphere.⁶⁷ While it will take considerable technical know-how, this is not something we are lacking. Yet we also need technologies and practices which address the psychological/educational nature of the question, as well as the political, economic and institutional dimensions to the problem. Much of this is in the social and cultural capital domain. I suggest that one way we can decrease our demand on the productivity of the ecosphere is through an increased supply of cultural and social capital along the lines of *qualitative* development.

This brings us to the economy of meaning. Beyond a doubt, we must learn to reduce our demand on the productivity of the ecosphere, including a variety of life-support services. This will require far lower material expectations than current patterns of consumption. The proposal would be unpopular without political support. A large aspect of the venture, thus, rests on methods of social learning and processes of institutional and cultural development. Shifting our development focus more towards the qualitative properties of social and cultural capital would be a key to “de-materializing” the economy. It could also bring more meaning to peoples’ lives.

These more qualitative factors would include social networks, community cohesion and a variety of relational pursuits, sexuality, music, the arts, dance and theatre, social and intercultural learning, education, sport, various leisure time and recreational activities, personal and public health, personal and spiritual development. All enhance the general quality of life. There are limits to material growth; “inner-growth” is endless. A certain degree of biophysical capital use is of course required for human life to sustain itself comfortably. Our overemphasis on this, however, has led to a net drain on the productivity of the ecosphere. Moreover, it has been accompanied by spiritual impoverishment.

Habermas raises the substitution of meaning with consumption. In his case a breakdown in meaning translates into increased production and consumption; if not a resulting legitimation crisis results in breakdown of the material structures of political economy. For the qualitative path to sustainable development, the reverse is the objective: *to decrease our demand*

on the ecosphere by substituting material production/consumption with the production of meaning in forms of social and cultural capital. ⁶⁸

This would involve a technical shift in emphasis from the quantitative to the qualitative. *Qualitative technologies* would be those based primarily on cognitive or subjective inputs, and found in relational or discursive pursuits. These are meaning-generating activities oriented to the production of cultural and social community capital and require relatively lower material inputs (i.e. less biophysical capital) than the production of current mass consumption lifestyles. One could say that qualitative technologies create “social energy” with a more modest use of biophysical energy and materials. This would be seen in deepened forms of social capital (i.e. relationship, greater community cohesion and diversity) and in increased flows of cultural capital (e.g. the developing and diversification of various knowledge bases and the meaning-producing systems of culture). It would also be evident in personal and spiritual growth and the general enhancement of quality of life for communities and their members.

Economically, this is embodied in a shift from an “economy of having” to an “economy of being”, from the production of material consumption to production of meaning. I call this the *economy of meaning*. Our modern system of values may be a basis for determining our economic model. Yet our meaning-producing system shapes value. Learning to shift our primary emphasis from valuing material growth and quantitative fulfillment to qualitative growth and greater subjective fulfillment will require research into technologies that foster social and cultural capital. We can learn to build our share of cultural, community capital and decrease the collective demand on biophysical capital. Rather than seeking to possess and transform the physical landscape, we can turn to development of the cosmological and mythical landscapes. In developing our “inner world” and “inner nature”, we may be able to spare our “outer world” and physical nature. We could develop as beings.⁶⁹

“Qualitative development” will also provide keys to equity and sustainability. It would enable the macro-consumers of materially dominating nations to find their subjective needs met in healthier and more fulfilling private, public and ecological lives rather than seeking displaced and ineffectual need gratification through heedless material consumption. Replacing material consumption with meaning production and our material growth with qualitative development through social and cultural capital will not only reduce demand on biophysical capital. This de-materializing of our economy will free-up resources to help other nations meet their basic needs, while addressing the power relations and ideas which shape our distributive mechanisms.

Investing in biophysical, social and cultural capital is a wise pursuit. It means learning to *plan with* social and cultural capital, and *plan for* their enhancement. We may enhance flows of cultural capital by planning for appropriate social capital infrastructures. To use the economic metaphor, we would be increasing the income flows of our social and cultural stocks. One might think of the meaning-producing system like raw materials and meaning as the en-

ergy of social and cultural capital. One difference between biophysical energy and social energy is that biophysical energy always dissipates on use. Social energy on the other hand does not; it grows. Increased flows of social and cultural capital (of quality of life) generate more wealth as they are spent. Thus, as outlined at the outset, development of the qualitative aspects of human life, of the pursuit of knowledge, learning, relationship and community, of creativity, art and the human spirit can become the basis for qualitative development by substituting consumption with meaning. This is a development model which is sustainable.

There are limits to biophysical production and material growth. The making of meaning, on the other hand, is boundless and qualitative growth need not end. This could be as simple as developing our appreciation for the beauty of the Earth and biodiversity, in developing our sense of communion with other species,⁷⁰ in writing poetry, or allocating for better delivery of music, dance, art, inter-cultural and language instruction in public education. It may also open deeper levels of experience and qualities of life as yet unknown.

Economy and ecology come from the same Greek root *Oikos* – the home. They both relate to the study or business of the home. As we come to see the human economy as a subset of its larger system, the ecosphere, we see that in caring for the Earth we are really taking care of our ourselves, our own home, our own needs. The essence of economy is really *human ecology*. In establishing the economy of meaning we may come to realize the meaning of economy. In finding the meaning of development perhaps we can foster the development of meaning.

What can we learn from the inter-cultural (inter-epistemological) dialogue of Traditional Ecological Knowledge and Western Science to help foster the emergence of a new paradigm which addresses the qualitative model of development I have described above? The question is one of theory and practice mediated by experience. I now turn to TEK as an empirical focus for this investigation. I use the material on social and cultural capital developed for my holistic model of sustainability as an analytical framework to examine the literature on Traditional Ecological Knowledge.

NOTES CHAPTER 3

¹ *Our Common Future*, The World Commission on Environment and Development, Toronto: Oxford University Press, 1987, back cover inset.

² Ibid.

³ Ibid. p.89.

⁴ R.K. Turner, P. Doktor and N. Adger, "Sea-Level Rise & Coastal Wetlands in the U.K.: Mitigation Strategies for Sustainable Development" situate the poverty and welfare focus under the concept of "Intragenerational and Intergenerational Equity" in *Investing In Natural Capital: The Ecological Economics Approach to Sustainability*, A. M. Jansson, M. Hammer, Carl Folke, Robert Castanza, eds. Washington, D.C. Island Press 1994.

⁵ Ibid. p89.

⁶ Ibid. 213.

⁷ Some suggest the possibility of a "Factor-5" or even "Factor-10" efficiency potential for the increase of industrial activity which could make the Brundtland scenario more tenable in theory. Even if this were the case, which is questionable, we would still see a net increase in appropriation of biophysical services, not to mention the current impacts set into motion, or the political and economic mechanisms required to implement such initiatives. Notwithstanding potential benefits, it is still a technical fix.

⁸ While chemo-synthesis played a role in planetary evolution in the distant past as a predecessor to photosynthesis and still exists in deep sub-marine trenches, photosynthesis is the primary food source of terrestrial and aquatic ecosystems on earth. See Rees and Wackernagle in *Investing In Natural Capital: The Ecological Economics Approach to Sustainability*, A. M. Jansson, M. Hammer, Carl Folke, Robert Castanza, eds. Washington, D.C. Island Press 1994. See also Rees, "The Ecological Meaning of Environment-Economy Integration", Vancouver, British Columbia: UBC Planning Papers, 1989.

⁹ Course Notes for *The Ecological Context of Economic Development Planning*, Dr. Bill Rees, Course Director, School of Community and Regional Planning, October 22, 1996.

¹⁰ Mathis Wackernagle and William Rees, *Our Ecological Footprint*, New Society Publishers, Gabriola Island B.C. and Philadelphia PA, 1996. This book presents the *Ecological Footprint* as an empirical tool for mapping the appropriated capacity of ecological productivity in order to sustain levels of human consumption and "production". I have been told by authors that this estimate is conservative.

¹¹ I have dealt with this in a working paper entitled, "Towards a Reconciliation of Humanity With the Planet Earth: A Green Critique of Socialism and Marxist Thought", prepared for in partial completion of the Master's Program in Political Science, York University, Spring 1987. Here, class contradictions – the relations of production – pose a constraint on the "forces of production" which take the form of class conflict. It is this same "engine of history" that gave rise to capitalism which is expected to give rise to the proletarian revolution whose goal is to unfetter the constraints imposed on the capitalist forces of production (the industrial economy). Once freed through these revolutionary social transformations, the productive forces can then be put to the service of the greater social good in a new society. The productive forces are "fetishized" in a manner similar to any modernist project.

¹² See Colin Fry, "Marxism Versus Ecology", *Ecologist*. Volume 6, Number 9; Michael Clow, "Alienation From Nature: Marx and Environmental Politics", *Alternatives*, 11; Summer, 1982; see also "The Impasse of Economics" and "The Dark Side of Growth" in Capra' *The Turning Point*.

¹³ From Bill Rees, "Achieving Sustainability", *Journal of Planning Literature*, Vol. 9, No.4, 1995.

¹⁴ See "Sustainable Development and the Biosphere." *Teilhard Studies* 23, 1990. Also from Course Notes for *The Ecological Context of Economic Development Planning*, Dr. Bill Rees, Course Director, School of Community and Regional Planning, October 5, 1996.

- ¹⁵ From William Rees, *Defining "Sustainable Development"*, UBC Centre for Human Settlements, CHS Research Bulletin, University of British Columbia, 1989, p.3, emphasis added.
- ¹⁶ The most comprehensive treatment of sustainability and social learning is likely Lester W. Milbrath, *Envisioning a Sustainable Society, Learning Our Way Out*, Albany: SUNY, 1989.
- ¹⁷ See Rees. "Achieving Sustainability: Reform or Transformation?" *Journal of Planning Literature* 9, no. 4 (1995): 333-360. also David Pearce, Anil Markandya and Edward B. Barbler, *Blueprint for a Green Economy*, London, Earthscan, 1989; see also Daly and Cobb, *For the Common Good: Redirecting the Economy Towards Community and the Environment*, Boston: Beacon Press, 1994.
- ¹⁸ *Investing In Natural Capital: The Ecological Economics Approach to Sustainability*, ed. by A.M. Jansson, M. Hammer, Carl Folke, Robert Castanza, Washington, D.C. Island Press 1994. Rees provides worthwhile discussion on the allegory of the expenditure and conservation of principal and annual stocks of natural capital in "Achieving Sustainability: Reform or Transformation?".
- ¹⁹ Herman Daly, "Operationalizing Sustainable Development by Investing in Natural Capital" Jansson *et. al.*, 1994, p.30.
- ²⁰ *Ibid.* A problem with the capital definition, he suggests, is that we tend to think of capital as human made means of production, which obviously is not the case in natural capital. A more apt definition is as "a stock which yields a useful flow of good and services into the future".
- ²¹ William Rees, "Achieving Sustainability: Reform or Transformation", *Journal of Planning Literature*, Vol. 9, No.4, May, 1995, p.350. Rees writes that "because adequate stocks of self-producing and replenishable natural capital are essential for life-support (and are generally non-substitutable)", that these two classes of natural capital are generally more important to sustainability than are non-renewable forms. Rees categories are an adaptation of those put forward by Daly and Costanza (1992).
- ²² *Ibid.*
- ²³ Fikret Berkes and Carl Folkes, "Investing in Cultural Capital for Sustainable Use of Natural Capital" in Jansson *et. al.*, 1994, p129. They also mention "the maintenance of a vast genetic library."
- ²⁴ R.K. Turner, P.Doktor and N. Adger, "Sea-Level Rise & Coastal Wetlands in the U.K.: Mitigation Strategies for Sustainable Development" in Jansson *et.al.* propose a spectrum: very weak, weak, strong, and very strong.
- ²⁵ James Coleman, *The Foundations of Social Theory*, Cambridge, MA: Harvard University Press, 1990.
- ²⁶ Robert D. Putnam, *Making Democracy Work, Civic Traditions in Modern Italy*, Princeton: Princeton University Press, 1993.
- ²⁷ *The Foundations of Social Theory*, p.302.
- ²⁸ *Ibid.* p.304.
- ²⁹ *Ibid.* p.304.
- ³⁰ *Ibid.* p.302.
- ³¹ *Ibid.* p.302.
- ³² *Ibid.* p.305.
- ³³ *Ibid.* p.315.
- ³⁴ *Ibid.* p.3.15. He also discusses information potential, norms and sanctions, authority relations, social organization, stability, ideology, and the creation, maintenance and destruction of social capital as well quantities of social capital.
- ³⁵ *Ibid.* p.302.

³⁶ See "Social Capital, Trust and Rotating Credit Associations" as well as "Norms of Reciprocity and Networks of Civic Engagement" in *Making Democracy Work*, pp.167-176.

³⁷ The place to start would be with Putnam's work.

³⁸ Mariana Valverde gives a discussion of Bourdieu's "materialist concept of 'cultural capital'" in her extrapolation of "Moral Capital", *Journal of Law and Society*, Spring, 1994; 213-232.

³⁹ Fikret Berkes and Carl Folkes, "Investing in Cultural Capital for Sustainable Use of Natural Capital" in Jansson *et. al.* , 1994, p.129.

⁴⁰ Ibid. p.129.

⁴¹ Ibid. p.130.

⁴² They cite several examples of TEK institutions around the world.

⁴³ Ibid. pp.141-146

⁴⁴ Ibid. p.146.

⁴⁵ Ibid. p.132.

⁴⁶ Ibid. p.132. They use the term "environment" or "natural systems" where I use the term ecosystem.

⁴⁷ Ibid. p.p.128.

⁴⁸ For the sake of brevity, I have left out an important point that needs to be mentioned. I understand cultural capital to include the broader manner in which a model of reality is expressed, transmitted and made sense of, such as visual art, music, dance, stories, rights of passage, ritual, ceremony, theatre, education etc. These are all meaning creating enterprises. They often function as part of social capital and can be used to transform ecological capital and create human capital.

⁴⁹ In "Sympathy and Identification: Affine Agents" Coleman gives an analysis of "identification" in social structure; pp.157-162. He provides a kind of social ontology in the chapter, "The Self", which starts, "Any theory of action requires a theory of the actor." p.503. He questions the "unitary" model of the actor/self assumed in rational-choice theory, and the "deviations from rationality" which appear as a result. He sees "the organization of the self" as being more complex. p.505. While Coleman does not seem to discuss its nature or value, the identitive feature of social capital is inherent in his work.

⁵⁰ This regenerative feature could be seen as a kind of socio-cultural autopoiesis.

⁵¹ This does not preclude the possibility that other species may create meaning.

⁵² Jürgen Habermas, *Legitimation Crisis*, United States of America: Beacon Press, 1973, 1975. He offers a discussion of 'The Legitimation System' in the chapter, "Crisis Tendencies in Advanced Capitalism."

⁵³ This is meant in the Marxian sense as in *relations of production*.

⁵⁴ Outhwaite, p.328, in Outhwaite and Bottomore, 1995.

⁵⁵ Op. cit. p.69. Of those associated with the Frankfurt School, more than his contemporaries, such as Marcuse, Horkheimer, Adorno and Fromm, Habermas made a more concerted attempt to stay within the Marxist tradition. His work is uncommonly comprehensive, yet also thick and at times cumbersome, seeking to ground social conflict in class contradiction. His commitment to social rationality places him well within the philosophical spectrum of modernity. His work remains an important contribution.

⁵⁶ He is especially known for his ideas on *communicative interaction*.

⁵⁷ *Problematic* (from Aristotelian logic) as a noun was adopted by some critical theorists and others associated with French Marxism and influenced by structuralism, in particular Louis Althusser's work on Marx. Here, *problematic* or *problematique* is used to denote a quintessential problem in theory or a fundamental

theme of political economy underlying a given social formation. It has broadly been used to flag underlying discourses in key political moments, schools of thought and works of thinkers.

⁵⁸ See, "The Impact of Science on Myth", in *Myths to Live By*.

⁵⁹ Jurgen Habermas, *Legitimation Crisis*, p.73. Emphasis added.

⁶⁰ There is much more to the discussion which has been left out; please see pp.68-96. The often cumbersome nature of the language is characteristic of political theory and late Marxism, in general, which has had to develop complex language to deal with certain anomalies such as the middle class, lack of class consciousness in the working class, the welfare state, and the persistence of capitalist economics in spite of internal contradictions. Some of the greatest challenges for Marxism have been in areas of political theory, meaning and will (due largely to doctrinal rigidity and epistemological determinism) which have been addressed prior to Habermas by Marxist thinkers such as Gramsci Milliband and others. It should also be noted that Marxism is not a static or unitary tradition. Though difficult to read and often alienating in the language, important contributions have been made here in understanding the political and economic nature of ideology in social domination, exploitation, the persistence of capital and its relation to the state. These are also addressed by those influenced through post-structuralism, feminism and post-colonial theory. Similar efforts in political economy by the American linguist Noam Chomsky have also achieved notoriety.

⁶¹ Antonio Gramsci developed (much earlier) the political strategy of an ideological "war of position" in the trenches between the state and civil society in order to break the *hegemony* of the modern state. The concept of hegemony was adapted from the Italian idealist philosopher Benedetto Croce.

⁶² For example political tensions which ensue as a result of over harvesting of fish stocks or forests seems to precipitate elements of legitimation crisis.

⁶³ See Marshall Sahlins, *Stone Age Economics*, whose thesis is that gatherer-hunter cultures are the original "affluent" societies. Evidence shows that most gatherer-hunter peoples have significant leisure time and a palpable quality of life. Whilst obtaining healthy levels of material subsistence, people turn their collective and individual energies towards the development of more qualitative or subjective pursuits. These include elaborate meaning producing systems and spiritual practices, intricate artistic traditions (visual art such as carving and painting as well as music, theatre, dance and the more general pursuit of knowledge) and complex social relations. Such cultural pursuits are evident as early as the Upper Paleolithic.

⁶⁴ A detailed discussion can be found in Rees, "Achieving Sustainability: Reform or Transformation?". See in particular his table "Comparing Competing Paradigms" which contrasts the static / expansionist worldview and the ecological/ steady-state worldview.

⁶⁵ Paraphrased from Ibid. Also course notes from Planning 504: The Ecological Context of Economic Development Planning, course director Dr. William Rees, School of Community and Regional Planning, University of British Columbia, 1994-96. These insights are from theory based on thermodynamics. "Achieving Sustainability: Reform or Transformation?" is a concise scholarly review of such theory.

⁶⁶ Ibid. See in particular "The Economy as Dissipative Structure" p.349.

⁶⁷ Some have suggested that there is a possibility of reducing our material demand by a factor of 5 or even 10. Rees provides relevant discussion in "Achieving Sustainability: Reform or Transformation?".

⁶⁸ The concept of substitution is important and problematic. As mentioned in the discussion of "strong" and "weak" sustainability it has significant implications. Guha provides excellent discussion in Guha and Martinez-Alier, *Varieties of Environmentalism, Essay North and South*, London: Earthscan, 1997, particularly of the problem of "incommensurability" in ecological economics. See "From Political Economy to Political Ecology" (chapter 2), especially pp.28-30.

⁶⁹ Arne Naess talks about "self-development."

⁷⁰ Wilson speaks of *biophilia*. There are some astounding examples of communication and communion with other species both anecdotally and in science. For example, Dr. John Ford, director of research at the Vancouver Aquarium, has recently established "Orca-FM". Applied for under the multi-cultural provisions of the CBC, this radio station will be broadcasting the voices of Orca pods from underwater microphones in Robson's Bite. He tells us that Orcas have distinct familial dialects passed on through matrilineal descent. "Behavioural traditions" and "cultural patterns" are exhibited in a manner where orcas seem to be "freed from the genetic constraints of a hard-wired vocal system" in order to develop their own vocal patterns. Vocal communication seems mostly to be oriented towards identity and emotional states. From CBC-1, "Quirks and Quarks", re-broadcast, Saturday, June 13, 1998.

CHAPTER 4: TRADITIONAL ECOLOGICAL KNOWLEDGE

This chapter introduces Traditional Ecological Knowledge (TEK) which is a relatively new topic for planning. I present a detailed analysis of current literature on TEK supplemented both anecdotally and substantively by my experience in the field. There is an epistemological tension which runs through much of the literature based on a failure to recognize key philosophical and methodological features of traditional knowledge. Many academic writers in the field recognize the inherent “spirituality” or “holistic” nature of TEK, very few, if any, explore the substantive features of this spirituality, or establish an analytical criterion for holism; this results in key aspects of TEK being missed and is a disservice to traditional knowledge. The epistemological account of TEK is generally one of trial and error over time. While TEK does employ empirical observation and deduction, it tends to be integrated with other ways of knowing. This, in part, is why it can be referred to as being holistic.

I use the material developed in the previous chapter on social and cultural capital along with a consideration of TEK methodological features as an analytical framework to advance the idea of TEK-Systems (TEKS). TEK is seen as embedded in networks of social and philosophical systems. Based on this analysis, I apply the ECO-system as a criterion for developing a deeper and more holistic understanding of TEK. This provides the basis for a comparative analysis of TEKS and Western science as parallel and complementary knowledge systems. It is important to recognize the diversity of both knowledge cultures as well as their differences and overlap.

My comparative analysis of TEKS and Western science is adapted to a conceptual framework developed from sources mainly in cultural anthropology by S.J. Tambiah. The central feature of this framework is the idea of the “multiple orderings of reality” for which there are at least two possibilities: one is “causally” ordered; others are more “participatory” in orientation. I consider the idea of forging an experiential bridgehead of understanding between cultures in the case of an interface between TEKS and Western science. Such inter-cultural analysis requires a metaepistemological approach to the knowledge systems and outcomes of these parallel world views. (This is the basic analytical framework I will apply to my case study of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound). The chapter closes with a review of barriers to and methodological implications for the research and implementation of TEK.

4.1 Academic and Cultural Paradigms

TEK is a fairly recent research paradigm in resource management with its origins in anthropology. It can also be regarded as describing a paradigm in the broader sense of a worldview: a knowledge system grounded in social institutions and mediated by social practices. The

term “TEK” is somewhat of a misnomer for two reasons. Firstly, because it focuses on the word “knowledge”, the term draws attention to the knowledge which is an outcome of a complex system of social relations and institutions (social capital), founded upon certain beliefs and values (cultural capital), mediated by the practices (methods) of oral cultural tradition.

Secondly, because we are dealing with living people and cultures, using the term “traditional” can lend a stagnant character to that which is an evolving, lived experience. In spite of the assault on First Nations by colonialism, including efforts to dismantle traditional social structures and curtail traditional practices, both Native people and anthropological research confirm that customary laws persist. Where they do, social norms and practices seem to be evolving rather than dying.¹

I assert that to divorce Traditional Ecological Knowledge from its social and cultural (institutional and meaning-producing) contexts is not only disrespectful, but weakens its impact—its usefulness—and misses its most important features. I will argue that to do so is also methodologically incorrect from the point of view of these traditions. There are three elements that any meaningful and rigorous academic paradigm of TEK needs to recognize, including: i.) the cultural/worldview component; ii.) the social/institutional component; iii.) the methodological component (and two other implicit but vital ones: people and ecosystems) and take them all into account in research, the planning process and professional applications.

In order to set the stage for my analysis, I have selected an article from TIME magazine which raises important themes and contradictory issues associated with the growing interest in traditional knowledge by the Western mainstream.

4.2 Lost Tribes, Lost Knowledge: Global Wake Up Call or Cultural Appropriation?

In the September, 23, 1991 issue of *Time* magazine an 11 page cover story was run on the topic of vanishing Indigenous cultures around the world under the title of “Lost Tribes, Lost Knowledge”. The article starts with recalling the burning of the Great Library in Alexandria as “a symbol for all ages of the vulnerability of human knowledge.”² The article continues with the insight that today “more vast archives of knowledge and experience are spilling into oblivion.” The point is made that humanity is in danger, not only of “losing its past” but that we may be “jeopardizing its future.” We are warned that this may have grave consequences, not only for the peoples whose cultures are at risk, but also for the developing world:

Until quite recently, few in the developing world cared much about this cultural holocaust. The prevailing attitude has been that Western science, with its powerful analytical tools, has little to learn from tribal knowledge. The developed world’s disastrous mismanagement of the environment has somewhat humbled this arrogance, however, and some scientists are beginning to recognize that the world is losing an enormous amount of basic research as indigenous peoples lose their culture and traditions. Scientists may someday be struggling to reconstruct this body of wisdom to secure the developing world’s future.³

The authors draw our attention to s
tances" using their knowledge of c
bouncing off islands from afar; since
without irrigation or produce abun
delicate balance that maintains the e
understanding of the basic ecology o
ties of plants. "If this knowledge l
scientific resources of the West" impl

It is noteworthy that *TIME* m
the Western world, speaks to the syn
a symbolic character to the picture
it paints of science and tradition,
of scientists' knowledge and the
wisdom of the elders and healers.
This symbolic depiction is punc-
tuated by a full cover picture (see
Figure 7). On the front page of the
magazine is a traditional High-
land Tribesman from Papua New
Guinea. The 'Lost Tribes, Lost
Knowledge' catch phrase and
subtext that reads "When native
cultures disappear, so does a trove
of scientific and medical wisdom"
frames the bottom of the picture.
From underneath the *TIME* logo
appears a bearded, elderly man in
traditional garb, strong, weath-
ered hands cradling his painted
face, cocked slightly to the side.
His moist compelling eyes hold
the reader's with a quizzical but
despairing gaze, a McDonalds-
type drinking straw inserted throug
tion from another article, "Is the CIA

The picture and text describe
tique: a multi-media mishmash of
origins, manipulated, re-mixed and r

of the capitalist press. At the same time, the humanity in the man's eyes is inescapable. However depicted, this is a living person. There are 33 of such compelling portraits in this feature, from a number of cultures around the world. The point that somehow the survival of the developing world is linked with the survival of Indigenous peoples and that scientific culture can learn from oral traditions has been a thesis in some environmentalist circles for some time. To witness a mainstream venue such as TIME touting such alternative ideas is clearly a "sign of our times."

A central theme of the article is that the epistemological "arrogance" of the Western science based world has been "somewhat humbled" by our "disastrous mismanagement" of the environment. This says a lot: we may not have all the answers and we're in trouble so we'd better take notice. It is a good point but not the first one to make. The reason to pay respect is not because people whom we have previously discounted may be useful to us now that we could be in trouble. All peoples and their cultures are relevant and worthy of respect on the basis of their own merit. This must be recognized first. If we knew that, however, perhaps the "cultural holocaust" to which TIME alerts us may not have come to pass.

To be fair, TIME magazine is doing a service to all in alerting us: a.) to the connections of nature and culture; b.) that those who live closest to their ecosystems over long periods of time can offer insights into our own failing or incomplete models; and c.) that we are participating in a global cultural holocaust hitherto unknown in human history. ⁴ TIME also instructs us that if the developing world is going to help Indigenous peoples preserve their heritage, it must first recognize that "this wisdom has value."

In a section called "Lending a Hand", TIME depicts how certain organizations and members of the scientific community have become involved in helping to legitimize and preserve the staggering amount of data collected in the annals of oral tradition. Scientists are legitimizing TEK, apparently helping people overcome the damaging effects of Christianity on traditional healing practices. TIME encourages us that "attitudes are beginning to change... scientists are learning to look past the myth, superstition and ritual that often conceal the hard won insights of indigenous peoples" but caution that "there is no way that concerned scientists can move fast enough to preserve the world's traditional heritage."⁵ There are methodological problems that can not be solved simply by gathering information through taped interviews. In lieu of all this, the author cites an American anthropologist who suggests that the knowledge is "best kept alive in the culture that produced it"⁶. He offers a program of economic incentives for Indigenous peoples to preserve their cultures and the ecosystems upon which they depend.

American companies are beginning to see "value in indigenous knowledge." TIME suggests that, "An indigenous culture can in itself be a marketed commodity if handled with respect and sensitivity."⁷ That is a very tricky business without clear guidelines from the people about how sensitivity is ensured and what constitutes respect. The Director of the Institute of Economic Botany in New York reports that only 1,100 of the Earth's 265,000 species of plants

have been thoroughly studied by Western scientists but there are many more which may have medicinal and other undiscovered properties. Tribal healers are seen to greatly focus scientific research. The National Cancer Institute has sponsored a study which sends scientists walking with “shamans”⁸ in Latin America to uncover plants useful in the treatment of cancer and AIDS. In 1989 a group of scientists formed *Shaman Pharmaceuticals* in California, whose aim is to commercialize the pharmaceutical use of plants.

The picture of the scientists working to save the knowledge of Indigenous peoples from slipping into oblivion is a compelling one. At the same time, there is a mixed message here. On the one hand, we are told that scientists are getting beyond the “Western contempt” that presumes itself “objective and thus more rigorous than other systems of thought.”⁹ On the other hand, as a sign of their growing respect, appreciation and changing attitudes, scientists are beginning “to look past the myth, superstition and ritual that often conceal the hard won insights of indigenous peoples.” The message is that we can value the knowledge outcomes of oral traditions and in the same breath dismiss the source of that knowledge as superstition and myth. The beliefs, values, cultural institutions and practices, the source of TEK in which it is “seamlessly interwoven”, seem to stand as barriers which conceal Indigenous people’s hard won insights. Scientists, presumably with their method and research techniques, will be able to help people extricate the hard won data from the more spurious cultural fluff of ritual and myth. This is little different from the colonial perspective of the missionaries who regarded those same practices as devilry and sought to extract people’s souls.

One difference is, now that we realize the commercial potential in TEK, it behoves us that the knowledge is “best kept alive.” Preserving tribal wisdom, we are told, “is as much an issue of restoring respect for traditional ways as it is for creating financial incentives.” In such efforts to “lend a hand” who is really being helped? Most likely, it is the invisible hand that is helping itself. The pharmaceutical industry is not particularly known for its philanthropy. These are the same companies who dump tonnes of substances banned from North America and Europe into the markets of the developing world. Meanwhile, those same transnationals have lobbied governments to curtail the availability of herbs in an attempt to push herbal businesses out of the market and regulate herbs to the domain of pharmaceutical companies (through registration taxes, initialization fees, increased price structures, and banning).¹⁰ Do we really expect these people to lend the kind of help that will actually be supportive to the holders of TEK wisdom? These are the same kind of self-serving favours that British and Canadian colonists gave to First Nations through residential schools, reserves and other institutions of assimilation while helping themselves to aboriginal homelands.

There is a supportive role for science in the dialogue on sustainability with First Nations. Yet, the image of corporate scientists working nobly to preserve TEK is suspect. It has much in common with the colonial missions which have historically characterized the relationships of Europeans with Indigenous peoples and their capital resources, both culturally and

ecologically. If we can think of knowledge as a “resource” based on cultural capital, then the extraction of knowledge is a kind of cultural resource extraction. From the ECO-system approach, this is like “mining the soils” of another one’s culture. Commodifying the products of TEK will not conserve culture, nor will it generate or create new knowledge as the knowledge has been truncated from its method of production. Viewed as a cultural paradigm, TEK is a way of knowing which has merit in itself and is worth exploring on its own terms. Commodifying the cultural system is to miss the point. The idea of preserving other cultures may be well motivated, but is also dubious. These are living people and cultures; it is at this level which our efforts need to be focused.

If we are going to value TEK then we must value and recognize the **people** who are its custodians. We must recognize and respect the social institutions and cultural practices which are its source. It is in this context which TEK has value. To divorce the knowledge from its source of origin is to open the possibility of the immense cultural appropriation which has already done so much, not only to trivialize the “hard won insights” of Indigenous people, but to damage to the cultural and social mainstays of people and their knowledge. Not only does this render TEK less effective, it is methodologically incorrect. The truncation of knowledge is indicative of the subject-object separation of the dominant epistemological model. This may be appropriate in the context of Western science, but it is antithetical to oral tradition. To truly “value” TEK we must learn to value it in its rightful social, cultural and ecological contexts. We must recognize the people. This is what the protocol of oral tradition is all about: to honour and recognize the sources of knowledge, personally, culturally, historically, geographically. To separate such knowledge from its cultural origins is an act of colonial violence as much as it is an epistemological error. It is contrary to the philosophy, rules and methods by which traditional knowledge is generated, validated and transmitted.

For planners, scientists, educators and other professionals, the point here is that to divorce TEK from its cultural and social context and reduce it to merely “the data” is not only disrespectful, but is to commit an epistemological error. It trivializes and renders less effective some very powerful and important management models. There are both opportunities and constraints for a constructive discourse between people from the scientific cultures of modernity and Indigenous peoples whose cultures are rich in TEK. One of the more pressing and promising foci for this is the dialogue around sustainability. There is much to learn and share, and much research with application potential. If it is going to happen, we shall have to get beyond our superstitions, myths and narrowly conceived agendas to recognize the cultures in which TEK is embedded and respect those who live them. We will have to go beyond our social constructions of Indigenous peoples. Only then can we begin to develop TEK as a meaningful paradigm of research and application in the academic context.

4.3 Defining TEK

Berkes (1993), one of the more recognized contributors to the TEK paradigm, notes that while the term TEK came into use in the 1980's and has been practised for thousands of years, there is no universally accepted definition in the literature. It is, by its nature, a fairly ambiguous concept.¹¹ Reviewing the literature however, it seems that most discussion of TEK recognizes four main features: spatial; temporal; cultural/philosophical; and social/institutional. There is another feature, which, although less evident in the literature, is vital in my experience: the methodological component. Reviewing at a glance these five features, TEK can be seen as being, involving, or constituted by:

- i.) a spatial aspect: i.e. it is located in a certain place;
- ii.) a temporal nature: i.e. it is handed down through many generations; (Berkes uses the term "historical continuity")
- iii.) culturally located: i.e. it functions as part of a larger worldview in a cultural system;
- iv.) socially mediated: i.e. it is transmitted through social institutions.
- v.) methodology: the fifth feature which, although not often noted in the literature, is implicit. It relates to the methodological aspects of TEK, of how knowledge is accessed, assessed, verified and transmitted, which some seem to refer to as *procedural knowledge*.¹²

Berkes searches the literature for a composite definition which combines the most "salient" attributes of TEK. He describes TEK as a "cumulative body of knowledge and beliefs handed down through generations by cultural transmission about the relationships of living beings with one another (including humans) and their environment." His definition generally recognizes the above first four elements. He adds that the important qualifier that TEK is an, "attribute of societies with historical continuity in resource practices..."¹³ In adding another attribute that TEK is associated with "less technologically advanced societies"¹⁴ a certain judgmental quality is lent to the definition. This opens it to an interpretation based on the Western industrial development teleology and renders it less attractive.

Doubleday (1993) writes that TEK, "represents a collective understanding attained over long periods of time, in particular places, of the relationship between a community and the earth."¹⁵ She adds that TEK may, "encompass spiritual, cultural and social aspects as well as substantive and procedural ecological knowledge. TEK may also include customary rules and laws, rooted in the values and norms of the community to which it belongs."¹⁶ As an academic definition, hers is somewhat more preferable than the Berkes' above as it draws attention to the broader nature of TEK as a shared cultural paradigm without a judgmental qualifier of technical advancement. She states more explicitly the "procedural" or what I refer to as the methodological aspects of TEK. In my involvement with First Nations for the past ten years, I have found this aspect of traditional knowledge to be one of its more notable features.¹⁷ This is

important and needs more attention. Most academic definitions and discussions are deficient as they only imply or make scant reference to the methodological aspect of TEK.

The *Report of the Traditional Knowledge Working Group* offers a definition which comes from direct input of local elders. Traditional knowledge is described as based firmly in the local landscape and “offers a view of the world, aspirations and avenue to the ‘truth’ different from those held by Euro-Canadians whose knowledge is based largely on European philosophies.”¹⁸ The elders made it clear that it is incorrect, even impossible, to integrate TEK into laws, policies, decision making or programs in a truncated, “piecemeal fashion.” It must be “more concrete ...more of a statement, so that it becomes a guiding principle for anything that has to be done.”¹⁹ They offer the following definition:

Traditional knowledge is knowledge that derives from or is rooted in the traditional way of life of aboriginal people. Traditional knowledge is the accumulated knowledge and understanding of the human place in relation to the universe. This encompasses spiritual relationships, relationships with the natural environment and the use of natural resources, relationships between people and is reflected in language, social organization, values, institutions and laws.²⁰

They amplify this definition with the insight that it is difficult for many people to grasp that for aboriginal people, traditional knowledge is much more than information. As one elder says, it is a, “common understanding of what life is about.” Traditional knowledge is “value laden”.²¹ The working group, therefore, has not attempted to separate values and understanding from science or “what one knows” in its definition of traditional knowledge.²² (The definition also infers that there are certain resemblances which exist among aboriginal cultures yet it should be pointed out that there is great diversity; I will be dealing with this as a theoretical issue and its implications for research later on.)

The above definition makes clear reference to the cultural worldview context of traditional knowledge. This includes not only a reference to cosmology, i.e. the nature of the Universe. There is an inherent *ontological* quality which refers to “understanding of the human place in relation to the universe” encompassing “spiritual relationships, relationships with the natural environment” as well as “relationships between people.” This leads into a reference to the social or institutional aspect of TEK in its “social organization”, as well as “institutions and laws”. The point of traditional law is notable. We may not think of the law in oral cultures in the same manner as we do in Western legal culture; however, there are certainly extensive legal traditions which exist in Indigenous cultures around the world. Personal experience has shown me that a great deal of legalistic protocol exists relating to traditional resource management systems.²³ Some have attempted to document this according to Western research standards.²⁴

The methods of TEK are not directly referred to in this definition; however, they are implied. Traditional knowledge is derived from or rooted in the traditional aboriginal “way of life.” When referring to a way of life in this context, one must understand that this involves

many cultural practices which are the sources or means for generating, transmitting and evolving TEK. This could involve traditional technologies and resource practices, for example sustainable practices of herring roe harvesting on kelp and hemlock boughs, or cedar bark gathering. An important part of these practices are the prayers and songs that express the beliefs and values which are the foundations of traditional knowledge. Central to such practices and their sharing is protocol.

We may not think of such practices as “methods” in the academic sense. However, in the context of oral traditions, knowledge and its transmission is guided by the rigour of strict rules of learned protocol which are replicable and generally consistent within language areas. These protocols are the methodological principles by which knowledge is generated, transmitted and legitimized. The protocols are learned from an early age. It takes years to become proficient in them and they are constantly reviewed. Protocol ensures that knowledge is shared properly, in a manner consistent with and legitimate to the beliefs, teachings and methods of the cultural tradition. For important matters there is usually a great deal of consultation between elders, specialists and other learned and involved individuals. Protocol is not only an arbiter of community cultural capital, it is also a mainstay of traditional social institutions. There is also protocol which is transferable within and between language groups. As one First Nations friend said, “there is a protocol for everything.”²⁵ This has certainly been my experience.²⁶

The methodological aspect of TEK, which some may refer to as “procedural knowledge,” is of a distinct nature. One might try to understand it as “cultural capital” because it is of a largely qualitative nature and is actively part of the cultural base of knowledge, beliefs and values which comprise TEK worldviews as cultural paradigms. At the same time, the methodological aspect is just as much an active part of the institutional-relational base of TEK. Thus, it is in many ways construable as social capital. It has the nature of being an agent of both social and cultural capital. It provides an active link between these and the knowledge which is produced and re-produced. Thus, the methodological features of TEK merit being regarded as a distinct, substantive component of TEK-Systems. This is essential for oral cultural knowledge where “the truth” is arrived at through extensive consultation and group process: it is avowedly discursive in character. Becoming sensitive to the methodological features and learning to work within basic protocol is vital for researchers and others who work with the TEK specialists.²⁷

4.3.1 TEK-Systems

As *knowledge systems*, TEK have methods which play a vital role in linking the worldview (cultural capital) with its social institutions (social capital) and the knowledge that is created and transmitted. All aspects are necessary components of “TEK”. If one loses or misses pieces from either of these, then the integrity of the system and the knowledge itself are com-

promised. It is the system—the culture and its members—which generate knowledge. There are two other implied components: the land and the people. Thus, I shall now refer to Traditional Ecological Knowledge Systems (TEKS) when referring to this larger context.²⁸ Distilling key components of the prior discussion, I understand the concept of TEKS to include three main features:

- 1.) **Cultural Capital**
Cultural capital includes the knowledge, values, beliefs, philosophy and teachings which comprise the worldviews of TEKS as cultural paradigms or *models of reality*.
- 2.) **Social Capital**
Social capital includes the social institutions and relational capacities which comprise the social structures of TEKS as social paradigms.
- 3.) **Methodology**
This includes the procedural knowledge, tools, methods protocol and practices through which knowledge is created, legitimized and transmitted in TEKS.

The two other implicit components, people and ecosystems, are also mandatory. These might seem obvious but it is important that they be recognized and addressed. While the terminology of “human capital” and “biophysical capital” might have some utility, such terms can be seen as objectifying and disrespectful.

Academics and professionals involved with TEKS and the TEK field must never lose sight of the fact that they are involved with **people**. Unfortunately, it is too easy for researchers and others to forget that, while we are dealing with such compartmentalized and large scale notions as worldviews, knowledge, methods, social institutions and cultural practices, the fount and focus of such matters are the people from whose culture they come. When people are reduced to their knowledge and technical skills, or some aspect of them, they have been objectified and greatly disrespected. This plays into colonial productive relations and opens the possibility for cultural misappropriation. Such reductionism is contrary to the spirit of TEKS and renders research and application far less meaningful and useful.

The other point is that TEKS are “indigenous” to a certain place. They are cultural ecologies born from and developed as part of a natural system. TEKS are thus reflective of the habitat, species, seasons and weather patterns of the places from which they come. Although there may or may not be aspects of some TEKS that bear resemblances to aspects of others, and while some knowledge, practices and skills may be transferable, a TEKS is specialized to its local area, habitats and bio-region. The perceptual and spiritual connections, as well as the material aspects, are part of a larger communal identity founded in the land.²⁹ The land, sea, rivers and all they contain have an *ontological* character; they are alive and imbued with spirit. It may make sense from one perspective to look on this as “biophysical capital”, yet it is a vast reductionism of something profound and influential. When I use the term “biophysical capi-

tal", I recognize not only its currency as an ecological source of production (material flows, nutrients recycling, throughput, as well as habitat and species, both terrestrial and aquatic) but also its cultural/spiritual or ontological capacities: *a sacred ecology*.

There is one other element relating to the temporal character of TEK. The long standing character of TEK is well recognized in the literature. However there is a further insight to make pertaining to the significance of history for First Nations and traditional knowledge. I have learned of the great importance of history through my work with First Nations. We could think of this in the more empirical sense of the knowledge of facts and events. There is also something deeper that relates to the collective identity of people and their connections to place and time in the Universe. Therefore, I refer to the temporal feature of TEK as its "historical nature".

Oral history requires years of special training, a rigorous memory and proficient oratory skills.³⁰ There are oral traditions that stretch back to creation.³¹ I am reminded of the time, some years ago, when I witnessed the Haudenosaune (i.e. People of the Long House) elders recite the Iroquois constitution. I was told the annual event, which is a record of oral history fundamental to Iroquois identity, continues for several days based on memory, witnessing, confirmation and prayer. A staggering amount of detail and protocol is involved.³² I have experienced the oral protocols in a number of First Nations language groups in North America.³³

It is difficult for many people to grasp the significance of history in First Nations culture. In "History is Now", the historical section of *A Spirit of Understanding*, I write that it is difficult for most Canadians to understand why First Nations people often speak of the past as present. "It is really about a way of structuring reality."

...It is a way of seeing and living life based on connectedness to one's place and past...it is hard to grasp the *presence of the past*.³⁴ Perhaps this is because it has been so long since *mama'thla* (European) people have lived as First Nations themselves. From the First Nations perspective, the past has always been with us, the past is what makes us who we are; our connection with it, is what will insure that there is a future...it is the connection to communal experience and identity. The basis of this shared identity is the land and the culture to which it has given birth. This view of reality brings to life a deep sense of personal and collective intimacy with the land and place in the Universe. It instills a protocol of behaviour based upon respect and relationship within the natural and spiritual worlds, which are one. These ancestral understandings are transmitted culturally throughout time and live in the present.³⁵

It is impossible to understand or appreciate current issues without having a basic background of the historical nature of the relationship between First Nations peoples and the country called Canada. It is also hard to appreciate or understand TEK without a basic historical background and respect for oral history.

To sum up then, "TEK" is an academic term which originated in anthropology and is quickly becoming a paradigm of research and professional application in resource management. As an academic concept, the term "TEK" is an attempt to describe something which is

really a knowledge system—TEKS—and way of life. These knowledge systems are part of larger worldviews and social systems which have specialized and complex methods for the generation and transmission of knowledge. The worldviews, social institutions and cultural practices ascribed to TEKS are embedded in specific places, and are examples of long standing human habitation that have developed, and are still in development, since “time immemorial”. These are internally consistent models of reality with methodological, philosophical and institutional merit. TEKS offer alternative *parallel knowledge systems* to the dominant cultural paradigm.

4.4 Epistemology and the Recognition of TEKS

I previously explored the idea of worldviews as knowledge systems which are models of reality. This discussion led to an analysis of epistemology as being linked to cosmology and ontology. I used these analytical categories to pose a framework of meaning-production I call the ECO-system which is mediated and embedded within social structures. This cultural system of relations, perceptions and material flows is a subset of local ecosystems and the ecosphere as a whole. I applied this framework to current sustainability theory, in particular the concepts of biophysical, social and cultural capital. The aim was to put forward a holistic model of sustainability for qualitative development from a metaepistemological perspective. This approach is useful for the academic study of TEKS as an inter-cultural framework of comparison based on alternative ways of knowing.

The Dene Cultural Institute definition of traditional knowledge quoted above (section 4.3) makes implicit references to the components of a *meaning-producing system* according to the ECO criteria. In its reference to “spiritual relationships” and *understanding* of the “human place in relation to the universe” there is a distinct ontological character lent to the definition. TEK is embedded in an understanding of who we are as beings. “Traditional knowledge is the accumulated knowledge and understanding of the human place in relation to the universe. This encompasses spiritual relationships, relationships with the natural environment and...between people”³⁶ TEK is seen as embedded in an understanding of our place in the universe, which gives it a sense of the larger cosmological context.³⁷

The epistemological component is not directly referred to in the above Dene Cultural Institute definition of TEK, but it is indirectly referred to. I discussed earlier that TEK paradigms—as knowledge systems—have their own models of reality. The Dene Cultural Institute writes that, as “a view of the world,” TEK offers a “distinct avenue to the truth”. As a paradigm, it does not attempt to separate “values” from “what is known”.³⁸ Thus, TEKS involve ways of knowing and transmitting such knowledge which, while different from the dominant model, are valid in their own right and should be central to the academic paradigm of TEK. This is related to the methodological feature of TEKS discussed above, and has a bearing on research and application in the field (a point to be discussed later).

Though occasionally referred to, the term “epistemology” comes up less often in the literature. However, theory of knowledge is discussed indirectly. There seems to be a kind of epistemological tension which runs through much of the literature. While TEK is often referred to as “spiritual” or “holistic”, it is generally explained through trial and error over time. Not unlike science, empirical observation and deductive reason are an important aspect of TEK, yet this is only one amongst other just as important means for creating and passing of traditional knowledge. There are a variety of body-based³⁹ and other spiritual modalities vital to the generating of TEK, such as singing, dancing, drumming, fasting, praying, purifying, other ritual and ceremony, and extended periods of isolation outside of the community. The tension lies, on the one hand, in recognizing knowledge outcomes but, on the other hand, in being able to recognize only some of the means for generating them. Scientific theory of knowledge can address only that which is within its domain—that which can be measured in time and space—and does not generally recognize that which is outside. The spiritual and other features of TEK are thus left unexplored and “un-substantiated,” at best, or negated at worst. The result is that we miss out on critical analysis and substantive understanding of how and why TEK can be regarded as holistic. This seems to be a gap in the literature.⁴⁰

The spiritual nature of TEK is generally recognized in the literature (Berkes, 1993; Doubleday, 1993; Berringer, Green and Smith, 1994). Berkes (1993) points out that TEK has an “intuitive component”. Another term often used to describe TEK is “holistic” (Berkes 1993; Doubleday 1993), yet, the term is usually left undefined. Boothroyd (1994), a planner writing on TEK and environmental impact assessment suggests “the aboriginal perspective was holistic because environmental assessment was an integral part of daily life.”⁴¹ He points out something that an increasing number of scientists, academics and other professionals are coming to recognize, which is that TEK has much to offer the dominant society:

The holism of traditional knowledge can be an antidote to the excesses of modern specialization...traditional knowledge can balance Western science, turning it from an inhuman force often hostile to spiritual and social development to a benign force serving the ends of healthy human ecology. Awareness of traditional knowledge increases respect for the contributions to be made by all people, improves communication among diverse interests, and enhances abilities to predict and monitor ecological and social impacts.⁴²

Several points are being made here. One is that, as traditional knowledge, TEK has insights and substantive contributions to make that are relevant in a variety of areas. Aside from predicting and monitoring ecological and social impacts, for example, traditional knowledge increases respect for people’s contributions and improves communication amongst a diversity of interests. This is arguably due to the procedural knowledge of TEK and will come up again in the sections to follow (and especially the case study). It is also important to flag the word “respect”; respect is highly a valued and key feature of TEKS protocol.⁴³ It is part of the model.

The other point is that TEK provides a balance to science. This, and the idea that TEK offers a “complement to science,” seem to be themes in the TEK literature. The point that TEK can balance science is one to which I will return. Yet, it is also noteworthy that there is little, or no reference in the literature to the role that TEK and its specialists play in legitimizing Western science in First Nations communities, although they can and arguably do.⁴⁴ Some, such as Colorado (1988), Corsiglia and Snively (1995) and Snively (1995) refer to “Native Science”.⁴⁵ The notion of Native Science seems especially prevalent in the educational literature. Cajete (1994) who is Pueblo, offers an “Ecology of Indigenous Education” in a book based on his Doctoral thesis. It is a worthwhile philosophical piece with practical insights on education, different ways of knowing and modalities of learning.⁴⁶

The idea of “Native Science” is not just limited to education. David Peat (1994), an extensively published theoretical physicist, also writes about “Indigenous science”. Although the two comprise different “ways of knowing and being”, he submits “a tantalizing paradox” which is that, “scientists who have been struggling at the cutting edges of their fields have come up with concepts that resonate with those of Indigenous science.”⁴⁷ Amongst other examples, he cites Bohm’s work on wholeness and the implicate order, quantum theory and other insights from high energy and particle physics, plus new paradigms in medicine and ecology.⁴⁸ Recent theoretical contributions by Sandra Harding (1998) coming from postcolonial theory, feminism and epistemology are helpful here in establishing the “cultural locatedness” of different types of science as “local knowledge systems”. From her perspective, even with regard to science, there is more meaning to speak of “epistemologies”.

The scientific recognition of TEK comes up often in the literature [(Dene Cultural Institute (1994; 1995); Berkes (1993); Corsiglia and Snively (1995); the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound (1994)]. It is underscored by global documents, conventions and other government policy statements [e.g. the World Conservation Strategy (1980); Our Common Future (1983); The Convention on Biological Diversity, Agenda 21, Guiding Principles on Forests (UNCED, 1992)]. There is certainly a role that scientists are playing to legitimize TEK in the dominant cultural paradigm.

Environment impact assessment is one professional discipline in the field of resource management which has explored some of the methodological challenges and practical implications, and demonstrated some of the practical applications of the scientific legitimacy and utility of TEK [(Johannes (1993); Sallenave (1994); MacPherson and Netro (1994)]. The integration of traditional knowledge with science has also become government policy for impact assessments in the Northwest Territories. CIDA, in association with the Centre for Traditional Knowledge and the World Council of Indigenous People, has recently finished its second draft of *Guidelines for Environmental Assessments and Traditional Knowledge*.⁴⁹

The idea that science can play a role in legitimizing TEK is an interesting one. The prevailing epistemological point of view in the literature regarding traditional knowledge is that

TEK has been created over many generations through processes of trial and error. In as much as both science and TEK use empirical observation and deductive logic, some, such as Berkes (1993), and the Dene Cultural Institute (1994), write on the marked similarities between science and TEK. Empirical observation and deductive reason do play a role in traditional knowledge; however, as stated, this is only part of the picture. Trial and error, empirical observation and deductive reason are satisfactory only as partial explanations of TEK. TEKS also contain other ways of knowing. To reduce all of TEK to trial and error is not only a disservice but a mistake. It is just as inaccurate to reduce all of TEK to its spiritual features.

As systems of knowledge, TEKS offer examples of ways of knowing which are outside of the dominant Western epistemological paradigm. As a result, these may be some of the more important areas of learning. Some aspects of TEK can be understood through the scientific approach, others can not. While this may be a problem from the perspective of Western science (certainly in its more narrow forms) there is no contradiction in traditional knowledge. It is fundamental in TEKS to bring together different ways of knowing into a larger whole: a metaepistemological perspective. I call this traditional holistic meta-perspective an *epistemology of the sacred*.

There may be methodological reasons for separating different types of knowledge in some kinds of research. However, it is fundamental to recognize and develop an appreciation for the larger holistic epistemological terrain. How should research in this area be approached? Is it best undertaken in cognitive science labs? Perhaps ethno-methodology or phenomenology would be more appropriate.⁵⁰ The question of body-mind integration has certainly come of interest in medical circles. It is well known that the so-called 'placebo effect' has consistent statistical significance, yet the actual mechanisms are "unknown". It might be more expedient to start from a model built upon wholeness rather than trying to integrate disparate aspects. Either way, the existence of different types of knowledge and different ways of knowing are central to TEKS.

Some more conservative or narrow thinking individuals may be uncomfortable with the idea that there actually are different ways of knowing.⁵¹ Yet, the idea is not entirely foreign to the Western cultural mainstream and even certain academic circles. In the context of TEKS, however, thinking of different types of knowledge operating as part of a larger epistemology of the sacred can help waylay some of these tensions. One need not believe in other ways of knowing to accept that they work for some people or to respect their culture. At the same time, there may be much that can be learned in this area. Let us consider some examples.

I'm adopted into an 'Nlaka'pamux family who either gathers, grows, fishes or hunts most of their food.⁵² My brother, Terry, is an experienced bushman. We were sitting around after supper one evening when someone asked, how does one tell a grizzly bear paw print from a black bear? I immediately launched into a lengthy discourse on the overall stature of the paw print, its general shape, the dimensions and depth of front and back pads, relative distances

between claws and forms of their impression in the soil. The room became silent and we turned towards Terry, an experienced hunter with considerably more knowledge on such matters and far more track-literate than myself. "By the way the hair stands up on the back of your neck!" was his reply. After the uproar of laughter subsided, people generally felt this to be a far less convoluted and more effective method. It launched the family into a lengthy discussion of traditional knowledge skills, of how being in the bush requires one to develop and use all the different ways of knowing one can.

My brother tells the story of how he came face to face with the *shmua* – an adult cougar. Rather than flee, he was compelled to pick up two rocks and clack them together. Out came a powerful new song. The cougar swished its tail; after a few rounds of the song, they both departed. The action was unpredictable, the outcome magical. We still sing the song today. How did Terry *know* what to do in this unpredictable, life threatening situation and from where did the song come?⁵³

The matter of where songs come from is a deep subject. There is a great degree of protocol that often attends the sharing of a song. Songs have immense social capital value; they really bring people together. They are also considered property. My brother Terry, who is an experienced singer, gave me permission to share a story of an important song which depicts some of the magic and mystery of where songs come from. The story reflects well on different ways of knowing:

...its because of our elders that we're living near the Stein now...they saw me living here because of the spiritual power and strength of Stein Valley, years ago before I had a family...a lot of interesting things have been happened to me in the time that I've lived here...What you wanted to hear about, one of our *Shux'nam*—Indian Doctors—is a song that he sang, and his song is a gathering song. It calls people from all directions to come...come and play, come and dance, come and have fun, and come and be together is what's behind the song. He's calling every-body...come and be here...listen to the stories, the songs, each other...I'd heard about Tommy Lick, years ago when I was doing cultural research for Lytton Band back in the early 1980's...and I knew that he was a medicine man for our 'Nlaka'pamux people and he was one of the last of the traditional medicine men. He had taped some songs for Wendy Wickwire...but I never did hear the tapes until just recently.

In March of 1987 I was sailing on a high from my time at the (Round Lake) treatment centre....I had no vehicle...I was walking around the community this one day, March 12, when I decided that I'd had enough time around town, so I started walking home...and it was a beautiful day, windy off and on...I was walking along at the bottom of "mile hill" right by Lytton Ferry road and just a little past the turn I was literally stopped in my tracks. Something stopped me. There was no sign of anything or anybody around, and this is a wild place...I stopped and I couldn't move, couldn't take another step. The wind picked up, and it was like a little mini-tornado which blew all around me. It was really an awesome experience...when you get shiveries, you get those people bumps

(goose bumps) that was flowing through my whole body, it was like, wow, what's happening here, and I just looked up around me and said, "Creator, what ever this is about, here I am, you stopped me for a reason." and all of a sudden this song starting coming out of me. And I didn't know where I'd heard it, and being a singer around the pow wow drum and having travelled that circuit years before, I'd never heard that song. I was just frozen in that spot where I was standing and that song just started coming out of me...it came out shakily at first, and then it started getting stronger as I went along...I took a really deep breath and started flowing with the song and just really lettin' it come out just as loud as possible...I was there for a long time and it surprised me that nobody came along ...The song just flowed through my whole being; I could feel it, I could taste it, I could sense it, just hear it all around me and I felt it from deep within. "O.K., now I have a song" ...I knew right away that I better turn to an elder who might know this song. Finally it felt like I was released...and I made it home with that song in my soul.

So I did turn to the elders and asked if they did know who's song this is, or was. So I sang the song to the elder and she said, "That song was a *Shux'nam* song. Where did you get this song?" So I had to tell her the same experience I'm just sharing with you. She just looked at me and said "You're meant to carry that song so you better sing it every time there's a gathering calling all people...You'd better liven up that song, 'cause that's why it came to you, its for you to call all the people together. There's a reason why the Grandfathers and Grandmothers (the spirits) are giving you this song, so carry it with pride because its a strong song and people are going to need to hear 'Nlaka'pamux songs; they need to come back, not with a big drum, but hand-drums and rattles." And that was what she told me at the time...I've sung it in different places and have really felt Tommy Lick's presence when I do sing it...its an awesome experience to reflect back on it and realize, "What a gift, what an honour to be so open and to receive a song that's been dormant for probably a generation."

Wendy, I believe, was one of the last one's to interview Tommy Lick before he passed on...when I first heard it (on the tape) it was hair raising. I thought, "O.K. I know that song!" He said it's a people gathering song, just like what the elder told me... Whoowee wow! talk bout travelling full circle...It was neat that that song was recorded way back then with Wendy and after having shared it with thousands of people it travelled full circle in the technology world. Like, hey, this song's been here and somebody really needed to bring it to life, and I really feel fortunate to be a chosen one for the 'Nlaka'pamux people, especially for a *Shux'nam* song. You know its really made me open up a lot more to receiving, from whatever direction...it moved a lot of people. The best experience I had with that song was singing it with John Denver, David Suzuki and Long John Baldry back in Stein at the gathering for three thousand people. My guess is that Tommy Lick just loved that moment, being there in the heart of Stein...⁵⁴

There is a great deal that could be said about this experience, but it really speaks for itself. I have heard this song many times and witnessed some interesting experiences when Terry sings it. Songs provide excellent case study material as features of social capital. The one point that I would like to make relates to the source of the knowledge for this song. It came from the spirits

of the ancestors. There was even empirical confirmation, both by the elder and by an academic, this was the same song that a deceased medicine man, now himself an ancestor, was the source of. There was also confirmation about the meaning of the song, about how it is to be used and for what purpose. Spirits are one source of traditional knowledge, and although they may not be measurable in time and space, their knowledge is passed on with empirical confirmation. They even use modern technology.

An elder once told me she could talk to trees, another that his father could understand what the fish were saying. That's how he knew when and when not to fish, where or where not. It's one thing to say, "I accept that for him but not for me". However, if such manner of interaction with other species and habitat systems is possible, and we simply discount it, then we really have missed out on some of the profound lessons which TEK and its practitioners have to offer. It is also likely that we will be less able to see the value in the methods required to ascertain and transmit such knowledge. For example, prayer, songs, purification and ceremony are often integral to many TEK practices. Having participated in such activities for some years, it seems they invoke a state of mind or mode of being that elicits certain cognitive processes – ways of knowing – for being able to receive and process certain types of knowledge.⁵⁵

Such practices require years of training, experiential learning and close mentorship with recognized cultural teachers. I'm told the oral history of the 'Nlaka'pamux speaks of youth training for their adulthood in the Stein Valley. Some would spend months, even years alone, their visions still recorded on the rocks. This vision would imbue a certain spiritual power that would be with an individual all their life. An 'Nlaka'pamux elder and TEK specialist, Louis Phillips (who is no longer in this world), told me that if I wanted to become "an Indian Doctor" I would have to go up to a wind-blasted snow cave on a mountain he pointed at. After ten days spent in the cave with no food or water, I could then come down and start my practice. The different types of knowledge, abilities and ways of knowing ascribed to such individuals are notable and is the stuff of legend. The topic deserves many research projects.

The idea of science legitimizing traditional knowledge is problematic. On the one hand, it may entail a sincere effort to bolster our understanding and respect of TEK. On the other hand, it can be insulting in that it plays into the chauvinism which says that knowledge claims are not valid or "true" until verified by Western science. Yet science can only verify that which is measurable in time and space. If representatives from a certain culture, nation or community attest to their long term sustainability, why should we be incredulous to accept the legitimacy of such claims at face value? Why must we consider their statements with the measure of scepticism to question their validity? Why is something considered to occupy a hypothetical status only until it is verified according to the methods of Western science? On the other hand, does this mean that we must give up critical thought or discount scientific research? Certainly not. It means that we need to learn to approach such research with the right attitudes and appropriate methods.

There is a great deal to be gained through bridging or integrating TEKS and Western science. Rather than seeing the epistemological differences as a burden, it is the strength of their integration. Yet it involves respecting the differences rather than simply smoothing them over. We may find that our own scientific knowledge is questioned or subjected to scrutiny. Freeman is the only researcher in the TEK literature that I have come across who recognizes epistemology as a pivotal issue.⁵⁶ He provides four Inuit case studies as examples of situations where TEK conflicted with scientific claims and was later vindicated upon further critical examination. It is worthwhile to briefly review, these case studies.

The first case study provided by Freeman involves Inuit TEK regarding the survival of the Peary caribou. A management system for sustainable harvesting of caribou based on scientific research instituted a program of selective harvesting of large males to the exclusion of females and immatures. Inuit TEK specialists related that survival of the High Arctic caribou depended upon the social structure of small herds in the winter. The large males are regarded as the "elders" of the herd who had knowledge, such as habitat and migrational patterns, vital for herd survival. Loss of the elders meant loss of the caribou's culture and tradition. The Inuit, thus, maintained that the scientific management approach would result in the accelerated death of the remaining population whereas their opportunistic, non-selective style, in addition to quotas was preferable. Subsequent monitoring of the South Ellesmere Island regional population bore out Inuit claims.⁵⁷

The second case study relates to Inuit TEK of social structure and behaviour of Musk-ox. The Musk-ox had been under a 50-year-old hunting management moratorium. Scientists suggested instituting a harvesting program of "solitary and surplus" males. Inuit disagreed, saying that the idea of solitary and surplus males was incorrect. They asserted that these animals play an important role in enhancing the musk-oxen population survival and that their harvest would prove "unwise". The Inuit views which contradicted the scientific "conventional wisdom" were later corroborated by independent research.⁵⁸

The third case study entails a dispute over the assessment of bowhead whale populations in the Beaufort sea. Whereas scientific surveys had estimated a vastly depleted population of about 800 whales in 1977, local hunters estimated it to be about 7,000. They disputed the underlying assumptions of scientific research that the whales were not capable of swimming under offshore ice and could only migrate in open water. They asserted that the whales could indeed migrate under the ice and that visual census research alone was deficient. The result was a complex survey technique incorporating Inuit assumptions which then verified Inuit data. Despite annual increases in harvesting quotas over the next ten years, the assessment result was 8,000 whales in 1991.⁵⁹

The last case study involves a dispute of the aerial censuses of barren-ground caribou west of Hudson Bay. Biologists warned that the herds had decreased rapidly by 100,000 head and were in threat of extinction due to overhunting. Inuit took issue with this, claiming that

recent changes in seasonal distribution of the caribou accounted for the changes in census figures and that the census techniques were inadequate. Surveys were carried out using techniques suggested by Inuit hunters in order to resolve the conflict. The outcome was to confirm the Inuits' analysis of the situation and increase the herd estimates by approximately 100,000 caribou.⁶⁰

In each of these case studies, the alternative TEKS model with data based on its own methods, different from that of Western science, was found to be empirically accurate in cases where scientific based data was less so. This data was shown to be of significant, if not of critical consequence for management planning. There were methodological and technical insights made which potentially affected the outcome of further research. The results of a mixed model (i.e. science and TEKS) appear to have been more effective, not only for research purposes, but for planning sustainable resource management. It is noteworthy that the impetus for this was not purely scientific or even management based, but the outcome of a political process. Are we to draw the conclusion, then, that here science was wrong and TEK was right? From an empirical or scientific perspective it may appear to be so, but that would be to miss the point.

The point is not that one system is more valid than the other. My point is that neither has a monopoly on "the truth" (or methods). Both offer insights based on different philosophical assumptions about the world in which we live. It is more useful to see the two as *parallel* and complementary knowledge systems. Freeman argues that TEK includes accurate and comprehensive taxonomies (what some refer to as "folk taxonomies") which extend beyond foods and medicines. They help provide a basis for "building extensive systems of knowing about nature."⁶¹ Commenting on research literature in both the natural and social sciences on the systemic knowledge capacity of TEKS, Freeman suggests that traditional knowledge extends far beyond, "what in Western science would be called descriptive biology, beyond knowing how to identify different species of animals, or describe their feeding, reproduction or migratory behaviour."⁶² He writes:

...The knowledge possessed by such tradition-based, non-industrial societies is essentially of an 'ecological' nature, that is...it seeks to understand and explain the working of ecosystems, or at the very least biological communities, containing many interacting species of animals and often plants, and the determinative role played by certain key biological and physical parameters in influencing the behaviour of the total biological community.⁶³

Expressed another way, traditional knowledge is more than merely esoteric; it is directed toward gaining useful understanding of how ecological systems generally work, to how many of the key components of the total ecosystem interrelate, and how predictive outcomes of practical concern can best be effected. This is precisely what ecological scientists or wildlife and fisheries biologists attempt to do...⁶⁴

He poses the question of how successful are both scientists and traditional resource users in their "efforts to understand such realities?".⁶⁵ He questions somewhat the validity, more so the utility, of reductionist science in understanding the holistic complexity of ecosystems from a mechanistic perspective.

Freeman suggests there may be more practical and reasonable ways for understanding "complex systems as wholes" than by taking them apart, gathering all possible "base-line data" and re-assembling what were once integrated bits into the former system as a whole. This is impractical "in the extreme" because, even if one were to know "everything there was to know about everything of importance under all possible combinations and permutations of variability, such an immense data base would be impossible to work with in practice."⁶⁶ Moreover, it is rare that such long-term, comprehensive data sets are available.

Traditional knowledge, in contrast, focuses its understanding on the system as a whole. It "eschews reductionism, placing little emphasis on studying small parts of the ecological system in isolation from the dependent interacting biophysical milieu."⁶⁷ TEK uses a "supercomputer of extraordinary sophistication", the human brain, which can work with incomplete data sets and "fill in many of the knowledge blanks...in those cases...where knowledge is not just unknown but, in fact, may be unknowable."⁶⁸ Characteristics of this "supercomputer" are that it is: programmed to collect and systematize knowledge, intuitively filter background noise and discern chaos, and draw normative conclusions from various disparate (inter-generational) data sets based on rational criteria, not unlike much of current science.⁶⁹ Freeman maintains that the traditional knowledge approach helps make complexity more understandable.

What is the basis of this approach? According to Freeman, the answer is a different epistemological framework. "Traditional knowledge seeks to comprehend such complexity by operating from a different epistemological basis."⁷⁰ The difference between the scientific approach to knowing and that of the "tradition-based resource user" argues Freeman, is not just a matter of how extensive is the data base available to the scientists or TEK specialist. Nor is it even simply the matter of an holistic approach versus reductionism. Important as these points are, the fundamental difference is epistemological. Science is concerned with causality; TEK is more multidimensional.

...the scientist is concerned with causality, with understanding an essentially linear process of cause and effect. If causes of observed facts can be measured and understood, then predictive statements about future outcomes can be made and the natural world can be managed. But the non-Western forager lives in a world not of linear causal events but of constantly reforming multidimensional interacting cycles, where nothing is simply a cause or an effect, but all factors are influences impacting other elements of the system-as-a-whole.⁷¹

Freeman asserts that analytical approaches based on linear causality are not suited to cyclical systems. As we are learning that ecosystems are characterized by complex cycles of recirculat-

ing energy, matter and relationships, “nowhere does the Cartesian model of modern science fail so completely and utterly” he posits, “as in trying to explain the workings of natural ecosystems.”⁷² He punctuates this assertion with the insight that many physicists “as the leaders in the scientific revolution” are utilizing increasingly such words as organic, holistic, systemic and ecological, in order to describe their understanding of natural events. Rather than viewing and studying certain phenomena as being composed of isolated entities, they can be better understood by means of their influence on other phenomena, “by means of their systemic relationships, outside of which they in fact cease to be definable.”⁷³ Freeman concludes that leading-edge scientific thinking, “is coming into remarkable alignment” with the TEK-based system of understanding what is the appropriate way of comprehending nature.⁷⁴

The question Freeman poses of “does this alternative work” becomes, in the end, a question of by what criteria is “success” appraised. “How does one assess its degree of ‘rightness’ or ‘truth’?”⁷⁵ In the final analysis, therefore, this seems to be a matter of epistemology. It is in this context that Freeman offers his case studies as an opportunity to “assess the efficacy of the TEK approach.”⁷⁶ His examples of TEK are certainly compelling. He draws our attention, not only to the utility of TEK, but also to its distinctive epistemological character and the significance of the TEK approach as an alternative epistemological and management model. This is underscored by his elucidation of the inadequacies of modern science to understand and manage the complexity and variability of ecosystems. While his style is rather polemical *vis-à-vis* Western science, the point that the TEK approach has insights into the nature of our world which science may be slower or more challenged to illuminate is well taken. Moreover, the discussion has served to highlight, for my purposes, the epistemological and methodological considerations of how these insights are obtained, and how they are shared or transmitted.

This brings me back to the broader issue of why I have chosen to refer to TEK as being part of a larger knowledge system—a TEKS. Perhaps, therefore, in the final analysis, the matter is not just one of epistemology, rather, epistemology as part of a larger system of meaning. The question of assessing the efficacy of TEK, of its degree of “rightness” or “truth” is an epistemological, and a methodological question, but not only that. It is a matter involving the values and other beliefs out of which meaning is constructed, in which goals are established, and from which efficacy is determined. It is also, thus, a political question: who is assessing, by what model, by which methods and to what ends?

In many ways, what these issues of epistemology and methods boil down to is attitude. That attitude is best stated in a word: respect, a part of the model. This is summed up by one of the scientists who sat on the *Scientific Panel for Sustainable Forest Practices in Clayoquot Sound*, ecologist Ken Lertzman. While he agreed that science may play a role in helping people to recognize TEK, for him, the issue of science legitimizing traditional knowledge is not part of the dialogue between scientists, TEK specialists and the worldviews they follow. “Both are equally legitimate and complementary...the issue of science legitimizing TEK doesn’t enter into it.”⁷⁷

Viewed respectfully, the validity of different ways of knowing is a non-issue. Entering into a dialogue on sustainability between Western science and TEKS is, for many people, about blending the best of both cultures and their systems of knowledge for the betterment of all.

4.5 Being and Knowing in a Participatory Universe: Spiritual Ontologies of Traditional Knowledge

If some people are challenged by the idea of different types of knowledge and ways of knowing as part of the discourse on TEK, then the question of different ways or models of being may be even more troublesome. Yet the ontological character of traditional knowledge is in one of its most salient features. What I am talking about here is a model of being which, although perhaps different from that of the dominant society, is vital to TEK and TEKS as a whole.

One problem, to which I have already alluded and will discuss further below, relates to the difficulty of generalizing between TEKS. TEKS are necessarily specific to people and place. It is critical to be respectful of this. There also seem to be common features. I have discussed, for example, what appears from the modernist Western point of view to be an epistemological tension between the spiritual and empirical aspects of TEK. Yet, when viewed from the TEKS perspective, there is no problem; all these various aspects of knowledge are fundamental to an epistemology of the sacred. The fount of this sacredness is based on beliefs which, amongst other things, deal in ontological propositions. It is to these which I now turn.

This is an area of TEKS most clearly germane to the spirituality of TEK. In as much as I am talking about people's sacred beliefs and knowings—about cultural teachings—it is a sensitive issue. I need to emphasize the complexity of the topic and the difficulty of writing about it. I am referring not only to the problem of writing about things oral and about the sacred teachings of another culture. The nature of spirituality itself is complex and often illusive, especially to the academic mind set. Aspects of spirituality may be impossible to write about, others may be better left unsaid. Some things can only be experienced.

It may also rile the more conservative reader with little tolerance for spirituality in an academic work whose focus is outside of religious studies; or the trained philosopher who may find my simple discussion of such deep concepts as “being” and “knowing” to be banal or understudied. Yet it is far too important merely to leave out of the discussion. These may be some of the most important places of learning. For my purposes, I would like to draw some basic connections between the epistemological problems with which I am dealing and questions of ontology; between *knowing* and *being*. This is because the two are quite linked, and indeed, can not fully be separated. I think it can be demonstrated that key epistemological aspects of TEKS are founded upon certain ontological ideas, even theory, which make TEK possible. The failure to grasp or recognize this point has led to the epistemological tension referred to above

wherein the spiritual and holistic nature of TEK is recognized while accounting for traditional knowledge through empirical observation and deductive reason.

Every First Nations community in which I have worked, visited or lived attests to the belief in a Supreme Being or Creator. This is a foundation or central component of traditional worldviews. While the influences of Western theology are present, I have experienced a similar character of belief even with my First Nations friends who consider themselves to be Christian. I have also heard as many names for this as there are languages. Often, there may be more than one or several names, yet traditional cultures in which I have had the opportunity to live and learn all have some concept of the Creator. (I am personally attracted to the idea of the Great Mystery, or Great Spirit.)⁷⁸ I will offer my understanding of this as best I can.

The Creator is the source of all. All things are part of this Great Being. Spirit is manifest in the material world and is part of, yet not entirely dependent upon it. Everything is infused with the spirit of this being. It might be more accurate to say “everyone”, as all things have spirit or are *beingness*, all are beings: plants, rocks, clouds, creatures, waters, winds, fire, land forms, all are related. In a sense, are all people.⁷⁹ The very earth itself is alive: Mother Earth. We are part of this being, part of a living system—the Earth—which is part of a living Universe. This is a “sacred ecology”.⁸⁰ It also describes a cosmology: we are part of a living Universe, created by a Supreme Being—the Great Mystery or Great Spirit. We *participate* with a myriad of beings within this larger living world. The Creator’s ways are revealed through our relationship and participation with other beings in this organic Universe.

Theologically, this has several notable features. One is that Spirit, although having certain transcendental capacities, is very much founded upon a teaching of *immanence*. Immanence is usually referred in contradistinction to transcendence. I use it here because it relates to a theology or cosmology which speaks of the presence of the Creator in all things and bespeaks the spiritual reality of a “more than human world”. (to use Abram’s term)⁸¹ It also describes a perspective which could be called *Panentheism*. Panentheism has been defined as, “the doctrine that all things and beings are modes, attributes or appearances of one single reality or being.”⁸² The literal translation is “everything God”⁸³. It may be even more accurate to use the term *Panentheism*, which means, “everything in God”⁸⁴ and combine both theism and pantheism. This is the idea that the Being of God infuses and includes the entire universe but is not limited to, entirely identified or described by it.

Many peoples around the world have espoused such philosophy, including Western cultures.⁸⁵ Notwithstanding strong traditions or renderings of pantheism both from within and outside of Western culture, many people associate such ideas with “pagan” beliefs, as indicative of an undeveloped, primitive spirituality or pre-rational/scientific worldview. This is especially the case with the concept of *animism*. That is because such ideas are so foreign and contrary to the mind-set of modernity which has secularized the concept of being to the point

that it has little or no place for the idea of spirit, soul, or even the concept of being. We have rationalized our ontology to the point that there almost is none. Thus, the idea of spirits seems preposterous.

The term *animism* was coined by the prominent Victorian anthropologist Sir Edward Tylor in his influential work of 1877, *Primitive Culture*. His ideas were taken up, in part, but with some differing views, by a well known and perhaps more influential later contemporary, Sir James Frazer. What emerges from their thought is a developmental or evolutionary scheme which posits the twilight of human spirituality in animism: a "belief in spiritual beings" or souls which inhabit natural phenomena. Tylor considered this a "minimum definition" of religion.⁸⁶ He thought such ideas instilled fear, leading to a belief in deity, and eventually, morality and ethics. According to this "cultural Darwinism", cultures, including Western society, develop from animism, to polytheism to monotheism⁸⁷

One criticism of this type of thinking is that it, "fails to recognize the highly complex nature of many of these religions and assumes that non-literate peoples lack the intellectual ability to develop complex religions and philosophy."⁸⁸ Most academics and students of religion or anthropology, even those who testify to the "simple appositeness" of the concept of animism agree that, "the developmental implications of Tylor's account are now not generally considered to be valid."⁸⁹ Why then refer to Tylor or use the term animism at all? For one thing, they tell us much about our own culture and the social construction of Indigenous people and beliefs by the Western mainstream.

I reject the language and concepts of "primitive" and "civilized"; the model is racist and Eurocentric. It is also important to bracket the ideas of those such as Tyler (or Lévy-Bruhl whom I will discuss below) and others within their historical context of the Victorian era. This was a time of climax, leading up eventually to the First World War when the full blown implementation of modernity was being realized. It was also the end of an era of colonialism where a great many collisions between cultures had already and were still taking place around the world. People from Western society were beginning to realize the opportunities and impacts of modernity. For most this was regarded to be a great achievement; for others, it precipitated sentimental longings which gave rise to Romanticism. Many people of the newly industrialized order came to see Indigenous peoples as an icon for what was put behind as part of the transition to the civilized and rational world of modernity; or, as reminder of what was lost, giving rise to the peculiar idea of the "noble savage".

Clearly, the evolutionary chauvinism of Tylor's (and Frazer's) scheme is to be rejected outright. In their agenda to scientifically and theologically discredit much older traditions, they are really expressing the chauvinism of their own culture, indicative of the Victorian perspective. Yet, these ideas have shaped our current perceptions and affected historical relationships with Indigenous peoples. What is most interesting and instructive, is the use of science as the tool, measure and hallmark against which to compare and discredit the beliefs and cultures of

those termed “primitive” or “savage”. In *Magic, Science, Religion and the Scope of Rationality*, the cultural anthropologist S.J. Tambiah writes:

The common ground that Tylor and Frazer on the one side and Malinkowski on the other shared was not only the use of the categories of magic, science and religion to organize their materials, but also the appeal to the needs and mental aptitudes of the individual actor, i.e. to individual psychology and biology as providing the ultimate explanation of human thought and action.

Tambiah tells us that Tylor prefigured Kuhn’s description of how “normal science” takes place; Tylor’s notion of positive science is a simplified version of Popper’s idealization of science as a search for “decisive falsification”; through certain shifts in focus, Tylor enabled advances in interpretations suggested by such current ideas as “self-fulfilling prophecy”, “placebo-effect”, “negotiated cures”, “psychodrama and sociodrama”, “psychosomatic efficacy” and “secondary rationalizations.”⁹⁰

Tambiah writes that there are many valid criticisms made against Tylor’s evolutionary hierarchies. Speaking, academically, for Tambiah, “the most damning one” is that Tylor never postulated any mechanisms or connections by how people evolve from one cultural “species” to another. The scheme is thus “illusory... without hinges to support the edifice.” He concludes that Tylor’s scheme (unlike Darwin’s) “produced no specific processes or mechanisms by which cultural evolution took place, so that anthropologists are ill advised to look for a dynamic in either ‘technological determinism’ or ‘Cultural Darwinism’.”⁹¹ This is an important point.

For me, an even greater problem is the European chauvinism which judges other cultural systems, and does so on the basis of categories which posit Western modernity as the apogee and inevitable end point of human development. It is also a telling insight on a perception, not just of other peoples, but of Western culture’s own origins. What we consider to be animism and pantheism, or even pantheism, was prevalent in the Hermetic revival which prefigured the advent of science. These beliefs were often practised by key scientific founders as alchemy.⁹² Magic and science are played off one another to this day.

Tylor constructed “natural” or “primitive religion”—what he called magic—as a “pseudo-science”. It was a “personalized causation theory” as opposed to scientific concepts of “impersonal causation”. In “educated” Western society, the transition of causal replacement had taken place as “the alteration in natural science, assigning new causes for the operation of nature and the events of life. The theory of the immediate action of spirits has here, as so widely elsewhere, given place to ideas of force and law.”⁹³ The pseudo-science of magic is regarded as a kind of inferior form of science. ⁹⁴ It is inferior because it is seen as based on incorrect assumptions which therefore invalidates its practices. The question of whether or not such practices are ends in themselves, or a means to other ends does not enter the discussion.⁹⁵

Interestingly, and Tambiah points this out, a “curious lacuna” in Tylor’s thought (shared also by Frazer), is the reluctance to broach the issue of “high religion” (i.e. Christianity) in relationship to the “truth” of science. “He fails to explain why higher religion with its ethical redistributive monotheism should persist in the face of science, or what moral-causal space it occupies such that it does not collide with science.”⁹⁶ If positive science is the source of truth, what are the implications or relationship of science with Christianity for contemporary Western society? Or of any spirituality, for that matter? The question still haunts the mind of modernity.

Be that as it may, the distinction between magic (i.e. primitive religion and/or animism) and science is clear. Aside from the fact that Western monotheism is somehow exempted, what is noteworthy is the epistemological invalidation by science of what we can call an animistic ontology of magic. Yet, Tambiah does not leave the discussion here. He explores Frazer’s extrapolations of Tylor and presents a critique by Wittgenstein. Tambiah writes it is “remarkably felicitous” for scholars of magic, science and religion that Wittgenstein, “arguably the greatest analytical philosopher of the twentieth century” who first championed logical positivism only to later repudiate much of it, “should have dipped into Frazer, the great Victorian story teller of man’s remote beginnings in dark superstition and his passage to civilized thought and action.”⁹⁷ On the one hand, Wittgenstein had an “immense irritation with, and scorn for...the rubric of false ‘sympathetic and contagious magic’”; on the other, he was “stimulated by the ritual and religious phenomena themselves” described by Frazer to the extent that he searched a different meaning for them.⁹⁸

What I find most important here, are two conclusions of Wittgenstein which Tambiah draws out. The first is that, whereas Frazer and the like draw our attention, with “relentless” condescension, to what is seen as the superstition, fear and errors of reasoning amongst “primitives” *vis-à-vis* the civilized and scientific world, Wittgenstein “takes the opposite course”. Wittgenstein attempts to demonstrate the similarity of so called “civilized” people (both in human endowment and in our linguistic and cultural constructions) with those we have termed “savages”.⁹⁹ The second point flows from this:

In proposing this unity of mankind, Wittgenstein reveals a truth that some of our contemporary philosophers have been trying to articulate: that translation of another culture’s conceptions into our linguistic categories necessarily implies a “shared space,” a “bridgehead of understanding” between the two.¹⁰⁰

At the same time, Tambiah points out that Wittgenstein’s famous notions of “forms of life” and “language games” also argue for the particularity and contextual nature of historically formed culture complexes and linguistic genres. These particularities of life forms and language games, “warn against the committing of ‘category mistakes’ by equating and comparing that which is not comparable, and against the too facile assimilation of the conceptions of other peoples’ conceptions into our own contemporary Western ones.”¹⁰¹ These two themes, and their tension, which run through Wittgenstein’s work become then a dialectic of meaningful exploration.

Wittgenstein's position here is helpful and supportive to my efforts. I regard my work of planning between cultural paradigms to be an example of an effort to build a "bridgehead of understanding". I have argued all along for the respect of particularity based on a sensitivity to cultural, ecological and historical contexts, as well as for an interest in shared human pursuits (and categories) of meaning, social organization and ecological exigency. There is yet another thinker, previous to Wittgenstein, Lévy-Bruhl, who shared a similar perspective on universality and particularity and who developed the idea of *participation*.

4.5.1 Participation and Causality: Two Models for the Multiple Orderings of Reality

Lévy-Bruhl accepted the idea of a "psychic unity of mankind". However, this did not jeopardize for him his thesis that "the collective representations of different societies could be built upon cultural premises very different from the modern scientific and mathematico-logical form of thought and knowledge."¹⁰² Lévy-Bruhl also disagreed with the offensive idea that Native peoples or their ways of thinking were irrational and based on misapplied logic, but had their own logic, coherence, rationality and organizational characteristics. These were based on what he termed, "the law of participation".¹⁰³

This participatory way of knowing and living is arguably founded upon an ontological insight. Tambiah writes that, "one of the most intriguing exegeses" Lévy-Bruhl gave dealt with the relation between personality and society.¹⁰⁴ Drawing on the idea of *mana* —a spiritual life force which is present in all things—Lévy-Bruhl finds what can be regarded as an ontological connection between the individual, the environment (and other non-humans) and the society as a whole including the dead, "who continue to live somewhere in the neighbourhood and take an active part in social life": all are part of a larger "inexplicable mystical identity."¹⁰⁵ This is the basis for a participatory way of life and knowing. It is to be understood, not merely as a metaphorical representation, but as an actual physical and mystical union.¹⁰⁶

Thus, for Lévy-Bruhl, there are two possible modes of human consciousness: one which is mathematico-logical, or *causal*, and the other which is *participatory*. Founded on the insight that reality is not given but constructed, Tambiah explores these possibilities under the rubric of Schutz's phenomenological approach to the "multiple orderings of reality" and "provinces of meaning."¹⁰⁷ "That which is compatible with one province of meaning may be incompatible with another...the passing from one finite province to another can only be performed by a leap and not by a formula of transition or transformation."¹⁰⁸ Therefore, Tambiah concludes that "it is possible to separate analytically at least two orientations to our cosmos, two orderings of reality that man and woman everywhere are capable of experiencing."¹⁰⁹ Verily, they are "causation" and "participation".

Causality is what I have described earlier as the dominant epistemological model of reality. Tambiah describes causality as "quintessentially represented by the categories, rules and methodology of positive science and discursive mathematico-logical reason. The scientific fo-

cus involves a particular kind of distancing, affective neutrality and abstraction to events in the world."¹¹⁰ In as much as we are generally familiar with this model, he puts significantly more effort into describing participation as a mode of relating to and constructing reality.¹¹¹ Amongst other theorists, such as Piaget, Foucault and Wittgenstein, Tambiah draws on the extensive applications of Lévy-Bruhl's work by Leenhardt with Melanesian peoples, who describes: ¹¹²

...a dynamic totalistic weaving of nature, society, myth and technology...he saw ...the village as the centre of a surrounding mythic landscape, where mountains, rocks, trees and animals were seen as familiar, and as endowed with the power of its ancestor...Such natural entities were regarded as discrete presences in which the living were implicated. The landscape was a mediator of the invisible and the visible worlds, an area of "lived myth," and the life of each group was guarded by its totems and ancestors imminent in the landscape.¹¹³

The context of this mythical landscape is clearly an ecological one. Tambiah refers to Leenhardt's notion of "participation in a mythic landscape" as a "sacred geography". He writes that the depiction of participation in a sacred geography as a reality orientation is born out by various ethnographies in other areas including current popular culture.¹¹⁴ Looking at Tambiah's analysis, participation can be depicted as occurring when individuals, groups, and beings other than human, including animals, trees, rocks, land forms, spirits, ancestors and other natural phenomena are in a "relation of contiguity" wherein that relation is translated into one of "existential immediacy", contact and shared affinity.¹¹⁵

Tambiah compares and contrasts the two models—causality and participation—as two orientations to the world. He offers the important insight that, "the notion of causality is much out of place and that of participation is very much in place".¹¹⁶ This concurs with my ongoing discussion of the modernist paradigm and TEKS.¹¹⁷ It illustrates the dominant epistemological perspective of the separation of knower and known versus an alternative of connectivity and participation. It underscores the methodological difference between the scientific approach of extracting knowledge from its various contexts versus the oral methods of seeking to establish the credibility of knowledge through its proper placement within a larger cultural context. What Tambiah refers to as a sacred geography is similar to what I refer to as a sacred ecology. The point that a participatory mode of knowing or ordering reality is grounded in the context of place as part of a sacred ecology, is particularly significant for the student of sustainability and those interested in TEKS. *The ecological context becomes the ground of both being and knowing, of identity and understanding.*

Again, the impetus for much of this is a matter of ontology. One of Tambiah's sources, Diana Eck, refers to the Hindu mode of participating in a sacred geography as "a sacramental natural ontology".¹¹⁸ Though she seems to be the only one who uses the term, what these people are discussing on a fundamental level are issues of ontology. It deals with the, "relation between self and person, and the phenomena of the mythic landscape".¹¹⁹ This model/theory of being—of ontology—seems to be the active element of a larger cosmology: "ultimately, partici-

pation enacted the relation between man (sic) and the immanent or transcendent."¹²⁰ Being or spirit seems a connective tissue that is present in all various beings which participate in a larger spiritual and organic cosmology.

These ontological and cosmological insights apply to our earlier discussion of a pantheistic or panentheistic outlook. The idea of animism is also pertinent. It does not apply in the sense that Tyler used it to describe a stage of human spiritual or philosophical development. Rather, it is pertinent in describing the individualized nature of a being in a larger cosmology wherein the Creator is the ground of all being. Animism is therefore not just individuated; it is constructed as part of a greater whole. This perspective on animism recognizes that the concept is not understood in isolation but as part of a larger meaning-producing system which includes social mediations and is geographically situated. Thus, the epistemological implications of this participatory model are instilled by a sense of intimacy and connectivity between knower and known. It is relationship oriented. This structures thinking, and allows for or encourages ways of knowing which, although they may not make sense from within the perspective of a causal model, are based nevertheless on a reasoning of their own internal consistency and credibility.

In *Lighting the Seventh Fire*, David Peat refers to traditional knowledge as "coming to knowing." He speaks of "knowledge as process", rather than as an object. Knowledge is itself a spirit. Peat claims that this work is not the result of an "objective academic study", nor is it "about" Native people and Indigenous knowledge so much as it is "an exploration of *two ways of knowing*, two different worlds of consciousness."¹²¹ It is "a discovery of the ways that people can begin to have dialogues with each other, enter into relationships, and offer each other respect and courtesy."¹²² Again, he does not use the term "epistemology" or explicitly mention the concept of "ontology", but he writes them.

In the chapter on *Coming-to-Knowing*, Peat makes the connection between epistemology and ontology in an insightful section called, "The Being of Knowing". He argues that in the Western world, knowledge is a kind of abstraction. It has no independent existence. In Western society, the existence of knowledge is manifest in its physical presence in a book (or some other media, e.g. video, radio, other recordings, Email, etc.), electrical signals in the human brain, or encoded as muscular skills in the human body. His experience of traditional knowledge, on the other hand, is profoundly different. "It is a living thing that has existence independent of human beings. A person comes to knowing by entering into a relationship with the living spirit of that knowledge."¹²³ There is, in a sense, an ontological status accorded, not only to the knower, but to that which is known, in this case, to knowledge itself. It is a kind of multi-subjectivity. Rather than being separate from what we know, we are connected, in relationship or discourse with it.

Peat also provides the example of traditional songs. What happens, for example, when traditional knowledge or skills are "lost"? There is a real and pressing concern that languages and songs are being lost, that they are not being passed on or transmitted generationally as

much as they have been. If these things, for example songs, do have their own spirit, energy, power or beingness—if they are alive—how may this affect the way we understand or experience knowledge? Peat relates the story of a man who went to a ceremony and after could not get a song out of his head. He told one of the elders who asked him to sing the song. After hearing the song, the elder replied, “That was Joe’s song. He died in 1910. I guess it got kind of lonely waiting around with no one to sing it.”¹²⁴ Does this sound familiar?

One acquaintance of mine is a lawyer with extensive TEK experience amongst Ojibway people. His work documents, in particular, the traditional management of *manomin* (wild rice) and fish (extractive polyculture) in several communities.¹²⁵ He told me how he had expressed his concerns when asking an elder and local TEK specialist about the loss of traditional knowledge, skills and management practices. The elder told him not to worry, the knowledge came from the bush; so long as the bush thrives, people will be able to contact the knowledge.

Peat’s insight about the “Spirit of Knowledge” helps give an understanding of ontology, animism and their epistemological implications. The “theory of spirits” is not a theory, it is not a hypothesis to be tested. It is a metaphor of participation, and more. It speaks about the ontological status, the quality of being shared between knower and known in a participatory world. This shared beingness is therefore a foundation for a participatory epistemology which is based upon relationship and connectivity. Because all things come from the Creator, this relationship is sacred. Thus, it is an *epistemology of the sacred*. If there is a spirit of knowledge, I wonder which spirit helps us organize knowledge and build bridges between knowledge systems or orderings of reality. Perhaps it is a “Spirit of Understanding”.

The above discussion holds important insights for the study of TEKS and the application of TEK. It is very difficult to appreciate, understand and value traditional knowledge if we don’t grasp the larger contexts in which such knowledge operates. In this case, I am looking at the cultural capital of an ontological model which is not part of the dominant, mainstream perspective. Indeed, it is one which the mainstream has invalidated for itself and ruled out or given only token recognition. If planning is knowledge into action, then there are important implications here for planning between cultural paradigms.

For sustainability, it seems there is something we can learn here from a perspective on knowledge and being that is grounded in place and founded upon a sense of intimacy, of the connectedness between people, ecological systems and their components as subsets of a larger, participatory world. This involves how one knows, what or who one knows, and also how knowledge is passed on. Different types of knowledge require different media for learning and transmission and one obvious factor is language. I would like to briefly consider the subject of language and its importance for TEKS.

4.6 Hearing the Trees: Language, Perception and TEKS

One friend relates the story of a healer in the Amazon who baffled a famous ethnobotanist by remarking that the way he knew how to combine and prepare parts of certain plants from different habitats into complex remedies for specific physical ailments was because he could “hear the notes” which they played.¹²⁶ Epistemologically speaking, this does not fit the model of Western reality.

Some Western and First Nations authors have attempted to help build philosophical bridges between the two models of science and TEK, between Western culture and TEKS. Abram’s work provides one of the more lucid and comprehensive examples.¹²⁷ Drawing from linguistics, phenomenology and TEKS wisdom from around the world, he explores questions of language, perception, and the process of how Western civilization came to estrange itself from a living reality. He also offers insights on a realignment with this reality. One central feature of his analysis is the prominent role of language in the structuring of knowledge. TEK is contained in languages which have literally evolved from the landscape. There seems to be a relationship between the structure of language and ecosystems where the landscape itself is reproduced in the structure of language.

While some linguists would find such ideas to be rather contentious, even the more conservative specialists in the field have recognized the importance of language for TEK (or Western science and materialism for that matter; language is a model of perceived reality and vice versa). TEK is contained and passed through language. This may include such features as complex grammatical constructions laden with meanings and information such as practical taxonomies of flora and fauna, sounds and calls of species, important material for oral histories and geography, even proper treatment and viable categories for sustainable resource use.¹²⁸ Language influences and is influenced by perception. There are meanings in one language which do not exist in others. Some may have more to do with the “data” of TEKS; yet some may have more to do with its ontological or cosmological features.¹²⁹

Abram makes the point that the loss of oral culture and the codification of language into the subject-object linguistic structure has had a significant impact on Western culture and the Western mind.¹³⁰ It has a direct influence on how we understand and evaluate knowledge, and our thought processes in general. Without going too far with the argument, the main point is that the structuring of language influences the structuring of knowledge and perception. There may be certain types of knowledge, ways of thinking and communicating in TEKS, which are difficult for us to grasp, partially because of the loss of oral traditions, and partially due to the current structure of languages in Western culture.

Linguist Benjamin Lee Worf has had a significant influence on the academic study of First Nations language and the field of linguistics as a whole.¹³¹ One of his well known treatises is on the Hopi language which does not have nouns in the way that Indo-European languages

do. The result is a relational perspective on reality as opposed to the subject-object style of Western the approach. In *Language Thought and Reality*, Worf finds it “gratuitous” to assume that a traditional Hopi speaker would have “the same notions, often supposed to be intuitions, of time and space that we have and that are generally assumed to be universal.”¹³² Moreover, he suggests that features of the Hopi language actually make it more useful for certain types of thinking, including some scientific disciplines. “Does the Hopi language show here a higher plane of thinking, a more relational analysis of situations, than our vaunted English? Of course it does. In this field and in various others, English compared to Hopi is like a bludgeon compared to a rapier.”¹³³

The point is not which is “superior”, English or Hopi, science or TEKS. Both systems of knowledge have valid contributions; they process knowledge differently and thus have different strengths. The point is that epistemological and cultural blind spots in the dominant model may prevent us from being able to properly understand, value and learn from TEKS. Another point is the importance of language itself. The languages in TEKS transmit, contain and map certain types of TEK. They contribute to the structuring of “reality” and the methods for knowing and understanding. Oral culture and methods impact on communication styles, on the learning, sharing and transmission of knowledge relevant, not only to TEKS, but to TEK as an academic paradigm.

While working in the Stein Rediscovery Program, in the summer of 1989, we came upon Tea Spoon Creek, a dense grove of old cedars with a small, swift glacial fed creek gurgling its way through a spongy carpet of roots, mosses and forest litter. An elder, and regionally famous Stla’atl’imx specialist in plant and bush lore, brought us to a large stand of old cedars with their bark partially peeled off. The trees had healed their wounds and eventually came to be a well known stand of ‘CMT’s’: *culturally modified trees*. We were taught how prayers would be offered and songs sung as part of the traditional technological practice. Although the example is not ‘Nlaka’pamux or Stla’atl’imx, the prayer might be similar to the one which follows:

Look at me friend, I come to ask for your garment. You always take pity on us, for there is nothing for which you cannot be used because it is your way that there is nothing for which we cannot use you; for you are really willing to give us your garments.

I come to beg you for this, Long Life Maker, Healing Woman, Supernatural One! For I am going to make a basket for berries out of you. I pray friend, to tell your friends about what I ask you. Take care friend. Keep sickness away from me Healing Woman, Long Life Maker. ¹³⁴

The bark is stripped in the spring while the sap is still running. After being peeled, dried and worked, it can be used for baskets, cooking vessels, rope, blankets, hats and other practical and beautiful things.

Nancy Turner is a well-known British Colombian ethnobotanist who served on the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound. She commented on the

ontological perspective of TEKS. As she puts it, the plants “are not just beings; they are relatives.”¹³⁵ This gives some insight into the practical intimacy of TEKS. The ontological belief that plants are people, family members, is a good example of how empirical observation, deductive reasoning and spirituality can work together towards sustainable forest practices.

Later on down the Stein trail, we came across the site of a trapper’s cabin, a marked trail stop. One of the youth participants in our group pointed out a smaller cedar tree with its bark peeled off all the way around; the tree had died. It was explained to us that when the *Shema’* (a.k.a. – white man) miners, trappers and other settlers had moved in, they observed how local ‘Nlaka’pamux people gathered the cedar bark for their use. These *shema’*, however, did not receive or understand the full set of proper instructions and teachings on this technology. They got the utility, but not the spirit. If they had listened to the tree, she might have told them.

As I have already mentioned, it is important to learn basic protocols in order to work respectfully and effectively with TEKS in the field. One important aspect of this involves some familiarity with the ownership of traditional knowledge. Although TEK is not owned as private property is in the Western understanding, there are very strict rules of protocol about ownership which are culturally based. In order to complete my sketch of TEKS, therefore, I must address the topic of cultural ownership.

4.7 Cultural Ownership of TEK: Paradigms of Property and Epistemology

We are looking at the dominant cultural paradigm and TEKS as being distinct, parallel knowledge systems. Aside from gaining better insight on the topic, my hope is to contribute to their mutual understanding and practical collaboration. It is important to note, therefore, that the historical relationship of these two cultural-epistemological paradigms has generally not been one of collaboration.

The historical legacy of colonialism in Canada has typically been one of disregard for First Nations peoples, their worldviews and social institutions.¹³⁶ This was an aspect of British and later Canadian Indian policy whose chief goal was the seizure of traditional territories, the restriction of First Nations access to traditional resources, and the removal of other perceived impediments to the needs of industrial development and internal colonial expansion. This has resulted in ongoing blind spots towards First Nations peoples and cultures by the mainstream society. There are also persistent socioeconomic dimensions to this relationship.

While the focus of my work is on knowledge systems as models of reality and the production of meaning (cultural capital), I stress that these are part of larger cultural systems including social institutions and relations (social capital). Amongst other things, these features mediate the appropriation, use and transformation of biophysical capital (material flows). A feature of this economic aspect deals in models of property which regulate the mediation of biophysical and other material and cultural capital. The relationship of First Nations and Cana-

dian society is, thus, not just a clash of epistemological models, it is constituted by a conflict of paradigms of property.

There is a connection that can be drawn between epistemological models and property models. The production of knowledge in Western culture is part of a larger social project which is institutionalized through private property. Although it would be included, I'm speaking not just in terms of scientific knowledge, but of knowledge in various forms. The commodification of knowledge is an aspect of private property. It is an arguable feature, if not a consequence, of the dominant epistemological model.¹³⁷ Property and epistemology seem to be congruent.

The development of capitalism and modern science are historically connected. The idea of knowledge as private property is facilitated by the philosophical separation of 'knower' and 'known' into subject and object. The social relations and productive forces of private property can be seen as linked to the epistemological assumptions and social structures which govern the production and transmission of knowledge. The objectification of knowledge and its commodification are part of a philosophical and economic process of reductionism or extraction which seeks the removal of both knower and known from their embeddedness in social relations, material flows and structures of cultural belief. This is markedly different from the models of cultural ownership associated with TEKS which tend to be more participatory and located.

Whereas, in modern Western society, knowledge is embedded, amongst other things, in institutions of private property and governed by the conventions of science, TEK is governed by cultural ownership and strict rules of oral cultural protocol. These rules typically require rigorous learning of oral histories, spiritual teachings and moral philosophy, geography, extensive family lineages and cultural practices. They all point toward and ensure for the *locatedness* of knowledge and meaning founded upon the connectedness of the knower and the known. In contrast to the Western model, here knowledge has its greatest value as part of a larger system including geographical (species, habitat), social (relational/institutional), and philosophical (epistemological, cosmological, ontological) components as well as the methods of knowledge transmission.

I have therefore argued that to reduce TEK merely to "data" renders it not only less effective, but that it is epistemologically and methodologically incorrect. Yet, the dislocation of TEK from its source of origin also opens the possibility of the commodification and, thus, cultural misappropriation of TEK. This contributes to the persistence of colonial relations and exacerbates continuing social impacts. Planners, researchers, educators, artists and technicians must learn to become literate with oral cultural methods if they are to be effective and respectful contributors to the growing discourse between TEKS and the cultural mainstream. If not, they will continue to reproduce the conceptual and economic terrains of the colonialism which gives rise to cultural repression and misappropriation.

What do I mean by cultural misappropriation? By *cultural misappropriation*, I mean the taking of something from another culture without obtaining proper permission, and without giving recognition to the member(s) of that group who are recognized cultural custodian(s). It is a statement on methodology as much as it is one of respect. It is about following, or not following, the appropriate methods which are the recognized vehicle for the transmission of cultural property, whether material or non-material. For oral cultural methods, this necessitates some lived experience with the members of that cultural group, whether in a local community or of a more diffused capacity.

Any meaningful and effective bridge between TEKS and Western science will require an approach to knowledge which honours the substantive and methodological mandates of both models. This would entail a 'bi-cultural' approach which can, amongst other things, satisfy the procedural needs of science based research as well as the stipulations of cultural ownership. This has implications for resource management, planning practices, research and education if TEK is to be a living component. Some of these implications are addressed in the professional document *A Spirit of Understanding* which is my case application. I would now like to move to my comparative analysis of Western science and TEKS as parallel knowledge systems for the cultural production of meaning.

4.8 Science and TEKS: Two Systems for the Production of Meaning

When speaking of Western science and TEKS, I am using them as icons for speaking to the larger discourse between cultures. The focus of this discourse is the structures within which meaning is produced. There are several levels of discussion and analysis. One is of scientific knowledge and traditional knowledge. Another is the paradigms in which such knowledge is produced: TEKS and the dominant scientific/cultural paradigm. These are part of the larger discourse between Western modernity and Indigenous peoples.

Enough basic material has now been covered in the previous parts of this dissertation to map some key features in the philosophical parameters of these two worldviews as 'meaning-producing systems' (or, as Tambiah would say, as orderings of reality). Based on the above discussion, and using the ECO-System criteria of epistemology, cosmology and ontology developed in the prior chapters, a comparative analysis of TEKS and the dominant cultural paradigm is depicted visually below in Figure 8.

I am not trying to infer that one system is "better" or preferable to another. Both have strengths and are desirable for different reasons. Mapping them this way helps to understand their internal continuity, differences, and interface. I would also like to offer a note of caution. There is significant variation within these broad cultural and philosophical parameters. While

Figure 8

An ECO Analysis of The Dominant Western Paradigm and TEKS

Traditional Western Science	Traditional Ecological Knowledge Systems
<p>EPISTEMOLOGY <i>Causal-Reductionist-Empiricism</i></p> <ul style="list-style-type: none"> • Subject-object separation as a basis of knowing • Objectivity in the "value-free" rigour of the scientific method: reductionism, measurement, falsification, replication 	<p><i>Holistic/Participatory</i></p> <ul style="list-style-type: none"> • Connection/participation of "knower" and "known" • Empirical observation and deduction, intuitive, body-based and other spiritual modalities • Epistemology of the Sacred
<p>COMSOLOGY <i>Mechanistic/Materialist</i></p> <p>The Universe is formed of inert matter, governed by independent, mathematically verifiable principles</p>	<p><i>Spiritual/Organic</i></p> <p>A living Universe created by a Supreme Being whose ways are revealed through participation with all forms of life</p>
<p>ONTOLOGY <i>Truncated/Anthropocentric</i></p> <ul style="list-style-type: none"> • Mind and matter are separate • Being is exhibited by cognitive functions of the brain, the apex of which is human reason 	<p><i>Animistic/Wholeness</i></p> <ul style="list-style-type: none"> • All things are part of the Creator, all life is imbued with Spirit • The Earth is alive • Humans are one kind of being amongst others in the Great Being

these generalized terms of reference are analytically useful, it is important to be cautious of overgeneralizing.¹³⁸ There is great cultural diversity amongst First Nations cultures and variation between TEKS and their communities. While there is commonality, speaking in such generalities can be stereotypical and a disservice. It can also lead to sloppy and misinformed thinking. A similar point, perhaps to a lesser degree, should be made in regard to the so-called "dominant cultural paradigm" and to Western science. Western culture is not monolithic, nor is science. Not only are there different schools of thought, there are new ones in development.

Indeed, the development of new paradigms within the Western sciences can be seen as part of larger philosophical and sociocultural developments within Western society. These new perspectives are beginning to translate into popular culture, to become part of the “mainstream”. This is an important focus of discussion. As a part of this discussion in the earlier part of my dissertation, allusions were made to participatory “pre-scientific” worldviews and teachings in Western culture which may have relevance to the larger social and philosophical discussion of sustainability. It would be worthwhile, in another research project, to explore a comparative analysis of insights gained from research with TEKS and alternative or rising paradigms within Western science, such as ecosystems management for example. Similar comparative analysis has already been the focus of efforts to examine the dominant cultural paradigm and current alternatives such as steady-state systems and other, more ecocentric perspectives.¹³⁹

Nevertheless, enough basic analysis has been provided to gain a rudimentary sense of these two complex knowledge systems as models of reality for the production of cultural meaning. I can now turn my efforts towards developing the analysis for building a bridge between these two cultural systems. To do this, I shall return to my discussion of Tambiah’s work. He provides a helpful framework of analysis for the translation and “commensurability” of cultures. Tambiah’s significant effort provides both extensive literature review and rigorous philosophical analysis relevant and supportive to my study. I can take his contributions further by refining them in the context of Western science and TEKS and putting them into practice. This makes his framework relevant for planning between cultural paradigms.

4.8.1 Bridging Between the Worlds: Towards an Interface of Causal and Participatory Modalities

Tambiah writes on the subject of the “translation and commensurability” of cultures at the end of his book. One focus for him is the philosophical problem of “rationality versus relativity”, which deals in part with the universality and diversity of cultures.¹⁴⁰ These can be typified by two prominent positions amongst philosophers. On the one hand are those who argue for the kind of rationality and consistency most self-consciously formalized in Western culture which is seen to be constructed around the “reality” whose truth science establishes. Here, there can be only one *rationality* which is based on the universally valid dictum of logic and inference where Western analytic rules provide categories of understanding, even if “rational knowledge” is provisional. Any external observer should be able to apply these criteria of rationality to the phenomena studied. The resulting application for social sciences is that transcultural and comparative judgements “can be made as to the degree of rationality and irrationality manifest in a belief or action system” which makes it “possible to grade these systems as superior or inferior...”¹⁴¹ Thus, any translation of cultures is based on this singular epistemological yardstick.

On the other hand, there is the perspective associated with Wittgenstein and others, whose “scornful denunciation” of Frazer for considering magical rites to be “mistakes” led him to offer instead a contrasting explanation with forms of life as ‘modes of understanding’. There can be different “rationalities”, “language games”, “forms of life” or “styles of reasoning”, some of which may be incommensurable; “It is therefore necessary to hold back as long as possible, from a too hasty application of rationality criteria that may not be appropriate.”¹⁴² Transcultural judgements based on degrees of rationality are difficult to apply between cultures or historical periods. Indeed, there are “ever-present dangers” of making “category mistakes...misplaced comparisons and the misapplication of rational canons” to phenomena not amenable to the judgements of rationality. The translation of cultures is difficult but possible provided a “careful mapping of the other culture’s understandings” is done with the provision that our own “categories can in turn be informed and modified by virtue of our cross-cultural experience.”¹⁴³ I think the operative word here is *experience*.

Tambiah provides some contexts in which “discourses predominantly in the perspective of causality are enacted.”¹⁴⁴ These range from research in the natural sciences, the biomedical paradigm and most university education, to engineering and the promulgation by development economists of economic growth and development plans (i.e. rational planning). He also gives examples of moments “predominantly in the wavelengths of participation” which include: courtship and sexual union; meditation and ritual; forms of religious practice; various festivals and rites of passage (religious and civil); certain sports events.

The next part of Tambiah’s work becomes somewhat difficult and thick, yet there are three points here worth mentioning. First is the notion of the “translation and commensurability of cultures”. As in the idea of the “multiple orderings of reality” which Tambiah develops from the debate initiated by Lévy-Bruhl, Tambiah’s discussion of the commensurability of one culture’s phenomena, concepts and categories with another is similarly helpful. The emphasis on commensurability is in finding correspondences by an attempt to gain an understanding of *total systems*, so that comparisons are done not through reductionism but by finding “proportionate equivalences.” The caution in this is to avoid making “category mistakes” and keep in mind that “there is a world of difference between establishing a *one-to-one correspondence*...and *mapping* a phenomenon in another culture onto one of our own.”¹⁴⁵ He quotes another thinker, Winch, who offers the insight that “to study another way of life necessarily extends our own.”¹⁴⁶ My approach is definitely one of mapping. My experience certainly concurs that learning from other ways of life has shifted my own.

That leads to the second point of “double subjectivity” which I regard as Tambiah’s main methodological insight. He suggests that the translation of cultures requires an approach which combines sympathy and empathy with distancing and neutrality. This constitutes what he refers to as “double subjectivity” and is applicable to research, observation, analysis and interpretation of social phenomena but not so pertinent to the natural sciences. It requires, as far

as possible, that one become subjectively immersed within the mind set of another culture to come to appreciate people's intentions, actions and reactions within the categories of meaning of that cultural context. Then, one must be able to subsequently or simultaneously distance oneself to the point of translating or mapping these phenomena and insights into their own (usually Western) terms of language and categories of meaning. This seems particularly notable for academic inquiry.

While the above fits, in some ways, with my own experience, I see things a little differently (it comes up later in the discussion of epistemology and participant-observation). I don't know if one can ever fully become part of another culture. I know from experience that one can become deeply immersed, one can be accepted, even adopted. People can feel like they've become part; one can even be recognized by others in this capacity. It is still probably quite qualitatively different from being born and raised within a culture.

In any event, one can become *culturally literate* and functionally *bi-cultural*. Because someone comes from another culture, I don't know if one has to *become* distanced; it would seem one already is. Merely going through the exercise of creating analytical categories of understanding, explanation and assessment will require or instil a degree of epistemological distancing. In as much as this is the model or context in which such knowledge activities take place, it is, by its very nature, a distancing exercise. Perhaps this is what Tambiah means, yet the emphasis seems shifted more experientially.

For me, it is the participatory aspect which requires greater effort; the other comes more "naturally" for those of Western academic training. Furthermore, I am reticent with the notion of "neutrality", which isn't to belittle the importance or usefulness of the causal model. Quite the contrary, however, we are inundated with the causal understanding and lacking in credible participatory alternatives. That is a challenge for perceiving the substantive features of other cultural models of reality. It is also important to keep in mind that aspects of one cultural model will likely not be commensurate with another, which is fine.

Tambiah provides an insight to the discussion, and this is the third point. It turns, not so directly on the commensurability and translation of cultures (i.e. their phenomenological systems of explanation and categories of meaning) although it is, perhaps, part of a foundation for a 'bridgehead of understanding'. I am talking about the intersection and interface of cultures. According to Tambiah, the causal and participatory orderings of reality are both, even simultaneously, available to human beings everywhere. While these may be different reality orientations and modes of knowing and understanding the world, they are not entirely separate, nor are they seen to be wholly mutually exclusive.

When referring to examples of modalities which are causal or participatory, Tambiah emphasizes the words *predominantly*. He uses it quite explicitly, in order to signal "the obvious and incontestable fact" that scientific discourses are not entirely lacking in elements of participation, nor are features of causality absent from participatory enactments. "Analytically

separate, they are intertwined in many mixes and I have pointed at contexts and discourses where one or the other mode predominates.”¹⁴⁷ While participation and causality are contrasting and appear contradictory, they can also be coexistent. They can be even complementary (e.g. science and TEK informing the planning process).

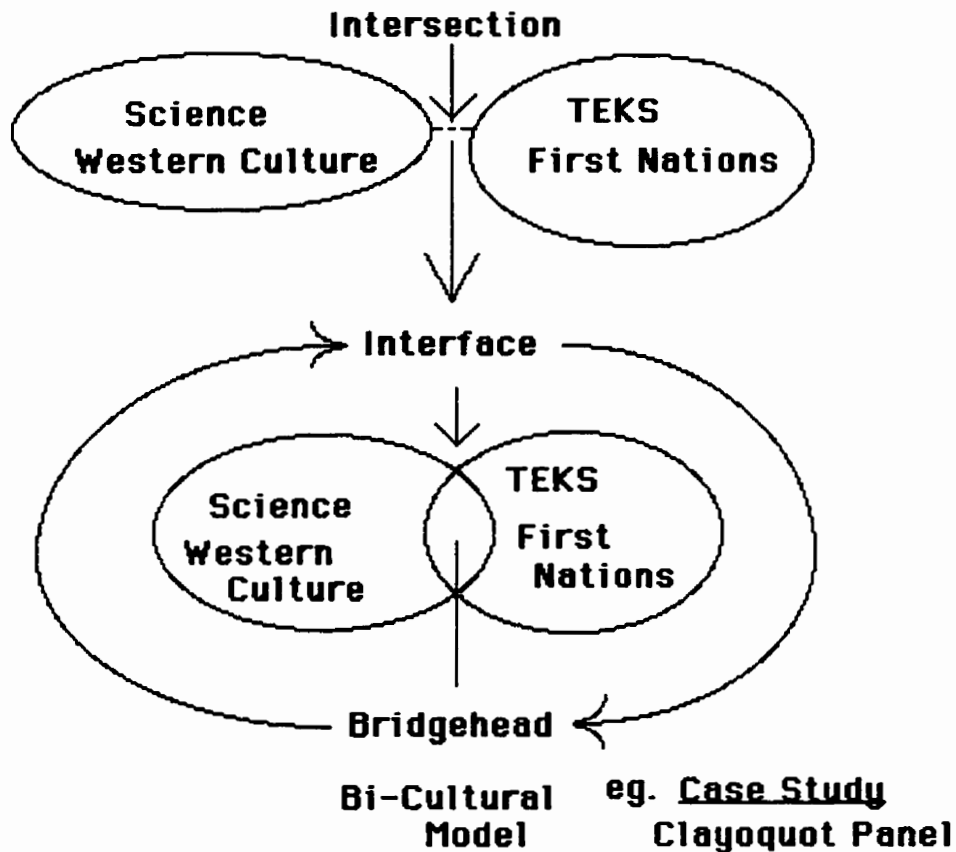
For example, on the subject of an ‘epistemology of the sacred’ I discussed how there is no contradiction in TEKS between its empirical observation and deductive reasoning feature with its body-based or spiritual modalities. In like manner, any prolific scientist knows that intuition can play a role in research, particularly in hypothesis-generating activities. Yet with the advent of modernity, the scientific approach of the Western cultures has been to focus upon, develop and codify more explicitly the less intuitive aspect and practices of the scientific model. On the other hand, TEKS have developed more richly their spiritual nature. Yet this does not preclude the fact there are moments of causal thinking within a participatory framework, or intuitive activity within a causally based model. Tambiah provides the example of science and religion, both as valid and credible, but different ways of thinking about and experiencing reality.

In my work, the interface is between traditional knowledge and Western science, with the perspective that these are icons for the larger discourse between cultures. We can also look at this as an interface between a model which is a causal ordering of reality with one which organizes around a more participatory approach. The question then, is what we can we learn from this discourse which can help facilitate a similar one within the Western cultural mainstream? What can we learn from this about planning’s role, a.) for the discourse of study, i.e. science and TEKS; and, b.) the discourse of further application, i.e. the transition to sustainability within the dominant society? Could our learning here aid in reconstructing participatory modalities within the Western cultural mainstream?

I should also note that I am drawing a distinction between an ‘interface’ and an ‘intersect’. For me they are qualitatively different contexts of experience. There are plenty of examples of intersections between cultures and interactions between their members; although they may encounter one another, the experience remains largely one of distinct and separate cultural systems.¹⁴⁸ The difference for me is that an interface implies more of a mutually entered-into discourse, an exchange or even collaboration which establishes an entirely new terrain of experience and understanding. The interface is a distinctly *discursive* zone; there is *articulation*. Such interfaces can be the experiential terrain for the beginnings of a bi-cultural model toward a bridgehead of understanding. A cornerstone of this shift in experience seems to be involvement or *participation* (and perhaps shared goals). The outcome of this participation is not just knowledge but one of *understanding*. It is understanding which helps to structure our experience. I have attempted to illustrate this below (see Figure 9).

Figure 9

Bridge of Understanding



Case Application

A Spirit of Understanding

I selected the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound as a case study of this interface for my dissertation. In particular, I will be looking at the Panel's third report, *First Nations' Perspectives Relating To Forest Practices in Clayoquot Sound* (referred to hereafter as *First Nations' Perspectives*). I see the Scientific Panel as a precedent-setting example of the interface between TEKS and science, between Western culture and First Nations. I believe it exemplifies a step towards building a bridgehead of understanding between cultures, and that it has important lessons to offer for planning in the development of a bi-cultural model which honours the substantive and methodological mandates of both models.

My case application, *A Spirit of Understanding*, takes a step forward on a smaller scale towards putting such knowledge into practice for planning between cultural paradigms. The document (authored by me and published by the B.C. Ministry of Education, Skills and Train-

ing for North Island College) contains a bi-cultural model and tools for building bridges between TEKS, and their authorities in local First Nations communities and science-based academic institutions, for education on resource management. This takes the form of community-based program and curriculum guidelines for First Nations integrated resource management programs at post-secondary and adult basic education levels.

4.8.2 Metaepistemology: A Spirit of Understanding for Planning Between Cultural Paradigms

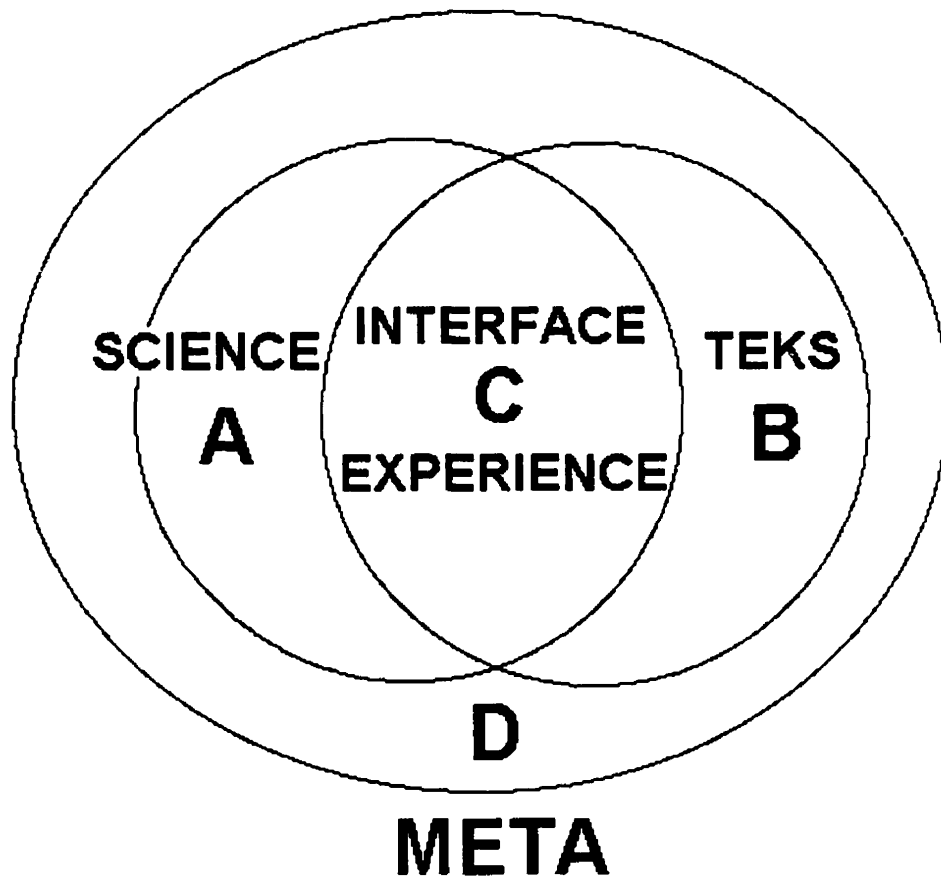
For me, metaepistemology is a spirit of understanding. It is a guiding spirit which inspires respect, tolerance and open-mindedness. At the same time, it is hard to imagine that any self-respecting spirit would choose a cumbersome name like “metaepistemology”, especially for one whose nature it is to bring forth understanding. Perhaps there is no word in the English language to convey the right meaning. I could call it respect, tolerance, open-mindedness or even curiosity. All these are vital, but they don’t really get at the idea of an experiential interface, nor the nature of two parallel models of reality ordered around distinct philosophical assumptions with different rules of protocol about knowing. There is an holistic quality that needs to be conveyed: thinking in systems, thinking in wholes, seeing connectivity and places of separation, respecting differences and exploring the interface, touching each other and knowing the whole. For lack of a better term, analytically and aesthetically, I will call this spirit of understanding *metaepistemology*.

As previously explained, a metaepistemological perspective is one which can help to see beyond the contradictions of different epistemological models. It is an approach which may also help to illuminate anomalies within one’s own model. I don’t think that such higher order reasoning is disconnected from experience; it requires it. The experiential realm is a kind of an epistemological zone of its own. It is the place of becoming and change, of newness, edges, learning and growth. It is a distinctly *discursive* arena, supported by our understanding. I represent this visually below, depicting TEKS and science as parallel knowledge systems, their experiential interface, and metaepistemology as a context of understanding.

The graphic in Figure 10 depicts four epistemological zones. Each is distinct, yet connected. Science and TEKS occupy discrete and parallel knowledge scapes. Their interface is a zone of *experience* and has a distinctly discursive character. It is a *shared* epistemological space. The overall *meta* level must also be addressed by theory. The metaepistemological perspective does not seek to overcome or obliterate the differences but to reveal and understand them, to explore and even draw strength from them. It will also help to scope and make more tangible the interface, the edges and boundaries which are most discursive. It may be enticing to explore all the permutations and implications of this. Yet my task is to scope a general model where metaepistemology helps serve the cultural interface of two larger meaning-producing systems.

Figure 10

4 Epistemological Zones



However, questions of “truth”, “validity” and “accuracy” are enticing. It is tempting to want to conclude that if two distinct epistemological models (each with its own substantive knowledge and rigorous methods) can agree on the validity or accuracy of something, then it must therefore be a more cogent epistemological conclusion to make. This would be a kind of bi-cultural basis for verification. It is similarly tempting to consider that this might be a sounder epistemological basis for ascertaining the validity of knowledge claims, the outcome of which would occupy a more epistemologically credible status. It is not perfect or the whole “truth”, but may be better. At the same time, this is tricky terrain.

That is not to say that I question the validity of the exercise, nor the power of it. It is helpful if we can think of truth, not so much in the rational “objective” sense, but as something more discursive and participatory; it exists between cultures as a shared space. For example, in my interviews with Richard Atleo, Co-Chair of the Clayoquot Scientific Panel and an Ahousat hereditary Chief steeped in protocol from birth, he spoke of the process of “affirm, confirm, witness”; this is an important methodological insight of orality:

When the elders get together, or when those people counsel together, what they do is to *affirm, confirm, witness* because they're never certain by themselves that, what they know is sufficient, or is it, and so, in humility, then confirm with one another...its that kind of consultation.¹⁴⁹

The idea of truth as discursive, as being arrived at through a participatory process, is helpful to understand and apply knowledge gained through the interface of TEKS and science. By the very nature of the experience, I would argue it is necessary. In my case study, I will explore how the planning model adopted by the Scientific Panel dealt with this metaepistemological problem by adopting traditional Nuu-Chah-Nulth oral methods as the keystone of their planning model. It may also be pointed out that science itself has a discursive element (e.g. peer review, debate, and consensus: yet the criteria and methods are different). This could be seen as part of the broader communities of scientists.

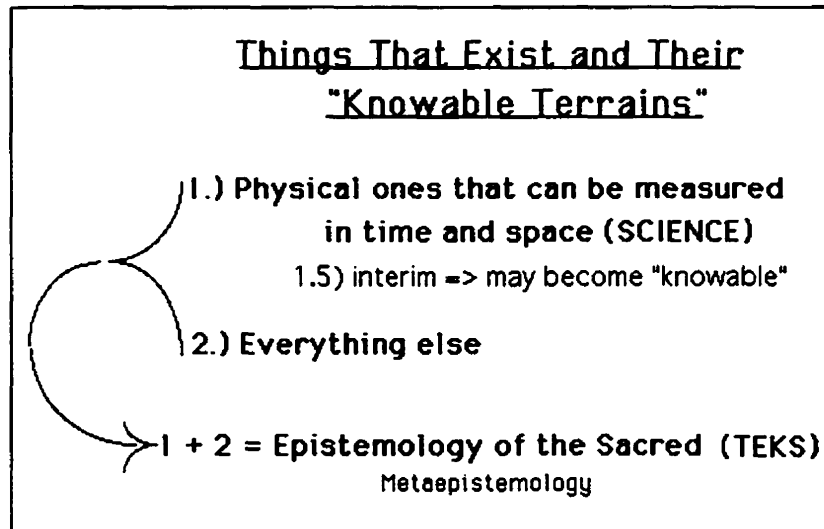
I am not trying to draw any hard and fashionable conclusions. All I am doing is introducing something. Regarding knowledge, we can begin to problematize the idea of the social construction of reality seeing these two parallel and equally valid systems, dealing in language within their own knowledge terrains, in discourse with one another, thus, establishing a new terrain. From this point of view, "truth" becomes a kind of effective practice, not so much in the rationalist sense of "objective reality" but in the sense of empowering or fostering *agency* in the world. Its effectiveness is determined discursively.

There is an important epistemological difference between Western science and TEKS which, although I have alluded to it, needs to be spelled out more clearly. Science is concerned with the empirical. From this perspective, the Universe seems to have two kinds of phenomena: 1.) physical ones which can be measured in time and space; and, 2.) everything else. (another interim category could be those phenomena which are currently not measurable but may become so as research improves.¹⁵⁰) The first is the domain of science; the second one science declares to be inaccessible. Both class "1" and "2" phenomena, however, are in the domain of TEKS.

Science uses physical measurement in approaching the empirical; TEKS approach the empirical and also have a spiritual vision, which is ignored or disallowed by science. TEKS may thus bring a richer range of knowledge and experience, not only to the physical, but also to class 2 phenomena. While science does not attempt to know class 2 phenomena, these may be just as, or even more important than class 1. Class 2 phenomena may require other ways of knowing than class 1, as well as empirical reason. Class 1 phenomena may also be known in a variety of ways. The various ways of knowing bring richness to empirical experience, as in the traditional metaepistemology I refer to as an *epistemology of the sacred*.

To the extent that both "science" and TEKS can agree on a class 1 phenomenon there should be no problem. At issue will be the extent to which the adherents of "science" can accept (for policy purposes) dissenting views on class 1 phenomena from TEKS adherents; and the

Figure 11



extent to which they will be willing to entertain the possibility of class 2 phenomena, and be willing to be guided by TEKS experts (and/or their own intuition or personal version of "2") on class 2 phenomena.

This completes now the general analytical framework from which I will be analyzing my empirical case study and case application. Before turning to empirical research, I would like to consider some methodological implications for the research and implementation of knowledge gained from the interface of TEKS and Western, science-based culture. In order to do that, I find it necessary to examine some of the key barriers and constraints for the persistence of TEKS and the research and application of TEK.

4.9 Barriers to TEKS

There are many opportunities to be found in the discourse between Western science and TEKS. There are also constraints. There are even dangers. To better understand these key issues and the methodological implications for empirical research, it is worthwhile to examine some of the barriers and constraints on TEK, to the persistence of TEKS, and to the research and implementation of traditional knowledge. A detailed typography of barriers (e.g. perceptual, institutional, methodological, historical, ecological, political-economic, lack of information) is presented as an appendix so as not to break the flow of discussion (see Appendix I). Before reviewing what I see as the main methodological considerations for research and implementation in the field, I would like to analyze a recent controversy around TEK entailing a mainstream backlash which typifies pivotal barriers and constraints.

4.9.1 Epistemological Blinders and Cultural Backlash: Debate on Traditional Knowledge

At the outset of this chapter, I used the article "Lost Tribes, Lost Knowledge" from *TIME* magazine to establish a context for discussion on TEK. Analysis of the article served as a forum to raise issues and flag contradictions surrounding the subject of TEK. I would like to provide another article as an example of current academic and professional debate on the relevance of the TEK paradigm to sustainability. The article typifies key barriers to the research and implementation of TEK raising the point that not all those interested in traditional knowledge are enamoured with it. Not only are some opposed to recent efforts of research, professional application and government initiatives which draw on TEK, they see recent emphasis on TEK as a backwards and politically misguided step for First nations.

In November of 1996, the Canadian public affairs journal, *Policy Options*, published Howard and Widdowson's (H&W) article, "Traditional Knowledge Threatens Environmental Assessment.". It was in response to a federal Environmental Assessment Panel directive that integration of traditional knowledge was necessary to complement scientific knowledge to fully understand the impacts of the proposed BHP diamond mine in the Northwest Territories. Howard and Widdowson suggest the attempt by government to include traditional knowledge in the approval process "flies in the face" of the Canadian Charter of Rights and Freedoms. In giving "the spiritually based concept of traditional knowledge" equal consideration to scientific knowledge, they argued that individuals were required to "affirm a specific religious belief".¹⁵¹

The authors lament that this "claim was made in spite of the fact that there had been no attempt to understand the difference between traditional knowledge and scientific technology or how traditional knowledge can be applied."¹⁵² The Panel had deferred questions on the nature of traditional knowledge to aboriginal groups. Along with other First Nations leaders, Bill Erasmus, Grand Chief of the Dene Nation, advised that insights on the nature of traditional knowledge and its difference from science must come from extensive consultations with holders of TEK across the NWT. This was also seen as necessary in order to ensure cultural ownership and protect intellectual property rights. According to H&W, the aboriginal groups had "obfuscated the Panel's attempts to understand the concept."¹⁵³ They admonish that the only thing the Panel could come up with was to identify the source of knowledge and "rationalize how the complexity of TK makes it difficult to acquire."¹⁵⁴

Understanding traditional knowledge is quite simple for H&W. They see TEK as being composed of two elements: i.) empirical knowledge gained through observation and experience; and ii.) beliefs acquired through spiritual teachings. (This is reminiscent of my class 1 and 2 phenomena table.) For them, the only difference between the two is what they call "spiritualism." They point out that science has developed a method by which observations and experience can be systematically understood and verified.

H&W reject the notion that First Nations have a special spiritual relationship with the ecosystems they inhabit as well as ideas of traditional values of respect and ethics of conservation. For them, the notion of “co-existence with nature” is founded upon a “pre-capitalist” stage of social and technological development. “Given the absence of both environmentally destructive technology and the profit motive, claims to responsible environmental stewardship in the past are without substance.”¹⁵⁵ Traditional spirituality is a moot point for them, yet they maintain that such ideas are the basis for assertions that First Nations have a better understanding of ecological processes and are more suited to managing the environment than non-aboriginals. The real purpose behind this belief is to deflect criticism and obscure the inaccuracies and inconsistencies of TEK.

The authors grant that First Nations “should be able to use and document traditional knowledge as they see fit”. Yet they maintain there are “disturbing implications” for integrating traditional knowledge into government policy which “hinders rather than enhances the ability of governments to more fully understand ecological processes...”¹⁵⁶ They argue that no mechanism or will exists for traditional knowledge to be challenged or verified. For H&W, TEK is politically motivated, where “pressure from aboriginal groups has made TK a sacred cow for which only uncritical support is appropriate.”¹⁵⁷ This is seen as part of a larger political agenda to enhance bargaining positions and extract favourable land claims settlements through negotiations with the federal government, whose “unconditional support” of traditional knowledge is “just a tactic to buy off the First Nations’ leadership...” Recognition of cultural ownership and intellectual property is similarly seen as a ruse to bilk funding from government and other research agencies.

For H&W, the significance of TEK thus boils down to the parochial interests and hidden agendas of First Nations leadership and a handful of manipulative, self-serving academics and professionals.

...Since aboriginal leaders are the liaison between governments and the TK holders, it is they and the various cultural institutes who will receive the funding earmarked for TK research. Subsequently *the importance of TK lies* not in its understanding of environmental impacts but *in an ability to extract money from government*. Why else would aboriginal leaders concentrate so intensely on the astonishing claim that TK is “intellectual property” for which its holders must be paid?¹⁵⁸

H&W claim preoccupation with traditional knowledge results in diverting attention away from the “real” impacts and issues for First Nations such as “alienation from the labour culture”. One of the only effects the integration of traditional knowledge will have is to “coerce” individuals who may not share but are obligated to “affirm the spiritual beliefs” of traditional knowledge.¹⁵⁹

What is presented by H&W as an intellectual argument against government policy is as much a statement on the dominant epistemological paradigm as it is a polemic against First

Nations, their culture and supporters' efforts to gain respect within the cultural mainstream. The example is instructive, not only because of what it has to say about the views it represents, but also the kind of knee-jerk reaction which some people have towards recent attempts to build bridges between First Nations peoples and Western society.

The idea that science has rendered First Nations culture obsolete is not new. It has informed the better part of Canadian "Indian Policy" for over two centuries. Yet it is important to point out that nowhere in H&W's perspective is there a place for First Nations voices. Aside from the dubious political and financial agendas of aboriginal leadership, the scope of issues is determined somewhere between the government, H&W, and non-Native consultants. H&W are incredulous towards initiatives which seek to empower First Nations voices at the local level.

Contrary to their position, H&W alert us to the need for such efforts. Their frustration with the concept of traditional knowledge provides the justification for greater attempts to understand TEKS and achieve clarity on how TEK is transmitted, its role in co-management and other initiatives, and the manner in which it can inform the policy process. Their polemic soundly underscores the urgency for building bridges between First Nations, traditional knowledge holders and mainstream society. It provides a stark testimony to the ongoing prejudice, chauvinism, misinformation, narrowness and political barriers of such efforts.

The point of chauvinism and narrowness is important because it is their epistemological perspective upon which the whole argument is based. This deserves further examination. In "Traditional Knowledge Revisited", their rebuttal article appearing in *Policy Options* in April of 1997, their position is made explicit. Responding to two articles, one by Stevenson, the other by Berkes and Henley, H&W reject the idea that there are different types of knowledge systems. They refuse to recognize that other cultures have different ways of knowing, "of experiencing, understanding and...defining reality."¹⁶⁰ They assert their belief that "There are not different ways of knowing."¹⁶¹ There is knowing and belief; scientific method illuminates the difference.

H&W do not come out right and say there is only one way of knowing, but, it is implied. "Without recognizing a distinction between knowing and believing a discussion is useless. Scientific methodology is based on vigorous testing of hypotheses. Validity depends...on the efficacy of the tests used and can therefore be re-evaluated at a later date."¹⁶² It seems there is only one way of knowing and Western science has the methodological monopoly. Their claim that "this methodology is not particular to western, euro-american, Christian or male mind-sets" and that it "is universally accessible because it is based on perceiving the regularities in nature" demonstrates how out of touch they are with ground level issues of education and economic privilege, not to mention Canadian history. It provides exemplary testimony on the Eurocentric arrogance in the narrow epistemological chauvinism of their belief.

H&W instruct us that the “mythological or spiritual” component of knowledge is “common to all people who lived in the period before scientific methodology was used to explain the universe”¹⁶³, a view right out of Frazer’s developmental typology. Their view is that “scientific methodology was practised in its early stages by aboriginal peoples” but was limited “by the lack of technological development” and “the absence of writing” without which “observations could not be recorded, measured and analyzed systematically. Subsequently, the empirical findings of traditional knowledge were imprecise and *rational understanding of the world was impeded by spiritualism.*”¹⁶⁴ (The very approach to inter-cultural comparison against which Tambiah cautions and Wittgenstein rejects.) H&W can thus dispense altogether with the relevance of TEK. “Even without the spiritual component, TK is not useful...TK findings are too vague and inconclusive to be incorporated into the precise measurements necessary for modern scientific research.”¹⁶⁵ Yet the growing interest in traditional knowledge persists, in part, because of its linking of empirical and deductive knowledge with spiritual teachings.

As I have argued, traditional knowledge cannot be fully understood in isolation from its larger cultural context including social institutions, ecosystems and various cultural practices, of which oral methodology is a central feature. Behind such ideas H&W see a purposive attempt to evade critical inquiry, “invalidate legitimate analysis”¹⁶⁶ and milk money from the government.

The inconclusive nature of traditional knowledge “research” means that it will be a cash cow for TK consultants and aboriginal leaders indefinitely. This money which should be spent on the various problems plaguing NWT communities will be directed towards incorporating a “knowledge system” which has limited value and little to do with knowledge. Aboriginal people will be the biggest losers because they will be encouraged to believe all ideas from the past, regardless of whether or not they are true.

Here, H&W seem to think they have a better idea of what to do at the community level than do Native people themselves.

Now we can clearly see the colonial-like paternalism inherent in the perspective of those who think like H&W. It demonstrates the link between the dominant economic development model and its epistemological underpinnings. The scenario is as follows: people emerge from apes as hunter gatherer societies and may develop agriculture. This is humanity in its “pre-capitalist” forms of economic production. The light of rationality, shining in the torch of a materialist worldview and fired by the tools of mechanistic science, makes possible the rational ordering of the universe.¹⁶⁷ This dispels the darkness of mythology (what Marx referred to as “nature idolatry”) allowing people to make the epistemological and cosmological leap to the Enlightenment.¹⁶⁸ With a *rational understanding of the world no longer impeded by spiritualism*, people can make the final development to that apogee of human society: Western industrialism. This is the classic modernist development teleology.

The epistemological position of H&W therefore becomes the basis for a whole set of cultural beliefs and ideological assertions. These are couched in the colonial mythology which sees First Nations as a backward people, lacking in rationality and requiring the guidance of those in the dominant society who know what is best (and true/real). These are the foundations for the Canadian policy of assimilation and goal of cultural termination. Reserves, residential schools, banning of the Potlatch and Sundance, the seizure of traditional "artifacts", all are expressions of this kind of thinking. It has a traceable history and political agenda, one which seeks the invalidation of First Nations in order to gain access to traditional biophysical capital sources for the industrial expansion of the Canadian state.¹⁶⁹

What can we learn from H&W? In spite of the growing interest in traditional knowledge, the old colonial attitudes towards First Nations still persist. The ideas may be dressed up in sophisticated language and presented in well written arguments but they still objectify Native people. It is hard not to be angry or offended. This is especially the case when people in the dominant society with little or no understanding of First Nations people and their cultures continue with the arrogance to think they know what is best. Nor is the question just academic. Widdowson is a senior policy advisor to the NWT government. Her article "unleashed a storm of controversy" and resulted in a one week suspension from her position with Resources, Wildlife and Economic Development, as well as two full pages coverage in the *Globe and Mail*.

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Can people who are so blind and disrespectful to another culture really care about its members? They may, which is another reason why work in my area is so important. People like H&W do think they can contribute; it may even be their intention. However self-serving and misguided their attitudes may be, they may actually have a measure of "good" intention.¹⁷¹ Yet, like our colonial predecessors, H&W cannot see beyond their own cultural worldview and have little motivation to do so. They are trapped in a self-referencing system of their epistemological model as part of a larger cultural paradigm. The result is not just an academic critique based on a narrow epistemological perspective but a cultural backlash.

Like many people, H&W are uneducated. They do not see the possibilities for different ways of knowing and models of reality because their model has no place for them. Thus they do not recognize the opportunity or avenues for building bridges between science and TEK. One of their main contentions is that traditional knowledge can not be challenged or verified. They miss entirely the methodological component of TEKS. Were they experienced with TEK practices they would know that knowledge is challenged and verified but is done so by its own rules and protocol. They must be unfamiliar with this and uninvolved with efforts of those who are.

When narrowly adhered to, the dominant epistemological paradigm disallows people the opportunities for alternatives. It must be incredulous to them. Moreover, this model of reality is part of a larger cultural paradigm of political and economic development. Therefore,

H&W, and those who think like them, remain actively part of the colonial enterprise. Hence, the discussion underscores the need for building bridges which can link the knowledge of these two cultural/epistemological paradigms and foster understanding and cooperation between their communities. It stresses the need for greater clarity, for educating academic and professional communities, and society at large. It justifies efforts to build bridges between these two models, towards a bi-cultural model for application in planning which could contribute to initiatives in a variety of fields: resource management and co-management, education, health care, tourism and the arts.

4.9.2 Addendum to the Debate: A Discussion of Romanticism and Respect

Another aspect of H&W, although not their main point, is worth bringing up. This is their reaction to non-Natives who are involved with or interested in traditional knowledge. Canadians are becoming increasingly aware that something is re-miss in our history. Amongst other factors, such as a spate of articles in the national press on the brutalities of residential schools, the push for aboriginal land title regionally and nationally, and ongoing efforts at the community level to gain control of social services, Canadians are becoming politicized to the persisting realities of our colonial past. This has been accompanied by a growing interest in Indigenous peoples. There is a sentiment that things can be learned from First Nations by the dominant society. Aside from an increasing number of books and workshops on spirituality, art and other cultural issues, one area of growing interest is that of natural resources.

In *Illegal Conservation: Two Case Studies of Conflict Between Indigenous and State Natural Resource Paradigms*, Thoms (1996) points out that the growing scholarly interest in Indigenous resource management paradigms stems, in part, from the current environmental crisis having spurred a search for alternative resource management systems.¹⁷² Thoms draws upon Clifford's seminal critique of anthropology where ethnographers have been shown to use the study of Indigenous societies to covertly critique their own. In challenging the Western growth ethic, Thoms submits that a trend has developed amongst some environmentalists to "use indigenous resource models as a 'foil' to argue that", whereas Indigenous systems "universally involve low impacts and have sustainable values," the Western approach "reflects an unsustainable and dangerous departure from 'sound' resource use."¹⁷³ He writes that:

...it has become commonplace to hear the argument that conservation is innate to tribal people...The problem is that in this trend, culture is not being represented, but rather, is being invented as it fits a current allegorical opportunity to criticize Western society. In these studies, cultural practices are often misrepresented or exaggerated, while large generalizations are made about all indigenous cultures.¹⁷⁴

Many Indigenous cultures have values and practices which are sustainable and some are more sustainable than others. Yet, as Thoms points out, it, "is probable that many indigenous cultures do not successfully manage natural resources." These differences have also lead to

conflict.¹⁷⁵ The result is a detriment to aboriginal people. He cites the Canadian example of a project where a non-Native researcher developed an inaccurate description of one aboriginal community's conservationist land use system. The unfortunate result was that opponents of aboriginal rights were able to poke holes in the research, responding that the community was actually a threat to local resources. The chief was placed in the position of defending a concept of his community he had not developed.¹⁷⁶ Such occurrences are not isolated.

One cumulative effect can be seen in the kind of backlash witnessed in the perspective of H&W. As early as 1982, an investigation into aboriginal conservation by the *Commission de droits de la personne du Quebec* (the Quebec Human Rights Commission) revealed as much. It was reported that wildlife protection has become "the principal weapon used by certain opponents of the recognition of special rights for Native peoples."¹⁷⁷ The report continued that, "in many cases, under the pretext of destroying the 'myth of the Indian as ecologist', people went to the extreme opposite to demonstrate that the Native peoples endanger 'the wildlife heritage of all Quebecers'."¹⁷⁸ Thoms thus cautions that the research findings be community specific and that the communities themselves should participate in research.

A couple of points need to be made here. The first one is methodological. It is necessary to have direct involvement of members from the community concerned when doing research on traditional knowledge. This is especially necessary if work is to be made public or used as part of any other initiatives which will implicate the community. I will return to this point later, yet it is one to which I have already alluded in the section on cultural ownership. As discussed, there are strict rules of protocol which have methodological implications. This is an issue of theory and practice for research and implementation. It is also one of basic respect. Yet given that such knowledge is rooted in cultural practices gained almost entirely through direct experience and cultural immersion, such respect may not be readily obvious or easily translated into action. One can hold respect intellectually or emotionally, but it takes education and training to know how to put such respect into practice, i.e. to show it.

This does not just apply to other cultures. It takes significant education and training, for example, to demonstrate proper respect for the rigours of science and the rules of protocol for academic research. How much more is required, therefore, when dealing with another culture and another culture's knowledge protocol. Case in point are those researchers (and others) who, while sympathetic and presumably with the best of intentions, have actually done a disservice to First Nations people, their communities and traditional knowledge as a result of research. This is not only due to a disconnectedness from the community and community members who are the source and holders of such knowledge. It is due also to a lack of familiarity with the protocol and methods which guide the transmission of oral cultural knowledge.

That is the second point. Just because someone is genuinely interested in TEK and sympathetic towards its importance does not mean this person will have the tools to actually further TEK initiatives. Moreover, it is demonstrated that such individuals can actually be det-

rimental. Coming from another cultural paradigm, with a different epistemological model, such individuals do not have a strong enough grasp of TEKS and working familiarity with the methods to put their respect into practice without proper training. Having a supportive attitude is certainly important. On its own, however, it is not enough. One needs to learn the proper methods and tools for how such respect is put into action. Non-Native researchers, planners, academics and other professionals require cultural education and specialized training to work in a field where planning happens between cultural paradigms. They require training in what I have come to call *cultural literacy*.¹⁷⁹

If the above point flags the issue of respect in a methodological sense, the next one broaches it in terms of theory. TEK research must be case specific. We can not assume that because one Indigenous culture fosters a model and practice of sustainability that another or all others do. One can push this insight further and assert that, even though there may have been sustainable systems in the past, this may not currently hold true.

The results of colonialism, the breakdown of traditional social structures and practices as a result of government policies whose chief goal was the dislocation of cultures, communities and their members from one another, have significantly diminished the capacity for traditionally sustainable models and practices in many places. The result of residential schools has fostered inter-generational barriers and impaired the transmission of traditional knowledge. The ongoing impact of the private property model and its development practices has exacerbated all of this, as have late Nineteenth and Twentieth Century state resource management agencies (such as fisheries, forestry, mining) all of which have involved aggressive, and oppressive interventions in tribal land use traditions and practices.¹⁸⁰

H&W suggest that, even in the past, the idea of First Nations societies as sustainable is moot. People of this perspective argue that a lack of technical development, the profit motive (and also scale) were the actual reasons for why some Indigenous people seem to have been sustainable. "Given the absence of both environmentally destructive technology and the profit motive, claims to responsible environmental stewardship...are without substance."¹⁸¹ This is misleading. There certainly are examples of ancient peoples creating ecological damage to local systems, to species and habitats.¹⁸² The capacity to do so exists even with fire, an extensively and often effectively used management tool.¹⁸³ However, to use such tools ineffectively simply does not make sense, and this is exactly the point. It is also to miss out on the extensive rules, regulations, rights, duties and sanctions of traditional management systems and the rationales upon which they are based. People did not develop the profit models of Western capitalism because they served no purpose; indeed, it would have been counterproductive. This is more of a testimony to wise use than it is to a lack of foresight or technical and social development.

Although H&W seem to miss the point, one of the more obvious considerations is scale. It might be argued that scale alone could be the main factor for the sustainability of Indigenous societies. Rather than seeing this as a liability, or as a reason to discount such examples of

sustainability, it provides an opportunity to learn about the nature of such examples of long persisting, sustainable human systems (i.e. what Sahlins referred to as the “Original Affluent Society”). One could ask, what was the nature and function of social and cultural capital as an alternative to high material through-put? What manner of technological achievement enables the infrastructure which makes this possible? What character of values, morality, philosophy, organizing principles and other aspects of cultural capital guide and develop in such systems? What mode of decision making and planning process prevail?

If anything, these insights underscore the precedent to learn from, and with, other cultures. This does not entail rejecting one’s own culture, but expanding it to include learning from others. It means getting beyond our constructions of First Nations, as pre-rational (i.e. pre-Western) people and romanticized notions of the noble/sustainable savages. This requires going a step further than social learning. It involves learning *beyond* our cultural models and beliefs, which I call *cultural learning*.

The journey from romanticism to respect is about recognizing people as people and accepting others on their own terms. It is not about relinquishing critical thought or passing uninformed, scantily conceived ideas. On the contrary, it’s about becoming more fully informed and learning to think critically in new ways. We all have strengths and weaknesses. Science has its blind spots along with its potency, as do TEKS. To project a belief of First Nations as always spiritual and sustainable is just as objectifying as it is to dehumanize people as pre-capitalist, or deny the validity of TEKS and discount the examples of ecologically sustainable Indigenous cultures.

The last point to make in this discussion deals with theory. Thoms cautions against generalizing from one aboriginal community to others, or to all, and rightly so. Does this then invalidate any attempt to draw on community-based learning or on knowledge gained in one community and using it in others? Does this insight thwart entirely any endeavour to develop more generalized theory on the nature of TEK and the constitution of TEKS. I do not believe so; rather, it helps inform the manner in which research can be conducted and theory is developed. This helps to guide the sharing and implementation of knowledge gained through such research.

I asked Nuu-Chah-Nulth hereditary chief UMEEK, Dr. Richard Atleo, about this point in an interview for my research on the *Spirit of Understanding*. Dr. Atleo was the Co-Chair of the *Scientific Panel for Sustainable Forest Practices in Clayoquot Sound*. First Nations of the Port Hardy area where the *Spirit of Understanding* was written speak a different language, Kwak’wala (from the Wakashan language group, as is Nuu-Chah-Nulth), and live in another region of Vancouver Island. Even though my project was in education and with a different group of nations, I thought the Scientific Panel provided an excellent case study on the discourse of science and TEKS. I felt it could provide guidance and inspiration to help form the foundations for an application in *A Spirit of Understanding*.

Yet I was concerned about the issues discussed above. I wanted to respect the protocol, and as much as possible, stay specifically within the culture in which I was immersed. Moreover, the Scientific Panel dealt with forest practices standards and I was developing curriculum guidelines for education in First Nations integrated resource management. Dr. Atleo recognized that there is a great deal of difference between First Nations of the Pacific Northwest. At the same time, he instructed me that there is also a, "uniformity of worldview between widely non-communicating peoples which reflects not only the Nuu-Chah-Nulth worldview and philosophy, but also principles which are transportable and can be applied in many areas."¹⁸⁴ Dr. Atleo's insights were very helpful and the Scientific Panel material was pivotal for my work in Port Hardy. More than anything else was its symbolic significance as an example of the equal respect given to the distinguished members of different cultures whose task was in an area of concern vital to all. Developing theory is not the problem; it is how theory is developed, with whom and to what ends.

As well as serving to underscore the need for further research in the area, both conceptually and methodologically, the above discussion also alerts us to the barriers for the practice, research and implementation of traditional knowledge. It punctuates the necessity for understanding these barriers and constraints they pose. It also highlights the need to develop effective conceptual models and methodological tools. I will now turn to considering some of these methodological implications.

4.10 Methodological Considerations and Implications for TEKS Research and Application

This concluding section considers some methodological implications for research and application of knowledge gained from the interface of TEKS and Western science based on the analysis of this chapter. The material is thus based on a combination of literature review, historical research and my own professional/personal experience in over ten years of cultural immersion. It establishes a further context for the upcoming two chapters on empirical research, in particular for the case application. I invite the reader to glance please at the Appendix on "Barriers and Constrains For the Research and Implementation of TEK".

4.10.1 Attitude

One of my "bush teachers" taught me years ago that the single most important thing about being in the woods is one's own attitude. It can mean the difference between a good time or a difficult one, even life and death. Like most of such teachings, there are many levels to the basic insight which allow for ongoing learning. The perspective we carry into any territory can make or break the journey. This is especially the case when we are venturing into new cultural terrain.¹⁸⁵

In the Keynote Address for the "International Workshop on Indigenous Knowledge and Community-based Resource Management," Chief Robert Wavey spoke to the issue of attitudes and perceptions setting the tone for professionals, scientists and other academics:

Recently, academics, scientific researchers and others have "discovered" that the knowledge which Indigenous people hold of the earth, its ecosystems, the wild-life, fisheries, forests and other integrated living systems is extensive and extremely accurate. On the eve of the 500th anniversary of Christopher Columbus having stumbled upon North America, it is appropriate to provide comments from the perspective of an Indigenous person in North America on what the concept of "discovery" means to us.¹⁸⁶

Chief Wavey draws attention to the 500 years of "continuous exploitation guided by science and technological discovery" which has created an, "era of unprecedented opportunity for widespread ecological catastrophe."¹⁸⁷ The process of acquiring aboriginal lands for agriculture, forestry, mining and settlements, "was rooted in an official policy of cultural extermination which continued for several generations."¹⁸⁸ These are the same processes of development and "management practices" which have "obliterated the reference points and actual resources"¹⁸⁹ shared by First Nations.

Science is thus part of the larger colonial project which has historically established the political and economic parameters for the relations of First Nations and the dominant culture. This does not discredit Western science, it merely states the obvious and places science within its larger socioeconomic context. Recognizing this persistent historical reality opens the doorway to change, new relationships, new development models and practices:

Science has never been neutral in relation to Indigenous peoples, lands, resources and development. The struggle to control lands and resources to facilitate development is the principal feature of the relationship between Indigenous peoples and governments world wide. Science is based on discovery, and has provided the foundation for the industrialization of the earth and the concentration of wealth in the hands of those nations with the greatest scientific capacity. Traditional ecological knowledge is not another frontier for science to discover.

When you contemplate the linking of traditional ecological knowledge and science in order to support the healing of Mother Earth, I urge you to resist seeking to discover. I urge you instead to accept what is obvious.¹⁹⁰

What is obvious is that we are all human beings and we are bound by a common place of origin. It should also be obvious that we all have our own culture, beliefs and ways of expressing them; we may be better off, as a whole, preserving the diversity within our own species and allowing for the possibility and the opportunity to learn from and with one another. By becoming more aware of our own values, perceptions and beliefs, we may become more open and able to create new cultural expressions that blend the teachings cultures have to offer. It is hopefully becoming obvious that we all share a common goal of seeking healthier and more

sustainable patterns of cultural development as part of the ecological system from whom we all come: Mother Earth.

However some things are more obvious than others, especially when cultural perceptions are involved. In this case, it may take some training to learn to perceive what is “obvious” from other perspectives. For anyone who is going to be working with First Nations, it is necessary to obtain specialized education in order to become a functionally bi-cultural individual.

4.10.2 Background for Cultural Literacy

The basis for becoming functionally bi-cultural is found in skills of *cultural literacy*. This starts with a recognition of the nature of the bi-cultural context and takes a certain degree of openness and sensitivity. Being bi-cultural is about knowing oneself and one’s place in another cultural context. It is about being accepted in this by members of that cultural world. It is not about leaving one’s own culture behind and replacing it with another. It is about understanding oneself as part of a larger whole. Cultural literacy provides tools which make this possible.

When we think of “literate” we think of “educated”. Someone who is literate has acquired the tools to understand the rules and protocols of a certain medium of communication. They must be taught by those who understand and are proficient. Cultural literacy is a form of education. It means that someone has gained a degree of understanding and familiarity with the basic norms and protocol of a certain culture. Someone who is culturally literate has acquired the tools to move and communicate effectively and comfortably in another cultural context. Being bi-cultural is the ability to function comfortably and effectively within two cultures. It also means that members of those cultures experience you as an effective, comfortable communicator in their world. In order to be open to the process of learning from and within another cultural context, one must learn to be sensitive to the perceptions and needs of others and to one’s own place in the larger bi-cultural world.

Cultural literacy is about understanding and communication. It is gained almost entirely through experience and requires intuitive as well as intellectual learning. There are worthwhile workshops, books and videos on aspects of the subject; however, cultural knowledge and understanding—cultural literacy—is achieved largely through direct human experience within and between cultural worlds and their members. Learning from another culture’s perspective can be challenging, broadening and enriching to one’s own perceptions. Cultural literacy requires respect, sincerity and curiosity. It does not “just happen”; it is an acquired, cultivated and ongoing process of *personal* learning and growth. This process of personal learning becomes the basis for a necessary and very powerful set of professional and methodological skills.

In the bi-cultural context with First Nations, it is important to be aware of the historical nature of the relations between First Nations and Canada. This is not just an asset, it is a must. There is a growing literature which can help people become more critically informed on the

subject of colonialism in Canada and its impact on First Nations. It is also important to familiarize oneself with the history of the local area, including cultural and natural history.

One of the most helpful things to do is find a cultural teacher. This is someone—a friend—from the local nation who is a recognized cultural and historical authority. If there is not someone of the nation readily available, one can learn much from other recognized cultural authorities about basic protocol matters, of *how* to approach traditional people, *who* to approach, proper *listening* and *asking* skills. Terry Alec says:

...I was taught that you need to gift an elder or whoever you're asking for information. It will have that much more meaning when you ask in that way... Information will come a lot faster and have more meaning for both parties...then you'll be going back many times and, I guess, the more that you give, the more you receive...We need to practice that more and more and pass this information on ...when you're working with cultural teachings ...you need to ask, you need to gift these people before they even step in through the doors, and don't make it just a piece of paper (i.e. money)...Be real with us, show that you really care for this information that you're asking from us, show that you really want to use it, not just on the surface, right from the heart...so I've had to teach people the right way to ask for traditional knowledge, it's a must.¹⁹¹

Such initial lessons and ground work will make a researcher, planner or consultant far more effective, personally and professionally.

4.10.3 Mixed Models

Research and implementation of insights gained from research with TEK specialists and scientists is an example of learning and working in a bi-cultural context. This requires an approach to research which is based on bi-cultural principles and methods. It is one matter to have a project and involve others within it. It is an endeavour of a qualitatively different nature to create something which is based on the models and methods of two different cultures. What this requires is a *mixed model* which can fulfill the substantive and procedural requirements of both.

There is an impetus for the development and implementation of such mixed models. The Dene Cultural Institute (1994; 1995) documents that, given the pluralistic character of society and the insight that the decisions and actions of one group will have implications for others, there is growing agreement amongst scientists, government and First Nations that integration of the two models is necessary. Moreover, the point is made that when the two systems are operating independent of one another that information is less complete and accurate. "Both sets of data are required to produce a full ecological picture."¹⁹² At the same time, they recognize that in spite of extensive discussion, no one has been able to describe what a truly integrated system looks like. Some even feel that a complete integration would be inappropriate.¹⁹³

Various impetuses for co-management, including a changing political climate, in particular as a result of land claims and devolution of power, would seem to broach increasingly

the issue of integration. He ¹⁹⁴ suggested two scenarios for devolution: one is the transfer of authority and responsibilities within an existing hierarchical structure and an intact, pre-established framework; the other entails the actual transfer of authority and responsibility from one system to another, implying a transformation of the dominant management paradigm. My experience is that such occurrences are not so cut and dry; I tend to look at these two scenarios more as a spectrum and range of possibilities in between.

As I have mentioned, an increasing number of scientists, researchers and resource management professionals are becoming interested in TEK and traditional management systems as offering alternatives to mainstream resource management paradigms. The Dene Cultural Institute (1995) cites co-management as the most widespread attempt to integrate the two models and gives a list of examples, most of which have been in existence for less than ten years making it difficult to draw any conclusions regarding their relative success or failure.

Finding common ground for such endeavours is fundamental. As the above discussions have shown, there are common goals shared by certain Western models of sustainability and those of many First Nations. There are some substantive, methodological and epistemological commonalities between Western science and TEKS; there are also marked differences and points of departure. These differences need not be seen as a liability or as barriers to collaborative efforts. Those differences are what make mixed models most significant; these are strong points. In an interview with then Coordinator of First Nations Forestry at UBC, Gordon Prest of the Sto:lo Nation, who has spent his professional career in forestry, suggested that, rather than trying to gloss over them, we must learn to “respect the differences” for such mixed models to work.¹⁹⁵

Prest’s is an important point. Viewed epistemologically, it means that there must be a context within which a diversity of understanding and approaches to knowledge can flourish, even if contradictory, and work together without compromising the methodological requirements or substantive contributions of either model. The result will be a mixed approach which not only tolerates differences, but draws upon them as part of the foundation for the transition to a new model—a paradigm shift. The new mixed model will have methodological requirements to fulfill and substantive contributions to make which, while based on two initial models, are the mainstays of a mixed model. We will be examining the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound in this light.

Paradigmatic evolution should not be foreign to academics and other researchers. It is common in interdisciplinary research. Such a manner of expertise is required for work with TEKS. TEKS are, by their nature, multi-disciplinary and interdisciplinary. For example, a TEK specialist with a substantive background in edible and medicinal plants will have, not only an extensive knowledge of many individual species, but will be well aquatinted with their habitats, relationships with birds, mammals and other animal species, as well as the basic ecology of the system as a whole. They may have knowledge of toxicological and other properties of

plants, of seasonal and climate variables, as well as sustainable harvest techniques and technologies of preparation. All of this is embedded in cultural history, protocol and other teachings.

This is indicative of the 'holistic' character of TEK. Its specialists must have a working knowledge of various areas which are the study of a number of academic disciplines, including: botany, animal and forest ecology, conservation biology, pharmaceutical science and nutrition, climatology, anthropology and religion. The nature of the knowledge of TEK specialists will have some similarities to that of the Western scientist; there will also be significant differences. This is where learning takes place and collaborative efforts can strengthen project initiatives and outcomes, not unlike most situations where specialists from different disciplinary backgrounds collaborate on interdisciplinary efforts.

In the case of mixed models based on a collaboration between TEKS and Western science, the difference is not only in the interdisciplinary nature of the work: it is inter-cultural. Between Western science and TEKS it is *meta-epistemological* character. There are methodological requirements for planing research—of learning and implementation—which are necessary to facilitate the collaborative efforts of those coming from the perspective of Western science and TEKS. The results are new perspectives on what "research" is and "how" it can be done.

4.10.4 Community-Based Participatory Research

The need for community-based approaches to research and implementation of TEKS is underscored in the literature (Traditional Knowledge Working Group, 1991; Johannes, 1993; Dene Cultural Institute, 1994, 1995; the Assembly of First Nations and Inuit Circumpolar Conference, 1994). The Traditional Knowledge Working Group offers extensive recommendations for overcoming obstacles for traditional knowledge. The Dene Cultural Institute (1994) offers a substantive "Guidelines for the Conduct of Participatory Community Research." The Assembly of First Nations and the Inuit Circumpolar Conference proposes a "Research Prospectus" and "Agenda". The Dene Cultural Institute also provide (1995) a review of various methods used to document TEK, including: the ethnographic method; community-based research; technical dictionaries; ecological knowledge and land use studies, plus the adaptive management approach.

Most notable about these initiatives, especially those coming from First Nations organizations, is the extent to which they target community involvement in both research design and objectives setting, as well as active participation of TEK specialists and other community members in both research and implementation processes. Upon reviewing these guidelines and recommendations, I see that they structure research and its implementation in a manner which attempts to ensure that three criteria are satisfied: i) recognition of cultural propriety; ii) real power sharing and joint involvement at the community level; and iii) methodological legitimacy. These seem to correspond to the three criteria or features of TEKS which I discussed earlier: cultural capital, social capital and the methodological component.

4.10.4.1 Cultural Property

It is fundamental that traditional knowledge be shared in a manner which does not dislocate it from its culture of origin, disenfranchise its rightful owners or compromise community cultural integrity. TEK is the cultural property (cultural capital) of individuals, of families and communities. This requires, not only a recognition of the fact, but also structures and processes which insure recognition is properly respected.

4.10.4.2 Institutional Power Sharing and Enhancement

It takes more than a verbal commitment to ensure the recognition of the cultural property of a community and its individuals. *It takes structures and relationships which institutionalize the protocol of cultural authority.* Involving elders, TEK specialists and other community members in goals and objectives setting, research and project design, and implementation, requires real power sharing at the community and academic levels. This calls for community-based networks which institutionalize the protocol and procedures of cultural authority and ensure collaboration and community input to research, implementation and follow up. These organizational and procedural initiatives could *build on and help build up the social capital of the community and the methods which they embody* (i.e. planning with social and cultural capital for their mutual enhancement).

4.10.4.3 Methodological Integrity

Cultural protocols will help ensure methodological integrity for TEKS research and implementation; the presence of elders and input of other community members will help assure that protocol is followed. This offers a crucial opportunity for scientists, professionals and other researchers to learn and have first hand experience with the cultural protocol and other aspects of TEKS. The input of scientists, professionals and other researchers will also help to insure methodological integrity. The direct experience of Western science and its methods – as cultural protocol on knowledge – will offer valuable experience and learning for elders and other TEK and community specialists. *The group of scientists, researchers and professionals, elders, TEK specialists and other community members will have the task of achieving together the protocol and procedural rigour which reflects the interdisciplinary, inter-cultural and meta-epistemological character of their mixed model.*

4.10.5 The Epistemology of Participant-Observation:

Some academics are cautious of participatory based research. In *Case Study Research, Design and Methods*, a well used academic text for graduate level research, Robert Yin cites methodological literature, writing that the major problems related to “participant-observation have to do with the potential biases produced.”¹⁹⁶ He lists three main points of concern: i) the researcher may have less ability to work as an observer, becoming involved in advocacy and other roles which are “contrary to the interests of good scientific practice; ii) the researcher is

likely to follow a “commonly known phenomenon” becoming a supporter of the group or organization studied, the existence of such support likely already being present; iii) the participant role may take too much time relative to the observer role and simply not allow enough time for note taking and the raising of questions about events from different perspectives, “as a good observer might”.¹⁹⁷

Yin implores that the trade-offs between the opportunities and problems of a participatory approach must be considered seriously in undertaking any participant-observation study. He writes that, under some circumstances, this may be “just the right approach”; under others, “the credibility of a whole case study project can be threatened.”¹⁹⁸ The tensions between what Yin describes as the researcher’s “role of observer” versus the “role of participant” are notable. The role of researcher-as-participant is seen as having the potential to invalidate her/his credibility as an observer. Presumably, although these roles may go hand in hand, there should be a clear procedural/epistemological distinction between them. Moreover, there is a danger that one’s participation – one’s involvement – with the subject matter can substantively undermine one’s ability to work as an observer, getting caught up in attitudes and activities “contrary to the interests of good scientific practices”.¹⁹⁹

Yin is accurate in flagging the temporal constraint; it can be difficult, inconvenient and often intrusive to make consistent and extensive documentation (e.g. note taking, and audio or visual recording). This is especially the case when involved in community-based work, which is time consuming and labour intensive. Yet, Yin’s insight on research methods of participation is largely epistemological and typifies mainstream academic research.

It is perhaps more noteworthy that the question is rarely or never raised as to whether a researcher’s role, actions and perceptions as an observer may have the impact of invalidating one’s role, abilities and perceptions as a participant. This has been a far more serious concern for myself and others involved in work with First Nations, especially with regard to community trust and perception. Many people in First Nations communities feel as though they have been literally “studied to death”. The concern for cultural appropriation is also a disincentive. Other issues involve the concern that, while community members may be sought for their knowledge, there may be little direct benefit to the community, and worthwhile findings may never make it from the shelf into practice.²⁰⁰ It may be a waste of community time. In my experience, good research is the result of good relationship, of being connected in sincere ways. Terry Alec said:

...It’s a must...We’ve had tonnes of professors...and researchers come into our communities and divulge information from our elders and we don’t see nothing from it...and elders that I’ve worked with over the years share with me, “sure it nice to receive monies from these that are coming from all over the place, but we like to see the end product too. A lot of the elders have voiced that they’ve really felt invaded upon; researcher after researcher has come into the community ...they research us to death, and then boom they’re gone. You know, we don’t

hear nothing or see anything from all the work that these people do, all the studies that these people do on us. We've been assessed to death.

The whole notion of the separation of the "participant" and the "observer" is a Western epistemological construct based on the subject-object separation as a basis for knowing. This features the "cognitive dissonance" inherent in positivism which dominates most academia. I am not rejecting the validity of this research model. It has been the basis for a great deal of useful research and technical application. Yet it can also be seen to constitute a liability for certain types of learning and in certain contexts. It is not within the realm of my dissertation to explore the question of the internal validity of the subject-object separation as a basis of knowing. Nor is it necessary to pursue such problems in order to state the case for alternatives. Some of these alternatives may fall outside of the dominant epistemological model; however, there are bridges which can be built, which is partially the impetus for my dissertation.

Efforts that actively involve researchers in community process is a form of participatory research. As mentioned, the Dene Cultural Institute prepared a document offering "Guidelines for the Conduct of Participatory Based Community Research." It is primarily the outcome of a traditional environmental knowledge pilot project to develop methods for documenting TEK in three Dene communities using a participatory community research approach. The substantive focus of these projects was on traditional medicine, environmental knowledge and justice. Final input was made by individuals involved with TEK across Canada. The guidelines are offered for both government and non-governmental agencies carrying out cooperative research in aboriginal communities in Canada. Due to the focus on Dene communities, it is suggested that some of the recommendation and examples may not be applicable to all projects or First Nations communities. They also notably suggest that some of the guidelines may be applicable to participatory environmental research in non-Native resource based communities.

4.10.6 Building Bridges Between TEKS and Western Science: Towards A Methodology of Learning and Respect

My methodological response to the above issues is to have two cases of empirical research: a case study in which I have had no direct involvement; and a case application in which I was directly involved in a community with whom I still have ties. To approach First Nations people as an "object of study" –or their culture which amounts to the same thing– is both an ethical liability and methodologically incorrect from the TEKS perspective. It runs contrary to the requirements of cultural protocol and principles of respect and sincerity which are arguable methodological precedents.²⁰¹

There are ways of demonstrating respect which allow for the possibility of access to information – data – in TEKS. Moreso, these methodological requirements allow for access to the *holders of knowledge and wisdom* opening the possibility for participation in experiential learning processes (e.g. food gathering, ceremonies, singing, paddling journeys on ocean going canoes,

extended cultural and wilderness immersion, language, cultural history and its means of transmission, traditional medicinal study and other cultural teachings relevant to TEKS, as well as community-based research and implementation processes) and meaningful relationships.

Rather than focusing on the potential for generating bias which could poison the objectivity of research, I think it is more fruitful to be up front about one's own bias and the cultural model in which it is embedded. This is underscored by the awareness that, while there is significant academic impetus and methodological support towards "objectivity", there is an even greater need to develop paradigms and practices of participation and involvement. One approach to research which is more sympathetic to such insights is the *participatory action research* model.²⁰² This is an approach which has been used effectively in work with academics, consultants and other professionals in First Nations communities.²⁰³ The participatory action research approach goes further than does participant observation towards recognizing the researcher's involvement on the spectrum of observation and involvement. The methods used for *A Spirit of Understanding* are closer to this model.

Participating in community-based research and implementation obviously requires recognizing one's involvement in a community, not only as a researcher, but as a *whole person*. Being part of the community means we bring *all of ourselves*, not just our skills as a researcher. It is up to the researcher to "show up" and participate.²⁰⁴ Another way of saying this is "to do the work you have to become a member of the community".²⁰⁵ This does not mean that one needs to move their home and family. It does mean that one must learn to be aware of one's own beliefs, perceptions, personal and cultural biases, not just as a researcher, but as a *person*. Being part of a community is as much a personal and cultural process of learning as it is an academic one. It is both a methodological necessity and boon for research, as I found in *A Spirit of Understanding*. It was one of the greatest lessons, professionally, academically and personally.²⁰⁶

Such manner of self-knowledge and self-examination are not only important features of cultural literacy and community involvement, they are basic proficiencies and practices for community-based research and implementation in the bi-cultural context. Academics may not be used to thinking this way towards research methods. Yet, research integrity and rigour in application are important features of "good scientific practice." When working in the bi-cultural context with First Nations, the model takes specialized skills and methods which are applicable to research, implementation and professional practice.

A methodology of learning and respect in the bi-cultural community context with First Nations recognizes that "research" involves the researcher in the larger social and cultural contexts in which knowledge is produced. This is especially important for planners whose disciplinary focus is to facilitate knowledge into action. The researcher, or planner, is a participant in a larger context of learning including people, institutions and the community as a whole. It is a context and process of social and cultural learning. This type of research and implementation is more than "just a job"; it is a way of life. This is especially the case for planners and others

whose role is to facilitate the dialogue and exchange of knowledge between cultures. It may be that the discourse between TEKS and Western science-based culture takes a certain type of professional person who is steeped in the skills of cultural literacy and practices of healthy community involvement. Such people are inter-cultural bridge builders; their models are the blueprints, knowledge provides the brick and mortar, the methods are their tools. The next chapters turn to empirical research.

NOTES CHAPTER 4

¹ This point is discussed in "Traditional Ecological Knowledge and Environmental Impact Assessment", Dene Cultural Institute, *Consuming Canada*, in Gaffield and Gaffield, eds., Toronto: Copp Clark Ltd., 1995. They also cite G. Oreshenko, *Sharing Power With Native Users: Co-Management Regimes for Arctic Wildlife*, Policy Paper No. 5, Ottawa: Canadian Arctic Resources Committee, 1988; see also Dene Cultural Institute in Sadler and Boothroyd eds., *A Background Paper on Traditional Ecological Knowledge and Modern Environmental Assessment*, International Study of the Effectiveness of Environmental Assessment, Centre For Human Settlements, University of British Columbia, 1994.

² *Time*, September 23, 1991, p.46. The Great Library in Alexandria Egypt was burned by mobs of zealous Christians in the first Century A.D. With it went the irreplaceable knowledge and wisdom (of quite possibly several millennia) from ancient cultures of the Near and Middle East which was in both oral and written form from mystery schools and other alchemical sciences.

³ *Ibid.* p.48.

⁴ The point is not that this kind of decimation has not taken place in the past, nor is it to suggest that tribal peoples have never committed acts of destruction. There has never been such cultural genocide on this scale, as a by product of socioeconomic development in the manner it has been and is increasing with the global industrial economy. Interestingly, the loss of cultural "bio-diversity" within humanity corresponds to E.O. Wilson thesis on biodiversity loss and the impacts of human intervention. The new area of *bio-pioneering* in genetics has now made it possible for pharmaceuticals and others to actually patent the genetics of Indigenous and other people around the world. Some call it *bio-piracy*.

⁵ *Ibid.* p.52, 54.

⁶ *Ibid.* p.54.

⁷ *Ibid.* p.56.

⁸ I have put the word *shaman* in quotes because, although TIME uses it, it is not a term from that part of the world. The word *shaman* is a Tungusic word for "one who knows" and is a term from Siberian people for a person with a certain community role. The type of abilities this person possesses seemed to anthropologists to be replicated in other cultures and they thus adopted the linguistically sloppy habit of carrying the term over to cultures around the world. *Shaman* has now, unfortunately become a commodified term. One can get self-help "how to" books on becoming an "Urban Shaman", a "Corporate Shaman" or simply attend a workshop on "technologies of the sacred."

⁹ *Ibid.* p. 52.

¹⁰ Many herbs in Canada, including well known ethnobotanicals, locally and internationally available folk remedies, and other plants, are being threatened with heavy regulation and removal from shelves (including: garlic, cayenne, ginseng) This is part of a renewed initiative "Schedule 705" of the Health Protection Branch. Categorized as "drugs", many commonly available herbs will require expensive registration fees, packaging and other deterrents. Some may be banned outright. This went into effect July, 1997; however, broad based national and local outcry has put a moratorium on some. A similar initiative was fought several years prior; recommendations from HPB's own panel of experts for a third category in legislation between food and drug were ignored. The same process has been under way in the U.S. Neither of these examples is as alarming as the CODEX international initiative, already adopted in Germany and the Netherlands, tripling prices, reducing availability and excluding organic and responsibly wild-crafted herbs. Amongst others behind CODEX are Bayer, Horsch, formerly of I.G. Farben, the same folks who supplied lethal gas and other "medicines" to Nazi death Camps. CODEX is being lobbied in Canada and the U.S. by the pharmaceutical industry. The HPB has come under fire from its own medical scientists for bowing to industry pressure on a variety of other issues.

¹¹ Fikret Berkes, "Traditional Ecological Knowledge in Perspective", in *Traditional Ecological Knowledge, Concepts and Cases*, Julian T. Inglis, ed., International Program on Traditional Ecological Knowledge (Canadian Museum of Nature) and International Development Research Centre, Ottawa, 1993, pp.1-2.

¹² For example, Nancy C. Doubleday, "Finding Common Ground: Natural Law and Collective Wisdom", in *Traditional Ecological Knowledge, Concepts and Cases*, Julian T. Inglis, ed., International Program on Traditional Ecological Knowledge (Canadian Museum of Nature) and International Development Research Centre, Ottawa, 1993.

¹³ Op. Cit. p.3

¹⁴ Ibid., p.3.

¹⁵ Op. Cit., p 41.

¹⁶ Ibid.

¹⁷ This has included personal, professional and cultural involvement with over ten First Nations from the boreal woodlands to the prairies, parts of Northern Canada and much of B.C.'s coast and interior.

¹⁸ *Report of the Traditional Knowledge Working Group*, Yellowknife: Department of Culture and Communications, Government of the Northwest Territories, 1991, p.1. The Working Group was composed of elders from a number of communities and was associated with the Dene Cultural Institute who are one of the more active organizational leaders in TEK paradigms.

¹⁹ Quoted in Ibid., p.17.

²⁰ Ibid. p.12 .

²¹ Ibid. p.11.

²² I do not suggest that Western Science is value free, although many consider it to be in its pure form.

²³ I am reminded here, of things told to me about the Potlatch while researching *A Spirit of Understanding*. See the section, "Holistic Resource Management and First Nations: A New Vision?"

²⁴ See J. Michael Thoms, *Illegal Conservation: Two Case Studies of Conflict Between Indigenous and State Natural Resource Management Paradigms*, Master's Thesis, Canadian Heritage and Development Studies, Trent University, (1996). Thom's is a particularly worthwhile study as he documents, not only the persistence of such traditions through extensive live-in research in two communities, one being Nishnabe (Ojibway) in Ontario, the other being Karin in Thailand. He also documents how these two have been confronted by, criminalized and impacted on by state intervention. In both cases, the result of Western development models (e.g. industrialization and colonialism in Canada; response of the Thai government to Western conservation and trade pressures) has precipitated the transition from a sustainable traditional resource management system, in both cases, to unsustainable community resource practices, in both cases. See also Doubleday, "Finding Common Ground: Natural Law and Collective Wisdom", in *Traditional Ecological Knowledge, Concepts and Cases*, Julian T. Inglis, ed. 1993.

²⁵ Fran Hunt-Jinnouchi, at the time Director of the Gwa'sala-Nakwaxda'xw College, is very active in her community, in particular in education. Interview on 12/2/97).

²⁶ I have been privileged to witness and participate in protocol of a number of nations in a variety of contexts for about ten years. For example, I have listened to elders and chiefs deliberate for hours on the passing of cultural property. I have been instructed intensively about protocol by two chiefs and other family members merely to listen to an important legend while researching *A Spirit of Understanding*, (see *Atla'Kima – the Spirits of the Forest*). I have also participated in cultural sharing between nations and witnessed the rigors involved in sharing of songs, dances and oratory. My most influential initiations into protocol (my cultural literacy pre-school) was working one-on-one as a helper to elders and traditional medicine people (e.g. sweat lodge, at events, in the home, gathering medicines).

²⁷ Addressing this point is a significant impetus for the *Spirit of Understanding* document.

²⁸ Some, such as Johannes (1993), use the term TEKMS: Traditional Ecological Knowledge Management Systems. See Johannes in Inglis, ed. 1993.

²⁹ See, Roy Haiyupis, *Land as the base of identity*, 1994a, and *Land is spiritual*, 1995a, unpublished manuscripts available through the Scientific Panel. Haiyupis is an Ahousaht elder who sat on the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound. With great loss to his community, he passed away whilst I was conducting my research.

³⁰ For example, a traditional Big House speaker may train for forty years before speaking their first words at a formal function. This was documented in a series of interviews with Adam Dick, Chief Kwaxsistala of the Dzawada'enuxw (Tsawatainuk; Kingcome Inlet) for the *Spirit of Understanding* document, Lertzman, B.C. Ministry of Education Skills and Training, 1996; footnote 25. Starting at age four, he is one of the few people today who have undergone this manner of rigorous (Kwakwala language) cultural training; according to him he is the last of his lineage to graduate.

³¹ Kwaxsistala lineage is an example. See *Ibid.* fn. 44.

³² For a discussion of the Great Law of Peace and other relevant materials, see the marvellous book *Basic Call to Consciousness, Haudenosaune Address the World*, Mohawk Nation Via Roosevelttown New York, Awkwesasne Notes, 1978. The Constitution of the Iroquois Confederacy was used as part of the model for the American constitution. (The founding fathers of the American system of government, omitted, however, the important detail of the Council of Grandmothers who chooses the chiefs.)

³³ This has included: Algonkian (Nishnabe i.e. Ojibway and Cree – Plains, Swampy and Bush Cree); Siouxan (Lakota and Dakota); Interior Salish ('Nlaka'pamux, Stla'at'limx and Secwepmec i.e. Thompson, Lillooet, and Shuswap); Coastal Salish (Nuxalk i.e. Bella Coola; Sto:lo and Squamish to a much lesser extent); Wakashan, including Kwak'wala (i.e. Kwaguilth, Mamalilikulla, Namgis, Tsawatainuk, 'Nakwaxda'xw, Gwa'sala, Gwagimukw/Quatsino), also Heiltsuk (i.e. Bella Bella), and Nuu-Chah-Nulth; Haida; and Athapaskan to a lesser extent (Nad'u'ten i.e. Carrier, Dene, and Chipeweyen); also Iroquoisan (mostly Mohawk). Much, not all, of this has been through my work with the Rediscovery Program which is a community based cross-cultural wilderness program for youth run from various First Nations communities in Canada, the United States, and elsewhere. This has involved direct work with elders, teachers, singers, dancers, orators, medicine people, and other traditional knowledge holders. This has involved my own role as a learner, helper, singer, story teller, educator, program developer, consultant and wilderness leader.

³⁴ See Rupert Sheldrake, *The Presence of the Past, Morphic Resonance and the Habits of Nature*, New York: Times Books, 1988.

³⁵ Lertzman, *A Spirit of Understanding*, Province of British Columbia, Ministry of Education, Skills and Training, 1996, p.23.

³⁶ *Report of the Traditional Knowledge Working Group*, 1991, p.12.

³⁷ Such teachings have been the source of a great deal of oral history, including: music, dance, visual form, oratory, initiatory and other key rites of life passage, and also traditional management systems.

³⁸ *Report of the Traditional Knowledge Working Group*, 1991, p.1.

³⁹ Berman uses the term "somatic" in *Coming to Our Senses*.

⁴⁰ While I have tried to find as many source materials as I can, I should point out that this is a new field which is growing rapidly. Most writers are non-Native and this explains some of the gaps in the literature. Even though many non-Native writers work directly with First Nations, I think that we can expect to see improvements as an increasing number of First Nations scholars begin to publish.

⁴¹ In Sadler and Boothroyd ed., *A Background Paper on Traditional Ecological Knowledge and Modern Environmental Assessment*, International Study of the Effectiveness of Environmental Assessment, Centre For Human Settlements, University of British Columbia, 1994, p.3.

⁴² Ibid.

⁴³ There are also very specific and more general ways in which respect is shown, many of which are learned as part of general cultural training and upbringing, others that are specialized in knowledge protocols. See for example, "Permission, Recognition and Accountability: A Protocol of Respect", in Lertzman (1996), *A Spirit of Understanding*.

⁴⁴ I experienced this with *A Spirit of Understanding*, and have witnessed it on other occasions. Elders who have worked with scientists and other professionals can play an important bridge-building role. It seems to have been the case with the Scientific Panel in Clayoquot Sound.

⁴⁵ Pam Colorado, "Bridging Native and Western Science", *Convergence*, Vol. XXI, No.2/3, 1998; John Corsiglia and Gloria Snively, "Global Lessons From the Traditional Science of Long-Resident Peoples", and Gloria Snively, "Bridging Traditional Science and Western Science in the Multicultural Classroom" in G. Snively and A. MacKinnon, eds., *Thinking Globally About Mathematics and Science Education*, Vancouver: University of British Columbia, Research and Development Group, 1995.

⁴⁶ Gregory Cajete, *Look to the Mountain: An Ecology of Indigenous Education*, Colorado: Kivaki Press, 1994. This book was his Doctoral Dissertation. Cajete is a First Nations person.

⁴⁷ F. David Peat, *Lighting the Seventh Fire: the Spiritual Ways, Healing, and Science of the Native American*, New York: Birch Lane Press, 1994. Peat is well known for his work in Quantum Theory, Chaos Theory, Bell's Theorem, Cold Fusion, Superstrings, and other popularly published works, including a co-authored piece with David Bohm. M.M.R. Freeman also makes the same point about the convergence of these two traditions in "The Nature and Utility of Traditional Ecological Knowledge" in Gaffield and Gaffield, *Consuming Canada*, Toronto: Copp Clark Ltd., 1995.

⁴⁸ While Peat does not use the concept of epistemology he speaks to the subject often. Similarly, while he does not use the term 'ontology', he presents much material which speaks to the topic.

⁴⁹ *Guidelines for Environmental Assessments and Traditional Knowledge*, CIDA: A Report from Centre for Traditional Knowledge to the World Council of Indigenous People; Alan R. Emery and Associates, 1997. I would have examined this in the body of my thesis had I not only very recently acquired it.

⁵⁰ See for example, George Psathas, *Phenomenology and Sociology, Theory and Research*, Lanham, MD: Centre for Advanced Research in Phenomenology, University Press of America, 1989.

⁵¹ A good example are Howard and Widdowson, whose article "Traditional Knowledge Threatens Environmental Assessment," in *Policy Options* I will be examining in detail below.

⁵² 'Nlaka'pamux people are more commonly known as "Thompson"; my family live at the mouth of the Stein River where there ancestors have lived for thousands of years.

⁵³ Habitat encroachment has precipitated a rise of cougar attacks in the area, a rare thing 15 years ago. When it did occur, it was usually done by the sick, injured or old. I have heard similar experiences to Terry's. I work as an outdoor educator and wilderness guide with *Rediscovery*, a community-based, cross-cultural wilderness program for youth run from First Nations communities. I have made input to a number of educational and training packages which blend traditional and scientific knowledge. One deals with human/bear interface protocol. Several programs are in grizzly country, including the Stein Valley. Wildlife biologists tell us to talk in low tones, which may have a calming influence; elders tell us to speak respectfully or pray to the bear spirit, "Hello, Grandfather! – *Shuch Shuch!* I'm not here to take anything from you, I'm just like you, passing through this beautiful place."; this is how I was taught. When I met *Shuch Shuch* (Grizzly Bear) in the Stein, I had a 60lb. pack, severe tendonitis in both knees and could barely hobble with a stick. I'm glad *Shuch Shuch* listened to my prayers.

⁵⁴ Interview with Terry Alec, 12/13/97.

⁵⁵ I recognize the hypothetical nature of the discussion here. Yet it is not entirely ungrounded. For example, the seminal German hermeneutist Hans-Georg Gadamer explores what seems to be a similar line of

inquiry in his famous treatise *Truth and Method*. This is where he considers “Play as the Clue to Ontological Explanation” in “The Ontology of Art and its Hermeneutic Significance” and refers to “the mode of being of the work of art itself”. I do not pretend to be versed in this area, yet I would flag it as an one of future inquiry.

⁵⁶ Milton M. Freeman, “The Nature and Utility of Traditional Ecological Knowledge” in Gaffield and Gaffield, *Consuming Canada*, Toronto: Copp Clark Ltd., 1995, reprinted from *Northern Perspectives* 20, 1 (Summer, 1992); 9-12.

⁵⁷ See M.M.R. Freeman, “Appeal to Tradition: Different Perspectives on Wildlife Management”, in *Native Power: The Quest for Autonomy and Nationhood of Aboriginal Peoples*, ed. J. Brosted, J. Dahl, et. al., Oslo: Universitetsforlaget, 1985; 265-81. Source, Freeman in Gaffield and Gaffield, 1995.

⁵⁸ See Freeman in Gaffield and Gaffield and his reference to, “Population Characteristics of Musk-Ox in the Jones Sound Region of the Northwest Territories”, *Journal of Wildlife Management*, No. 35, 1971.

⁵⁹ See M.M.R. Freeman, “The Alaska Eskimo Whaling Commission: Successful Co-Management Under Extreme Conditions”, in *Co-operative Management of Local Fisheries*, E. Pinkerton ed., Vancouver: UBC Press, 1989; 137-53. From Freeman in Gaffield and Gaffield.

⁶⁰ See M.M.R. Freeman, “Graphs and Gaffs: A Cautionary Tale in the Common Property Resource Debate” in F. Berkes Ed., *Common Property Resources: Ecology and Community-based Sustainable Development*, London: Belhaven Press, 1989; 92-109. Source, Freeman in Gaffield and Gaffield, *Consuming Canada*, Toronto: Copp Clark Ltd., 1995.

⁶¹ M.M. Freeman, in Gaffield and Gaffield ed., 1995, p.39.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid. p.40.

⁶⁵ Ibid.

⁶⁶ Ibid. p.41.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Ibid. p.42.

⁷² Ibid.

⁷³ Ibid. p.43.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Interview with Dr. Lertzman in his office at the School of Resource and Environmental Management, Simon Fraser University, 7/22/97.

⁷⁸ Great Mystery can be found in several areas. One well known origin is from the Siouxan languages – *Wakan Tanka’a*. I was told that *Wakan* literally means, “something you don’t understand” (he added that since he didn’t understand me, perhaps I was a *Waisichu* (whiteman) *Wakan*.) *Tanka* – means “great” or “really big”. “Great Spirit” is somewhat similar; it is an English translation of a Nishnabe (Ojibway)

term – *Kgitchay Manitou* – from the Algonkian language group. One hears derivations of the word *Manitou* quite a bit back East in place names like “Manitoulin Island” or “Manitoba”.

⁷⁹ Thus, we will hear in oral histories, legends and stories where stones are referred to as “rock people” or the “patient people” or, as one friend of mine calls trees, “the standing people”. I have often heard prayers where an elder will refer to “the winged nations” or the “finned people”.

⁸⁰ It seems to have the sense of a “nested hierarchy”.

⁸¹ See David Abram, *The Spell of the Sensuous*, New York: Vintage Books, 1997.

⁸² Irving Hexham, *Concise Dictionary of Religion*, Downers Grove, IL: Intervarsity Press, 1993, p.166. The term was coined in the late 17th century by John Toland.

⁸³ Gedes MacGregor, *Dictionary of Religion and Philosophy*, New York: Paragon House, 1989, p. 462. The term was coined in the early 19th Century by K.C.F. Krause.

⁸⁴ *Ibid.*

⁸⁵ Pantheistic philosophy can be quite an involved and elaborate system of thought, found in aspects of Hinduism, Buddhism and Taoism, as well as Hermetic, Alchemical, Greek, Kaballah and other mystery schools. The most well known and thoroughly expounded system of pantheism in Western culture is that of the 17th. Century Jewish philosopher and theologian Baruch Spinoza. In spite of the fact that many Christian and other Western mystics have espoused pantheistic beliefs, many regard the ideas of pantheism as atheistic or irreligious and inimical to Christianity and Western, transcendentalist monotheism in general. Panentheism is by some as an attempt to reconcile the theistic transcendentalism of Western religiosity with a more naturalist pantheistic outlook.

⁸⁶ For a scholarly discussion of Tyler, Frazer, their contributions and critics see Stanley Jeyaraja Tambia, *Magic, Science and the Scope of Rationality*, Cambridge: Cambridge University Press, 1990, in particular, “Sir Edward Tyler versus Bronislaw Malinkowsky: is magic false science or meaningful performance?”. He draws connections between ideas in Tyler’s thought with those of Kuhn, Popper and others; he also discusses the challenges to both Frazer and Tyler, in particular by Wittgenstein and Malinowsky. This is an excellent book and has much to offer on the broader terrain of the subject, in particular the question of “Multiple orderings of reality”, (Lévy-Bruhl) participation and causality.

⁸⁷ *Ibid.*48.

⁸⁸ Hexam, 1993, 18.

⁸⁹ Michael Pye, *MacMillan Dictionary of Religions*, London: MacMillan Press, 1994, p.15.

⁹⁰ Tambiah, p.46.

⁹¹ *Ibid.* pp.48-49.

⁹² Indeed, as discussed briefly in the first chapter, they likely had a significant influence on the development of science. *Hermeticism and the Renaissance: Intellectual History and the Occult in Modern Europe*, Ingrid Merkel and Allen G. Debus, eds. Toronto: The Folger Shakespeare Library, Associated University Press, 1988, provides excellent scholarly treatment of the subject, both philosophical and historical. See especially the section on *Magic Philosophy and Science*, including such topics as: “Alchemy in the Age of Reason”, “Witches, Wise Men, Astrologers and Scientists” and a fascinating review of “Newton’s *Commentary on the Emerald Tablets of Hermes Trismegistus: Its Scientific and Theological Significance.*”

⁹³ Quoted in Tambiah, p.50.

⁹⁴ Interestingly, some may think of magic as “pseudo-science”; would we ever think of science, however, as “pseudo-magic”? If we were to take the historical perspective, it could be more accurate to think about science as a form of magic than magic as a form of science; both could be seen as part of alchemy.

⁹⁵ Tambiah does provide some discussion of these issues in the chapter, "Malinkowski's demarcations and his exposition of the magical art". Malinkowski is certainly a step further than Frazer, yet he still falls into the position that, while magic may be a "true" social act, it is still a "false" technical act. I see this as indicative of the problems of studying and assessing one model from another's assumptions, methods and values. Spirits are not a "theory" as we think of it.

⁹⁶ Ibid. pp.50-51.

⁹⁷ Ibid. p.55.

⁹⁸ Ibid.

⁹⁹ Ibid. p.63.

¹⁰⁰ Ibid.

¹⁰¹ Ibid. pp.63-64.

¹⁰² Tambiah p.87.

¹⁰³ From Tambiah, p.86.

¹⁰⁴ Ibid. p.86.

¹⁰⁵ Ibid. p.86.

¹⁰⁶ Tambiah notes that what Lévy-Bruhl struggled to describe under the concept of participation was carried further and clarified by his friend Maurice Leenhardt who, unlike Lévy-Bruhl, had significant first hand experience of Melanesian life. He also points out that Lévy-Bruhl's concept of participation which he strove to illustrate largely from secondary accounts "has been magnificently documented" by Foucault in *The Order of Things*, in 16th Century European thought known as the "doctrine of signatures" wherein the idea of "resemblance" played a role in the relation between humans and the phenomena of the cosmos. Ibid. p.87.

¹⁰⁷ Ibid. p.102.

¹⁰⁸ Ibid. p.102.

¹⁰⁹ Ibid. p.105. emphasis added; I appreciate that Tambiah states, quite clearly, this qualifier.

¹¹⁰ Ibid. p.105.

¹¹¹ "I need not develop further the philosophy and methodology of the prestigious sciences further here," he writes. p.106.

¹¹² Leenhardt was a missionary in Melanesia for almost 25 years (from 1902-1925) and as a professional anthropologist later held the chair at the *Ecole Pratique des Hautes Etudes*, where he elaborated and refined the notion of *participation* as the central feature of the New Caledonian people's "mythical sensibility". Tambiah writes that Leenhardt "infused the notion of participation with a realism and intensity, and gave it the kind of body and substance, that Lévy-Bruhl did not achieve." (p.106)

¹¹³ Ibid. p.106

¹¹⁴ He discusses briefly the Marabouto cult of Saints in Morocco, sacred geography in Hindu villages and amongst pilgrims, in Sri Lanka, Tobriand Islanders and Calbrian villages in southern Italy. He also considers examples in Buddhism; of Thai royalty; of young North Americans demonstrating against nuclear weapons and for their environment; the Romantic poets, Wordsworth, Shelly, and Coleridge; even national monuments such as Lincoln's or Jefferson's; as well as gender based insights – all are intimations of participation.

¹¹⁵ Ibid. p.107.

¹¹⁶ Ibid. p.106; emphasis added.

¹¹⁷ Recall the earlier comment by Toulmin there are four fundamental ways in which the philosophers of the scientific revolution and the Enlightenment retreated from what he refers to as “the long standing preoccupations of Renaissance humanism”. They disclaimed the validity of four different realms of practical knowledge: the oral, the particular, the local and the timely.

¹¹⁸ In Tambiah, p.107.

¹¹⁹ Ibid., p.106.

¹²⁰ Ibid.

¹²¹ F. David Peat, *Lighting the Seventh Fire: the Spiritual Ways, Healing, and Science of the Native American*, New York: Birch Lane Press, 1994. pp.8-9, emphasis added; his claim that the book is not “about” Native people is well taken, in that he is trying to focus on the bringing the two “worlds of consciousness” together. At the same, it is hard to avoid be seen as writing “about” people; if you are writing about people’s knowing, you are writing about them.

¹²² Ibid.

¹²³ Ibid. p.67.

¹²⁴ Ibid. p.68.

¹²⁵ See Andrew Chapeskie, *Land, Landscape, Culturescape: Aboriginal Relationships to Land and the Co-Management of Natural Resources*, Prepared for the Royal Commission on Aboriginal Peoples, 1994.

¹²⁶ Interview with Thom Henley, 7/13/97. Henley has been recognized with numerous national and international awards for conservation and human rights with Indigenous people. He has published several books, lectured in 15 countries and travelled to 72. Adopted into a Kigani Haida Raven clan, he is a founder of the Rediscovery program and has been given names in several cultures.

¹²⁷ David Abram, *The Spell of the Sensuous*, New York: Vintage Books, 1997, is an important piece. He draws upon phenomenologists such as Husserl, Heidegger and Merleau-Ponty, while at the same time relying on Indigenous wisdom and TEK from around the world. His lifestyle and research methods depict the epistemological diversity necessary to explore such theoretical domain: he holds a Ph.D. in philosophy, writes chiefly on ecological issues and is an accomplished slight of hand magician who has lived and “traded magic” with Indigenous people in Indonesia, Nepal and the Americas.

¹²⁸ This was confirmed in an interview with Dr. Jan Van Eijk (Ph.D.-Linguistics), 8/7/97. Dr. Van Eijk is a specialist in First Nations languages and a Professor of Native Indian Languages at the Saskatchewan Federated Indian College. He is fluent in Stla’atl’imx, a complex interior Salish language. He is also familiar with other First Nations languages and has been involved in curriculum development.

¹²⁹ For example *Wakan*, from the Siouxan language group, is not a word we have in English. It would take several words to attempt to convey its meaning—sacred, mystery, something we don’t understand, having power—and could be the subject of much discussion or writing. It can be placed with other words to create or emphasize meaning. For example, *Tanka* means “great”; *Wakan Tanka* is an appellation for the Supreme Being. It can be put with *Wichasha* for man”, which is “Holy man”; put with *sunka* for “dog”, it becomes “horse”. According to Van Eijk, it is similar to the Lillooet word *axa*.

¹³⁰ Abram is not the only one who makes this point, see “the Greek Language Question” in Deloris LaChapelle, *Sacred Land, Sacred Sex, Rapture of the Deep*, Silverton Colorado: Finn Hill Arts, 1988. Much of such material is based on the earlier work of Eric Havelock, linguist and literary historian.

¹³¹ Worf’s work went out of vogue with the rise of structuralism (e.g. Chomsky) but is becoming of interest again. In spite of some of the problems with his work, there is some worthwhile material.

¹³² Benjamin Lee Worf, “An American Indian Model of the Universe”, in *Language Thought and Reality*, John B. Carroll, ed., Cambridge MA: The MIT Press, 1956, p.57.

¹³³ Ibid. p.85.

¹³⁴ "Kwakiutl Prayer to the Cedar Tree", Quoted in Thom Henley, *Rediscovery: Ancient Pathways, New Directions*, 2nd. edition; Vancouver: Lone Pine, 1996, p.164. 'Nlaka'pamux people, more known to most non-Natives as "Thompson", are from the mouth of the Stein Valley near Lytton B.C. The Stla'atl'imx people are related to the Lillooet and are from the Mount Curry area near Pemberton. Both have a long standing relationship of use and worship in the Stein Valley.

¹³⁵ Interview with Dr. Nancy Turner, 7/24/97. Dr. Turner worked has with First Nations elders and TEK specialists for many years up and down the coast and in the interior of the province. A common phrase one hears at First Nations prayer circles which embodies this idea is "All my Relations."

¹³⁶ Discussed below at "4.1.2 Background: Land Use Issues and Colonialism in Canada and Clayoquot Sound". I dealt in detail with this in my Master's Thesis, *Perspectives on Native Self-Government in Canada*, Masters, Department of Political Science, York University, 1987; and more recently in the historical section of *A Spirit of Understanding*, Province of British Columbia, Ministry of Education, Skills and Training, 1996.

¹³⁷ This is no surprise given that science and capitalism are correspondent historical developments.

¹³⁸ Someone once told me, "the only thing we (First Nations) have in common is you (White) guys!"

¹³⁹ See Tambiah's discussion of Wheeler's article on the disagreement between Bohr and Einstein on the nature of Quantum "reality" and participatory implications of Heisenberg, p.110 and Rees 'Comparing Competing Paradigms' in "Achieving Sustainability: Reform or Transformation?"

¹⁴⁰ Tambiah obviously goes into greater detail of discussion and looks at a number of philosophers who have considered these problems. See "The contesting positions regarding rationality and relativity" in "Rationality, Relativism, the translation and commensurability of Cultures" in *Ibid.* pp.111-139.

¹⁴¹ *Ibid.* p.116.

¹⁴² *Ibid.* p.116.

¹⁴³ *Ibid.* p.116.

¹⁴⁴ *Ibid.* p.109.

¹⁴⁵ *Ibid.* p.123.

¹⁴⁶ Quoted at *Ibid.* p.123.

¹⁴⁷ *Ibid.* p.109-110.

¹⁴⁸ In chapter on "Developing Community Based Curriculum and Programming" in the *Spirit of Understanding*, there is a section entitled "'Cultural Literacy' and The Bi-Cultural Context." I write that, "many people may work and live with those from other cultures, perhaps for all of their life, yet they may never become bi-cultural people. They may not achieve 'cultural literacy'.

¹⁴⁹ Interview in his office at Malaspina University-College, 12/3/97

¹⁵⁰ An example might be the work of biologist Rupert Sheldrake, see *Presence of the Past*; or of David Bohm, see *Wholeness and the Implicate Order*. While some might argue that I am presenting a rather narrow view of science, this is the mainstream perspective. I do not discount that there are variations.

¹⁵¹ Albert Howard and Frances Widdowson, "Traditional Knowledge Threatens Environmental Assessment," *Policy Options*, November 1996, pp.34-36. They point out that the Charter states "...government may not coerce individuals to affirm a specific religious belief or manifest a specific religious practice for a sectarian purpose."; *ibid.* p.34.

¹⁵² *Ibid.*

¹⁵³ *Ibid.*

¹⁵⁴ *Ibid.*

¹⁵⁵ Op.Cit. p.35.

¹⁵⁶ Ibid. 35.

¹⁵⁷ Ibid.

¹⁵⁸ Ibid. p.36. emphasis added

¹⁵⁹ Ibid.

¹⁶⁰ "Revisiting Traditional Knowledge", *Policy Options*, April 1997, p.46. This article took the form of a rebuttal to two articles in the April 1997 issue of *Policy Options*: Marc G. Stevenson, "Ignorance and Prejudice Threaten Environmental Impact Assessment" (pp.25-28); Fikret Berkes and Thomas Henley, "Co-Management and Traditional Knowledge: Threat or Opportunity" (pp. 29-31).

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Ibid. p.47.

¹⁶⁴ Ibid. p.47. emphasis added.

¹⁶⁵ Ibid. p.48.

¹⁶⁶ Ibid. p.46.

¹⁶⁷ What Weber called the "colonization of the lifeworld."

¹⁶⁸ "Pre-capitalist" is a Marxist term. It is Eurocentric and racist in that it implies the Western developmental teleology that all people are in a general process of social evolution towards Western industrialism. Marx wrote in the *Grundrisse* that capital is the ultimate revolutionary force in history, tearing down all prior forms of "nature idolatry", paving the way for capitalism and eventually socialism. In the *Economic and Philosophical Manuscripts of 1844*, he wrote that nature's highest expression is in Western industrialized humanity and that, devoid of the insight of scientific abstraction, nature is, of itself, "nothing-a nothing proving itself to be nothing [and] has only the sense of an externality which needs to be annulled". See "Economic and Philosophical Manuscripts of 1844" in Tucker, *The Marx-Engels Reader*, New York: W.W. Norton & Company, 1978, p. 75, 123.

¹⁶⁹ I have dealt with this in detail in my Master's Thesis, and in the historical section of *A Spirit of Understanding*, Province of British Columbia, Ministry of Education, Skills and Training, 1996.

¹⁷⁰ See "Tempest in a Teepee, Getting into the Spirit of Things", *Globe and Mail*, D1-2, August 9, 1977.

¹⁷¹ Many of the people, for example, who participated in the residential schools really thought that they were "helping". We see this coming out now in trials, talk shows and other media venues.

¹⁷² J. Michael Thoms, *Illegal Conservation: Two Case Studies of Conflict Between Indigenous and State Natural Resource Management Paradigms*, Master's Thesis, Canadian Heritage and Development Studies, Trent University, (1996), p.26.

¹⁷³ Ibid. p.27.

¹⁷⁴ Ibid. p.27. He also cites James Clifford,, "On Ethnographic Allegory", *Writing Culture: The Poetics and Politics of Ethnography*, James Clifford and George E. Marcus eds., Berkley, University of California Press, 1986; 98-121.

¹⁷⁵ Ibid. p.27. He gives the example from his own research in Thailand where one Karin village, the Mae Me Nai, did not feel that another tribe who live above their community practised conservationist values; their hope was the other village would move their community from outside watershed.

¹⁷⁶ Ibid. pp.27-28.

¹⁷⁷ From Pierre Lepage, *Reconciling Wildlife Conservation and Native Rights*, Montreal: Commission des droits de la personne du Quebec, March 30, 1982; source, Thoms, 1996, p.28.

¹⁷⁸Ibid.

¹⁷⁹ I will be going into greater detail on this later; see also *A Spirit of Understanding*.

¹⁸⁰ See Dianne Newell, *Tangled Webs of History: Indians and the Law in Canada's Pacific Coast Fisheries*, Toronto: University of Toronto Press, 1993. Frank Tough, *As Their Natural Resources Fail*, Vancouver: UBC Press, 1996; Robert G. MacCandles, *Yukon Wildlife: Social History*, Edmonton: University of Alberta Press, 1985. Thoms, *Illegal Conservation*; see above. Bruce Hodgins and Jamie Benedickson, *Temagami Experience: Recreation, Resources and Aboriginal Rights in the Northern Ontario Wilderness*, Toronto: University of Toronto Press, 1990. Frank Tough, "The Criminalization of Indian Hunting in Ontario, c. 1892-1930", paper presented to the Commonwealth Geographical Bureau Land Rights Workshop, Wellington/Christchurch, New Zealand, February 2-8, 1992.

¹⁸¹ Howard and Widdowson, 1996. p.35.

¹⁸² See for example, Clive Ponting's *A Green History of the World: the Environment and the Collapse of Great Civilizations*, New York: St. Martins Press, 1992; also Mannion, A.M. *Global Environmental Change*, 2d. ed. Essex: Longman, 1997. The strange disappearance of the Anasazi is reputed by some to be the result of deforestation, as is the fate of the Easter Island culture.

¹⁸³ For example, fire was used for berry and root cultivation, and in agriculture in many places in North America.

¹⁸⁴ Interview with Dr. Atleo in his office at Malaspina University-College, January 31, 1996; quoted in Lertzman, 1996, p.20.

¹⁸⁵ In the Splats' in Rediscovery Program, for example, we start our basic survival skills workshop with a discussion of attitude, thus setting the tone for other lessons in "cultural survival", counselling and community protocol. The wilderness and other cultural and personal survival skills which participants learn are transferable to their day to day lives back at home on reserves and in urban centres. This has been demonstrated through ongoing professional and personal experience, as well as in research for which I have been contracted by the Spallumcheen Indian Band to perform for program evaluations of Splats' in Rediscovery (Program Evaluation for the Summer of 1993; Program Evaluation for the Summer of 1994, Prepared for David Tremblay, Director, Splats' in Rediscovery).

¹⁸⁶ Chief Robert Wavey, International Workshop on Indigenous Knowledge and Community-based Resource Management: Keynote Address", in *Traditional Ecological Knowledge: Concepts and Cases*, Julian T. Inglis, ed., International Program on Traditional Ecological Knowledge (Canadian Museum of Nature) and International Development Research Centre, Ottawa, 1993, p. 11.

¹⁸⁷ Ibid., p.11.

¹⁸⁸ Ibid., p.12.

¹⁸⁹ Ibid., p.13.

¹⁹⁰ Ibid. p.16, emphasis added.

¹⁹¹ Interview with Terry Alec, 12/13/97.

¹⁹² Dene Cultural Institute in Sadler and Boothroyd ed., 1994, p.10.

¹⁹³ Mulvil (1988) in Dene Cultural Institute, 1995, p.350.

¹⁹⁴ See P.J. Usher, "Devolution of Power in the Northwest Territories: Implications for Wildlife" in *Native People and Renewable Resource Management*, Edmonton: Alberta Society of Professional Biologists, 1986. Source Dene Cultural Institute, 1995.

¹⁹⁵ Interview with Gordon Prest, Coordinator of First Nations Forestry at the University of British Columbia, 7/28/97.

¹⁹⁶ Robert K. Yin, *Case Study Research, Design and Methods*, Applied Social Research Methods Series, Volume 5, Thousand Oaks California: Sage Publications, 1994, p.89. This book is often checked out from the library with a waiting list of holds and is heavily used on reserve library lists.

¹⁹⁷ Ibid.

¹⁹⁸ Ibid.

¹⁹⁹ Ibid.

²⁰⁰ These are all concerns that I have listened to first hand, both with the *Spirit of Understanding Project* and in others.

²⁰¹ One aspect of which is to ensure the "locatedness" of knowledge.

²⁰² For an useful introduction to this research model, see Julian Norris, *From the Field, an introduction to participatory action research*, Calgary: PAR Trust, 1997. This is a comprehensive field guide for Canadian PAR practitioners including First Nations Case studies.

²⁰³ The Four Worlds Development Learning Centre has used this approach in a number of communities on a variety of projects.

²⁰⁴ From David Lertzman (1996), "A Note on Research Methods" in *A Spirit of Understanding*, p.2.

²⁰⁵ Ibid. p.53.

²⁰⁶ See the "Personal Skills Section" in *A Spirit of Understanding*.

CHAPTER 5:

CASE STUDY:

The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound

The following case study is of the *Scientific Panel for Sustainable Forest Practices in Clayoquot Sound* as a current example of dialogue between First Nations traditional knowledge experts and Western scientific knowledge specialists. I see this as part of the larger discourse between Indigenous people and Western modernity. This is a Canadian case focusing on issues of sustainability. The Panel was appointed by the provincial government of British Columbia to review forest practices standards in Clayoquot Sound and recommend new forest practices standards. The main focus of my case study is the Panel's third report: *First Nations' Perspectives*. There are three interviews with Panel members, including the Co-Chair (see "1.2 Research Methods for details). The transcription of interviews is presented verbatim and often at length to preserve the character of "orality".¹

I apply the criteria for TEKS developed in the previous chapter (social capital, cultural capital, methods) and the ECO framework to analyze the discourse between TEK specialists and scientists on the Panel and the nature of the planning process they adopted. To what extent did the Panel recognize these social and cultural capital and TEKS methodological features? To what extent did they play a role in shaping the planning process and in determining its outcome? What can we learn from the Panel about TEK and its interface with Western science? What kind of learning took place on the Panel? Were there difficulties and tensions and how were the members able to overcome barriers to their cultural interface? What was the role of planning and the nature of the planning model? I then consider these lessons to inform the impetus for a model of planning between cultural paradigms.

Using textual analysis (Panel reports, government documents, press releases) and interviews, it will be shown that the Panel recognized the three aspects of TEKS I have identified: the cultural capital component; the social capital component; and its methodological feature. In building a bridge between Western science and TEKS, the Panel arrived at a mixed cultural model which, albeit with some tensions, harmonized a meta-epistemological approach to their planning task in respect of the methodological requirements and substantive contributions of its bi-cultural and multi-disciplinary constituents. Amongst other things, key features of the Panel's success involved asserting their independence from government and other political pressure, the definition of protocol, a recognition of the importance of planning, and their adoption of key methodological features of Nuu-Chah-Nulth TEKS as a basis for their planning process.

There was a substantive enough discourse to facilitate an interface between the two knowledge cultures of Western Science and TEK where an articulation of different paradigms occurred. This was the impetus for a new ecosystem-based planning model combining scientific and traditional knowledge. The outcome is a paradigm shift in two distinct ways. The first is part of the transition to ecosystem-based models in the culture of Western resource management. The second is on a deeper cultural level as the model was the outcome of an experiential interface between TEKS and Western science. This underscores the need for a meta-epistemological approach to planning theory and practice in the transition to sustainability. The Scientific Panel has great symbolic significance: culturally, historically, politically and epistemologically. Its substantive and theoretical contributions have implications beyond the immediate geographical and multi-disciplinary focus.

5.1 Introduction: The Historical Importance and Symbolic Significance of the Scientific Panel

In order to grasp the symbolic significance of the Scientific Panel, and its contributions, it needs to be put in the larger historical context. The fact that First Nations people have forever lived in the lands now called Canada often seems to escape the history books. Oral traditions stretch back to creation; archaeological evidence documents human presence for at least eleven thousand years in the Pacific Northwest and elsewhere in North America.² While there are two models of historical origin, one of Indigenous oral tradition and the other from Western science, both agree that these lands have been occupied since time immemorial by First Nations.

Born through the conquest of First Nations ancestral homelands, like most countries in the Southern and Western hemispheres, Canada has a colonial history. That history lives on; the attitudes and beliefs of the colonial mentality which created this country are the foundations for current legal and political institutions, including resource management and land use policy. This has shaped and guided the development of political and economic relations between Canada and First Nations. The same beliefs, attitudes and social forces which formed the cornerstones of Canadian colonial policy are extant today.

Even though First Nations have been, and still are fundamental to the development of this country, they have generally been regarded as part of the "background" of Canadian history.³ Like the land, First Nations people were lumped in with the rest of the natural setting, "as savages to be feared, as a means to economic and political ends, as an impediment to political and economic development, as uncivilized heathen to be Christianized and brought up to Western standards, or merely an invisible detail to be ignored."⁴ This is not to blame or point fingers, it is merely to bring to light historical fact. It is far too easy to push such realities into the shadows of Canada's past. The facts, although unpleasant and disturbing, must be brought to light in order to have a more complete understanding of Canadian history and current affairs.

Historically, First Nations have been regarded on the basis of European criteria and dealt with in order to serve the goals and objectives of a foreign and dominating colonial culture.⁵ The earlier character of the relationship between European powers and First Nations was of trade dealings and, at times, military alliances between sovereign nations. First Nations people and their knowledge have made a great many contributions to early post-contact history and development in North America. After this era, First Nations were increasingly viewed by colonialists and other Europeans as an impediment to social and economic progress. Their cultures have been regarded at best as irrelevant, and worse, as dangerous to Canadian society at large and First Nations themselves.⁶ Such attitudes formed the basis for government policies of culture termination and assimilation of First Nations people.

The official policy of assimilation persisted until major revisions of the Indian Act in 1951, though it was actively carried out by residential schools well into the 1970's. Termination ended officially with the Constitution Act of 1982, its last major statement being in the Trudeau government's *White Paper* of 1969. Yet we still live with the structural legacy of the colonial worldview. As discussed earlier, this worldview entailed a break with the Indigenous heritage of European peoples and is founded upon the philosophical separation of humanity from nature. The economic practices to which it gave rise instill the imperative for private ownership of land and the exploitation natural resources for increasing industrial development. This perspective has shaped current political and economic reality and land use planning in Canada. The conflict of land use and access to natural resources is a central theme in colonial history and persists to this day. The results from colonialism have institutionalized socioeconomic disparity and racist attitudes and inflicted deep cultural and personal wounds which will take generations to heal.

It is therefore remarkable that the Scientific Panel was ever created. It is perhaps even more remarkable that its members were able to achieve the outcomes they did, where all other previous attempts at land-use planning in Clayoquot Sound (such as the Clayoquot Land Use Strategy) have failed. Aside from the substantive and methodological accomplishments, there is thus an even more important *symbolic* achievement made in the Scientific Panel.

The Panel was sat upon by scientists and elders, each recognized as experts in their field. This is a sign of respect, not just for those individuals. It is a testimony to the communities they represent and a tribute to the knowledge, beliefs and worldviews they reflect. This is a way of recognizing, not only to First Nations, but to other local people, the scientific community, the forest sector, British Columbia, Canada and the world, that Indigenous peoples have something important to say and that we need to listen, for all of our interests.

It is not just *what* was said that is important; it also *how* was said, and by whom. Just as important, are the social, cultural, political and historic contexts in which this took place. These things are not separate. The Panel is symbolic as a meeting of some very fine minds and brave hearts from two totally different worlds. It is an icon of the meeting between those two

worlds—an interface—whose articulation has helped to establish new terrains of knowledge, methods and planning between cultural paradigms.

This is the first time in British Columbia, perhaps in Canada,⁷ where the recognized experts representing pinnacles of knowledge in First Nations and the dominant culture have worked together at this level and in such capacity. Moreover, they made substantive and procedural achievements in the face of tremendous political and economic pressure, marked philosophical and cultural differences with divergent philosophical models and protocol. To agree upon procedure alone, in this context, is a significant achievement. To successfully write government policy in a highly contentious field, such as land use planning in old growth temperate rainforest, not only with multi-disciplinary but bi-cultural input, is remarkable. To have the fate of a now, world recognized area of great ecological and financial capital decided upon for British Columbians through a process, appointed by the government, comprised chiefly of scientists and guided by elders is astounding. To write government policy in this fashion is unprecedented. To accord epistemological legitimacy to both oral traditional knowledge and science, hand in hand as its foundation, is revolutionary and, if I could say, healing.

5.1.1 Background: Land Use Issues and Colonialism in Canada and Clayoquot Sound

Clayoquot Sound, on the central west coast of Vancouver Island, is a truly beautiful and rich bioregion. Comprised by stunning coastlines of great marine biodiversity, they edge along lush temperate rainforests which surge up green mountain slopes and pulse through a number of smaller watersheds. These teeming forests and coastlines are the traditional homelands of a number of long standing First Nations. The ocean shelf has been a veritable cornucopia, having sustained manifold generations throughout the millennia. The abundant forests have similarly nurtured the lives of the people who are the Nuu-Chah-Nulth.⁸

As with many Indigenous peoples, the knowledge of how to sustain life and transmit the cultures which grew from these ecosystems is governed by strict rules of protocol embedded in complex social institutions and spiritual beliefs. The wealth that these ecosystems bestowed upon the people was thus mediated by a tremendous repository of social and cultural capital which enabled long term cultural and ecological sustainability.⁹ These cultural and ecological systems of coastal forest peoples resulted in very spiritually rich and material wealthy nations. This material wealth and political power was recognized by Europeans as early as their original encounters with James Cook in the late 1700's and forms some of the earliest terms of reference for Canada's political and economic dealings with *First Nations* .

The term "First Nations" refers to the original people of the land, yet there is more to the concept than "primary occupiers". Using the term First Nations recognizes that first peoples comprise autonomous collective entities exercising political sovereignty with distinct social and economic systems, language and religion. It is this context in which the British made dealings with First Nations. The Royal Proclamation (1763) was founded under such auspices, thus en-

shrining in constitutional law, not only recognition of the status of First Nations sovereignty, but also aboriginal land title. This title required a treaty in order to be relinquished. One can see the recognition of sovereignty in the so-called "Doctrine of Discovery" which became part of English law and recognizes "usufructuary rights".¹⁰ While the law is obviously "racist and predatory,"¹¹ its significance is in that it recognized a degree of First Nations sovereignty and control over lands which could not be extinguished unilaterally by Europeans. The recognition of this land title is, in part, why treaties were seen as necessary.

It was the insatiable drive for economic expansion which drove both the political machinery of Europe and provided the financial backing to pursue the Fur Trade which characterized the early relationship of coastal peoples and Europeans.¹² These interactions can be characterized as commercial relationships amongst sovereign nations. Under the banner of the so-called "Doctrine of Discovery" and the "law of conquest" a tremendous amount of natural capital was routed in order to feed the industrial development of Europe.¹³ This pattern of draining natural resource capital for trade and export to supply the burgeoning industrial sweat houses of Europe was eventually replaced with settlement.¹⁴ Treaties were required to support colonial efforts in both continental Europe and North America.

As much as it was self serving, British policy towards First Nations was characterized by paternalism. The British regarded themselves as being morally and culturally superior to First Nations. By 1830, the British had changed their policy of using First Nations as allies to one of attempting to "civilize" them. They believed it their Christian duty and civilizing "mission" to "raise" First Nations people to the British standard of humanity. According to Lord Glenelg, British Colonial Secretary in 1838, the goal of British policy was, "to protect this helpless Race...[and] raise them in the Scale of Humanity." ¹⁵ As the services of First Nations became less required, economically and militarily, and their lands increasingly coveted, policies were developed to promote the re-settlement of villages within close proximity to the "institutions of civilization": churches, schools and agriculture. The intended outcome of assimilation was the termination of First Nations as distinct peoples.

In the minds of the British, they were doing First Nations a favour. They were helping to prepare a conquered and backward people to become functioning members and economic contributors to modern society. It is also clear that this "favour" was for the British to help themselves to First Nations' land. In this context the treaty process was initiated. The treaties were tools of European expansion. They were designed to free up land traditionally inhabited by First Nations and initiate the process of assimilation. The needs of First Nations were of a secondary concern, instrumental only to obtaining British goals. The British approach to the treaty process, as with the Canadians who followed, was as draconian as it was instrumental and self-serving.¹⁶

There is a remarkable relationship in Canadian history between the treaty process and the immediate and long term requirements of internal colonial expansion: agriculturally, mili-

tarily/politically and especially industrially. Most treaties have been sought with mineral, agricultural and other natural resources in mind, and the need to remove the legal and social impediments to natural resource exploitation posed by First Nations.¹⁷ It is now generally considered to be the constitutional obligation of the Federal Government as a "fiduciary responsibility" to protect First Nations' usufructuary rights.¹⁸ The current legal/constitutional structures of Canada's relations with First Nations are founded upon the attitudes and needs of the British colonialists.

The Canadians continued with the colonial civilizing mission of the white man. They regarded their policies to be benevolent and wise as their British forebears. Duncan Campbell Scott, Deputy Superintendent of the Department of Indian Affairs in the early Twentieth Century, was possibly the single most influential person in Canadian Indian policy. Often portrayed as a "friend of the Indians" he once remarked that "the Indians were a real menace to the colonization of Canada."¹⁹ His thoughts and attitudes give clear insight into the intentions of Canadian Indian policy and the worldview which formed it:

I want to get rid of the Indian problem. I do not think, as a matter of fact, that this country ought to continuously protect a class of people who are unable to stand alone. That is my whole point. Our objective is to continue until there is not a single Indian in Canada that has not been absorbed into the body politic, and there is no Indian question and no Indian Department.²⁰

The happiest future for the Indian race is absorption into the general population, and this is the object of the policy of our government. ²¹

Be that as it may, this seizure of First Nations lands and the restriction of their traditional access to it is an essential component of the socioeconomic and political development of Canada. The acquisition of land and control of natural resources have been primary issues throughout the colonial history of Canada and remain so today.

Fisher writes that the, "quintessential conflict between settlers and the Indians was over land."²² There have been very different understandings of the meaning of "land" (and the nature of humanity's relationship to it) between First Nations and the dominant society throughout colonial history. (It is also clear that there was just as divergent an understanding of what the treaties implied).²³ In First Nations culture, land is imbued with collective and personal identity, with Spirit — it is quite literally alive. One could say that the land is accorded a primary or a-priori ontological status.²⁴ According to Ahousaht elder and Panel member Roy Haiyupis, "land is the basis of identity".²⁵ It is the focus of ancestral connectedness; it provides for all of one's current life needs and is the insurance of life for future generations.

Europeans were quite baffled by indigenous intimacy with the land.²⁶ While they did not ascribe such affection for it, European desires for land were quite in earnest. "Land meant either money or status or both to the colonist. He had come to the colonies to acquire the land that could be no longer obtained in Britain, and he was in no mood to take the claims of the In-

dians into account.”²⁷ These trends were to increase with the transition to settlement. In this context the Vancouver Island Treaties were created under commissioner Douglas.²⁸

The worldview of colonialism can not grasp the meaning of land in the First Nations context. There is an obvious material imperative to deny such realities. Such an understanding of what land is, of what humanity’s relationship is with it, and how this relationship is lived, is foreign to the Western industrial understanding of reality. The Canadian mentality has thus been generally blind to the meaning of land in the First Nations context. It is from this place of cultural denial in which treaties were struck, policy has been developed and land use decisions are still enacted. The divergence of these worldviews is certainly evident with the outcome of the Vancouver Island Treaties.²⁹

Yet most of British Columbia, such as the Clayoquot Sound area, is not under treaty. The state of First Nations land title and political status in much of B.C. has, until quit recently, been relatively undefined. Many First Nations consider themselves never to have ceded land or title. The Ni’sga have sought treaty under the auspices of such an argument and finally, after over a hundred years effort, seem to have become successful. Reactions to this have been quite varied, with land access and land use as central issues. Some First Nations feel too much was compromised, many Canadians see the deal as a model. Still, there is a vocal constituency who regard such developments as a grave danger to British Columbians and Canadian society at large.³⁰ The old conflicts are still here, along with new ones. The outcome remains to be seen.

A current example of historic forces at work in development of land use issues and First Nations in Clayoquot Sound is the Interim Measures Agreement, signed by the HAWIIH (hereditary Chiefs) of five Nuu-Chah-Nulth First Nations (the Central Region First Nations of the Nuu-Chah-Nulth Tribal Council) and the Premier of B.C. on behalf of Her Majesty the Queen. It was hailed by the provincial government as a “significant and historic step...providing for joint management of resource and land use in Clayoquot Sound until the completion of treaty negotiations.”³¹ The Interim Measures Agreement, whose signing took place in a ceremony with traditional songs and dances, begins to build a government-to-government relationship between B.C. and the Central Region First Nations of the Nuu-Chah-Nulth Tribal Council.

It is significant that the Interim Measures Agreement was signed by the Hawiuh. Clifford Atleo, co-ordinator of Clayoquot Sound issues for the Central Region Tribes of Nuu-Chah-Nulth noted this, saying that this “historic agreement” was signed by the B.C. government and the hereditary chiefs who are, “the highest authority within our traditional system of government...the agreement recognizes our Hawiuh, who have the right to manage and preserve our traditional territories.”³² The Premier noted this, saying that “our government has moved forward to build a new, more honourable relationship with the First Nations of this province.”³³ Chief Francis Frank of the Tla-o-qui-aht First Nations, spokesperson for the Central Region First Nations, spoke of the signing as an important day in the lives of his people who would finally

have an “unprecedented say” in how resources in their traditional territories would be managed:

This process provides a chance to begin reconciliation of historic injustices against aboriginal peoples...First Nations aspirations are to conserve resources for future generations. The only way resources can be conserved in Clayoquot Sound is if everyone works together and begins the process of reconciling our differences...Our guiding force during the intense negotiations was our previous leaders and ancestors who had to fight before us and live with the previous governments trying to take away our rights. **We feel their spirits with us today, and we will not forget them.**³⁴

Amongst the 19 Objectives listed in the Agreement is an assessment of compliance with the Scientific Panel’s standards³⁵. Other objectives include provisions for: promoting more sustainability; restoring and enhancing levels of fish and wildlife, damaged streams and forest habitat; providing viable, sustainable forestry; ensuring that ecological integrity is given high priority in resource extraction or development in Clayoquot Sound; respecting and protecting aboriginal uses of resources; encouraging respect for aboriginal heritage in Clayoquot Sound; working towards reconciliation between environmentalists, labour, industry, First Nations, recreational users and government; developing an ongoing dialogue within the communities and developing better ways to determine the best uses of the forest and the economic, social and cultural advantages of each use.³⁶

Developments such as the Interim Measures Agreement are encouraging for a number of reasons, in what is being said, how and by whom. Having both substantive merit and symbolic significance, such achievements are bracketed by great challenges: ecological and cultural vulnerability, industry pressure, the demands of community economic development (both for First Nations and in local non-First Nations communities), government political expediency, environmental politics, growing recreational use, and international attention. Colonialism is a given in Canada. Attitudes and structures die hard, the force of history is compelling. The old issues of the meaning of land, its uses and access to it remain hotly contested to this day. There is much at stake.

5.2 The Origins of The Scientific Panel

In an attempt to balance environmental, economic, social and cultural values for the region, the Government of British Columbia announced its land use decision for Clayoquot Sound on April 13, of 1993. Implications of the decision elicited a strong reaction, especially from First Nations and many environmentally oriented British Columbians. Some of the issues raised about this decision were addressed in a submission by Stephen Owen, Commissioner for B.C.’s Commission on Resources and Environment (CORE). In response to the recommendation that a Scientific Panel be established under an independent chair, in cooperation with CORE, the *Scientific Panel for Sustainable Forest Practices in Clayoquot Sound* was initiated.³⁷

The Panel was charged with reviewing forest management standards, to make recommendations for changes, and develop a "world class" set of forest practices standards for Clayoquot Sound. Commissioner Owen recommended that the Panel be generally comprised of members recognized internationally and provincially as objective, credible leaders in their areas of expertise. It was also recommended that the members would comprise a multidisciplinary scientific body, representing a variety of scientific and professional fields, including: harvesting systems, silviculture, fisheries, wildlife, soil/terrain stability, biodiversity, hydrology and visual assessments. He further recommended that the Chair member be notably impartial, widely respected and generally familiar with the technical and scientific issues involved, and that direct employees of government and industry be excluded. All appointments to the Panel were subsequently reviewed and endorsed by CORE.³⁸

Amidst ongoing political occupations, roadblocks and protests against logging practices in Clayoquot Sound, with strong reactions from forest industry workers, and voices of concern from various other private and public sector actors, in the face of growing international scrutiny, the creation of the Panel was announced by Premier Harcourt on October 22, 1993. A Province of British Columbia News Release, entitled, "New Scientific Panel Will Ensure Forest Activities in Clayoquot Sound Stand up to World Scrutiny", quotes Harcourt:

...The creation of this independent panel is another step toward providing a sustainable future for Clayoquot and ensuring that forest activities...stand up to world scrutiny...to achieve our goal of sustainable forest practices, it is crucial to put the task in the hands of an impartial panel of recognized experts.³⁹

The Premier advised that the 19 member panel would be comprised of scientists from B.C. and Washington State who were internationally recognized leaders in their respective fields of expertise. They were to be joined by four other recognized specialists, these members designated by the Central Region of the Nuu-Chah-Nulth Tribal Council.

Representing the Nuu-Chah-Nulth nations were selected Dr. Richard Atleo, the hereditary Ahousaht Chief UMEEK, as Co-Chair,⁴⁰ with elders Ernest Lawrence Paul of the Hesquiaht First Nation, Roy Haiyupis of the Ahousaht and Stanley Sam of the Ahousaht/Tla-o-qui-aht, to provide, "First Nations' Perspectives on the value of forests to their way of life". As Panel Co-Chair, Dr. Atleo would "provide an all important link between the scientific community and the First Nations Elders."⁴¹ Clifford Atleo, co-ordinator of Clayoquot Sound issues for the Central Region Tribes of Nuu-Chah-Nulth, was quoted as saying:

First Nations are encouraged by the creation of the Panel and are grateful for the opportunity to participate. First Nations see it as an opportunity to begin the process of changing how we manage and harvest forests and providing an awareness that forests need to be viewed in a holistic sense.⁴²

Co-Chair Dr. Fred Bunnell is an internationally recognized scientist and Professor of Forest Wildlife Ecology and Management at the Centre for Applied Conservation Biology at UBC. He

remarked that the Panel, “is a huge opportunity to do something worthwhile,” adding that there is, “serious talent on the Panel.”⁴³ In his speech at the announcement of the Panel, Dr. Bunnell noted that if the Panel could effectively reconcile current inconsistency in forest practices standards, their efforts could have, “implications well beyond Clayoquot.”⁴⁴ The Panel was charged with presenting its final recommendations for forest practices in Clayoquot in June of 1994 to ensure that British Columbia would meet the forest stewardship standards required for designation of Clayoquot Sound as a U.N. Biosphere Reserve.

The 19 member Panel (and secretariat-Registered Professional Forester) were comprised by a diversity of cultural, professional and academic specialists. These included two Co-Chairs, as mentioned: Dr. Fred Bunnell, Professor of Forest Wildlife Ecology and Management, Director of the Centre for Applied Conservation Biology, UBC and Dr. Richard Atleo, the hereditary Chief UMEEK, and Instructor at Malaspina University-College, and Researcher, Consultant, Indigenous Human Resources, Nanaimo. There were three Nuu-Chah-Nulth elders, each recognized as experts in their field (e.g. First Nations history, culture, language and traditional resource use). Other experts include representatives from various fields, including: biodiversity; ethnobotany; fisheries, forest harvest planning; hydrology; roads and engineering; scenic resource, recreation and tourism; silvicultural systems; soils; wildlife; and worker safety. There was at least one change of membership during the Panel’s work because of the appointment of one Panel member to another body involved with the B.C. Forest Practices Code.

5.3 Early Work: Establishing Protocol

The Panel released its First Report, February, 1, 1994. Of the 18 working days which resulted in the First Report, most of the effort was focused upon defining the Panel’s task, developing its approach, and “determining how such a diverse group would work together to integrate all issues and concerns.”⁴⁵ The Report details guidelines on: Terms of Reference, Operating Principles, International Standards, Applicable Guidelines and Standards, Procedure and Criteria for Reviewing Standards, plus an Outline of Tasks and Progress. In choosing to focus on protocol and operating procedures rather than the immediate request of scientifically based guidelines for immediate road building, the Panel was, to some extent, digressing from what the government had expected. This came out in interviews conducted with Panel members.⁴⁶ A similar important move was to include planning as a central focus, one which had not been previously included in the Panel’s original mandate.⁴⁷

Even though the focus on protocol was a break from the government’s initial instructions, it was hailed as a major achievement. A Government of British Columbia Press Release entitled, “Clayoquot Scientific Panel Releases First Report on Sustainable Forest Practices Standards in Clayoquot Sound” states:

A major accomplishment of the Panel has been the definition of protocol—the agreed procedure by which the group accomplishes its work. *The Panel reflects*

the Nuu-Chah-Nulth approach to group process: all members participate in determining the issues, information and actions relevant to the Panel's task. It is based on respect for one another, for different values, and for data founded both in science and "lived experience." Following full discussion, decisions are made based on the collective wisdom of the group.⁴⁸

At the release of the Panel's First Report, Co-Chair, Dr. Bunnell is quoted saying:

Our success in combining First Nations experience with Western science, and merging these into principles for world-class forestry has been a truly positive experience.⁴⁹

Co-Chair, Dr. Richard Atleo—Hereditary Chief UMEEK—was quoted as being "cautiously optimistic" that the protocol would lead to a positive outcome:

While the relationship between indigenous and non-indigenous peoples over the past 500 years was characterized by misunderstanding and a lack of mutual respect, the protocol of the Scientific Panel is characterized by mutual respect, reciprocal inclusivity, and a shared commitment of working towards the common goal of an environmentally healthy planet.⁵⁰

The perspective of both the Co-Chairs clearly underscores what I have referred to as the important historic and symbolic importance of the Panel. It is particularly notable that the protocol which was to become the procedural foundation of the Panel's work is based on Nuu-Chah-Nulth cultural and institutional methods—on TEKS oral methods—and was guided by the elders.⁵¹ This became a central feature of the planning model. There is good reason to believe it is why the Scientific Panel succeeded where previous attempts failed. It is also an insight into the "revolutionary nature" of the Panel.

5.3.1 The "Revolutionary" Nature of the Scientific Panel

Ken Lertzman (Associate Professor, School of Resource and Environmental Management at Simon Fraser University) is a forest ecologist with special interests in old growth, natural disturbance regimes and landscape ecology. He sat on the Scientific Panel as a specialist in biodiversity and ecosystems management. He described the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound as "revolutionary".⁵² There are several reasons for this claim. The first is political:

That we were empowered to do something as revolutionary as what we did is probably the single most amazing thing...I'm not sure that the government really intended to set off a process that would result in something as revolutionary as in fact they did..⁵³

This point was even more strongly corroborated by Panel member Nancy Turner.⁵⁴ It is likely either that the Government did not fully realize what they were getting into, or that the Panel would actually go as far as they did. Co-Chair Richard Atleo actually described the Scientific Panel as a "paradigm shift." ⁵⁵ Lertzman continues:

It's revolutionary in the procedure and in the substance of the report. In the British Columbian context, it is revolutionary, first of all, in that we were given such a broad mandate and that all parties agreed to abide by our recommendations from the outset, that is, without having seen what we were going to recommend. In all previous cases that I know of, groups like this have just been in a policy advisory role, we were essentially given a policy making role. Cabinet had the option to accept our recommendations, but...it wasn't something that was in the politically acceptable policy space...and I think it's very unusual for, essentially a technical type of group, to be given policy making authority and in particular, policy making authority with such a broad mandate ...that's one way I think that it is revolutionary.⁵⁶

These are important initial points. Even if the members went further than the government might have understood or anticipated, the impetus for the Panel was the result of a political process. The decision to proceed with it was a political one. It was an unprecedented decision arising from a regional and provincial political process with tremendous pressures from a diversity of public and private interests in the context of local, provincial and international scrutiny.

For planning, this insight into the political context of the Scientific Panel is noteworthy. It reminds planners, and others, of the determining role that the political climate and political process, public and private pressures can play in shaping or even establishing the context of planning and the planning process. For Canada, and British Columbians in particular, it also flags the growing impact that First Nation's interests and First Nations have in shaping and acting in that political process. The political context of the Panel had an ongoing impact on the Panel's work. This was exhibited as influences both outside of and from within the Panel.⁵⁷

The next point Dr. Lertzman makes, relates the revolutionary nature of the Panel with regard to First Nations. There are four points he makes here. The Panel is revolutionary in its bringing together traditional knowledge and Western science; by doing so with credible representation from both of those "knowledge groups"; in actually achieving its mandate where previous attempts have failed; and doing so with a consensus on the outcome.

It's revolutionary in the mandate to consider traditional knowledge *and* Western scientific knowledge. It was revolutionary in having First Nations people representing traditional knowledge rather than merely having another group of Western professionals representing that knowledge body, which would be a little more "traditional" (i.e. status quo) way of doing it. It was revolutionary in our ability to actually work together effectively, as so far as I know, it's the only quasi-public process or policy making process involving Clayoquot Sound which has actually successfully carried out (its mandate) without falling apart. It's certainly the only one to have carried its mandate with a complete consensus on the outcome.⁵⁸

This puts the issue of two different knowledge paradigms front and centre. It does so with the insight that TEK is credible here because it is represented by those who are the recognized cul-

tural authority. Both are important points. It describes the set up for an actual discourse—an interface—between two models constituted by members in a context which provides the possibility for some real articulation to take place.

The next point that Dr. Lertzman makes about the nature of the Panel is with direct references to planning, planning process and knowledge. This brings into focus aspects of the Panel's work which, according to Dr. Lertzman, are revolutionary, both in scope and substance.

So, all of this so far without actually referring to the substantive nature of the outcome, which again was, I think quite revolutionary, both in the degree to which it considered broad ecosystem characteristics as the basis for management (and) in the way that it considered a hierarchy of spatial scales for a planning framework. It was revolutionary in the way it sees planning as central to forest management and recognizing that everything else hinges on planning; and, it was revolutionary in actually building a forest management framework where First Nations people and their traditional knowledge have an equal and central role to non-First Nations people and their knowledge. The things for which it received the most attention—the move away from large-scale clear cutting and even age management are certainly revolutionary, but they're probably the most trivial revolutionary aspects of the Panel's products.⁵⁹

He added to this:

The silvicultural systems aspect is a very small part of it; it is essentially what happens at the finest scale of planning in the hierarchy of planning processes that we recommend, and, in some ways, is the least important of things we recommend, but it flows logically from everything else we've done; it flows logically from the science we've done in those kinds of forests.⁶⁰

Perhaps one of the most significant insights for me is the point that the Panel was revolutionary in the way it sees planning as central to forest management and, that "everything else hinges on planning" in building a forest management framework "where First Nations people and their traditional knowledge have an equal and central role to non-First Nations people and their knowledge." This insight is, for me, somewhat of a perk towards the idea of planning between cultural paradigms. It is thus notable that he says that First Nations people and their knowledge have an equal and central role in the planning process. This recognizes the role of traditional knowledge in planning—in knowledge into action—and it also recognizes that the credibility of TEK is established and maintained by the presence and actions of its own specialist/custodians. (The Panel's fifth, and final, report is the most extensive. It contains the overall recommendations for sustainable ecosystem-based management in Clayoquot Sound, as well as the *First Nations' Perspectives* material, which is central. It provides much of the nuts and bolts of their recommendations on everything from road building to riparian zone stability and watershed integrity. It contains guidelines for implementing their model of a "variable retention stand" silvicultural system and is worth viewing as an example of ecosystem-based planning.)⁶¹

In recognizing that First Nations people and knowledge play an equal role in the planning process, and in *planning the planning process*, this says something about the kind of necessary context for establishing meaningful cultural discourse within planning process. Furthermore, the process itself is the result of discourse. If the process is established without this presence and input, traditional knowledge, or even its cultural experts, would then be merely slotted within the context of a process established by and within the terms of reference and operating procedures of an imposed paradigm or foreign cultural context. It would be a far less meaningful and effective basis for discourse. It would not be a context conducive to interface and articulation, and would be, on the whole, less effective for reaching agreement. This is quite likely why the other, previous attempts have failed (I will revisit this point).

Perhaps it is even more noteworthy, therefore, that First Nations people and their knowledge occupy or play, "an equal and central role to non-First Nations people and their knowledge."⁶² The point here is that we are seeing TEK and its experts having relevance, not only to themselves, but to those from the mainstream paradigm. This seems to me somewhat of an historic shift, both in procedure and in substance.

Also noteworthy is the insight that, according to Dr. Lertzman, it is the more "trivial revolutionary aspects" of the work of the Panel to which people seem to have paid most attention. Having seized upon the outcome of, "the finest scale of planning in the hierarchy of planning processes", people seem to have missed the even more radical nature of the process itself, or the fact that planning was moved from a peripheral (or non-existent) role to one of prominence and centrality. I'm not entirely sure why these have been rather overlooked. The politicized nature of logging and logging practices in B.C. is one obvious factor. However, I wonder if it could have something to do with the fact that this is new terrain for Canadians. People may not perceive the radical nature of the context and process of such planning simply due to lack of familiarity. Even for those on the Panel, it seems to have been a rather precedent setting and unrivalled experience.⁶³

Be that as it may, it is noteworthy that what seemed to draw the most public attention was a fairly radical or precedent setting outcome of an even more radical and precedent setting process. In lieu of this, I asked Dr. Lertzman "what looms larger in your mind?" He responded:

I would say the planning process and the ecosystems based nature of what we recommend, aside from the First Nations stuff; the planning process, the hierarchical planning process, the centrality of planning, the ecosystem-based nature of everything, are the really revolutionary things...On a global scale, the First Nations material is by far the most significant and, I think in the long run, will have the most impact in terms what people in various parts of the world take from it....again, it's something that has not received that much attention, but the kinds of recommendations we make for including First Nations people and traditional ecological knowledge in the planning process, the forest planning process are very revolutionary.⁶⁴

Dr. Lertzman's account of the revolutionary nature of the Panel underscores what I have described as its historic and symbolic significance. It also gives insight into Dr. Atleo's account of the Panel experience as constituting a "paradigm shift" (discussed below) which was echoed by Dr. Turner. Their accounts raise the importance of the political nature and context of the Panel's work and of its substance. Lertzman's, in particular draws attention to the crucial role of planning for ecosystem management and for planning between cultural paradigms. This sheds light on the role of First Nations people and their knowledge in having a determining role, both within and in shaping the planning process. Indeed, Nuu-Chah-Nulth traditional oral methods became a pivotal feature of the planning model, as recognized by Panel members and the government.

The Panel's work seems a kind of paradigm shift, both in procedure and substance. This is certainly the case with regard to the interface of TEK and science. The Panel signals a shift towards First Nations people and traditional knowledge, not only in playing a central role in the planning process, but in *structuring the planning process*. This is significant, and it worked. There also seems to be a shift at work within resource management science and planning towards ecosystems-based models. As a forest ecologist this is important for Dr. Lertzman. He told me that the ecosystem-based approach of the Panel (i.e. ecosystem management) is the direction in which the Panel members were headed as a group. It seems noteworthy that these two paradigmatic shifts (i.e. within resource management science towards an ecosystems based approach; and, between science and TEKS) converged on the Scientific Panel. To what extent they actually facilitated one another is difficult to say and would require more research. I will discuss this somewhat more below using the material gained from interviews with Dr. Atleo.

Nevertheless, it is evident that the ecosystem approach which the scientists on the Panel were taking was of a more amenable or conciliatory scientific posture towards TEKS than others have been. I asked Dr. Lertzman about this and he agreed. While he did not want to attribute a special role to the Nuu-Chah-Nulth (more than any other) members in facilitating the ecosystem management approach, there is an interesting story he related about their model of ecosystem management and the Nuu-Chah-Nulth traditional concept of *hishuk ish ts'awalk* (which I discuss below) that typifies the kind of conceptual exchange, commensurability and articulation which characterizes the Scientific Panel. Another contributing factor is the members themselves. I think the individual members of the Panel comprised a special group of people (in an unprecedented context with an unprecedented mandate and opportunity) who seem to have been a major factor to the Panel's success. Much can be learned from this case study.

5.4 First Nations' Perspectives: An Overview of the Contents of the Report

Report 3: First Nations' Perspectives, Relating to Forest Practices in Clayoquot Sound of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound is a total length of 74 pages. It

contains 6 chapters, along with an executive summary and 6 appendices. Appendices numbers V and VI are published as a separate companion document. The Report was published in March of 1995.

Chapter 1 contains a description of the report's context. Referring to recent international documents on resource use which recognize the needs and aspirations of Indigenous peoples (i.e. *The Convention on Biological Diversity*, *Agenda 21*, and *Guiding Principles on Forests*, all from the UNCED '92, the United Nations Earth Summit), the Panel states its goal of developing "world-class standards for sustainable forest management by combining traditional and scientific knowledge" as being consistent with these precedents. The Panel recognizes that First Nations, in British Columbia and Canada, are not merely another stakeholder in resource issues but have "unique collective rights" which make them central to the process of sustainability. Sustainable development "as a whole" will not be achievable without the support and full involvement of First Nations.

Chapter 2 discusses the importance of Nuu-Chah-Nulth concepts and philosophies which are regarded as "integral" to the work of the Panel. This, with the recognition of three foci for integrating traditional and scientific knowledge in developing world class standards for forest management in Clayoquot Sound. First is the recognition of and commitment to important elements of the Nuu-Chah-Nulth *inclusive process*. The Panel has adopted this as the method of decision making, "for discussion and sharing to reach agreement". Secondly, is a recognition of the need to incorporate knowledge and cultural values of Nuu-Chah-Nulth peoples into the work and recommendations of the Panel. Foremost among these is "*sacredness and respect for all things*". Thirdly is recognized the need to respect Nuu-Chah-Nulth social structure in framing the Panel's recommendations and drawing its conclusions. A central component of this is the institution of *hahuulhi*--the traditional land management system governed by hereditary chiefs.

The focus of Chapter 3 is on Traditional Ecological Knowledge (TEK). This contains a discussion of the importance of TEK and its recognition globally, in North America and locally in Clayoquot Sound. An outline of the characteristics of TEK is provided which has been adapted from research and writing from, largely, non-native academics with input and writings by Indigenous people.⁶⁵ The Panel then presents (an essentially epistemological) statement on the "different origins and shared goals" of TEK with scientific knowledge. This is followed by a discussion of "incorporating TEK in environmental planning" and decision making with "co-management" offered as a model for integration.

Chapter 4 reviews areas of cultural importance relevant to First Nations in Clayoquot Sound, including a discussion of "sacred areas". The current status quo usage of the term "cultural heritage sites" in legislation and other documents is discussed as a limiting concept and an ineffective management tool in forest practice standards for protecting First Nations interests. The broader definition of "historic areas" is offered in its place while drawing upon newer

typologies of traditional use sites which recognize a broader spectrum of culturally important areas. There is also a discussion of current and future use of traditional lands for cultural, subsistence and economic purposes by Nuu-Chah-Nulth people.

In Chapter 5 is a review of current forest practices (and other related) standards. The Panel assess their adequacy, and inadequacy, in providing for and protecting First Nations' interests and perspectives. Citing the long standing social, political and economic exclusion which has resulted in Nuu-Chah-Nulth people being omitted from participation in the decision making processes for managing resources in their traditional territories, this chapter points at recent documents which have helped shape the Panel's recommendations for new forest practices standards which recognize First Nations knowledge and interests. These include: *Interim Measures Agreement* (1994); *Clayoquot Sound Sustainable Development Strategy* (1992); *British Columbia Forest Practices Code Standards with Revised Rules and Field Guide References* (1994); *National Aboriginal Forest Practices Code* (1994).

Chapter 6 presents recommendations for including First Nations' Perspectives into forest practices standards in Clayoquot Sound. The Panel recognizes that First Nations' perspectives are "inconsistently and incompletely" addressed in existing forestry documents and standards pertaining to forest management in Clayoquot Sound. New standards and procedures are required which can adequately represent First Nations' interests and "involve indigenous people in forest management and associated activities within their traditional territories." The Panel establishes criteria for what is required in a new approach to sustainable ecosystem management. What is provided is a framework or context founded upon a comprehensive set of concepts. This includes: guiding principles, goals, objectives, and recommendations for including First Nations in sustainable ecosystem management with a framework for change or action.

The report also includes a number of appendices. Most noteworthy are Appendices V and VI published in a companion document. Appendix V contains an "Inventory of Plants and Animals Culturally Significant to the Nuu-Chah-Nulth of Clayoquot Sound." Appendix VI is an "Inventory of Nuu-Chah-Nulth Cultural Areas by Resource and Association." These two appendices are notable because they present a compilation of marine and terrestrial flora and fauna which are indexed and cross-referenced by the Nuu-Chah-Nulth language with Latin species and English common names. Listings include also: habitat, uses and other notes, associated places and references from both oral and written sources.

There is also provided an appendix of "Documents Relating to Forest Practices Reviewed for Incorporation of First Nations Knowledge and Interests", and another entitled, "Spirituality of Land and Sacred Sites Within Sacred Areas". Along with the references are some notable entries which contain a series of unpublished manuscripts by two of the Panel's elders. These include entries by Roy Haiyupis⁶⁶ on: Ha Hoolthie and hereditary rights, its relationship to land claims and the social impact of government control of Chiefs hereditary rights

and natural resources; Nuu-Chah-Nulth respect, tradition and culture, law, holistic health, family law and counselling; Nuu-Chah-Nulth perspective on ecosystem sustainability; land as the basis of identity; land as spiritual; sacred sites in sacred areas; protected areas for central region, Clayoquot Sound. Entries by StanleySam include subjects of: Indian traditional medicinal practices and doctoring stories; how Nuu-Chah-Nulth people “knew the weather and the forecast of the summer”; forestry, fishing and herring in Clayoquot Sound; discussions on local First Nations history; and Clayoquot Sound.

5.5 Examining the Report

This section examines the report in detail. The analysis focuses particularly upon looking at the work of the Panel from the perspective of the categories and attributes or features of TEKS developed in the prior chapter in order to help understand the TEKS-science interface as part of a larger discourse on planning between cultural paradigms.

5.5.1 First Impressions: Reading the Executive Summary

A very good way to get a sense of the overall character and spirit of this type of document is to read the Executive Summary. Executive summaries are often written for government officials and high level bureaucrats (e.g. deputy ministers, assistant deputy ministers, ministers), for private sector executives, for funders and other significant individuals and bodies. These people may not have the time to examine a document in full or in great detail, but need to be able to make informed decisions. Thus, an executive summary can be critical. The executive summary is also useful for researchers and others to identify, with not too much effort, the character and content of written and other materials. Therefore, the executive summary is a good place to start for overall impressions.

One of the first impressions of the Executive Summary is the recognition of First Nations “knowledge and interests.” Knowledge is mentioned in the first paragraph. There is clear recognition of the long standing presence First Nations in the local ecosystems and of the special spiritual relationship between Nuu-Chah-Nulth people and Clayoquot Sound.

The traditional knowledge base of the Nuu-Chah-Nulth nations is extensive. As indigenous peoples residing in the Clayoquot Sound area for thousands of years, the Nuu-Chah-Nulth people have great knowledge and personal experience of Clayoquot Sound ecosystems. Nuu-Chah-Nulth history, culture and spirituality are firmly bound to the area’s forests and waters as well as their future well-being.⁶⁷

There is clear recognition here of the significance and special nature of First Nations traditional knowledge. There is a recognition of the long standing temporal nature of TEK and its special relationship to the local and regional ecosystems. The spiritual and material connection to the ecological base is explicit, not only historically, but for future well being.

The above quote implicitly raises epistemological considerations of TEK. It cites material which is explicitly relevant to the category of TEKS that I have referred to as cultural capital. This is made even more explicit in the statement below which underscores the importance of spiritual and ethical concepts tantamount to a statement of cosmology:

The history of First Nations' resource use in Clayoquot Sound is framed by two important concepts: *hishuk ish ts'awalk* and *hahuulhi*. *Hishuk ish ts'awalk*, or "every-thing is one," embodies the Nuu-Chah-Nulth sacredness and respect for all life forms and their approach to resource stewardship. *Hahuulhi*, the Nuu-Chah-Nulth system of hereditary ownership and control of traditional territories represents a long history of resource use and management in Clayoquot Sound, and provides a basis for Nuu-Chah-Nulth participation in co-managing the area and its resources.⁶⁸

At the end of the Executive Summary are two quotes from Ahousaht elder and TEK specialist Roy Haiyupis. These speak directly to the ontological and cosmological significance of TEK:

Our ancestors still live with us in these forests where we encounter our spiritual values, our powerful healing medicines which were gifts of the Creator, the forests that are our very sustenance for everyday living, are also being blessed by our ancestors. The natural setting needs to remain stable.⁶⁹

Therefore, all three categories from my ECO system model are either explicitly or implicitly made reference to in the Executive summary. The one which is made less explicit reference to, actually receives much greater attention in the body of the document.

Not only is there clear recognition of the cultural capital aspect. In citing the importance of *hahuulhi* (Nuu-Chah-Nulth system of hereditary ownership and control of traditional territories) this brings into focus the institutional-relational mediation of TEK which I have referred to as the social capital component of TEKS. Moreover, in stating quite explicitly that *hahuulhi* provides a basis for Nuu-Chah-Nulth participation in co-managing the area and its resources, the Panel is giving a clear direction about the implementation of knowledge. Putting such knowledge into practice will require an arguably bi-cultural model, in both its procedural and its substantive capacities. Indeed, the closing statement of the Executive Summary is the Panel's belief that Clayoquot Sound "can become a model" for including TEK and interests of Indigenous peoples in sustainable ecosystem management.

Another point worth mentioning is the historical recognition of TEK and of First Nations, both in the long term picture and more recently. Although there is no discussion of colonialism the Panel clearly recognizes some of the end results:

Despite this long history of residence and resource use, current forest practices standards in Clayoquot Sound show little or no recognition of First Nations' values or interests. Where First Nations knowledge or interests, are recognized... provisions for them are often cursory. Current standards reflect limited understanding of the nature and scope of First Nations' traditional knowledge and interests and what is required in order to incorporate or protect them. Forest

practices standards have tended to exclude the Nuu-Chah-Nulth from meaningful participation in management of resources within their traditional territories in Clayoquot Sound.⁷⁰

The Panel does not go into the historical and colonial origins of these inequities; however, there is a clear recognition of the disregard of First Nations knowledge, history and interests, and in the forest practices standards which has resulted. This recognition of the historical exclusion of First Nations' interests from land use planning and decision making is a critical one to make. Without recognizing these structural inequities and the limited understanding of First Nations knowledge and interests such work would be ineffective and shallow.

The practical implications and sensitivities of such issues are apparent in a subsequent section on "Historic Areas" which I shall discuss later. In any case, these insights are bracketed by the historical nature of an ongoing political process with First Nations and the dominant society. The Panel thus cites four documents which take significant steps towards recognizing and providing for First Nations interests: the *Interim Measures Agreement* (1994); *Clayoquot Sound Development Strategy* (1992); *British Columbia Forest Practices Code Standards With Revised Rules and Field Guide References* (1994); and the *National Aboriginal Forest Practices Code* (Draft 1994). They recommend that more explicit guidelines are still needed to ensure the *involvement of First Nations and incorporation of their knowledge* into Forest ecosystem management in Clayoquot Sound. (my emphasis).

In order to address the deficiencies and build on the steps already taken, the Panel made the following contribution. Drawing on the principles, goals, objectives and recommendations developed earlier on in its work, the Scientific Panel presents a framework for developing new forest practices standards. This framework consists of 27 recommendations covering 9 themes. These include:

- incorporating Nuu-Chah-Nulth traditional ecological knowledge into environmental planning, inventory, monitoring, and research to complement scientific knowledge;
- co-management based on equal partnership and mutual respect as a means of including indigenous people and their knowledge in planning and managing their traditional territories;
- full consultation and active participation of the Nuu-Chah-Nulth in planning and decision-making processes, in all operational forestry activities (including inventory and mapping), and in monitoring and evaluation related to ecosystem management;
- recognizing *hahuulhi* in determining and implementing ecosystem management within traditional territories;
- implementing forestry practices that pose least risk to foreshore and offshore resources of primary importance to the Nuu-Chah-Nulth;
- restoring areas and resources capabilities where damage has occurred;

- broadening the definition of culturally important areas beyond “cultural heritage sites”, based on areas deemed to be culturally important by the Nuu-Chah-Nulth First Nations, and including, sacred, historic and current use areas;
- providing education and training to Nuu-Chah-Nulth people in ecosystem management; actively recruiting First Nations’ workers for forestry and related activities; and developing a forest worker qualification program that includes education and training related to Nuu-Chah-Nulth perspectives and values; and
- undertaking research to enhance the effectiveness of sustainable ecosystem management and to complement Nuu-Chah-Nulth traditional ecological knowledge and experience.

It is noted that these are consistent with the *Interim Measures Agreement*. The Panel then expresses their hope that such activities, and other collaborative efforts with First Nations in British Columbia, will help to establish “a new relationship among provincial and federal governments, First Nations peoples, industry and society in general, in the management and stewardship of ecosystems.”⁷¹ The Executive summary then closes with two quotes by Ahousaht elder Roy Haiyupis (one of which is cited above) and the statement, as mentioned, that it is the Panel’s belief that Clayoquot Sound (i.e. if their guidelines and recommendations were implemented and these efforts continued) can become a model for including Traditional Ecological Knowledge and interests of Indigenous peoples in sustainable ecosystem management.

There is obviously a great deal of material here, more than I have space to discuss. Yet, even from a brief look at the Executive Summary, it should be evident that my analysis of TEK from the previous chapter has a distinct bearing on the work of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound. There is either explicit or implicit recognition of two of the three chief features of TEKS I have outlined: its cultural and social capital mediations. The methodological feature, while not mentioned in the Executive Summary, is a central feature of the Panel, which I discuss below with the support of interviews. There is recognition of some of the other TEK features I have outlined, particularly its temporal aspect which I have expanded to the larger concept of a TEKS oral history feature. There are also textual references to the ECO systems criteria that I have employed; the least explicitly recognized in the Executive Summary is the epistemological aspect. Yet it receives much greater implied focus in the body of the Report. It is to these subjects which I now turn.

5.5.2 The Context: Global and Regional Recognition of Indigenous People and Sustainability

The first chapter, which serves as an introduction and provides an overview, is worth mentioning because it establishes the context of the Report. It does so at global and regional levels, which is consistent with the character of the Scientific Panel’s approach to ecosystems management, and Clayoquot Sound in general. (The global context of the Panel’s work is also

addressed in greater detail in the Panel's fourth report, *A Vision and Its Context: Global Context for Forest Practices in Clayoquot Sound*.)⁷² It also conforms to the Panel's mandate to develop a "world class" set of forest practices standards for Clayoquot Sound.

In establishing the context globally, the Panel notes the extent to which First Nations' interests have generally been excluded. The impacts of forests practices on the lives of First Nations peoples in Clayoquot Sound have either been ignored or paid lip service to, at best. They note that the past neglect of First Nations' values and concerns which has been evidenced in Clayoquot Sound "is a common situation" in many parts of the world. The Panel then brings to the attention of the reader that in recent years, "worldwide attention has focused on the relationships between conservation of the environment and indigenous perspectives." They also point out that "an accompanying movement" has recognized the importance of TEK and the rights of Indigenous peoples, "to be meaningfully involved in every phase of land-use planning and decision-making within the boundaries of their traditional territories."⁷³ They then cite several sources, including the International Union for the Conservation of Nature (1975); the International Society of Ethnobiology (1988); the United Nations, amongst other academic sources.⁷⁴ The Panel then cites the appointment by the B.C. government to their own body four prominent Nuu-Chah-Nulth people as part of this global trend.

The Panel acknowledges also recent international documents and agreements on resource use which recognize "the needs and aspirations" of Indigenous peoples. They quote at length the World Commission on Environment and Development including the following:

These [Indigenous] communities are the repositories of vast accumulations of traditional knowledge and experience that link humanity with its ancient origins. Their disappearance is a loss for the larger society which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems.⁷⁵

They cite subsequent agreements including the *Convention on Biological Diversity, Agenda 21*, and *Guiding Principles on Forests*. They state that the Panel's goal: *is to develop world-class standards for sustainable forest management by combining traditional and scientific knowledge*. This they regard as consistent with the recognition of Indigenous people's values stated as objectives in these international agreements.

The Panel also cites at length Frank Cassidy from the School of Public Administration at the University of Victoria who states explicitly that sustainable development will not come to pass in British Columbia without "the full support and involvement of First Nations."⁷⁶ Cassidy had the important insight that Indigenous peoples are, "not just one more stakeholder in the process of achieving sustainable development."⁷⁷ Cassidy points out that First Nations retain, "unique and collective rights" which make them a central part of the process of sustainability. Moreover, they have, "much wisdom and knowledge to offer." Perhaps the strongest statement of Cassidy's which the Panel cites is the following: "Until the rights, practices, institutions and

knowledge of Indigenous peoples are fully respected, the goal of sustainable development will continue to be illusive and unachievable. The sooner this fact is recognized, the better.”⁷⁸ If this is the case, and clearly the Panel must believe it to be so, otherwise they would not have cited Cassidy as helping to establish the context of the Report, then First Nations, and also TEK, have significant substantive, institutional, procedural, philosophical insights and political consequences for the transition to ecological sustainability in British Columbia, and elsewhere.

In accordance with these insights, the concluding remark is that the Report does not provide detailed standards for incorporating First Nations knowledge and interests into forest practices standards. It establishes a *framework for standards*. This is a significant point for me, in as much as I am interested in the development of a planning model to bridge the knowledge of different paradigms with applied outcomes. The very goal of the Panel: to develop world-class standards for sustainable forest management *by combining traditional and scientific knowledge* attests to this perception. It underscores my preoccupation with epistemological considerations and models which are the focus of much of this dissertation. It punctuates the recognition of an inter-cultural model which is the outcome of an experiential interface—a discourse—between cultures. In order to help achieve this goal, the Panel established a subcommittee comprised of Dr. Atleo, the three Nuu-Chah-Nulth elders, and Dr. Nancy Turner, an ethnobotanist from the University of Victoria with an extensive background in TEK and experiential training with elders and other TEKS specialists. (Dr. Turner is one Panel member whom I interviewed.)

5.5.3 Recognizing the Methodological, Philosophical and Institutional Features of TEKS

The first substantive chapter of this report is entitled “Nuu-Chah-Nulth Concepts and Philosophies Relevant to the Work of the Scientific Panel”. In it, the Panel recognizes explicitly and adopts as integral to achieving its goal key aspects of the three features of TEKS which I have highlighted in the analysis of my prior chapter on TEK. They write that “Nuu-Chah-Nulth concepts and philosophies are integral to the work of the Scientific Panel.” In order to “integrate traditional and scientific knowledge in developing world-class standards for sustainable forest management in Clayoquot Sound”⁷⁹, the Panel makes three declarations which correspond to the three features of TEKS I have identified as its methodological, cultural capital and social capital attributes. I reproduce these below:

The Scientific Panel has:

- 1.) recognized and adopted important elements of the Nuu-Chah-Nulth inclusive approach to discussion and sharing to reach agreement;
- 2.) recognized the need to incorporate knowledge and cultural values of Nuu-Chah-Nulth peoples into the work and recommendations of the Panel—foremost amongst of these is the sacredness and respect for all things; and;

- 3.) recognized the need to respect Nuu-Chah-Nulth social structure in forming its recommendations and drawing its conclusions. A dominant element in the Nuu-Chah-Nulth social structure and cultural fabric is *hahuulhi*.

Amongst other things, it is in recognizing and adopting aspects of these three core features of TEKS which I believe distinguishes the Panel's work. It is why we can see in the Scientific Panel an inter-cultural planning model which respects TEKS and Western science in both procedure and substance.

All three elements are notable, yet the methodological one is key. This is due to its central role in planning and decision making, and in the general sharing of knowledge. It is also significant because this is where I have identified a deficiency in the literature. I will explore in detail this key feature which was vital for the Panel to achieve its goal of integrating traditional and scientific knowledge in an applied capacity. This TEKS "procedural knowledge" has discursive utility not just in its traditional context. It played a pivotal role for the Panel in a more general sense, both inter-culturally and, seemingly, for the Panel's multi-disciplinary character. It was the Nuu-Chah-Nulth specialists who were instrumental in its inclusion and application.

*5.5.3.1 Acknowledging Oral Methodology:
Commitment to the Nuu-Chah-Nulth Inclusive Process*

At the top of the list of Nuu-Chah-Nulth concepts and philosophies which the Panel has recognized and adopted are "important elements of the Nuu-Chah-Nulth inclusive approach to discussion and sharing to reach agreement". This is elaborated upon further in a section entitled, "Commitment to the Nuu-Chah-Nulth Inclusive Process." They note that the first task of the Panel was to establish protocol and guiding principles. They state that the protocol reflects the "Nuu-Chah-Nulth approach to group processes whereby all members participate in determining the issues, information, and actions relevant to the Panel's work."⁸⁰ When one talks about guiding principles, in particular about protocol, one is speaking about "how you do things". It is a procedural protocol for how knowledge and information is shared, which here is based on the traditional knowledge protocols of Nuu-Cha-Nulth oral methods.

This approach and its model has affective and effective characteristics and results, procedural, substantive and epistemological outcomes: a.) it calls for each Panel member to "exercise patience, flexibility, tolerance, endurance, and faith in a process and task that are surrounded by conflict and turmoil; b.) it is characterized by a "demonstrable and inclusive respect" for individuals and for different values, and c.) "for data founded in both science and traditional knowledge"; d.) it has, created, "an atmosphere that encourages open discussion and the pursuit of consensus"; e.) it has enabled the Panel to develop, "a clearly articulated and inclusive philosophy for its work."⁸¹ Nuu-Chah-Nulth oral methods were thus fundamental to the success of the Panel. This is particularly notable given that the development of such protocol was not part of the government's initial directive, yet, as discussed above in "4.3

Early Work: Establishing Protocol”, it was later hailed in a government press release as a major accomplishment.⁸²

That the traditional inclusive approach was instrumental is confirmed in my interviews with Panel members. (Turner and Atleo are discussed here, Lertzman further below in the section “examining the discourse”.) It is likely to have been the key factor in why the Panel succeeded where other efforts in Clayoquot Sound have failed. Panel member, and specialist in ethnobotany, Nancy Turner, offers these revealing comments:

...with the Scientific Panel we made an agreement right at the beginning; we used the Nuu-Chah-Nulth protocols for working together, we agreed on that right to begin with and part of that protocol was that we all solemnly committed ourselves...I know Richard (Atleo) believes and maybe *most people on the Panel believe that we were as successful as we were because we were able to do that*...other efforts were made earlier (e.g. Clayoquot Sustainable Strategy, and others)...to try and come to some kind of conclusion or plan about what should be done in Clayoquot Sound and were not successful...they never developed a way for solving problems or working together at the outset, they just started right in on it and...I know that he (Richard Atleo) has commented on this in relation to those other efforts that they didn't operate within that realm of respect that was required and that's why they failed...but for us, because we had this protocol in place, there were times that were, I guess, maybe more contentious than I realized at the time from talking to people after...there were times when people were ready almost to give up and that we could never really come to any kind of agreement and we always, at that point, would go back to the original protocol, think it through, listen more carefully, talk about it, discuss it and then find a way of getting around whatever problem that was...

(D. Lertzman asks)

“Who were the main protocol advisors for that process?”

(N. Turner replies):

The elders...not on scientific methods...but certainly on the way that information was pulled together, analyzed and evaluated.⁸³

The commitment to Nuu-Chah-Nulth oral cultural methods clearly had a profound impact on the Panel and played a key role in determining its outcome. Moreover, it is noted that where other land use planning initiatives in Clayoquot sound failed, this is attributed in part to not having had such methods as part of the process.⁸⁴ That had been my impression from reading the Report and was thus confirmed in my interviews with Dr. Turner.

It also caused me to think more about oral methods and the epistemology of the sacred. As discussed, this is somewhat metaepistemological by nature. It brings together, in practical fashion, different types of knowledge which are based on different ways of knowing. I asked Dr. Turner about this which led to the above conversation. The discussion went as follows:

(D. Lertzman):

...There may be different rules, different tools, and different methods, but if you

have a methodology (which is the study of method) then you can respect that maybe there are different methods for different types of knowledge...

(Dr. Turner replies):

we adopted and committed to the Nuu-Chah-Nulth protocol

(D. Lertzman):

which is about method?

(Dr. Turner):

Right

(D. Lertzman):

so what I'm hearing is that the elders had something to offer the scientists that could help bridge the gap between different models and different methods?

(Dr. Turner):

Yes, I would say they did, and I believe...and maybe most people on that Panel believe, that we were as successful as we were because we were able to do that.⁸⁵

I questioned her further on this. What about the "larger context," about bridging "multi-cultural gaps, multi-disciplinary gaps and multi-field gaps?" She replied in the affirmative. I then asked about this as, "a comment on personal, social and cultural learning." She replied:

The Panel members that I have talked to, including Fred (Bunnell, Chair) have all said that they learned just a tremendous amount; in a way I felt quite privileged because I have been working with Aboriginal people for a long time and was, in a sense, starting from a different point than most of the other Western science trained Panel members.⁸⁶

This to me was a rather remarkable conversation. It affirms the hypothesis that oral cultural methods—the procedural knowledge of TEK—can offer something to the dominant society and to planning for sustainability on the epistemological problem, not only of blending and uniting different types of knowledge, but also for their practical application. It would have been a worthwhile subject to pursue were I to have had the time and resources for other interviews.⁸⁷

I was, however, honoured to have the opportunity to interview Dr. Atleo. As the Nuu-Chah-Nulth Co-Chair of the Panel, Dr. Atleo had a critical role to play. Being a hereditary Chief and having a Ph.D. in Educational Studies gives him a rare and special background and set of skills.⁸⁸ According to a government of British Columbia press release, Dr. Atleo was to "provide an all important link between the scientific community and the First Nations Elders." Not only did he "interpret"⁸⁹ the meaning of the elders for the scientists; he also helped the elders to understand the meanings of their scientific counterparts.⁹⁰ It was Dr. Turner's impression that Richard Atleo had played a very important role in bridging between the elders and scientists.⁹¹ These are specialized, acquired skills. They are what I have referred to as *cultural literacy* and can be the basis for being a bi-cultural person.

I was curious about non-First Nations Panel members who might have functioned in a similar capacity. In particular, I was interested in Dr. Turner's role who had already worked extensively with elders and oral knowledge and has acquired cultural literacy. Dr. Turner was the one non-Native person who sat on the cultural sub-committee. While all the Panel members contributed to the third report, *First Nations' Perspectives*, it was led by this committee.⁹² This was obviously a special role for a non-Native Panel member to play.

I asked Dr. Atleo about Nancy Turner's role. He pointed out that Dr. Turner was on the cultural sub-committee and that she, "provided a link to the scientific community."⁹³ While he mentioned several Panel members, "who played that role substantively over time as the Panel work progressed...Nancy certainly was a major (contributor in this capacity), at the top of the list. Nancy, being a member of...our cultural group on the Panel."⁹⁴ When I asked him about this, in particular about her prior experience and training with elders and TEK specialists, he replied, "Oh, it was because of her training, so she was necessary part of the group. She provided a link to the scientific community, because initially I was not a link to the scientific community." This emphasizes the crucial role of those with cultural literacy skills. It also attests to peoples' ability to acquire such skills "over time" and play an increasing role "as the Panel work progressed."

We can surmise from this that what I call cultural literacy skills are essential to the kind of work done on the Panel. There are special people who, because of their acquired knowledge and specialized skills, can more or less function inter-culturally. These people play a special role; moreover, these skills and knowledge can be learned and acquired over time through experience, and put into practice. It's a good example of knowledge into action, in particular for planning between cultural paradigms. It also demonstrates knowledge into action, not only within planning process itself, but in planning for planning.

The process was not always easy, and this is an important point. People had to work very hard, they had to wrestle with the process, with the methods, the content, themselves and their associates. Dr. Atleo commended his Co-Chair, Fred Bunnell, saying, "It was difficult. To get to the Report was going through the fire for both of us."⁹⁵ Success was not a given; there were many obstacles, both within and outside of the Panel.⁹⁶ At the outset, Dr. Atleo was sceptical:

In the beginning, my opening comments at the first meeting was that I didn't expect the process to succeed because we'd never been able to sit down at the table in our history and over time make it work. I said, "we've always been betrayed" —just in a quick look at the history of our relationships—"so why should we be successful here?" ...It created quite a reaction.

We were not really a major part of the Panel focus at the beginning. We were seen initially as an add on to the scientific community. Our credibility had not yet been established. There were larger issues to consider, foremost was the independence of the Panel. There were strong pressures from the government to

be outwardly independent, to submit to the pulling of strings from the outside. So getting the Panel together as a unit needed to be worked out. It didn't happen immediately.⁹⁷

Persistence, unrelenting endurance on the part of the Nuu-Chah-Nulth members is what eventually paid off. We just kept saying the same things, and we said the same things from beginning to the end. We never altered; we never changed. What we started out with in the beginning was what we had in the end.⁹⁸

The challenges the Panel faced, and the difficulties through which they had to go, do not detract from their achievements. On the contrary, they underscore them. The insight brings a tone of sobriety and realism to the work. It also underscores the consequential role and impact of what the Panel termed the Nuu-Chah-Nulth inclusive approach.

It is likely, from the above analysis, that these traditional discursive methods, which are rooted in the transmission of oral history, have utility, not just in the inter-cultural context. These oral cultural methods seem also to have utility in other areas of discourse for decision making and application in complex issues involving empirical knowledge, ethical or normative considerations, social institutions and economic or sustainable development. They may apply *intra-culturally*. Before leaving this aspect of the discussion, I would like to explore a little more deeply into the nature and origin of the Nuu-Chah-Nulth "inclusive process" adopted by the Clayoquot Scientific Panel.

5.5.3.1.1 The "Nuu-Chah-Nulth Inclusive Process": Insights Into the Methods of Oral History

Dr. Atleo spoke at length about the nature and origins of what the Panel came to term as the "Nuu-Chah-Nulth Inclusive Process". In order to understand this, it is important to appreciate Dr. Atleo's background, for the meetings upon which the Panel were modelled, were based on the traditional meetings that he had attended as young child. I will quote him at length here in order to convey the full meaning and context of the oral history:

My Great Grandfather Ki'sta was born sometime in the period of the late 1850's to early 1860's, roughly in that time frame...Ki'sta and his...entire generation would have lived without substantive colonial influence in Ahousaht, because it was not until the turn of the century...that the first settlers began to arrive. Missionary activity had gone on before that, but settlement didn't really begin until the turn of the century. What this meant is that substantive structural changes to culture didn't really begin...until this century. So the housing didn't change until the turn the of the century, and housing, structurally speaking, created a major cultural change, in terms of cultural patterns of behaviour of our people, because we had hi'stees and ckla'ha.

I was born in Ki'sta's house and Ki'sta was the head of the house; in the 1892 Canada census Ki'sta was not head of the house, he was son of his father – son of the head of the house...Nukmis. Nukmis was the head of the house then, and at that time there were...20 some odd members of that household...the new diseases

had helped to whittle down the number of people in households in that day...The reason its important in my background to have been born in Ki'sta's house is that, traditionally, then, Ki'sta was head of the house and there were very strong traditional elements in our household when I was born. So whatever is done to chiefs when they are born was done to me, and so to speak, thousands of years of a way of ensuring leadership, ensuring maintenance, ensuring safety, ensuring well being, and so many other factors that are necessary for a healthy society to exist, and to carry on. The training...begins at birth and the preparation begins there...the imprinting of the culture is done in those first few years...⁹⁹

The source of the model for the Panel's meetings was revealed to me later on in the interview. It came out of a discussion we were having on issues of epistemology and traditional knowledge methods, when Dr. Atleo shared the following:

...in First Nations reality as I experienced in the traditional world that I lived in when I was very young—the latter part of it—I attended meetings, traditional meetings, and I recall very much; as a matter of fact, the traditional meetings that I attended at that young age, those are the meetings upon which the Panel meetings were modelled.¹⁰⁰

The model for the meetings of the Clayoquot Scientific Panel then came from a source steeped in ancient oral history. The methods of traditional knowledge are founded in this transmission and are the basis for the traditional processes of decision-making which the Panel recognized and adopted as “important elements of the Nuu-Chah-Nulth inclusive approach to discussion and sharing to reach agreement.” This traditional discursive approach is founded in what I have referred to as the TEKS cultural capital component; that is, it is based on the philosophical ideas (e.g. ontological; cosmology) that underlay the epistemological model of TEK.

Dr. Atleo elucidated for me on the relevance of the underlying philosophical ideas of TEKS in how to understand the epistemological nature of oral methods. As I mention above, we had been engaged in a lively discussion of “oral methods and epistemology”. We discussed what are the “parallels between First Nations culture and Western science in knowledge acquisition” (i.e. the empirical observation and deductive reasoning aspect; what he referred to as “the empirical process in both worlds”), also considered where the two approaches disengage on “the spiritual acquisition of knowledge”, which, “is unacceptable”. He agreed with my notion of an “epistemology of the sacred” as a larger context that unifies empirical knowledge and deductive reasoning with spiritual modalities and other body-based ways of knowing.¹⁰¹

Dr. Atleo brought up the testing of knowledge hypotheses as a method for validating knowledge. I asked “about the testing of hypothesis in the First Nations context? Do they have that?” His response is what had led into the previous passage quoted above:

That's an excellent question. I think it was a world without hypothesis...a radical statement; because hypotheses are presumptuous...in its assertive sense; there is speculation which is non-assertive, it's a wondering...but hypotheses are definitive and affirmative statements about reality which can be tested, and are tested

and found to be true, or not true, or partially true, etc....but not First Nations reality as I experienced in the traditional world that I lived in when I was very young...

This is where he went into greater detail about the philosophical—the ontological—ideas behind the methods—affirm, confirm, witness—which are central to oral history and TEKS. He related a story from his early childhood about some very contentious ideas proffered in one of the traditional meetings he had attended, “and this relates to hypothesis, the point is how did the people respond to this...to how our people traditionally respond to reality...”. He related that, “it’s an ontological sort of thing...what is the nature of reality; so the position is something like this, which is not articulated by the people, it’s lived, but I will articulate it in this way”:

...here is a being, like a tree, like an eagle, like a salmon, and so on—it’s a human being (in this case)—who makes a statement which we can not understand, but who are we to judge and to say that the statement is stupid, perhaps the Creator has put these words into his mouth; we don’t know. Perhaps he sees a reality that we can’t see, which is just as real as ours, or maybe more real, who knows...so we wonder about it, it’s a mystery, we respect this gentleman...he was always welcomed into the council chambers...it’s inclusive, in terms of values it’s very tolerant ...but there’s no hypothesis there...

...you see, an hypothesis would be presumptuous...so the assumption, then, is that the Universe is intelligent, because the Prime Mover is a Creator who is intelligent, etc. etc. etc. The creation of the Creator has said something we can not understand (even a tree) it’s basically consistent then with the notion of balance and harmony...because the assumptions underlying balance and harmony are that, “you don’t know everything, you can’t know everything” and that’s the nature (of it); that’s one of the characteristics of the human being...of our existence, it’s the finitude of our knowledge, the infinitude of our empirical experience; then underlying that, is the assumption that the Creator, who made all things has a purpose...which we can’t understand...it’s a question then of faith; this gentleman has made a statement which we don’t understand and we’re not going to jump on him and call him stupid, and we’re not going to condemn him, and we’re not going to try and confine him to an institution, we will respect what he says; that’s some of the articulation that’s possible in response to the question about hypothesis.

This gives some insight, the tip of the iceberg, into the philosophy and discursive methods of traditional knowledge arising from oral history of which the Panel eventually recognized and adopted key elements: the Nuu-Chah-Nulth inclusive approach to discussion and sharing to reach agreement. It begins to give some substantive explanation and supportive experience for statements like Boothroyd’s, made in the previous chapter, when he says that an awareness of traditional knowledge, “increases respect for the contributions to be made by all people, improves communication among diverse interests, and enhances abilities to predict and monitor ecological and social impacts.”¹⁰² This case study gives credible evidence to such assertions.

What is also evident is the profound manner in which such discursive methods are foundations of building relationship and the functioning of traditional institutions. The oral

methods, the protocol, are thus the procedural or activating feature of social capital in TEKS. All of these are founded upon the spiritual and philosophical teachings which are the cultural base of TEKS. For example, the ontological basis of knowing which I discussed in the prior chapter, as well as the organic cosmology are clearly discernible in Dr. Atleo's articulations on the question of hypothesis and TEK knowledge methods as they relate to the Panel. Indeed, all three ECO-systems components are discernible. Having examined in detail the methodological feature of TEKS as it applies to the Scientific Panel, I will next turn to dealing with the Panel's treatment of the two other TEKS features: cultural capital and social capital.

Before I do so, I would like to punctuate the above discussion with the anecdotal reference to an extraordinary and timely occurrence, one which has been touted as one of the most significant decisions to be made in Twentieth Century Canadian history. It is a decision which has vast implications for First Nations, British Columbia, and the rest of the country. It underscores the important and critical nature of the manner of research in which I am engaged. It also establishes an even greater precedent for building real discourse and interface between cultures, having relevant bearing on the epistemological credibility of oral methods.

5.5.3.1.2 Recognizing Oral History: A Relevant Note From the Supreme Court of Canada

I'm writing in this section on the recognition of oral cultural methods. This is a challenge given that these methods are based on philosophical assumptions underlying an epistemological model quite different than that of the dominant cultural paradigm. At 9:30 a.m. (December 11) the CBC-1 Radio News comes on with the bulletin that the Supreme Court of Canada has reached a land-mark decision in its ruling on the Delgamukw case put forward as an appeal by the Gitksan and the Wet'suwet'en nations to a decision by the B.C. Supreme Court. The Supreme Court upheld the precedent of Aboriginal land Title, sending the case back to the B.C. Supreme Court and the political challenge back to the Province of British Columbia.

The reason that the Supreme Court of Canada overturned the trial judge's ruling was because he "did not give sufficient weight to oral history". The feature story on CBC National television evening news reiterated the "land-mark decision". In recognizing oral history and the testimonials of the elders, it was reported to have huge symbolic and substantive significance for First Peoples in Canada, in particular for British Columbia and the Gitksan and Wet'suwet'en First Nations. Overturning the B.C. ruling was seen, not only as a vindication of First Nations' traditional knowledge and oral methods but as a snub to B.C. Supreme Court Justice McEachern whose B.C. Court of Appeal's decision had been overturned. The now B.C. Chief Justice had allowed the oral testimony but later discounted its validity as objective historical fact; it was experienced as a great insult to many First Nations and also as a serious set back.

Throughout the day, the CBC and other news, were full of commentary by First Nations leaders, by lawyers and academics, in an effort to understand the implications of the land mark ruling which would affect immediately the 58,000-square-kilometre area in Central B.C. claimed by the Gitksan and Wet'suwet'en as their traditional lands. It was reported how B.C. Supreme Justice Court McEachern had quoted Thomas Hobbes in his 1991 ruling where he described traditional life as, "...at best, nasty, brutish and short...".¹⁰³ The oral historical testimony of the elders was regarded as "folklore", not credible enough on its own to stand in the court of law where reason and fact must prevail. According to the criteria of a "civilized" world, First Nations were not seen to constitute social entities with geographically delineated political boundaries to the extent that their oral history made the case for ownership or tenure of traditional lands. Their knowledge could not stand on its own legal footing without external corroboration.

There followed a spate of articles and similar commentary in the press.¹⁰⁴ The decision was seen as having huge implications, amongst other things, for land use planning and decision making. In establishing a tremendous legal precedent for co-decision making and co-management, some have lamented this decision as being a terrible mistake which will shift the balance of power in British Columbia from industry and the provincial government to First Nations.¹⁰⁵ Others have regarded the decision as being an honourable one which, although a long time in coming, demonstrates Canada's willingness to obey its own laws.

The overturning of a trial judge is considered to be a serious deed, one which higher courts are loath to do unless clearly justified. In as much as only the trial judge has experiential access to the witness and actual testimony, it is a strong legal precedent to allow the greatest discretion for the judge at trial. The act of overturning such a ruling is, thus, not entered into lightly, especially in regards to evidence and the credibility of witnesses and their testimony. On what grounds, then, did Supreme Court of Canada's Chief Justice Lamer (who is usually considered to be a fairly conservative legal thinker) overturn the ruling of Justice McEachern?

The answer can be found in the words of Supreme Court of Canada's Chief Justice Lamer in his decision which could be down-loaded from its internet site on that same day. He basically concluded that oral histories of First Nations are from a different cultural tradition than that of mainstream Canadian society. They are told differently, have different methods and criteria of validity, and strive towards goals which are different than that which is customary in the dominant Canadian culture. He advised that aboriginal evidence must not be undervalued just because it is different and must be treated judicially with these understandings. Oral histories of First Nations are now legally acceptable evidence in cases having to do with the establishing of aboriginal rights or land title.

Chief Justice Lamer ruled that the laws of evidence must be adapted so that the "aboriginal perspective on their practices, customs and traditions on their relationship with the land, are given due weight by the courts."¹⁰⁶ The practical implications of this are that the

courts must, “come to terms with the oral histories of aboriginal peoples, which for many aboriginal nations, are the only record of their past.”¹⁰⁷ Chief Justice Lamer summarized a recent *Report of the Royal Commission on Aboriginal Peoples* as being a “useful and informative description of aboriginal oral history.”:

The aboriginal tradition in the recording of history is neither linear nor steeped in the same notions of social progress and evolution [as in the non-Aboriginal tradition]. Nor is it usually human centered in the same way as in the Western scientific tradition, for it does not assume that human beings are anything more—and not necessarily the most important—element of the natural order of the universe. Moreover, the Aboriginal historical tradition is an oral one, involving legends, stories and accounts handed down through the generations in oral form. It is less focused on establishing objective truth and assumes that the teller of the story is so much a part of the event being described that it would be arrogant to presume to classify or categorize the event exactly or for all time.¹⁰⁸

In citing the above “useful and informative description”, the Chief Justice has implicitly recognized the cultural (capital) context of traditional knowledge systems. It should be noted that there is also an implicit recognition of the TEKS cosmology, as well as the epistemological approach which is organized on a participatory model.

Amongst other things, the central issue which Justice Lamer was facing, is the epistemological problem of the credibility of knowledge which is transmitted and valued by the different rules of protocol and standards of credibility of another cultural model. He had already dealt with the challenge in precursory fashion in his previous Van der Peet ruling which he quoted as precedent:

...The courts must not undervalue the evidence presented by aboriginal claimants simply because that evidence does not conform precisely with the evidentiary standards that would be applied in, for example, a private law torts case.¹⁰⁹

Yet the Chief Justice built on this precedent in grappling with the same type of evidentiary problem for his even more precedent setting Delgamukw ruling. He recognized that many features of oral histories, “would count against both their admissibility and their weight as evidence of prior events in a court that took a more traditional approach to the rules of evidence.”¹¹⁰ Yet he obviously felt that these challenges to credibility could be overcome when he ruled the following:

Notwithstanding the challenges created by the use of oral histories as proof of historical facts, the laws of evidence can be accommodated and *placed on an equal footing* with the types of historical evidence that courts are familiar with, which largely consists of historical documents.¹¹¹

While Chief Justice Lamer recognized that Justice McEachern did allow oral history as admissible, he upheld the appellants’ allegations that serious errors had occurred in McEachern’s treatment of the appellant’s oral histories. He agreed that these were admissible, but disagreed

with some of the reasons by which McEachern, “went on to give these oral histories no weight at all.”¹¹²

In particular, Lamer took exception to McEachern’s evaluation of *Adaawk* and *Kungax*. These are the traditional oral histories of a “special kind” – “sacred official litany” – of the Gitksan and the Wet’suwet’en nations. Lamer mentioned the roles that these play in traditional social structure, including the songs and the feasts (which can be construed as social capital). He also mentioned how these were validated as authentic at the community level in these functions (a tacit recognition of the protocol of oral cultural methods for assessing and transmitting knowledge). It was on the basis of his analysis of *Adaawk* and *Kungax* that Lamer developed the credibility of oral history for proof of the existence of aboriginal land tenure (cultural ownership).¹¹³

Chief Justice Lamer chided McEachern for casting doubt on the validity of these “special oral histories”. He took exception to the manner in which McEachern ruled “it was impossible to make an easy distinction between the mythological and ‘real’ aspects of these oral histories”:

...he (McEachern) discounted the *adaawk* and *kungax* because they were not “literally true”, confounded “what is fact and what is belief, included some material which might be classified as mythology”, and projected a “romantic view” of the history of the Appellants.¹¹⁴

There is a clear difference of epistemological precedent between the two rulings and the perspectives upon which they are based. There was considerable material generated in the ruling by Chief Justice Lamer which resulted in his conclusion that the “trial judge’s treatment of the various kinds of oral histories did not satisfy the principles” laid down previously (i.e. Van der Peet) and resulted in errors that are “particularly worrisome because oral histories were of critical importance”.¹¹⁵ One of Lamer’s most telling statements is worth quoting verbatim:

Although he framed his ruling on weight in terms of the specific oral histories before him, in my respectful opinion, *the trial judge in reality based his decision on some general concerns with the use of oral histories as evidence* in aboriginal rights cases. In summary, the trial judge gave no independent weight to these special oral histories because they did not convey historical truth, because knowledge about these oral histories were insufficiently detailed. However, as I mentioned earlier, these are features, to a greater or lesser extent, *of all oral histories*, not just the *adaawk* and *kungax*. The implication of the trial judge’s reasoning is that oral histories should never be given any independent weight and are only useful as confirmatory evidence in aboriginal rights litigation. I fear that *if this reasoning were followed, the oral histories of aboriginal peoples would be consistently and systematically undervalued* by the Canadian legal system...¹¹⁶

So Chief Justice Lamer’s decision is based largely on a philosophical difference that attempts to come to terms with valuing the credibility of knowledge claims which come from a very different cultural paradigm than that of mainstream Canadian society. This is now constitutional law.

In overturning the earlier McEachern decision and giving legal credence to the oral history, it was reported to have tremendous "symbolic significance" for the Gitksan, Wet'suwet'en and other First Nations. It was also reported that the Gitksan felt vindicated after the huge insult dealt by the B.C. Supreme Court Justice. Gitksan spokesperson Herb George was quoted as saying that, "we are no longer an invisible people."¹¹⁷ At the Gitksan celebration ceremonies, the speaker proclaimed that this was a victory not just for their nation, but for all First Nations of B.C.¹¹⁸ Chief Justice Lamer was quoted in the *Globe and Mail* as saying that, "had the trial judge assessed the oral histories correctly, his conclusion on the issues of fact might have been very different."¹¹⁹ The result will likely be a shift in the balance of power in regard to land use planning and decision making in B.C., and renewed efforts to find political solutions towards land claims in what had become a faltering process.

There is great significance here, symbolically and in substance, not just for First Nations, but for B.C. and all Canadians. In 1763, by Royal Proclamation, King George III of England recognized the Indigenous peoples of North America as "nations or tribes" guaranteeing their sovereignty and also their protection by the Crown of the British Empire. Lamer's ruling not only reiterates this, but begins to explore the murky waters of its practical implications. One aspect of this seems to be the Constitutional recognition of the epistemological credibility of oral history and its methods. Canadians must begin to recognize this "fact". Some may fear, even detest it,¹²⁰ others may celebrate, but as Chief Justice Lamer has counselled, "Let's face it, we're all here to stay."¹²¹ Political process (backed by his ruling), not litigation is what he recommends as the path towards reconciliation and understanding between First Nations and Canada.

For me, this is an astounding and timely turn of events. It lends credence and political sobriety to the work that I and others are doing to construct a bridgehead of understanding between cultures. Most specifically, it draws attention and further credibility to the Scientific Panel's model. In particular, it underscores the need to explore the philosophical, methodological and substantive components of this bridgehead. It also gives greater emphasis to the work which has already offered examples of such efforts, such as the Scientific Panel in Clayoquot Sound. One of the impacts of the Supreme Court decision is the legal and constitutional impetus for co-decision making in land use and land use planning. Thus, we need to develop appropriate models and tools which can create the best opportunity for such decision making and co-management to take place.

Again, this underscores the case of the Scientific Panel. It underscores the need to create the proper context wherein decisions can be made that are informed through traditional knowledge and Western methods, and made by those who can best represent these knowledge groups. In particular, it highlights the methods and protocol of how such discourse and decision making is to take place, and can be put into practical frameworks, methods like the Nuuchah-Nulth inclusive process for discussion and sharing to reach agreement.

There is one more point to make in closing the discussion. I have brought this up and must do so again. The whole exercise is colonial by its very nature. Although leaders were quoted as saying that they have had their “faith restored” in the legal system, we must realize that the entire procedure is antagonistic. The fact that First Nations’ oral history and traditional knowledge must be judged and recognized as having “independent” credibility (by an external arguably political body) gives credence to the idea that there is a higher authority which can do so, and some higher method or standards by which it is to be done. It is similar to the idea that science “legitimizes” TEK. I would refer back to the diagram of “four epistemological zones” to order to place the topic in a more helpful context of understanding.

The fact that the Supreme Court has set into constitutional law the incipient foundations for the epistemological credibility of traditional knowledge is astounding, as much as it is historically monumental. It is sad, though, that it cost so much in financial and emotional resources for the Gitksan and Wet’suwet’en. Even still, the outcome is a paradigm shift of sorts, but more for the dominant society than it is for First Nations; I’m sure that the Gitksan and Wet’suwet’en never doubted the (epistemological) validity of their claims and the cultural basis for them. Nevertheless, the political context and economic outcomes of the situation are a reality, not unlike that of the Scientific Panel, where similar factors have been influential and at stake, though perhaps not of the same scale.

Let me sum up the discussion in terms of its relevance to the Scientific Panel. The Scientific Panel was constituted in a less judgment based and antagonistic fashion than that of a trial procedure, but even the Panel members had to go through a gruelling process in order to achieve a vantage point of relative epistemological parity. Both examples of the Scientific Panel’s work and the Lamer decision share a common feature of helping to establish a new terrain of knowledge with practical, action-oriented implications. This inspires attempting to understand the philosophy, spirituality and methods which underlay the cultural capital of traditional knowledge systems. The Supreme Court upheld the precedent of aboriginal land title, sending Delgamukw back to the B.C. Supreme Court. More intentionally, Supreme Court Chief Justice Lamer sent a political challenge back to the Province of British Columbia. This has given strong impetus for solutions to be found through political process and has established a precedent for co-decision making on land use and co-management in land use planning. The model proffered by the Clayoquot Panel and their approach is a credible example for this challenge.¹²²

5.5.3.2 *“Everything Is One”: The Sacredness and Respect for All Things – Drawing from the Wisdom of Nuu-Chah-Nulth Cultural Capital*

Much of the case for the Panel’s recognition of what I have referred to as the cultural capital component of TEKS has been made evident in the section above on recognizing oral methodology. I would, however, like to make this somewhat more explicit. The section in the

First Nations' Perspectives report that follows the one on the Commitment to the Nuu-Chah-Nulth Inclusive Process is entitled, "Sacredness and Respect all Things". It is essentially the philosophical statement of the report, and has direct bearing on the cultural capital component of my analysis. It deals largely in the ontological character and cosmology of TEKS. The main focus of this is the Nuu-Chah-Nulth concept of *hishuk ish ts'awalk*: *everything is one*.

The section on the Nuu-Chah-Nulth inclusive process begins the substantive discussion of Nuu-Chah-Nulth philosophy as it relates to the Panel's work. It leads in to the discussion of *hishuk ish ts'awalk*. At the end of the inclusive process section is put forward "the first four general principles espoused by the Panel", developed in the Panel's earlier work which, "incorporate traditional Nuu-Chah-Nulth philosophy":

- 1.) The world is connected at all intervals;
- 2.) Human activities must respect all life;
- 3.) Long-term ecological and economic sustainability are essential to long-term harmony; and,
- 4.) The cultural, spiritual, social and economic well-being of indigenous people is a necessary part of that harmony.¹²³

The Panel adds that the fourth principle is elaborated upon in the following way:

Indigenous peoples live within the landscape from which they and the rest of society extract resources. Because of their longer, often closer connections to nature, the cultural and spiritual relationships of First Nations peoples with their environment are different from those of other cultures. Such cultural and spiritual needs must be accommodated in standards governing land use and resource management.¹²⁴

In the sub-section entitled "Sacredness and Respect for All Things", the Panel writes that the Nuu-Chah-Nulth believe that "all things are sacred" and deserve to be treated with respect. "All entities used as resources (such as a tree, bear, deer or salmon) are to be treated as gifts from the Creator."¹²⁵ The result of this belief paradigm is that, "Mass degradation is unthinkable."¹²⁶ One can see that underlying this are the spiritual-organic cosmology of TEKS cultural capital, and the ontology of animistic-wholeness which accords the status of being to all aspects of that living world. These are embodied in the principle of oneness which underlies the ideas of sacredness and respect.

The quintessential statement of this belief paradigm is *hishuk ish ts'awalk*, — everything is one — which embodies the ideas of 'sacredness and respect'. They quote Panel member and Ahousaht elder Roy Haiyupis:

Nothing is isolated from other aspects of life surrounding it and within it. This concept is the basis for the respect for nature that our people live with, and also

contributed to the value system that promoted the need to be thrifty, not to be wasteful, and to be totally conscious of your actual needs in the search for foods. The idea and practices of over-exploitation are deplorable to our people. The practice is outside our realm of values.¹²⁷

Respect is the very core of our traditions, culture and existence. It is very basic to all we encounter in life...Respect for nature requires a healthy state of stewardship with a healthy attitude. It is wise to respect nature. Respect the Spiritual...It is not human to waste food. It is inhuman to over-exploit. "Protect and Conserve" are key values in respect of nature and natural food resources. Never harm or kill for sport. It is degrading to your honour...It challenges your integrity and accountability. Nature has that shield or protective barrier [that] once broken, will hit back at you.¹²⁸

The Panel writes that "with deep respect for other life forms comes the Nuu-Chah-Nulth belief in the spirituality and sacredness of life and of the earth, and in a *oneness* between humans and their environment."¹²⁹ They stress here the idea or principle of oneness. It is this ontological unity in the Creator which seems to be the foundational teaching of the Nuu-Chah-Nulth meaning-producing system. It is a foundation of community cultural capital.

The principle of ontological unity – *the connectedness of beings* – is what forms the basis for the traditional system of resource management and sustainable land stewardship. The Panel was clearly aware of this when they made the following transformational statement. "This philosophy contributes to a framework for a new type of management or resource stewardship that is ecosystem-based."¹³⁰ Why do I use the term *transformational* ? *Hishuk ish ts'awalk* is the character of ecosystem management adopted by the Panel. It was astounding for me to read:

The Nuu-Chah-Nulth phrase *hishuk ish ts'awalk* ("everything is one") epitomizes a holistic worldview, and has been adopted by the Clayoquot Scientific Panel to describe the ecosystem management approach to forest practices the Panel recommends.¹³¹

This is where the two knowledge systems and belief structures of Western science and TEKS converge. I mentioned in the prior section that there are two paradigm shifts visible in the unified work of the Panel. One is the shift in resource management sciences from an anthropocentric and sectorially based model to an holistic and ecosystems based model;¹³² the other is the convergence of TEKS and Western science. I think it is evident that the two facilitated one another in the work of the Panel.¹³³

The statement that the philosophy of *hishuk ish ts'awalk* contributes to a framework for a new type of resource management or stewardship that is ecosystem-based is the articulated outcome of an experiential discourse between the recognized members of two distinct epistemological models and sets of cultural paradigms. It is part of the new terrain of knowledge established by that discourse (zone 3 in the four epistemological zones diagram, Figure 10).

I will relate the story of how the term *hishuk ish ts'awalk* came to be the official character of ecosystem management adopted by the Scientific Panel. It is an interesting and telling story, which illustrates the mutually articulated nature of a new ecosystem-based framework for resource management and planning founded upon the cultural teaching of *hishuk ish ts'awalk* and the science-based model of ecosystem management.

Dr. Lertzman described to me the process the Panel underwent in linking the two concepts of ecosystem management and *hishuk ish ts'awalk*. The conversation came out of a discussion of some of the language challenges faced by the Panel. This involved having as part of the knowledge exchange, not only a broad multi-disciplinarity, but also Nuu-Chah-Nulth and English, in particular, "technical and jargon ridden English". The conversation went as follows:

K. Lertzman:

we (ecologists) would sort of yammer away in ecological jargon or forestry jargon for a while and half the panel wouldn't understand half of what we were saying, and that would include the non-specialist people other than First Nations; then people would have to translate into everyday English for the non-specialists on the Panel, which may or may not include the First Nations and other members. Similarly, there are a lot of important concepts from a Nuu-Chah-Nulth cultural perspective which are expressed most clearly and effectively in Nuu-Chah-Nulth, and they would talk about it, then have to struggle to try and translate it for the rest of us—for the other non-specialists—and it was definitely a struggle sometimes. Quite often, we would spend a fair bit of time explaining something, going in one direction or the other, and then talking about what did that mean; and I think that the evolution of the term *hishuk ish ts'awalk* as the Nuu-Chah-Nulth equivalent for ecosystem-based management is really a good example of that ...the most direct translations for it seems to be, "everything is one"...the way that is interpreted in Nuu-Chah-Nulth culture seems to embody much of the concept cluster of ecosystem-based management...their view of unity as a part of the eco-system in which they participate.

D. Lertzman:

...So the scientists have an idea about ecosystems management, explain it, then the First Nations say, "well this is what that means to us," and the scientists kind of come back and say, "well that's pretty cool, we'll go for that too!"

K. Lertzman:

that's a fair assessment.¹³⁴

It seemed to me to be a rather extraordinary story of the convergence of knowledge paradigms and their specialists. I brought this story up with Drs. Turner and Atleo; each remembered it happening in similar fashion and were able to help detail the occurrence.

The story conveys a sense of the experience of the Panel. A model is proffered by scientists which involves extensive technical language, substantive components and has practical

implications (e.g. planning where ecosystems are the object of management, having individual attributes that are evident, can be manipulated or pulled, and managed only at certain scales) as well as a more generalized paradigmatic nature. The First Nations specialists then must go away and confer amongst themselves to discuss the meaning of this in the context of their own knowledge system. When they come back with their own concept and term in their own language, having cultural-spiritual, ethical and practical implications for management, the scientists can then re-consult and attest to their agreement. The process of discourse and its outcome are attributes or features of the whole group and the experience of the Panel in general.

The result of this discourse is the articulation of a new model which is grounded in the cultural teachings of the local First Nations and also in the science-based management approach of planning for ecosystems sustainability. The Panel would never have been able to achieve this if there were not members of both knowledge systems being substantively involved. There was a wide array of multi-disciplinarity amongst the natural and social sciences on the Panel. This was both necessary and challenging in and of itself.¹³⁵ There was also the capital of Nuu-Chah-Nulth cultural wisdom upon which to draw, and its specialists, including three TEK elders and a hereditary chief. As a whole, the group drew upon scientific, technical and traditional knowledge, as well as other government and policy documents, and reached consensus. This bridgehead of understanding was achieved through the articulation and commensurability of concepts cultivated through an intensely discursive process based upon the Nuu-Chah-Nulth inclusive approach.

Speaking on the recognition of cultural capital, we can say that the Panel recognized the broader cultural context and significance of knowledge. In doing so, they were able to work at a higher order of thinking; they were operating from an arguably meta-epistemological point of view. This was not a given at the outset but had to be achieved. (Achieving this can be regarded as a substantial accomplishment in and of itself, part of the planning for planning phase inter-culturally and multi-disciplinarily). The practical implications of this higher order thinking are that the Panel recommendations are of a much broader and more profound nature than they otherwise might have been. The Panel's recommendations are paradigmatic in character. I raised this question of recognizing the broader cultural context of knowledge with Dr. Lertzman as a basis for the planning process:

D. Lertzman:

They recognized the spiritual, cultural and social context of knowledge...

K. Lertzman:

That's much more what we were dealing with. We did not deal with setting up management plans for any specific resource or any specific place. We didn't make recommendations about how a particular valley should be managed or how a particular road should be built or how a particular cultural resource should be treated. We made recommendations about how watersheds, in gen-

eral, of different characteristics should be treated, or how roads in general should be built in areas of different characteristics...we talked about how, in general, traditional ecological knowledge, or resources of cultural significance and information should be obtained and built into the management system.¹³⁶

The outcome then is modular, bi-cultural, not just science or TEKS based, but both; it is of its own order: the result of a discourse between cultures and part of a new terrain of knowledge incorporating the substantive and methodological requirements of both epistemological models. It is, thus, of an arguably meta-epistemological character.

I have looked briefly here at the recognition of the cultural capital component of TEKS by the Scientific Panel and also explored what some of the practical results of this are. The next step is to look at the social capital component of TEKS as it is recognized by the Scientific Panel. The main focus for this is the Nuu-Chah-Nulth social institution of *hahuulhi*.

5.5.3.3 *Hahuulhi: Ecological Accountability, Cultural Ownership and Social Capital*

The recognition of *hahuulhi* by the Scientific Panel is a matter of some critical importance. *Hahuulhi* is the system of traditional ownership of lands, waters and resources by the Nuu-Chah-Nulth hereditary chiefs. It is regarded as "the key to the social and cultural practices, tribal membership and property ownership, [and also] economical, environmental and resource controls to promote effective enhancement levels to sustain life for the tribe today and for generations to come."¹³⁷ Needless to say, *hahuulhi* is an institutional mainstay of the social community capital in traditional Nuu-Chah-Nulth society.

It is therefore most noteworthy that the Panel has recognized the institution of *hahuulhi*. They write that the concept of *hahuulhi* is important to the work of the Scientific Panel for several reasons. This is because *hahuulhi*:

- recognizes First Nations historical use and management of land and water resources of Clayoquot Sound;
- is both a source and reflection of Nuu-Chah-Nulth traditional knowledge of the area;
- embodies the Nuu-Chah-Nulth belief in sustainable resource use practices; and
- provides a traditional framework for co-managing these resources in the future.

This last point is especially significant. It requires some real power sharing in co-management (it puts the 'co' in the management). It also establishes a precedent, if followed, for a link between mainstream social institutions and the institutions of TEKS social capital. This will have the dual purpose, not only of helping to ensure a more effective approach to co-management with TEKS, but also should serve to enhance the social capital at the community level.

There is a relationship here between sustainable resource stewardship and the ownership of the hereditary chief. Prior to the arrival of Europeans, there were very clear inter and intra-national boundaries. "These boundary lines we can show on a chart...which can show you

that these boundary lines are very important in the same way that the government is with their boundary lines with Canada and the U.S.A.”¹³⁸ All lands, waterways, shorelines, offshore islands and waters, as well as remote areas far inland fell under the *hahuulhi* system of ownership control and resource use. “The boundaries of the various resource use sites owned by individual chiefs were known to all, and were formally recounted and reinforced many times through Nuu-Chah-Nulth oral traditions during feasts and other cultural gatherings.”¹³⁹ *Hahuulhi* provides the traditional institutional vehicle for resource stewardship. It insures accountability through the Chief’s hereditary responsibility to his community and the ecosystem.

The Panel quotes Roy Haiyupis in noting that “*hahuulhi*...indicates...that the hereditary chiefs have the responsibility to take care of the forests, the land and the sea within his *hahoolthe* and a responsibility to take care of his *mus chum* or tribal members.”¹⁴⁰ *Hahuulhi*, therefore, is an extraordinary institutional link between social capital and ecological capital. It is a property model which assures ecological and community accountability, based on the obligations of the chief’s hereditary responsibilities. This property model is an interesting blend of private ownership and cultural or community obligation. *Hahuulhi* has been translated or described as being “private ownership”. I don’t think this is private ownership in the sense of private property as it is in the economic and philosophical systems of Western capitalism. Given the ecological and community responsibility of *hahuulhi* as a key feature of social capital, it would be more accurate to think of *hahuulhi* as a private ownership model based on cultural ownership where collective propriety is held on behalf of the community by the hereditary chief.

The Panel recognizes that *hahuulhi* is both a “source and reflection” of Nuu Chah-Nulth TEK. They also recognize that *hahuulhi* embodies the Nuu-Chah-Nulth belief in sustainability and enacts sustainable resource use practices at the community level. This then underscores the role that such institutions of social capital have, not only for traditional models of sustainable resource management systems, but also for current and future practices, in particular, for co-management. Given the recent decision by the Supreme court of Canada, the significance and potential role of *hahuulhi* will be increasingly influential, both as a historical record of cultural ownership and as a political mechanism for land title and treaty negotiations.¹⁴¹

5.5.4 Recognition of Traditional Ecological Knowledge

Chapter three of the report deals with the “Recognition of Traditional Ecological Knowledge.” The Panel does not use the term epistemology, but this chapter is what amounts to their epistemological statement on TEK. They introduce the subject of TEK with the following quote. “Speculation and reflection upon the nature of the Universe and of man’s place in the total scheme of things have been carried out in every known culture.”¹⁴² They go into some detail in introducing and discussing the concept of TEK. As I have mentioned, they situate the recognition of TEK in its global context, in North America and in Clayoquot Sound. The Panel

also goes into some detail describing the “Characteristics of TEK”. They explore both the differences and convergence of scientific and traditional knowledge, incorporating TEK into environmental planning and suggest co-management as a possible model for integration.

5.5.4.1 Knowledge, Self and the Universe: Recognizing the Broader Terrain of Knowledge

The Panel recognizes that TEK is “rapidly becoming an acceptable source of information in non-indigenous society.”¹⁴³ It is notable that, at the outset of their discussion of the recognition of TEK, the Panel also points out that there has been resistance to this trend attributable to, “an elitism and ethnocentrism that runs deep in much of the western scientific community.”¹⁴⁴ They write that this resistance “may be based upon fundamental differences in world view.”¹⁴⁵ They quote a passage from Clarkson *et. al.* to explain the content of what this divergence of world view is about:

the nature of human’s relationship to the planet; the place of self and community in actualization of that relationship; conceptions of the organic matter of the planet; reasons for utilizing organic matter of the planet; and in the vision for our existence as it related to sustainability.¹⁴⁶

It is especially notable to me here that, although they don’t use the term “ontology”, this is essentially what is underneath the discussion. There is also made an implicit connection to the realm of cosmology. The Panel continues that another contrast is founded in the difference between worldviews where one, the Indigenous worldview, is characterized by, “oneness with the universe, while the western worldview holds that everything is characterized by individualism and isolationism.”¹⁴⁷ They write that:

The indigenous worldview holds that everything is related and connected in some way (*hishuk ish ts’awalk*), whereas the western worldview may recognize holistic subsystems within the universe yet may act as though reality is not necessarily made up of related or connected parts...In contrast to the compartmentalization of reality which is arguably characteristic of the western worldview, the indigenous worldview is characterized by wholeness.¹⁴⁸

The Panel recognizes the diversity of First Nations cultures in North America. Yet they also recognize a “common thread” which runs through each of these cultures. The common thread is, “a spiritual worldview...that all things are related in a sacred manner.”¹⁴⁹ They recognize that the basis for all this is “the Creator” who “created all living things.”¹⁵⁰

The Panel cites several elders from around North America to replicate the idea that humans are one part of a larger living-spiritual world where all creatures have a similar foundation in the being of the Creator – The Great Spirit – and have equal right to share in the living system. They establish the perspective of the spiritual-ecological connection between all aspects of this living world and our place as humans within it. It is stressed that such realizations engender a certain character of humility and respect amongst humans, without which we would lose touch with our humanity and balance would be lost. They quote Nuu-Chah-Nulth

elder Simon Lucas who tells us that the, “animals have a right to those forests too. They belong there – it is as much theirs as ours.”¹⁵¹:

The greatest spiritual teaching of the elders is that we must “treasure day so that we will treasure life.” During the day all life is visible. Within old-growth forests, we are totally surrounded by creation, and we can deepen our understanding and achieve humility with respect to our place in creation. Without this humility, engendered within old-growth forests, we are prone to feel superior to other forms of life. We can begin to fail to account for the simplest forms of the networks of life. Without humility, our attitude towards other living things can become destructive.¹⁵²

The Panel quotes Gitksan elder Marie Wilson on sacredness and interconnectedness:

Our ancients...sought reason for their existence and understanding of their role in the created whole of their environment. They required this self-knowledge to validate and dignify their existence.

These Gitksan came to a firm decision that all created life was equal, necessary and a vital part of the interconnected whole that we now call Planet Earth. They believed that this interconnected whole was created to be in perfect balance and must remain so if all parts were to survive in comfort and harmony.¹⁵³

The Panel recognizes that TEK is an integral aspect of Indigenous cultures in North America and the examples provided above are representative of many that can be found in other publications. They conclude with the reminder that the validity of traditional knowledge has been generally ignored or undervalued, at best, in mainstream North American society. They cite the residential schools as one example where First Nations languages and culture were firmly suppressed and children were taught that the dominant European lifestyles and knowledge bases were superior to their own.

It was encouraging for me to read the above material. From the point of view of my own work, the Panel’s approach to TEK is amenable to my own. In their treatment of knowledge they recognize the larger social and philosophical contexts within which knowledge operates – the terrain of knowledge. They recognize that this is connected with an understanding of our place in the Universe and what that picture of the world looks like – the ontological and cosmological features of knowledge. The spirituality in this material is earthy and refreshing. The Panel has also implicitly recognized the connection between these insights and the topic of sustainability: the ontological nature of the challenge of sustainability. Moreover, the Panel is sensitive to the differences between what is the dominant cultural model and that of TEKS, and how those differences have at times engendered prejudice and oppression.

This is all quite validating for my efforts. The Scientific Panel’s approach to traditional knowledge places the subject in the larger context of cultural-philosophical paradigms and their features in a manner which underscores my own work. It affirms the categories of thought that I developed earlier on in order to understand planning as knowledge into action. It con-

firms that such an understanding is useful as an approach to understanding knowledge in its larger philosophical and social contexts. It bears witness to the fact that such an approach is relevant for the topic of sustainability. What encourages me more, though, is that the Panel is writing government policy. They are legitimizing such insights. The Panel is educating the dominant power structure and the public at large.

5.5.4.2 The Different Origins and Shared Goals of Scientific and Traditional Knowledge: Metaepistemology in Action

One of the more important contributions made in the Panel's third Report towards understanding the concept of TEK is their sub-section entitled, "Scientific and Traditional Knowledge: Different Origins, Common Goals". They refer to Webster's definition of the word "knowledge" and make the insightful assertion that although people can, "acquire knowledge in different ways" they may "often reach identical conclusions."¹⁵⁴ They then offer the rather extraordinary discussion:

...consider traditional medicinal knowledge: it is acquired through the rigours and methodology of a vision quest, in which persons isolate themselves and undergo fasting, cleansing, and other ritual activities to receive inspiration and medical knowledge from supernatural powers. Although the methodology of the vision quest is unfamiliar to the modern medical community, the knowledge gained often coincides with that of modern medical scientists, acquired by wholly different methods.¹⁵⁵

Why is this so exceptional to me? Many people raise the topic of spirituality or the holistic nature of TEK in the literature. Yet, beyond this more nebulous recognition, very few give actual epistemological recognition or analysis to those methods. The Scientific Panel is the only source I have found, aside from my own treatment, which does so in this fashion.¹⁵⁶ It is also important to remember who these people are. They are trained scientists whose credibility is on the line, both in terms of their academic credentials and in political terms. If there is anything which is at all "sacred" in the scientific world, it is the methods of science. Training in method and its rigour are the craft of science and the basis of its credibility. This recognition of TEK methods by the Panel is not to be taken lightly.

As I have mentioned, some in the literature do refer to TEK procedural knowledge. However, the Panel is the only other source aside from myself who refers to the, "rigours and methodology" of such practices. They do not go as explicitly into the methodology itself, but their work with the Nuu-Chah-Nulth inclusive process is credible. I think it is ground-breaking. This is one of the features of the Panel's perspective on traditional knowledge which sets them apart from others who generally fall back into the position of empirical observation and deductive reasoning, which the Panel also recognizes. Theirs is thus a respectful and realistic approach in that they do not stress one aspect of traditional knowledge acquisition over the other. It is closer to my idea of an epistemology of the sacred, on which Dr. Atleo concurred.

The Panel recognizes that the “acquisition of ecological knowledge” (i.e. knowledge about the environment) can be gained through different types of experience. They outline three major distinctions between scientific knowledge and TEK. The first point made is that Traditional Ecological Knowledge is profoundly spiritual—the Creator made all things one. They raise the point that the “approach we call science abandoned spiritualism as an explanatory approach during the Renaissance...and devised an impersonal method that was ‘inter-subjectively testable’...”.¹⁵⁷ The next distinction is that TEK adopts as a fundamental principle that all things are related and interconnected—*hishuk ish ts’awalk*. While the Panel members recognize that scientific ecological knowledge approaches this principle, it must proceed differently in its approach to understanding nature. Due to the primacy of replicability, “any single experiment must sever and ignore some natural connections.”¹⁵⁸ According to the Panel, the ingenuity of the experimenter, thus “lies in choosing the appropriate bounds of the experiment.”¹⁵⁹ I would add here that the researcher’s creativity also comes out in the hypothesis-generating phase. The third distinction that the Panel outlines is that “the recipient of traditional knowledge is an integral part of the system” while the researcher of scientific ecological knowledge “is deemed to perform best when attempting to behave objectively as a dispassionate observer of the system.” We can see here the recognition of two models or knowledge cultures; one is based on the separation of knower and known, the other founded upon their connectivity.

The above is a good discussion of the two models described by Tambiah, one being causally based, the other ordered upon principles of participation. Along with the differences, one can see also where the two systems have some connectivity which could be a basis for commensurability. The Panel concludes their discussion with the insight that, despite the differences in the manner in which knowledge is gained, the goals of both these knowledge cultures can be identical. Both approaches accordingly “seek to understand interrelationships, including humanity’s place, within a forest ecosystem.”¹⁶⁰ This seems to be a point of connection upon which some manner of commensurability could be based.

There are two important reasons why the Scientific Panel believes that TEK should be a more prominent feature in forest management. One is the length of its experience. The other is in its complementarity to scientific knowledge.

In Clayoquot Sound, scientific knowledge is based on experience of the west coast rainforest that has lasted for less than one tenth of the lifetimes of the dominant trees in the forest. The collectively shared experience of the Nuu-Chah-Nulth, on the other hand, reaches far back into history, passed on by centuries of oral tradition. Furthermore, most scientific studies are individually based on, at most, a few years observation, whereas the knowledge of local people is reinforced by a lifetime of experience.¹⁶¹

It is notable for me that the Scientific Panel, in recognizing the long standing nature of TEK, what I discussed in the prior chapter as the temporal feature of TEK, has tied this to its cultural-

historic context in oral tradition. This is not unlike the manner in which I have contextualized the temporal feature of TEK as its historical nature.

It is important to note that, while these are both good reasons why TEK should be more prominently included, there is another reason. This is the ethical reason which is in respect to First Nations themselves as a people, to the precedent of their presence, history and ongoing relationship to the land. I respect that the Panel needs to give scientifically—epistemologically—credible reasons for their support of TEK, this is all part of the bridge building process. Yet there is a level of recognition which I think needs to happen prior to this, a kind of political or spiritual recognition. To be fair, I think that the Panel has done so, but we need to be reminded of this in the context of the discussion.

On the point of the complementarity of Traditional Ecological Knowledge to scientific knowledge, the Panel notes that TEK is complementary by providing an “*external, independently derived reference standard*”.¹⁶² This point is important as it gives independent epistemological credibility to oral TEK, not unlike the fashion in which does the Lamer decision. It puts the two knowledge cultures, at least in an epistemological sense, on a more equal footing. What is also notable is that, while other authors mention that traditional knowledge can be complementary to Western science, the Clayoquot Scientific Panel seems to be the only source that provides an analysis that gives an epistemological foundation for the claim. This helps establish some actual criteria for the insight.¹⁶³

The positing of TEKS as providing, or constituting an external, independently derived reference standard, also harkens to the point I made at the end of my treatment of Tambiah on the subject of truth, validity and bi-cultural verification. The Panel seems to implicitly assert here that this intercultural corroboration and cross-checking is a credible criterion for knowledge confirmation. This is an arguably meta-epistemological position: TEK provides for science an *external independently derived reference standard* because it is derived from another internally consistent—participatory—epistemological model which operates outside of the dominant cultural paradigm. This insight is one of the Panel’s most significant contributions. I think it advances the epistemological terrain, not just between cultures, but within our own.

According to the Panel, there are two ways in which Traditional Ecological Knowledge provides an external, independently derived reference standard. The first is founded upon the recognition that TEK places people firmly within the system, “as an integral part and does not remove them.”¹⁶⁴ By reason of its method of acquisition, scientific knowledge, on the other hand, “must first remove the knowledge recipient from the system to play the role of dispassionate observer.”¹⁶⁵ The other criterion for providing an external, independently derived reference standard to science is that, whereas TEK “does not depart from its holistic view”, the acquisition of scientific ecological knowledge, “often begins from a holistic view, but then exploits repeatable, reductionist experiments, only to resynthesize these pieces back into a holistic view.”¹⁶⁶ The Panel punctuates their discussion by reminding us that neither scientific knowl-

edge nor TEK is “free of errors”. Yet, due to the commonality of ends, in particular with regards to humanity’s place in nature, it is beneficial to use both of these “broad approaches”.¹⁶⁷ They also stress the value of traditional knowledge because it has so often been ignored. The Panel concludes the discussion with the insistence that the integration of scientific and Traditional Ecological Knowledge is essential to the development of forest practices standards which can ensure sustainable ecosystem management.

These insights are consistent with the analysis I provided in the prior chapter. It is amenable to my comparison of TEK and Western science according to the ECO criteria. What the Panel presents here as an epistemological statement is consistent, in particular, with my analysis of the “causal-reductionist” model versus an approach which is “holistic-participatory”. Moreover, the analysis provided by the Panel is relevant to the model of Tambiah’s that I have borrowed in order to describe multiple orderings of reality based on causal versus participatory principles. This is an excellent case study for the beginnings of a bridgehead of understanding between these two models and their cultures. Both in their written material and upon examination, the Panel provides critical insight into the basis for establishing a foundation of commensurability between these knowledge cultures. They also provide material with specific examples. Although not a focus of this section, I should point out that the Panel gives an experientially credible treatment for putting this into practice. So we can conclude that what the Panel is, and what the Panel offers, is the articulated result of a discourse between cultures: a model based on bi-cultural knowledge and learning criteria.

The last point I would like to make is about the different origins and shared goals of TEK and science. I think that the Panel is a special and precedent setting case. While the Panel is representative in a general sense, I don’t think that we can conclude it is representative of all science, or even all First Nations for that matter. Rather, it is indicative of what can happen, of the realm of possibility, given the right people, methods, spirit and circumstances. To infer that the shared goal of “including humanity’s place, within a forest ecosystem” is indicative of all science is a generalization that may not be entirely accurate outside of science as it is practised by some ecologists or scientists of a more holistic or ecological bent. I do think, however, that including humanity within ecosystems is more generally indicative of TEKS as they vary amongst Indigenous peoples in Canada.

In particular, with regards to science and shared goals with TEK, the Panel is indicative of a certain perspective within science that is of an ecological nature. If the scientists were of a less holistic and ecological perspective, or of a more hard-line reductionist perspective than that associated with ecosystem-based management, I don’t know if the Panel could have wound up where they did *vis-à-vis* the science-TEKS interface. Along with the individual practitioners themselves, I think that this growing ecological model or paradigm was very responsible for supporting the discourse in unfolding as it did. This is because ecosystem management, like TEK, holds as one of its main tenets the idea that people, including their beliefs, values and so-

cial structures, are integral to the larger system. This may have played almost as significant a role in facilitating the TEKS-science discourse as did the Nuu-Chah-Nulth oral methods. I would like to look at this discourse a little more closely.

5.5.4.3 Examining The Discourse

I would like to stress again that their position on traditional knowledge had to be arrived at by the Panel. It was more of a culmination than a beginning. It was the result of a process of discourse between the specialists of two knowledge cultures or paradigms, in the context of the Nuu-Chah-Nulth inclusive method. In looking at the Scientific Panel as a precedent towards bringing together these two different cultures paradigms, I asked Dr. Atleo if indeed they were given equal epistemological merit. He replied:

Not in the beginning. In the beginning there was a lot of misunderstanding, lack of communication...we used the same English language, but often, when you have people from two different cultures using the same language, it's usual I think, to have misunderstanding.

I asked Dr. Lertzman if it was ever difficult for scientists on the Panel to accept the substantive knowledge of First Nations based on their approach at face value. He replied:

I think people came into the process with varying degrees of experience in working with First Nations and varying perspectives on the unitary place of the scientific knowledge system in the world...I don't think anybody ever had any problem with the statement of something being of value culturally to the Nuu-Chah-Nulth. I think that statements of fact on the nature of ecosystems or of ecological processes that arose from traditional knowledge, some people had a harder time of accepting that at face value...how this ending up getting expressed is this hypothesis testing-hypothesis generation dichotomy.

The question of hypothesis testing vs. hypothesis generating is fundamentally an epistemological one. Some are comfortable with a more open ended approach to the component of research which involves the generating of hypotheses, as Dr. Atleo told me, "generating hypotheses can be done with different kinds of spirits, with different kinds of hearts." This would be the more intuitive or participatory aspect of science referred to in Tambiah's work.

At the same time, to accord a certain type of knowledge generation (i.e. oral knowledge and experience, spiritual visions, etc.) the status of being fine for hypothesis generating but not for hypothesis testing, sets up a kind of dichotomy or hierarchy. It could be seen as somewhat of an insult. I asked Dr. Lertzman about this. He replied that "most scientists feel more comfortable with experiential based knowledge" as a "hypothesis generating exercise rather than as a hypothesis testing exercise".¹⁶⁸ He did suggest that one could regard "persistence over time as a kind of hypothesis testing exercise", but that, "scientists would like to perform an experiment and separate out the hypothesis testing and generating aspects..."¹⁶⁹ It seems that persistence could be seen as an ethnographic criterion for hypothesis testing, but insufficient for science.

I asked Dr. Lertzman whether the above distinction constituted an “epistemological chauvinism”. He replied that he didn’t think so, it was “just different criteria for testing.” He also added that there were cases with TEK, “where we had no problems accepting (statements) just at face value as true statements”. He recalled an example dealing with wind-throw:

We were talking about wind-throw problems for instance, and some Nuu-Chah-Nulth people said that, “we know that on such and such a mountain the wind blows very strongly there and trees blow down all the time, and I can remember back to when I was a kid and my grandfather said that when he was a kid there were big storms and there was large wind-throw problems up there...we were pretty happy, as scientists to say, that there’s good evidence that this area is likely exposed to wind-throw and we should be concerned about partial cutting systems in that area...we were fine in recommending that those kind of sources of information be sought for any given area when planning silviculture systems that might be exposed to wind-throw problems.¹⁷⁰

I asked him why, as specialists in their TEK fields, did these individuals have such validity for the scientists? He responded:

We were all selected because of our knowledge specialties, they weren’t randomly chosen people, they were selected because they were very knowledgeable people in their culture—they are traditional ecological knowledge specialists. There’s no reason not to respect their knowledge base that they’re working from, in the same way that I respect the soils knowledge of Terry Lewis or the view scapes knowledge of Katherine Berris...everybody essentially started with that kind assumption, we’re all here specialists in something and there are all different things.¹⁷¹

When I brought up the Nuu-Chah-Nulth inclusive process which was adopted, Dr. Lertzman replied:

We set up a working protocol in Report One which governed how we worked and that was very important; and it was very important to demonstrate to the Nuu-Chah Nulth people involved that we were committed to honestly including them and, in effect saying, “this was not tokenism.”...the government told us that was what we were supposed to do, I’m not sure they really expected that we would do it.¹⁷²

For the Nuu-Chah-Nulth Panel members, participation was contingent upon the adopting of aspects of their traditional methods. These traditional methods seem to have played a role specifically in helping to bridge these two knowledge paradigms, and more generally, in facilitating this inter-cultural – multi-disciplinary body.

It is evident that the Panel went through a series of developments, generally and more specifically around the TEK-scientific knowledge interface; the initial stage of establishing protocol was key for both. One can get a sense of the progression of discourse as it continued. In such discourse, people are challenged. Ideas from outside of their cultural perspective—and ways of engaging them—challenge people, not just academically or intellectually, but person-

ally. People are required to make an extra effort, go the extra distance in ways they may never have before. I asked Dr. Turner how her work with the elders has challenged her as a scientist. She replied:

It's made me have to be much more open minded...the bottom line is I have to accept myself that things are not always what you see and what they seem, even at times when I have never experienced what people are saying. I have learned that you never dismiss what people tell you...no matter how unlikely it may seem...there's enough evidence that this really happens for those people, whatever level it is. It may not be at a level which is...concrete, it may be at...a different spiritual level, but for those people it's absolutely real. Whether you believe it or have experienced it yourself, you have to appreciate that for those people it is absolutely real and therefore just as much a reality as any of our (scientific) realities; I think this is where we have...to use another non-scientific word – we have to have faith in other people, and in their integrity and the fact that they truly believe what they tell us; they're not trying to pull the wool over our eyes when they tell us things...we have to respect what they say and the knowledge that they bring, whether we've had any direct experience of it or not...that's all embodied in what respect is...so with the Scientific Panel we made an agreement right at the beginning; we used the Nuu-Chah-Nulth protocols for working together, we agreed on that right to begin with and part of that protocol was that we all solemnly committed ourselves, not only to listening to what other people told and what other people said and believe, but in trying to understand what other people said, in really trying...trying hard to understand them...I think that's one step further than just listening to somebody, and listening, in itself, is one step further than many people will go.¹⁷³

This does not mean that people give up their own beliefs, values or criteria for knowledge. One must have a certain position to start out with if they are to actually engage in discourse, or if they are to arrive at a new one. People go through their own learning, things change, the discourse evolves.

I believe this is what happened on the Panel, more for some than for others. Nor were the differences in perspective always drawn between the lines of TEK specialists and scientists. It also seems there was more diversity amongst the scientists and more of a consistent and unified position amongst the Nuu-Chah-Nulth Panel members. Dr. Lertzman commented:

We were all pretty green on the Panel (ecologically in the political and philosophical sense) and there was a lot harder time with accepting different people's positions along that spectrum than along the Western scientific-First Nations spectrum. But we all committed to a consensus process...People varied in how easy it was for them to live with the tac we took with the First Nations stuff, but I think everybody felt pretty good about where we ended up with it.

D. Lertzman:

And that inclusive process was very much stimulated by the First Nations themselves?

K. Lertzman:

It arose directly from their requirements for participation in the First meeting.

D. Lertzman:

and you found it was also supportive to the holistic and hierarchical approach to planning?

K. Lertzman:

yup

D. Lertzman:

so in a sense, there was learning that was really going both ways, on a lot of different levels

K. Lertzman:

yup.

Again, the role of the Nuu-Chah-Nulth traditional methods seems to be prominent in facilitating the discourse, not just inter-culturally, but also for the general development of the Panel as a whole.

For Nuu-Chah-Nulth members, according to Dr. Atleo, there was a certain degree of consistency of perspective. "Everything I said was founded in heritage or in the elders; it was a more unified perspective (than that of the scientists). What we said at the beginning we also said at the end; we went in with a certain view and came out with that view."¹⁷⁴ Yet, as pointed out, there was learning and shifts going on in many directions, including for the Nuu-Chah-Nulth. Situating the Scientific Panel in the larger historical context of colonialism, Dr. Atleo remarked to me that, for the Nuu-Chah-Nulth people, the Scientific Panel is a compromise "...as with everything and any of this interface...such as the treaty process....From the traditional perspective the Panel is a great compromise, but the leadership accepts it and thinks it's a good compromise."¹⁷⁵ He also added that, as a hereditary chief, he "was trained as a statesman. Statesmen are well trained in the craft of compromise." This brings another dose of realism to such discourse and what it means for those whose way of life is still grounded in Traditional Ecological Knowledge systems.

As a Nuu-Chah-Nulth, the Co-Chair and as a Panel member, Dr. Atleo gives us a deeper sense of this discourse, of the process through which people went, and the experience of the Panel as a whole. It is an amazing experience he describes, from where the Panel started out, to where they wound up and how they got there. As he puts it, it was literally a transformational process:

...The Panel changed greatly, they went through a literally transformational process, if only because of the environmental crisis. They literally went through a paradigm shift and we (Nuu-Chah-Nulth) helped them with that. It was a group process...I witnessed them doing it out in the forest, standing in the Circle—a

classic Nuu-Chah-Nulth situation. We stand in circles, when we sing, when we hold council. It was the culmination of a long process and necessity is the mother of invention: the impact of European scrutiny, the world heritage site of UNESCO, the government, industry, all these facilitated the outcome.¹⁷⁶

It is not frivolous or trendy to invoke the term “paradigm shift” when referring to the discourse between Western scientists and TEK specialists on the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound. There are many ways in which the claim can be substantiated: culturally, scientifically, methodologically and procedurally, politically, academically and in terms of planning theory and practice. I would like to provide a brief summary of my analysis of the discourse between Western scientists and First Nations TEK specialists on the Clayoquot Scientific Panel before moving into their recommendations for implementation.

The image of scientists and elders standing in the forest and coming together in a circle is a powerful and symbolic one. It is a symbol of the coming together of respected representatives of two different knowledge paradigms and the cultures from which they come. It can be seen as a meeting of minds and hearts from two totally different worlds. It is a symbol of the joining of those worlds in a way which has helped to establish a bridgehead of understanding between them. It is also symbolic of the process through which the Panel members went to get there: an arduous, challenging, and discursive one, under great scrutiny from a multitude of local and far flung sources around the world, both public and private. It was *transformational*. Guided by the methods of oral tradition, through a process which harmonized scientific knowledge from a broad diversity of academic disciplines and professional fields with government policy sources and traditional knowledge, they reached consensus as a group where others had previously and consistently failed.

The image is also symbolic of the place whereat they arrived. There was a great deal through which the Panel members had to go in order to get there: as individuals, professionals and academics, as traditional people, as the representatives of two distinct knowledge cultures, and the group as a whole. The result of this transformational process, amongst other things, has helped to establish a new terrain of knowledge which is based on the blending of two distinct models of reality. The image of people standing in the forest is befitting one. It represents the ecological system of which both cultures are a component. This is the common ground shared by the two models, philosophically, materially and ideologically.

The new terrain of knowledge this group of people is helping to establish is one that has been revealed to be meta-epistemological in nature. As well as the credibility of science, it also required aspects of the oral methods of Traditional Ecological Knowledge-Systems in order to achieve this. I believe that is because traditional approaches to ordering reality and making sense of our place in the Universe are founded on an essentially meta-epistemological perspective which I have called an *epistemology of the sacred*. This was affirmed in my interviews with an Ahousaht hereditary chief, the Co-chair, who also holds a Ph.D. One does not have to sub-

scribe to the spirituality of this approach or to its ontological underpinnings in order to grasp that it has implications for the practice of planning between cultural paradigms, for co-management in ecosystem-based planning, and perhaps planning theory in a more general sense as it applies to sustainability. That is, it has application both *inter-culturally* and *intra-culturally*.

In building a bridge between Western science and traditional knowledge, the Panel can be seen to have arrived at a mixed cultural model which, albeit with some tensions, successfully harmonized a meta-epistemological approach that was able to honour the methodological requirements and substantive contributions of its bi-cultural collaborators. The Panel eventually became an entity of its own. There was a substantive enough discourse to facilitate an interface between these two cultural paradigms where articulation of their different knowledge models occurred. The outcome is a paradigm shift not just in terms of the various multi-disciplinary fields which comprised the Panel in the transition to an ecosystem-based approach, but on a deeper cultural level. The Panel is of great symbolic significance: epistemologically, politically, historically and culturally. This contribution has implications beyond the scope of its immediate geographical and multi-disciplinary focus.

5.5.5 Some Recommended Areas of Application

There are several areas recommended by the Panel for application of this kind of bi-cultural model. I would like to consider three. One deals with incorporating TEK into environmental planning, one considers co-management as a model for integration, another relates to cultural heritage sites and land use planning. I will consider the first two more briefly and in general terms, and the third in somewhat more detail.

5.5.5.1 Incorporating TEK Into Environment Planning

The Panel recognizes that Canadians are, "among those seeking appropriate means of recognizing and including First Nations' interests in environmental planning and decision making."¹⁷⁷ They cite the literature¹⁷⁸ which suggests that there is need for "open, bi-directional consultation" with local communities where First Nations are stewards for substantial parcels of land.¹⁷⁹ They stress that Native communities and groups should be involved from the beginning of program development. The Panel recognizes that Native people are likely to have vested interests in certain environmental problems, especially those impacting on species and habitat as it relates to traditional subsistence patterns and also local public health issues. Institutional linkages need to be developed.

The Panel recommends that traditional knowledge of local communities should be incorporated into monitoring programs where possible. In conjunction with their emerging responsibilities under land claims settlements, many First Nations organizations are developing their own databases. They go on to cite Sallenave (1994) in noting the growing recognition of

incorporating TEK into environmental impact assessment. Sallenave notes, not only that TEK can help to provide base line data, but that traditional knowledge can help provide frameworks for linking ecological and social components of the human environment. I think that this last point is most notable and consistent with this case study.

The Panel also cites Sallenave's warnings about barriers to integrating TEK. These are consistent with my discussion in the previous chapter and in the appendix. First off, they cite the "perceptual barriers" between what aboriginal peoples interpret as significant impacts and what policy makers and proponents of development projects perceive as significant impacts. These differences are understandable, but the continued exclusion of First Nations from the process only exacerbates the problem. It is required that "meaningful dialogue among all parties" be pursued in order to help bridge such gaps.¹⁸⁰ The second barrier cited is, "the scepticism within the scientific community about credibility or reliability" of traditional knowledge. The reliance on "hard" or "objective" data is found particularly "among scientists on policy or regulatory committees, who tend to dismiss aboriginal knowledge as subjective, anecdotal and unscientific."¹⁸¹ The third, and what is "perhaps most overwhelming" barrier, is the political obstacles to TEK which require that decision-making processes be altered.¹⁸²

The Panel agrees that the research and application of traditional knowledge to environmental impact assessment can be successful only if aboriginal peoples control the research and application of traditional knowledge; they must have decision-making authority over the use of research results.¹⁸³ These last insights are important. They are consistent with my own review of barriers to TEKS research and implementation as well as my discussions of methodological implications of TEKS and those with regard to cultural misappropriation and models of cultural property in my previous chapter.

The Panel asserts that they have managed to overcome some of these barriers. Given the work done in my case study of the Panel, I think that they are justified in saying so. They cite other initiatives such as the *Interim Measures Agreement* and the Long Beach Model Forest project¹⁸⁴ which reflect TEK of the Nuu-Chah-Nulth. While I do think that the Panel takes significant steps towards overcoming some of these barriers, time will have to be the judge in the longer term. Political factors are ongoing and have their own cycles and changes of climate. Moreover, the whole phase that deals with implementation of the Panel's work is still underway. The Panel believes that Clayoquot Sound can become a model for including TEK in environmental impact assessment and other aspects of ecosystem management. I am inclined to agree with this, even with the above cautions.

5.5.5.2 *Co-Management as a Model for Integration*

The Panel endorses the concept of "co-management" as one which has been increasingly recognized as a means of incorporating traditional knowledge, values and decision making capabilities the management process. They cite Schwarber (1994) who defines co-

management as “the shared decision making *process*, formal or informal, between a government authority and a Native or other user group for managing a species of fish or wildlife, or other resource.”¹⁸⁵ They further quote Schwarber who notes that a key strength of co-management is in its flexibility to address challenging management situations. Where traditional resource practices and Western management policies come into contact, conflict can often be minimized by involving Native users in the initial development and operation of a co-management regime. “This shows one of the important strengths of co-management—its adaptive ability to resolve management issues when two or more separate legal and cultural systems are applied to the same resource.”¹⁸⁶ The Panel reproduces Schwarber’s eight levels of co-management increasing in the level of sharing of authority with a community. These are: informing; consultation; communication; regional councils and advisory committees; cooperation; management boards; partnership; and community control. The Panel notes that this aspect of Schwarber’s work is based on the prior work of Berkes *et al.* (1991) and also Oreshenko (1988).¹⁸⁷

The Panel then goes on to provide a list of examples of co-management models and initiatives which have been undertaken between First Nations and government in North America. Included in this list is the Gwaii Hanas National Park Reserve on South Moresby (Haida Gwaii, or Queen Charlotte Islands) which is co-managed by the Federal government and the Haida Nation.¹⁸⁸ Another example cited where a similar co-management arrangement is anticipated is between the government of British Columbia and the Haisla First Nation in the Kitlope watershed (near Kitimat).¹⁸⁹

I would like to add another example which is currently being established between the B.C. government and the Lytton (‘Nlaka’pamux) First Nation for the Stein Valley. Both the Stein and the Kitlope are of interest to me, partially because of the involvement of the Rediscovery program and because of their significance as large contiguous habitat areas with long standing First Nations history. The Kitlope has been touted as the largest intact temperate rain forest in North America and even the world. It is well known for its grizzly bear habitat. While it is doubtful that the Kitlope is the largest contiguous temperate rainforest (the coastal portion is largely a temperate rainforest system, but the watershed goes through significant habitat and terrain changes as the valley progresses inland) it is the largest intact watershed in B.C. The Stein is the largest intact watershed in southwestern B.C.¹⁹⁰ The Stein is especially of interest for me, partially because this is the nation into which I have been adopted, but also because of its political and inter-cultural significance. There has been significant involvement of Native and non-Native people in the political process which led eventually to the protection of the Stein. Not unlike South Moresby and Clayoquot Sound, these have become world famous wilderness struggles. The Stein is regarded as a world-class wilderness area. Many people are curious to see how co-management unfolds in the Stein.¹⁹¹

The Panel mentions that the *Interim Measures Agreement* (between British Columbia and the Haida of the Tla-o-qui-aht First Nations, the Ahousaht First Nation, the Hesquiaht First Nation, the Toquaht First Nation and the Ucluelet First Nations, 1994) provides the basis for Nuuchahnulth co-management of lands and forests in Clayoquot Sound. The Scientific Panel endorses this concept and provides for it in its "Recommended Framework for Change" which is section 6.2 of Report 3, *First Nations' Perspectives*. Their second recommendation (R2) is that co-management of the Clayoquot Sound ecosystem must be based on equal partnership between the Nuuchahnulth and the Province of British Columbia.¹⁹²

I was surprised that, in their section on co-management, the Panel does not tie more together co-management and ecosystem management. I was told that this had been the Panel's mandate.¹⁹³ However, in the third recommendation (R3), they do make the connection. "(R3): The first step in developing an ecosystem-based co-management strategy for Clayoquot Sound must be to establish a working protocol based on mutual respect. This protocol must be developed and agreed to by all participating agencies and individuals, and must be followed throughout planning and decision-making process."¹⁹⁴ The recommendation is reminiscent of the manner in which the Panel has had to approach their own work in establishing protocol as the necessary initial phase, then linking this to planning processes and decision making.

If the Panel is any indication of how this might proceed, I think we can anticipate that the linking of co-management with ecosystem-based management would be a fruitful elaboration of co-management as a model for integrating science based resource management and TEKS. This would necessarily have to involve the kind of planning which occurred on the Panel. It would have to involve, not just Western management styles and planning processes, but also First Nations TEK specialists in the planning of planning phase. It would need to involve TEKS protocol and procedures, such as those which incorporate inclusive processes and traditional discursive methods, if co-management is to become a model for the integrating of science and TEK for sustainable resource management and planning between cultural paradigms.

This leads to a caution for co-management. We can not view this, or any such model in a political or historic vacuum. There are real power issues involved. If it is to be meaningful and effective, co-management must have to address the barriers to TEKS research and implementation outlined in the previous chapter. Along with the perceptual and methodological barriers, it needs to broach the political, economic, institutional and historic ones with particular attention to what has been termed as the "dangers" of TEK research (see Appendix on barriers and constraints to the research and application of TEK.)

5.5.5.3 Cultural Heritage Sites, Sacred Places and Historic Areas: An Example of Planning Between Cultural Paradigms

The discussion and recommendations made by the Panel in the section entitled “Nuu-Chah-Nulth Culturally Important Areas” is worthwhile looking at. It reveals the practical application in planning and management of knowledge gained from two the different cultural paradigms.

The Panel scrutinizes the status quo management regime of “cultural heritage sites” which it finds to be a limiting concept. Using their integrated approach, the Panel develops a more competent definition of “historic areas” which draws on scientific knowledge and TEK. This becomes the basis for a new regime of planning for the integration of culturally important areas into ecosystems management. It is a good example of how the bi-culturally based knowledge of the Panel is used to develop new theory and practice for components of management. This becomes the basis for approaching future sustainable resource management. The discourse between scientists and TEK specialists thus enables the Panel, not only to reveal how the status quo approach has been deficient, but how integration of the two knowledge cultures can develop new theory and practice in planning for sustainable ecosystem-based management.

The Panel goes to considerable lengths in discussing areas which are sacred to the Nuu-Chah-Nulth. There are extensive quotes from Panel elders describing the nature of sacred areas such as prayer pools, diving places, sacred caves, medicine places, training areas and sections of forest as well as areas of importance to oral history.¹⁹⁵ There is a table which provides examples of sacred areas in Clayoquot Sound. The Panel quotes Richard Atleo who tells us that “(s)acred areas are pivotal to Nuu-Chah-Nulth culture. They are important to the well-being, survival and sustenance of the Nuu-Chah-Nulth in the same way that any logging company considers the forests to be [to the company’s survival]”¹⁹⁶ The Panel tells us that the recognition and identification of these First Nations’ values and uses of traditional territories is an important precursor to incorporating these values and uses into current forest practices standards.

The written inscriptions of oral accounts provided in the document help give a feeling of these living sacred spaces. Yet the Panel writes that what they provide “merely hints” at the “enormous scale of spiritual practices incorporated into the social and economic fabric of traditional Nuu-Chah-Nulth societies.”¹⁹⁷ Every family is said to have participated in spiritual activities as all things physical are derived from the spiritual. Therefore, success in the physical world is contingent upon an effective relationship and communication with the spiritual world. Panel elder Stanley Sam describes this:

When our people sought spiritual power, called *7uusimch* in our language, they visited a very sacred pool known as *7uusaqulh* where they used special medicines called *tich'im*. Each family had its own spiritual medicine which was handed down from generation to generation.

Then he received a vision called *ch'ihshiti*, from the animals. The animals who appeared in a vision were often land otter, eagle, mink, squirrel, and a little brown bird [possibly thrush or winter wren]. Sometimes when these animals appeared in a vision they brought with them a certain rattle or song, or the special family owned medicines...the Indian doctor...[Dr. Atleo's] power was a land otter that turned into an eagle. He received this power in a vision when he was trapping in Tofino Inlet...Dr. Atleo was my great-great-grandfather...¹⁹⁸

It is important to understand, the Panel reminds us, that sacredness is not limited to just a specific place or localized area. It can include a whole species and thus also the habitat. They write that the depletion of salmon, for example, as a result of faulty forest practices, is not just a loss of food or income, but a loss of part of oneself.¹⁹⁹ One can see here the importance of developing an understanding of the traditional cosmology of which TEK is a part, in particular its ontological capacities, in order to appreciate traditional knowledge and identify resources and resource use. The being or spirit of nature may be its greatest resource, or certainly ours.

For some traditional people, this realization, this experience, is so strong that an entire watershed is regarded as being sacred. Roy Haiyupis considered the sacred nature of the entire Clayoquot River Valley in the following manner:

The power of the spiritual history of the people who lived there, perhaps at the latest in the early part of the previous century, still has to be there. The specific sites for these spiritual searches and vision quests, to me, seems apparent...Nature suggests to us with all its might that this is the central cathedral for meditation and cleansing in readiness for major hunts and excursions. This is where the greatest bear and whale hunters entered into harmony with the Creator and Nature. This is even the valley where those seeking and given healing powers found their alliance with the spiritual for good and destructive powers...

Today, Clayoquot Valley is encountering a very serious threat from the outside world in the logging industry...Even allowing for a passage [e.g. a road] through the valley would certainly destroy something of the spiritual treasure and quality that is there.²⁰⁰

This may help to provide some sense of what people feel or how they think when we are discussing such concepts as sacred and historic areas. It also helps to provide a basis for assessing forest practices standards as they apply to cultural heritage sites in the Panel's mandate of developing world class forest practices standards which draw on both traditional and scientific knowledge.

Cultural heritage sites are currently protected under the provincial *Cultural Heritage Conservation Act* (1989) of B.C. The Panel reviews a number of planning documents and other provincial management guidelines which refer to such sites. "Cultural Heritage Sites" (including archaeological sites e.g. middens, burial sites, rock art, habitation sites, culturally modified trees), are the only type of First Nations' cultural sites which are generally recognized to require consideration for legal protection. The only cultural sites which currently qualify for protection

under legislation are those which are substantiated by physical and written verification. The Panel suggests that this emphasis on written and physical evidence, "denies the many sites whose significance and existence is communicated by oral tradition"²⁰¹ The more diffuse nature of many sacred areas, their locations, even their existence (which is often found only in community cultural capital) in forests is unapparent to those without oral historical learning and information. Again, one can see the problem of corroborative evidence/data (cf. the Lamer decision) and the methodological challenges of planning between cultural paradigms.

The Panel concludes that the currently used term "cultural heritage sites" is a limiting concept. Whereas sacred sites are omitted from protection, midden heaps receive great recognition. "The effect is to protect a culture's rubbish heaps...while ignoring its spiritual basis."²⁰² Moreover, even sites which do qualify for protection are often inadvertently destroyed through logging practices.²⁰³ The way resource planning currently takes place, cultural heritage sites are in many cases lumped in with scenic and recreational values, ignoring that these sites must be recognized "in their own right" as separate and distinct features of the forest ecosystem. This is an excellent example of how the two models of reductionist science and TEKS clash in a manner where the reductionist approach does not have the conceptual tools to identify critical resources, the methodological capabilities of verification, or an appropriate planning model for managing its sustainability.

For example, consider the typical resource planner who will seek to include cultural heritage sites based on the data that has been provided. The planner will likely believe that s/he has accomplished a worthwhile management objective by including the identified cultural heritage sites into some manner of integrated plan which recognizes the multiple uses of a certain area. When local First Nations are frustrated or upset, or simply mention that their interests have not been included, the planner may be hard pressed to appreciate this apparent lack of gratitude. The problem is that the planner and other resource specialists have been working from a perspective or model who's data collection on identified resources is incapable, not only of verifying the data, but even of properly identifying resources. The problem of "lack of access to information" is an issue. An even larger one, however, is how "data" is accessed and verified; these methods require community-based networks and training in cultural literacy.

Perhaps the greatest issue here is the paradigmatic one. The planning model is founded within a certain belief system or cultural paradigm within which these key resources may not have a place: they exist outside of the model. This goes back to material from the first chapter where I discuss "autopoietic nature of cognition" or knowledge as part of a self-referencing system. How can the planner know something, obtain, validate and value such knowledge, if what is being known exists outside of the model? What if the methods for transmitting and validating knowledge are not regarded as credible according to established "rational criteria"?

The Panel provides insights into how such epistemological and culturally paradigmatic problems may be overcome. They suggest that efforts are currently underway in British Co-

lumbia to help expand the definition and recognition of culturally important areas beyond the current legal definition of cultural heritage sites. Working with historical documents, contemporary literature and Nuu-Chah-Nulth elders, they offer the broader definition and concept of “historical areas” to be included in legislation and for management planning. The Panel draws strongly on the work of Bouchard and Kennedy (1990) and, in particular, on Kennedy *et. al.* ‘s *Vancouver Island Cultural Resource Inventory* (1993). These sources incorporate traditional ethnobiological and ecological information, include site use, traditional ownership and occupancy as well as providing detailed maps.²⁰⁴ The Panel notes that, although these are the most extensive and detailed documents of their nature, Panel elders have pointed out there are still deficiencies and that more work needs to be done.²⁰⁵

The Panel reproduces the categories and typologies of traditional use-sites categories developed from the above mentioned documents in the government publications by the Heritage Conservation Branch of B.C. They add two additional use site categories of their own.²⁰⁶ I will not examine or reproduce these, but they provide important criteria for the historic areas model. The Panel stresses that this approach does diminish the significance of archaeological sites as a subset of cultural heritage sites. Indeed, they point out that much more can be learned about these from oral cultural sources which can, in effect, serve to underscore their importance. What I would like to draw attention to, however, is the following conclusion drawn by the Panel:

The identification and characterization of culturally important places should be decided ultimately by the indigenous peoples within whose territory the places occur. This principle of co-management is critical in recognizing traditional knowledge in self-determination for indigenous peoples.²⁰⁷

This point is really the take-home lesson. It is consistent with the discussions at the end of my prior chapter and in particular my section on cultural ownership and paradigms of property and epistemology. The political connection between self-determination and traditional knowledge is important to make. This is saying that the planning and decision making authority in co-management with TEKS must rest with those who are the rightful owners and recognized specialists of such knowledge. This is critical for the current topic which revolves around the defining, identifying and verifying of culturally relevant places and historic areas. The power to do so must rest within the communities in whose culture such resources are founded.

This can be a challenge, given that the sustainability of such resources of cultural capital may come into conflict with the perceived economic resources (i.e. the ecological capital) of those same areas. Again, we see two different culturally based models of resource management and use coming into conflict. This theme also comes up in the following two sub-sections of “Current Use of Traditional Lands for Cultural and Subsistence Purposes” and “Future Use of Traditional Lands for Cultural and Economic Purposes.” The Panel therefore asserts that it is necessary to recognize “the full extent of culturally important areas and traditional practices” in

traditional lands whether “they be past or present, with or without physical manifestation” and to “allow for their protection by the First Nations for whom they are significant.”²⁰⁸ This also becomes a basis for recognizing these as future culturally important areas.

To live in Clayoquot Sound and “retain their cultural identity”, the Panel recognizes that Nuu-Chah-Nulth people “need access to their lands for traditional practices and relationships, and an economic base and local employment.”²⁰⁹ Therefore, culturally important areas can not be limited solely to past and traditional practices or to mere survival. In addition to cultural and spiritual interests, the Panel also recognizes that Nuu-Chah-Nulth people have economic interests in sustaining and developing the resources of their traditional territories. This leads into whole new areas of “special forest products”, including such items as edible wild mushrooms and other edible ethnobotanicals, medicinal plant products, floral greenery, landscaping and craft supplies.²¹⁰

The Panel underscores the above insight with the some key demographic data on the population break down of the Clayoquot Sound area. They recognize that, in addition to special forest products, the Nuu-Chah-Nulth wish to participate more fully in mainstream economic activities such as timber harvesting and fisheries. They want to be more involved and partnered in resource planning, stewardship and development in order to reap sustainably the economic and social benefits of their traditional territories. These vested economic interests are seen as being tied to ongoing health of the ecosystems upon which they depend. They also assert that “the long-term well-being of the land is more important than any economic commodity” and are in support of “a strategy that protects the land base and restricts its exploitation to sustainable levels.”²¹¹ All of this will challenge current licensing agreements and attitudes.

The above discussion therefore underscores the need to integrate TEKS of First Nations with ecosystem-based management and planning models. It highlights the importance of having the appropriate knowledge criteria and methodological expertise that informs planning between cultural paradigms. It also brings into focus the important and very current political context of these issues. In absence of the kind of mixed model and bi-cultural approach pursued by the Panel, such co-management goals are unachievable. Up to now, the process of even arriving at these realizations has been an arduous one, for both scientific and TEK specialists involved. It will require even more creativity and ongoing collaboration of a similar nature if such knowledge gained from this discourse is to be implemented.

I shall now turn the final chapter of *First Nations’ Perspective*, which contains the Panel’s policy directives. It contains the recommendations for including First Nations’ Perspectives into sustainable ecosystem management and plan of action which is recommended as a “framework of change” for forest practices standards in the Clayoquot Sound area.

5.5.6 Frameworks of Change and Knowledge Into Action: Recommendations for Including First Nations' Perspectives:

The final substantive section of the report is broken into two sub-sections. The first establishes a context for recognizing First Nations' interests by laying down guiding principles, stating goals, providing objectives and re-stating the same set of recommendations about inclusion of First Nations that had been established in its second report. The second sub-section is called a "Recommended Framework for Change"; it is essentially an action plan for implementation. This contains twenty-seven recommendations grouped under sixteen headings.

To analyze fully the eight pages of recommendations made by the Panel would easily generate a great deal more material for this already lengthy case study. I will instead present an overview of this very important outcome of the Panel's work. Examples will be drawn and discussion provided to help illustrate and affirm the model of the Panel, the approach they have taken and the spirit in which this has been guided. I will also tie these insights into the larger contextual issues of this case study and my dissertation. I will begin to draw some initial conclusions for the dissertation which are results of this case study.

5.5.6.1 Implementation Directives

The First Point made at the outset of the section on recommendations by the Panel is to re-affirm what they stated at the beginning of the document. This is that First Nations' Perspectives are inconsistently and incompletely addressed in existing forestry documents and standards as they pertain to forest management in Clayoquot Sound.²¹² They also re-affirm that new standards and procedures are required to adequately represent First Nations' interests and involve Indigenous people in forest management and its activities within traditional territories.²¹³ The Panel then goes on to present five key details which new approaches to sustainable ecosystem management must implement. These are:

- recognizing more clearly the close interrelationships that exist among the forests, waters, and marine ecosystems in Clayoquot Sound;
- recognizing the importance of Nuu-Chah-Nulth perspectives and traditional knowledge;
- including Nuu-Chah-Nulth people and perspectives in decision making;
- providing educational opportunities for non-Nuu-Chah-Nulth forestry workers to learn about and gain an understanding of Nuu-Chah-Nulth history, traditional knowledge, and perspectives; and,
- providing training and employment opportunities for Nuu-Chah-Nulth people in forestry activities.

These five overall implementation directives provide a general sense of the recommendations made by the Panel (below). They also give a feeling for the spirit of the Panel itself which seeks to blend TEK and ecosystem-based management in order to proffer a new paradigm in forest planning. As I have already noted, several times now, we can say that this paradigm or model blends cross-cultural learning of traditional knowledge and Western science to respect the substantive features and methodological rigour of both models. It seeks to honour the past and plan hopefully for the future in recognition of current challenges. This requires a balance of political realism in regard to current power anomalies with the courage and creativity to forge a bridgehead of understanding between two entirely different knowledge cultures. While these two cultural paradigms may have some tensions, there are also points of connection and commensurability; these are a basis of shared goals in TEKS and ecosystem-based management. When respected, the differences can actually serve to strengthen the bi-culturally mixed model. The methods employed to articulate this model become a basis for its implementation and for planning between cultural paradigms.

5.5.6.2 A Context for Recognition

The guiding principles, goals and initial recommendations developed in the Panel's earlier work establish a framework for the review of existing forest practices standards and the development of new ones. The Panel recognizes that "all the guiding principles are relevant to Nuu-Chah-Nulth participation in all aspects of forest practices in Clayoquot Sound."²¹⁴ They then summarize the aspects of these which are particularly relevant to providing a context for specific standards which recognize Nuu-Chah-Nulth interests. These include: providing for sustainable activities in logging, fisheries, tourism and cultural pursuits; accommodating the needs of First Nations for cultural, social, and economic well being; protecting cultural and spiritual values and other special sites; involving local people and affected parties in planning and management processes. The Panel instructs that these are examples of underlying concepts directly affecting the inclusion of First Nations' knowledge and interests in forest practices.²¹⁵

These guiding principles are consistent with the Panel's overall strategy of seeking to provide a planning framework rather than more specifically the details. Thus, they are providing a model and criteria for the analysis and development of standards rather than all the standards themselves. This approach is to the credit of the Panel, and I think it has much to do with their overall holistic approach to the mandate they were given. Part of this involved reforming their mandate in key areas both procedurally and in substance. In particular it included the establishing of protocol and including planning as a prominent feature of the model. Establishing of protocol is essentially a methodological tactic. As we have seen from my analysis, the role of traditional oral methods figured prominently in this and was instrumental in the success of the Panel achieving their goals with full consensus. The prominence and centrality of planning is of considerable significance for me and the School of Community and Regional

Planning. There is ground breaking material here for planning theory and practice. This point will be dealt with in the concluding chapter of my dissertation.

5.5.6.3 *Specific Goals*

There are three specific goals of relevance to First Nations' interests in forest practices standards for Clayoquot Sound which are reproduced from the Panel's earlier work. These are: i.) to recognize and support the long-standing aspirations and needs of the Nuu-Chah-Nulth people that are based on traditional occupation and use of the land and waters; ii.) to recognize, support and incorporate Nuu-Chah-Nulth Traditional Ecological Knowledge and values into land use planning and decision making; iii.) to recognize and support the intent of the *Interim Measures Agreement* to engage Nuu-Chah-Nulth participation in Clayoquot Sound land and resource use, including aquatic and marine systems.²¹⁶

These three goals recognize, not only TEK, but also the political precedent established by the long standing presence of First Nations (arguably established in constitutional law by the *Royal Proclamation* of 1763). We should be reminded that this has once again been upheld in constitutional precedent in the recognition of aboriginal land title by the Lamer decision. This political reality underscores the significance of the *Interim Measures Agreement* (and others like it) whose intent the Panel recognizes and endorses. The Lamer decision gives a timely punctuation to this broader political context; the Panel's goals, objectives and recommendations must also be seen in this light.

It is therefore of considerable significance that the Panel provides the goal of recognizing, supporting and incorporating Nuu-Chah-Nulth Traditional Ecological Knowledge and values into land use planning and decision making. This will require the incorporation of traditional decision making processes and discursive methods such as the Nuu-Chah-Nulth inclusive process, in both planning processes and what Lamer has termed "co-decision making" with regards to land use. These are also important insights to keep in mind for co-management, particularly with the outcome of the recent Supreme Court of Canada's ruling on Delgamukw. The Lamer decision is very timely for the Clayoquot Panel's specific goals with regards to First Nations; their work is almost anticipatory. We can arguably conclude, as I suggested earlier, that the Panel offers a credible model and approach for pursuing political solutions to land claims and for co-decision making and co-management of resources in land use planning in B.C. in the aftermath of the Supreme Court of Canada's ruling on the Delgamukw appeal.

5.5.6.4 *Relevant Objectives*

There were six relevant objectives established in the Panel's previous efforts which are specific to First Nations' interests with regard to forest practices standards in Clayoquot Sound. They have been presumably established in order to achieve the three goals discussed briefly

above in accordance with the larger implementation directives. These objectives are: a.) to recognize the fundamental spiritual heritage of the Nuuchahnulth; b.) to accommodate traditional ownership of lands and resources in Clayoquot Sound in land use decision-making activities; c.) to involve the Nuuchahnulth in planning and managing resource use activities in Clayoquot Sound; d.) to consult and negotiate with the Nuuchahnulth about economic benefits before developing further economic activity in Clayoquot Sound; e.) to ensure that forest practices do not negatively impact Nuuchahnulth foreshore and offshore resource use; and, e.) to ensure that cultural sites defined by the Nuuchahnulth are inventoried, mapped, effectively protected, and restored when damaged.²¹⁷

These seem to implicate some degree of political and economic restructuring of current land use decision making practices and resource management regimes in the region. It is reasonable to expect that there might be resistance to aspects of this in local non-Native communities and in the forest sector. While it is unclear how the provincial government might proceed with such specific objectives, we can also expect that the recent Lamer decision with regard to aboriginal land title and its implications for land use decision making can only serve to shift the provincial political balance of power towards First Nations in this direction.²¹⁸ As I have already suggested, this will clearly require new models in co-decision making and land use planning which can accommodate such implementation objectives and render the obtaining of such objectives realistically achievable.

In citing the accommodation of the traditional ownership of lands and resources in Clayoquot Sound in land use decision-making activities, the Panel hints at one way in which this can be achieved. The recommendations which follow in the second half of the chapter help to create an appropriate model for achieving this within the context of co-management based on the integration of an ecosystem-based approach with the Nuuchahnulth TEKS. Part of this involves a specific recommendation of the role of *hahuulhi* in co-management. We could say that achieving the manner of political and economic restructuring which involves a shift in the political and economic power base towards First Nations with regards to land use decision making and management will need to draw on the social capital component of TEKS. In other words, institutional linkages will have to be developed which build upon the traditional institutions of TEK practices if we are to achieve an integrated co-management model which effectively combines TEKS and ecosystem-based management in planning for sustainability. This may prove to be a challenging and creative endeavour. It is certainly an exciting one.

There is an implicit recognition of the cultural capital of TEKS in positing the respect and recognition of the fundamental spiritual heritage of the Nuuchahnulth as a management objective. If this is to be consistent in implementation with the approach taken by the Panel, then, substantively speaking, respect means that the cultural capital component of TEKS must be thoroughly integrated as a part of this model. As in the case of the Panel's own experience, it will help to guide in planning these political and economic transitions as well as in achieving

sustainable resource practices in the region. There is another point about cultural capital as an aspect and objective of ecosystem management. If we can think of cultural capital as being a resource, then we can think about planning for the sustainability of the knowledge, teachings, spirituality and its less material expressions. These are some of the most precious resources of TEKS.

I'm talking here about the sustainability of meaning and the meaning of sustainability. This amounts to managing our model of reality – the systems out of which meaning is created. This might seem a rather radical or off-beat idea, yet I had a discussion of similar character some time back with Dr. Atleo. He told me that, while the effects of colonialism through church and state have impacted drastically on First Nations' traditional knowledge, there are still "secrets to be found" which orient people and place in the Cosmos.²¹⁹ The cultural secrets of which Dr. Atleo speaks are much about relationship, but more than just about human beings, "they are about relations between species".²²⁰ Traditional management practices provide "ways of dealing with mental health, community health and stability."²²¹ What he describes is a system for managing "the nature of reality and how to respond to it"²²². Proper management of TEKS cultural capital would necessarily have to be founded on its social capital aspect; it must build upon TEKS institutions. This also necessitates a reliance upon the protocol/methodological features of TEKS.

The methodological features may be addressed implicitly in the objective that posits the involvement of Nuu-Chah-Nulth people in the planning and managing resource use. If the Panel's model is to be implemented in the same spirit in which it was created, this means that the methodological feature of the Nuu-Chah-Nulth system of Traditional Ecological Knowledge must play a role in the planning and implementation processes in much the same way that it has for the Panel's own work at arriving at its recommendations and determining objectives. This is critical if the implementation process is to be consistent with the Panel's model. The second objective which poses the accommodation of traditional ownership of land and resources in land use decision-making and activities will also help to further this. However, if the TEKS methods such as the inclusive process are to play as key a role in the implementation phase of planning, this needs to be stated more explicitly, not just in terms of traditional practices but also in the planning and implementation which are to follow. The second goal and third implementation directive may help to ensure this.

5.5.6.5 Initial Recommendations

There are eleven recommendations made in the Panel's second report which deal specifically with including First Nations' Perspectives into forest practices standards in Clayoquot Sound. I will not reproduce them verbatim but summarize with reference to their key features. These include: the inclusion of First Nations representatives at the onset of planning processes for Clayoquot Sound; respecting traditional values, spirituality and *hahuulhi* and providing for

traditional subsistence in forest planning and management; incorporating First Nations management practices which are founded in traditional values and ecological knowledge, and which arise as a result of treaty negotiations, in forestry inventory, planning and management; comprehensive consultations with the Nuu-Chah-Nulth are to be conducted regarding land use practices, as specified in the *Interim Measures Agreement*, the redefining of cultural heritage sites and providing for further research under Nuu-Chah-Nulth supervision; restoring traditional sites which have been altered or degraded by logging practices, in consultation with the Nuu-Chah-Nulth; recognizing the importance and potential of the concept of tribal parks and sacred site reserves in land use planning; providing for the training, education and meaningful employment of Nuu-Chah-Nulth people in both research and forestry activities to ensure that they benefit from the commercial use of resources in Clayoquot Sound; giving precedence to traditional Nuu-Chah-Nulth needs for sustenance (the definition to be agreed upon by First Nations and governments) over sport, commercial and other interests outside of Clayoquot Sound, and providing for the well being of wild fish stocks over fish farming; the developing of standards which recognize, respect, implement and enforce the maintenance of cultural and biological diversity in *Agenda 21* and also *Guiding Principles on Forests*, in forest management practices; recognizing and taking steps to minimize the impact of forest practices on marine ecosystems.²²³

When considering these recommendations in light of this case study, they are consistent with the analysis provided above of the implementation directives, goals, objectives and guiding principles. This includes recognition of cultural and social capital and again requires the methodological considerations discussed above with regards to planning process, land use decision making and co-management. The second and third recommendations are a clear demonstration of this. Again, I think that this is given a certain dose of political realism in light of the Supreme Court's recent ruling on *Delgamukw*. This political context is also relevant to the fourth recommendation providing for comprehensive consultations with the Nuu-Chah-Nulth over land use as specified in the *Interim Measures Agreement*.

The prominence which is given to planning in the Panel's model becomes especially evident when it comes to recommendations. The first recommendation provides for Nuu-Chah-Nulth participation at *the onset of planning processes*. This is key when we consider the Panel's own experience of having to establish operating protocol and procedure for planning process at the outset of their endeavours. This relates to the 'planning for planning stage', according to the bi-cultural and multi-disciplinary requirements of their own approach. These are important details to keep in mind for the implementation process of the Panel's recommendations. *The implementation stage of planning must be methodologically consistent with the planning and planning for planning phases.*

Another conclusion that can be drawn relates to ecosystem-based management, TEKS and sustainability. There is a recommendation the Panel makes, their second recommendation,

that relates to traditional resource use and subsistence needs of Nuu-Chah-Nulth in forest planning and management. These types of practices require intact ecosystems, whole watersheds, healthy marine systems and old growth forests. Ecosystem-based management is a model based on a paradigm which posits ecosystems as the object of management. Rather than attempting to manage for a specific set of specific resources, ecosystem management starts with the ecosystem as a whole. Instead of trying to maximize an aggregate of demands, uses and values that place pressure on a given system, *the ecological integrity of the system provides the basis for economic decisions.*

I think I am justified in concluding, in the case of Clayoquot Sound, that TEKS and their practices are consistent with the planning processes, management goals and objectives of sustainable ecosystem-based management. I will also conclude that TEKS and their practices, in particular TEKS methods and protocol, can further ecosystem-based planning and management. Moreover, viewed from the perspective of the bi-cultural discourse, we are also justified in drawing the conclusion that, in the case of the Scientific Panel model, the management goals and objectives of sustainable ecosystem-based management are also more or less congruent with the Traditional Ecological Knowledge-System of the Nuu-Chah-Nulth. These congruencies give rise to the Panel's particular version of ecosystem-based management which is really the outcome of both knowledge cultures and management paradigms. The Panel's model of ecosystem-based management is a particularly holistic one.

There are several other notable points. One relates to education, which I shall discuss more in the next sub-section. Another is the idea of tribal parks and sacred site reserves. Tribal parks are a relatively recent phenomenon. I believe that Gwaii Hands in South Moresby was the precedent for this, with Meares Island Tribal Heritage Park following it. I understand that the current co-management plan for the Stein Valley is similarly being developed on the tribal park model. I am somewhat familiar with sacred sites at the community level of TEKS.²²⁴ I had not seen sacred sites as a land use category and component of planning systems for resource management before. Tribal parks and sacred sites reserves are concepts in development; I am particularly interested in the sacred sites reserves. They have great potential for public education on sustainable resource management with regard to cultural capital resources of TEKS. This is a further extension of the paradigm shifts inherent in the model developed by the scientific Panel.

There are a couple more notable features. In particular is the provision for standards which "recognize, respect, implement, and enforce" the maintenance of cultural and biological diversity according to the international agreements arising from UNCED (1992). This places the Panel's recommendation in concert with what is becoming a global movement, recognized at the beginning of their document. The linking of cultural and bio-diversity is an important development. I think that it will take efforts of the nature of the Scientific Panel to help understand what this really means in practical and philosophical terms. The matter which they

refer to as enforcement is a huge endeavour in practical terms. This is another feature of ecosystem management which needs further elaboration, both conceptually and institutionally.

From the point of view of TEKS, I think there is a lot that can be learned in both the conceptual and application aspects of ecosystem-based enforcement. It is certainly an area which could benefit greatly from the integration of TEK and western science. There are already special fisheries enforcement programs being developed by the Federal Department of Fisheries. I know of at least one nation in the United States (the Lummi) who have their own community-based enforcement agency where officers are trained outside of the community. There are certainly other enforcement models to be drawn from. The oldest and most established is likely the aboriginal constable initiative which was developed by the R.C.M.P. This involves traditional activities such as sweats and circles.

It would be an issue of another order, however, to develop an enforcement model and practices which link ecosystem-based principles and are based upon TEKS philosophy and practices at its core. It would also have to work with TEKS social institutions. One possible model to be looked at would be the *Watchmen* programs which have arisen out of community-based initiatives in several First Nations communities. These are all volunteer-based and guided by local cultural teachings. The impetus, again, was with the Haida. I have not yet even raised the legislative challenges. All of this will be shaped by the political process and outcome of land claims.

One other feature to note is the provision which gives precedence of wild stock fisheries over fish farming, and sustenance (to be defined) over sport, commercial and other interests outside of Clayoquot Sound. The provision for reducing the impact of forestry activities on marine ecosystems is also notable. The tying of forest management with marine and other aquatic systems is consistent with both TEKS and ecosystem-based management. It is thus not surprising that the Panel should include it. There have in the past also been concerns raised by the Nuu-Chah-Nulth about the impacts of fish farming in their traditional territories. This has resulted in at least one incident of the D.F.O. not renewing a fish farm licensee for an aquaculture business run from the town of Ucluelet.

5.5.6.6 *A Framework for Change: Recommendations for Knowledge Into Action*

The twenty-seven recommendations of the Panel which are the culmination of its work on *First Nations' Perspectives* are comprised in sixteen categories. I will review the categories, not each of the recommendations. These include: international convention; co-management; consultation and planning; recognition of TEK; *hahuulhi* as a traditional system for ecosystem management; foreshore and offshore resources; Nuu-Chah-Nulth cultural areas, including sacred and historic areas, current use and future use areas; Nuu-Chah-Nulth tribal parks; inventory and mapping; operations; education and training; employment; monitoring; evaluation; restoration; research.²⁵

R1: International Convention

All forest activities in Clayoquot Sound must comply with either their own standards or the international standards regarding Indigenous peoples' relationship with forests, whichever is more rigorous. This is in compliance with the Panel achieving their mandate that the forest practices they recommend are to be "world-class". It could also be a reminder to governments (provincial and federal) that they are signatories to such documents and this places the Panel and Clayoquot Sound into the global context.

Rs 2-3: Co-Management

The Panel recommends for co-management in Clayoquot Sound by directing that it be based on equal partnership between the Nuu-Chah-Nulth and Province of British Columbia. The first step in developing an ecosystem-based co-management strategy *must be to establish a working protocol based on mutual respect*. This protocol must also be *developed* and agreed upon by all participating agencies and individuals; it *must be followed through planning and decision making processes*.

This is an important category with very important recommendations. It has an implicit recognition of the political context within which land claims take place by implicating co-management between the provincial government and the nations of the Nuu-Chah-Nulth. What is especially important about the content of these recommendations, however, is their focus on protocol. This, more than any other aspect of the Panel's final chapter of the report, is an insurance on the inclusion of traditional knowledge methods (e.g. the Nuu-Chah-Nulth inclusive process). This was the first step for the Panel and was a "non-negotiable" item for Nuu-Chah-Nulth participation, and it must be seen as the first step for co-management; it establishes planning and decision making processes; it is planning for planning; it is developed and agreed upon by all actors involved; it must be followed throughout planning and decision making process. These recommendations will help to ensure some methodological continuity between the Panel's work and its implementation; it will help to see that future the implementation and further planning components are congruent with the same methods through which these recommendations were arrived at.

Rs 4-5: Consultation and Planning

All decision-making processes relating to ecosystem use and management in Clayoquot Sound Decision Area must be undertaken in full consultation with the Nuu-Chah-Nulth of the area; all planning processes for forest and ecosystem use in this area must be undertaken with full consultation and shared decision making with the Nuu-Chah-Nulth of the Clayoquot Sound Decision Area.

These recommendations essentially extend the above discussed requirements more explicitly into the planning and decision making processes. It also ensures that the only people who can represent First Nations interests in the Clayoquot Sound Decision Area are the Nuu-Chah-Nulth of that region themselves. There are provisions for planning and planning process,

decision making and consultation woven throughout the recommendations. The centrality of planning for the work of the Panel becomes particularly evident in these recommendations. As much as it is anything else, this is a planning document. It is thus quite extraordinary that one of the most prominent features of the Panel's contribution is an aspect that was not included in its original mandate. It is to the credit of the Panel that they had the foresight and tenacity to insist that the provincial government re-draft aspects of their original mandate to include planning and the establishing of protocol (which went hand in hand). Planning is the central nervous system of the Panel's model: a lesson and case-study in planning between cultural paradigms.

R6: Recognition of Traditional Ecological Knowledge (TEK)

Forest practices standards must incorporate Traditional Ecological Knowledge. Conflicts between scientific knowledge and Traditional Ecological Knowledge must be resolved in consultation with the Nuu-Chah-Nulth of Clayoquot Sound. Inventory, monitoring, and research must also recognize and include TEK.

This is a rather remarkable recommendation, not just for what says, but also because it is even there. We need to remember that just considering to include TEK is a huge development for the mainstream; to actually recommend for its incorporation into such an applied and politicized area as forest practices is an even greater achievement. These are not just amorphous recognitions, there are clear, specific, procedural and substantive components. This is policy.

What is also quite remarkable here, is the provision with regards to conflicts between TEK and scientific knowledge (which is not cast as conflict between science itself and TEKS). The Scientific Panel advises that any such conflict be resolved in consultation with the Nuu-Chah-Nulth of Clayoquot Sound; we can assume they that intend this will necessarily involve the manner of inclusive decision making process upon which they relied to reach an initial bridgehead of understanding. It is interesting that conflicts are not posited here as being between TEK (perhaps more accurately TEKS) and science, but in potential conflicts which may occur between the knowledge outcomes of these two cultural paradigms. This is the closest to which the Panel approaches making an epistemological recommendation. It is precedent setting.

R7: Hahuulhi: Traditional System for Ecosystem Management

In consultation with the co-chairs of the Nuu-Chah-Nulth Tribal Council, *hahuulhi*, the traditional system for ecosystem management, must be recognized in ecosystem management processes in Clayoquot Sound; *Hahuulhi* will be used in determining ecosystem management within traditional boundary lines.

This is another remarkable recommendation. Perhaps most notable is the statement affirmed in the category title itself. This is the first time in the document where the Panel actually comes out with the conclusion that *hahuulhi* constitutes a form of ecosystem management. It is quite an endorsement. This group of fifteen scientific professionals and academics would never

use the term frivolously or throw around the concept of ecosystem management in cavalier fashion. I can conclude this, solely on basis of my interviews with Dr. Lertzman, a specialist of ecosystem management and forest systems ecology. This has much to say about the bridgehead of understanding forged through the efforts of the Panel. In particular, it is a comment on how ecosystem-based models hold some substantive commensurability as a conceptual touchstone for planning between cultural paradigms.

Aside from the above affirmation that *hahuulhi* constitutes a traditional form of ecosystem management, there are two fields of application of this insight. One deals with co-management. This is an of application area of a more bi-cultural nature which would imply the linking of Nuu-Chah-Nuth TEKS models and institutions with other Western based approaches as part of a bi-cultural mixed co-management model. The other deals more specifically within the Nuu-Chah-Nuth traditional boundaries and designates the determination of ecosystem management as falling to the *hahuulhi* system of management. This will evidently be up to the Nuu-Chah-Nuth to work out amongst themselves. This recommendation is not only an important sign of respect towards TEKS and management. It also holds the potential to boost the local social capital base of Nuu-Chah-Nuth communities, both through efforts of co-management and within their own internal community management processes. It will be of great interest to see what develops over time.

Rs 8-9: Foreshore and Offshore Resources

Provisions are made for assessing in consultation with the Nuu-Chah-Nuth the impacts of planned forestry on foreshore and offshore resources; alternative low risk practices are to be employed when a risk of damage is involved. In cases where foreshore and offshore resources have already been or are accidentally damaged, immediate steps must be taken to mitigate or reverse these damages and restore the resource capabilities to their former condition.

This is consistent with the final recommendation from the prior set of initial recommendations, yet goes somewhat further. It includes consultation with the Nuu-Chah-Nuth in what is, essentially, a risk assessment process. Risk assessment is a field unto itself and there have been some initial efforts to calibrate ecological risk scenarios for planning into ecosystems-based models.²²⁶ Impact assessment may be similarly included. Impact assessment receives somewhat more treatment in the recommendations below. For these two linked, but distinct areas, TEK can help provide important baseline data and other relevant material for the data bases required in monitoring and assessment. In other cases, the contributions of TEK could go further than providing data; some of these are dealt with in other recommendations below.

The point regarding restoration is a notable one. There is a prior section of the document which actually refers to the “healing” of denuded systems and damaged areas. Healing is, in my experience, a more appropriate term for the concepts of reclamation and restoration as they apply to TEKS. I think that there could be a role for some of the other types of knowledge and practices rising from TEKS cultural capital, aside from its empirical features, that might be rele-

vant for such practices (e.g. ceremonies and prayer, communication with species, landscape and ancestral guidance).²²⁷

Rs 10-13: Nuu-Chah-Nulth Cultural Areas, Including Sacred Areas, Historic Areas, Current Use and Future Use Areas

The Nuu-Chah-Nulth of any area within which planning is undertaken are to be given the opportunity to identify, locate and evaluate culturally important sites and areas before the completion of any ecosystem planning process within Clayoquot Sound. The typology for the classification of culturally important sites developed by the Heritage Conservation Branch should be adopted, along with the two categories offered by the Panel. The determination of culturally important areas is to include those sites whose significance and existence are communicated by oral tradition as well as those established by physical and written evidence. Culturally important areas which are identified as significant by the Nuu-Chah-Nulth must be protected using methods appropriate to the use and the area.

This category has the greatest number of recommendations. Perhaps this is an indication of the amount of work which needs to be done in this area. It may, however, be an even greater indication of the *type* of work which needs to be done. First and foremost is the recognition of the need to protect such areas. Yet we also see here the imperative to gain a better understanding of their significance, along with more appropriate criteria and methods for research, identification and protection. Obviously, the role of Nuu-Chah-Nulth people in the planning processes which affect and include such provisions is key.

Underneath all this are the methodological insights which have been achieved as the result of a discourse between two different, yet coherent and internally consistent knowledge paradigms. This is consistent with the discussion and analysis I provided earlier on this topic in the sub-section on historic areas. The Panel has taken steps to ensure that methods of research, identification and verification of resources are consistent with the oral methods of TEKS. This is another area of recommendations where epistemological considerations had a determining role in both planning and implementation processes. There is a significant outcome here for research and other knowledge generating exercises which are in accord with both knowledge cultures.

R14: Nuu-Chah-Nulth Tribal Parks

Tribal Parks owned and managed by the Nuu-Chah-Nulth for public purposes must come under the jurisdiction and authority of the Nuu-Chah-Nulth. The character of Tribal Parks is not yet firmly specified; the Nuu-Chah-Nulth must participate in developing concepts concerning Tribal Parks.

As discussed prior, and as is evident in above the recommendation, Tribal Parks are a relatively recent phenomenon and are a concept which is still in development. As the land claims process develops, I think that we can expect to see an increasing number of these Tribal Parks throughout British Columbia. Tribal Parks have great potential as an alternative model

that can showcase an ecosystem-based approach to park planning and management which manages the physical features of ecosystems as well as their cultural, historic and spiritual ones. There is a great opportunity here for cross-cultural learning, and education for the public at large with many potential spin offs.²²⁸

Rs 15-16: Inventory and Mapping

Planning inventories undertaken for ecosystem management must be done in full consultation and participation with the Nuu-Chah-Nulth of Clayoquot Sound; Nuu-Chah-Nulth cultural resources and culturally important areas must be incorporated in planning inventories before completion of the planning process. Mapping projects undertaken for ecosystem management in Clayoquot Sound must be done in full consultation with the Nuu-Chah-Nulth of Clayoquot Sound. Nuu-Chah-Nulth cultural resources and culturally important areas, as identified by the Nuu-Chah-Nulth of Clayoquot Sound, must be shown clearly on maps, with particular attention to zones of high cultural and sustenance value; one potential exception are First Nations sacred areas.

Inventory and mapping is an area of a particularly applied nature and is one which could greatly benefit from the discourse of TEK specialists and scientists. As already mentioned, of obvious benefit are the data, knowledge of local areas and long standing experience with species and habitat, which TEK has to offer. We can also see here an area of professional application which can benefit from an 'external, independently derived reference standard'. Cultural areas and other such resources are an obvious outcome. Yet maps are of conceptual enough nature that it will be of interest to see how maps and mapping for ecosystem-based management planning may be affected by TEK specialists.²²⁹

Given the manner in which maps and mapping can serve to structure and reflect how we view the world, it is important that Nuu-Chah-Nulth people participate in this conceptual structuring of the physical scapes which reflect their cosmological scapes. There are also some important practical considerations here. We need to see that the proper knowledge and data which inform planning are, not only made available, but can help define the components of planning and physical terms of reference for planning. Mapping and maps must therefore reflect the bi-cultural character of the model from which they are produced. This will also require the appropriate methods, as discussed above in the recommendations dealing with Nuu-Chah-Nulth cultural areas.

Maps have historically reflected, and still do reflect, the colonial relationship of the dominant society with First Nations in the interest to gain access to the biophysical capital of traditional territories. Land use and land use planning in Canada is an outcome of this historical process. There is an opportunity here for this to change. It will need to do so as the political process with First Nations progresses. The discretion to withhold information, such as with sacred sites, is also an important part of the shifting discourse of power. Many First Nations do not like certain areas to be public information and consider it dangerous or inappropriate for

such knowledge to be shared. This must be recognized and so the Panel has made provision for it. It does not mean that such areas will not be managed or planned; it means that they will be managed and planned far more appropriately and effectively.²³⁰

R17: Operations

All operations relating to ecosystem management (e.g. environmental impact assessment; selection of silvicultural systems and harvesting methods; proposed use of pesticides and herbicides; road location, construction and deactivation) must be carried out in full consultation with the Nuu-Chah-Nulth of Clayoquot Sound.

This recommendation is consistent in much the same way as are others of a more applied nature. These operations are all components of or inputs into the planning processes for ecosystem-based management. I have already discussed the main relevant points which apply to these topics such. I will thus re-affirm what I have previously said with regard to the data contributions of Traditional Ecological Knowledge and the important methodological considerations of recommendations above (in particular Rs. 8-13 and 14-16)²³¹ which have arisen from my analysis of the TEKS-science discourse. The other point is that traditional knowledge, because it arises from an “external independently derived reference standard”, provides not just missing data or even just an alternative to knowledge verification, although it does. It helps provide alternative insights into the nature of such operations and research, their goals and methods. Through the discourse with TEKS, new models are developed. The technical nature of many of these operations also brings up issues relating to education and training; these are dealt with below.

Rs 18-19: Education and Training

Provisions must be made for the Nuu-Chah-Nulth to participate in education programs relating to ecosystem management processes and practices which enable Nuu-Chah-Nulth people to obtain the necessary background for co-managing the ecosystems of Clayoquot Sound. As a part of a system of forest worker qualification, all forest and ecosystem workers and managers should be provided with the opportunity to view educational videos produced by Nuu-Chah-Nulth people about Nuu-Chah-Nulth perspectives on forests and their impacts on the environment as well as the Nuu-Chah-Nulth.

The subject of education is one which comes up at various points in the document. For me, the whole exercise of the Panel is an example and case study of learning between cultures – learning goes both ways. There are historically ingrained social inequities arising from Canada’s colonial past and present which have been structured into relations between First Nations and the dominant society. One of the most notable features of this, both historically and currently, is education. Education has been one of the principal weapons of colonialism in Canada. It was consciously used as a tool to spearhead assimilation and there is a great deal of effort currently under way by First Nations to restructure education along more appropriate and effective lines.

The Panel recommends that provision be made for the Nuu-Chah-Nulth to participate in education programs relating to ecosystem management processes, and practices which enable Nuu-Chah-Nulth people to obtain the necessary background for co-managing the ecosystems of Clayoquot Sound. Co-managing of ecosystems on a bi-cultural basis means that there must be appropriate education opportunities to support all the people involved. There is a recognized need to develop technical skills and improve the delivery of education at the community level. Amongst other things, First Nations can provide increasingly within their communities the kind of professional expertise required for co-management without having to rely as much on sources and services from outside of the community.

There are many individuals in First Nations communities with practical and experiential skills necessary for ecosystem management. Yet, for the most part, these are not recognized by or capable of being accredited to educational institutions. It will take a new approaches to education planning, and curriculum development which can broach such issues in appropriate fashion. Such a model for education will have to be based on the same basic model in which the Scientific Panel is founded, and be able to operate by the same kind of bi-cultural criteria of knowledge, methods and learning (this is the focus for *A Spirit of Understanding* which is the case application that follows this case study).

These same insights also recognize that learning between cultural paradigms is not a one way affair. The Panel has begun to broach this by recommending that, as a part of a system of forest worker qualification, all forest and ecosystem workers and managers should be provided with the opportunity to view educational videos produced by Nuu-Chah-Nulth people about their perspectives on forests and their impacts on the environment as well as the Nuu-Chah-Nulth. This is certainly a step in the right direction, but it will take much more. There will need to be specialized training and education programs for forest workers as well. The same applies to professionals involved in fields such as mapping, impact assessment, various types of operations and research, and especially for planners (some of which is addressed in the Panel's final report).

All of those working in such co-managed fields require basic skills, training and knowledge in cultural literacy. Some of these skills and knowledge include: history and basic demographics of local First Nations; the basic philosophy of TEKS; cross-cultural communication skills and an introduction to basic cultural protocol; community interface etiquette. These are base line skills which all should have exposure to; length of training and depth of study would increase with the degree of exposure and scope of involvement with First Nations' communities and community members.

Basic cultural literacy training and education can be detailed and specialized to forestry workers and other resource professionals. Other educational features more specific to resource fields could include: exposure to examples of traditional resource practices; basic protocol for working and learning with TEK specialists and elders; introduction to community-based ap-

proaches for resource management and First Nations. Learning would have to include a balance of various educational media, including experiential learning; learning with TEK content specialist and other recognized cultural teachers. There would need to be specialized methods components for researchers, impact assessment professionals, consultants, planners and other specialists and professionals interfacing and working with the knowledge outcomes and production of oral traditions. These would all be laddered and could eventually take the form of an ecosystem planner's certificate for co-management planning with First Nations, or just a basic cultural literacy module for those who are involved in planning and researching between cultural paradigms.

R20: Employment

Firms must actively recruit amongst First Nations for employment equity; federal government employment equity guidelines must be followed.

It is very important that First Nations accrue benefits from resource activities which take place in their traditional territories. We can expect this issue to come up increasingly in light of the Supreme Court's ruling on Delgamukw. Firms and First Nations could both benefit by providing the kind of cultural literacy training and education discussed above to the private sector; this would greatly increase the effectiveness of recruitment programs. It might be a more effective way, or at least supportive aspect, for the federal government to obtain goals of equity employment.

R21: Monitoring

All ongoing ecosystem management activities must incorporate monitoring programs for impacts on biodiversity, soil, water quality, fisheries, marine systems, and cultural sites with full consultation and participation with Nuu-Chah-Nulth of Clayoquot Sound.

For discussion see R's 24-25 below.

Rs 22-23: Evaluation

Impacts of present and ongoing forest activities in Clayoquot Sound must be evaluated through environmental and social impact assessment procedures in full consultation with the Nuu-Chah-Nulth of Clayoquot Sound; mitigative actions must be undertaken where damage to ecosystems, culturally important areas and traditional resources due to these activities is likely to occur.

For discussion see R's 24-25 below.

Rs 24-25: Restoration

Restoration must be undertaken where damage to ecosystems, culturally important areas, and traditional resources due to forestry activities is found; all phases of restoration activities in damaged Clayoquot Sound ecosystems must be undertaken in full consultation and with active participation of the Nuu-Chah-Nulth of Clayoquot Sound.

The discussion for Rs 21-25 and R's 26-27 is commensurate with the analysis provided above for recommendations 8-17; R17 provides a brief summary. I would also like to draw at-

tention to the topic of restoration and healing which came up in the analysis in R's 8-9 and stress again this point for recommendations 24-25.

Rs 26-27: Research

Research and inventory must be undertaken to complement Nuu-Chah-Nulth TEK and experience; opportunities and imperatives for research on impacts of past, present and future forest practices on Clayoquot Sound ecosystems, and on possibilities for employment identified by the Nuu-Chah-Nulth must be developed in full consultation and participation with the Nuu-Chah-Nulth to enhance the effectiveness of sustainable ecosystem management.

Discussion and analysis relevant to the topic research has been provided in other discussions; please see R's 24-25 above; R17 provides a brief summary.

This recommendation, again, recognizes the substantive contributions which can be made, in a variety of areas, by TEKS and TEK specialists; TEK "enhances the effectiveness of sustainable ecosystem management". It is notable that the Panel has stated here that research and inventory must be undertaken to complement TEK and experience rather than the other way around (i.e. TEK complementing science). The linking of research with employment is important, not only because of the obvious benefit to local communities. It can help to counteract an unfortunate trend. For the most part, dollars generated for research of traditional knowledge sources has typically gone into the pockets of non-Native researchers, professionals and academics, with little or no returns to the communities involved (this problem is discussed in my final two sections of the last chapter).

Along with employment, there are many worthwhile research opportunities and spin offs that can benefit both First Nations and non-Native people. Aside from its practical mandate, one of the greatest contributions of the Panel is to help establish a new terrain of knowledge which has vast implications for a multitude of professional fields and academic disciplines. In recognizing TEK and its cultures of origin to the rest of Canadian society, this will hopefully open doorways for First Nations people. It can help to make British Columbians and other Canadians more receptive to the aspirations of First Nations communities and be supportive of a greater discourse of learning in society at large. This may help to open opportunities for First Nations scholars, for community-based initiatives and efforts which can bolster the social and cultural capital of TEKS in First Nations communities and the larger Canadian society.

One critical area of learning is that of my problem topic in sustainability. What can mainstream society learn through its dialogue with First Nations on the topic of sustainability that might facilitate a similar dialogue within the dominant culture? What can we learn from this case of planning between cultural paradigms that may help to facilitate planning between cultural paradigms as part of the transition to ecological sustainability? I will begin to consider some answers to these questions in the initial conclusions below.

5.6 Case Study Conclusions

I will now draw summary conclusions from my case study of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound. I will review relevant material as implications for the case application that follows. I then offer some initial conclusions for the dissertation research question to be revisited upon completion of the case application.

5.6.1 Summary Conclusions: the method, the model, the people, the path

The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound has been a worthwhile case study. It is worthwhile because it advances learning in a number of substantive areas, contributes to new theory, develops new practice and builds on the existing literature. Both the work of the Scientific Panel and my analysis of it are advances in knowledge for the sustainability field, for planning theory and practice, for academic paradigms of TEK, and for contributions to the development of new paradigms within Western thought. It is a good case study for planning between cultural paradigms. Using the philosophical categories (i.e. the ECO system model) and substantive criteria and components for TEKS (social and cultural capital and methods) developed in the earlier chapters has been essential in helping me to understand and learn from the work of the Scientific Panel, who have implicitly and explicitly recognized these categories, criteria and components. What are some of the things I have learned?

The work of the Panel gives credible responses, both in theory and practice, to many of the problems and methodological considerations for the research of First Nations TEKS and application of knowledge gained from its discourse with Western science. One of the most difficult challenges here relates to the methodological problem of bridging between knowledge systems which are founded upon different, at times contradictory, philosophical assumptions. The main contribution which helps in overcoming this challenge is in developing a respect and appreciation for TEKS, for their larger historic, social and philosophical contexts, and in particular, an appreciation and familiarity with TEKS methodological features. Aspects of this arise only through experience; that is, they must be learned and practised through interactions with people who are the holders of such knowledge and wisdom. Putting such knowledge into action requires sincerity and respect, and is often personally challenging and fulfilling.

The Scientific Panel case study has validated for me that the methodological feature is a substantive aspect of TEKS as an academic paradigm of research. It has also demonstrated the important and cogent nature of *its utility in facilitating complex planning processes for issues of relevance to sustainability*. This is evident in the textual data of my case study – the report itself – but becomes much more clear in the interviews. The interviews have been invaluable data sources. Supporting textual analysis with interviews has brought the experience of the Panel to life and provided information hidden to the reader which reveals key aspects and moments of the discourse between the scientists and TEK specialists (plus other substantive and descriptive

information). This has been critical in revealing the fundamental utility and spirit of the Nuu-Chah-Nulth inclusive process in facilitating the work of the Panel.

There are at least two areas in which it was shown that oral methodological features of TEKS facilitated the work of the Panel. One is in the discourse between the TEK specialists and scientists as part of a larger discourse between two knowledge cultures or paradigms. The other is in the general work and progress of the Panel as a multi-disciplinary body. Each of the Panel members interviewed—a Nuu-Chah-Nulth hereditary chief who was the Panel's co-chair, an ethnobotanist with extensive experience in working with First Nations TEK specialists, and a forest systems ecologist who is a specialist in ecosystem-based management—have all indicated that the Nuu-Chah-Nulth inclusive process was instrumental in facilitating the work and consensus outcome of the Panel in both of these contexts.

Inclusion of traditional oral methods was based entirely on the initiative of the Nuu-Chah-Nulth Panel members as a condition of their participation, but was adopted by the Panel as a whole. Indeed, establishing procedural protocol was the first substantive achievement of the Panel's work and adopting aspects of the Nuu-Chah-Nulth inclusive process for discussing and sharing to reach agreement was central in this. It formed the procedural basis of the Panel's planning model.

It was revealed that there were difficult and critical moments when these traditional discursive methods provided a context and methods for retaining group cohesion. It was also made known that these traditional methods helped bring together, in practical fashion, different types of technical, philosophical and ethical knowledge from a multitude of professional fields and academic disciplines, and from two different cultural paradigms. A large part of the Panel's success, in a situation where all other previous attempts have failed, is attributable to the adopting of key aspects of the methodological features of Nuu-Chah-Nulth traditional knowledge.

The Scientific Panel case study also underscores the importance of the social capital component of TEKS. The work of the Panel has explicitly recognized that *hahuulhi*, a central institution of the Nuu-Chah-Nulth TEKS social capital base, constitutes a traditional model of ecosystem-based management. Given the nature of the Panel membership, this is a monumental conclusion to draw. It says, with empirical credibility based on bi-cultural criteria of verification, that, in this Nuu-Chah-Nulth case, TEKS are commensurate with the very leading paradigms of Western resource management. Yet TEKS, coming from a different philosophical perspective that integrates empirical knowledge with spirituality and other ways of knowing, have much to offer the leading mainstream model in both theory and practice. Applied ramifications take the form of recommendations for including this social capital feature of Nuu-Chah-Nulth TEKS as an institutional basis for any future ecosystem-based co-management efforts to be pursued in Clayoquot Sound. This is an important insight for co-management if it is to be a truly bi-cultural model for sustainable ecosystem-based planning and management.

The above insights are strongly underscored by the recent Supreme Court of Canada decision on the Delgamukw case. Recognizing the credibility of oral history is a critical feature of the decision. The focus for this aspect of the ruling deals with hereditary systems of cultural ownership and their means of transmission amongst the Gitksan and Wet'suwet'en. These are key social capital features—of some similar function to *hahuulhi*—which were used as a basis for establishing the credibility of aboriginal land title. One result of the decision is to give strong incentive for political solutions to the land claims process in B.C. and to establish a precedent for co-decision making and co-management in land use planning. The Scientific Panel offers a credible model for the kind of co-decision making, planning processes and co-management initiatives which are to follow. There are also implications for land claims and other political processes with First Nations affecting land use planning and decision making in the aftermath of the Supreme Court's ruling.²²²

The cultural capital foundation of TEKS is given a great deal of attention by the Panel. The spirituality and philosophy of the Nuu-Chah-Nulth people is not only respected and recognized, it is infused throughout the report. The Scientific Panel members have gone to considerable lengths to make credible the contribution of TEK to a model for sustainable ecosystem-based management and planning. At no point do they ever imply that TEK needs science to be credible, rather, they are helping other scientists, professionals, industry and government to come to an understanding of the substantive features of TEK. They also try to convey an appreciation for some of the larger social and philosophical context of traditional knowledge. They recognize TEKS historical features and have drawn attention to the colonial nature of Canada. This comes out mostly in revealing the lack of recognition of TEK and of First Nations in current forest practices standards, in planning and decision making processes.

One of the greatest epistemological contributions of the Panel is in its recognition that TEK provides for science an *external independently derived reference standard*. Recognizing TEK in this way places it on an epistemologically equal footing to Western science. This constitutes an advancement in our general understanding of the whole field. This does not mean that one criterion replaces the other; as I have said, these are parallel and complementary knowledge systems. Moreover, the Panel gives criteria for such claims, including its holistic nature. TEK is a topic which is drawing increasing interest. A number of people have now written on TEK, many recognize its "holistic" or "spiritual" nature; few, if any, have gone very far into exploring what this really means, why it is holistic, how it is spiritual, and what its substantive features are. **These insights address gaps in the current literature and have broader implications for developing holistic paradigms of thought and practice in the cultural mainstream.** The work of the Panel opens doors for this field of inquiry. My ECO criteria of epistemology, cosmology and ontology take this further, as part of my larger holistic model of sustainability.

The ECO-system model has been a helpful heuristic device for understanding how different worldviews construct their model of reality and make meaning from it. The analysis of

TEKS developed with these categories in the previous chapters was born out by the work of the Panel. In particular, the ontological aspect of TEK has figured prominently. Moreover, using both textual and oral data, the case study of the Panel has helped to further demonstrate the connections to be found between different ways of knowing and different models or ideas of being. These connections between ontology and epistemology can help gain insight into the methods of TEKS.

The case study of the Panel has also demonstrated the usefulness of the term and concept of 'Traditional Ecological Knowledge-Systems'. The work of the Scientific Panel has implicitly recognized all the key features and characteristics for the criteria which I established in the prior chapter for developing a basic model of TEKS. This is an advance in the development of an academic paradigm of inquiry and application for the TEK literature and its applicability in a number of areas, including planning.

The Panel has recognized the ontological capacity of land and its basis for establishing cultural identity. They have recognized the spiritual cosmology in which TEK finds its source of meaning. The case study has also served to reveal the connections of cosmology with teachings about the place of humans within ecosystems and the Universe. This recognition of humanity's place in ecosystems has also been used by the Panel to establish conceptual commensurability between TEKS and an ecological scientific paradigm founded on the same basic insight. While founded upon different philosophical assumptions, TEKS and ecosystem-based management have certain commensurate realms of inquiry and application. This commensurability was the foundation for a bridgehead of inter-cultural understanding upon which the Panel developed an integrated, bi-cultural model for sustainable ecosystem-based management and planning.

The Panel is thus a worthwhile opportunity to put the work of Tambiah into empirical application. In looking at these two cultural paradigms of knowledge as examples of "multiple orderings of reality", we can also see their discourse as one which operates between "causal" and "participatory" models. This analysis helps to illuminate why, and how important it is, that the Panel can look to TEKS as providing an external independently derived reference standard. It provides an empirical example of what I referred to in the previous chapter as a "bi-cultural basis for verification." (see 4.7.2 "Metaepistemology: A Spirit of Understanding for Planning Between Cultural Paradigms")

It is, therefore, a justified conclusion to make that, while the Panel may not have begun from such a position, they eventually arrived to a "metaepistemological" perspective. This had important implications for planning and planning process. Different ways of knowing generate different types of knowledge. Different types of knowledge use different methods for their transmission and criteria of verification. As an "epistemology of the sacred", TEKS integrates empirical observation and deductive reasoning with other body-based and spiritual modalities. TEKS are thus, by their nature, of a more meta-epistemological character in that they employ a

greater variety of ways to generate knowledge; they also *apply* knowledge which is the result of a variety of realms of human experience. Some of these realms can be understood and verified through the methods of science, others operate outside of the scientific domain.

These insights may help to understand why the traditional methods for the sharing and applying of knowledge, and for reaching consensus, were so powerful as they were employed on the Scientific Panel. This is what informed the planning process from its stage of planning for planning, through directives for future planning, to the recommendations on implementation. If planning is knowledge into action, there are some implications for planning theory and practice, especially as it is concerned with the field of sustainability. We see on the Scientific Panel how different types of knowledge, some from outside of dominant paradigms of academic inquiry, were legitimized into the planning process. We see also how such knowledge, and its methods arising from traditional sources with recognized specialists, had a role in determining the nature of the planning process itself.

The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound can justifiably be described as constituting a paradigm shift, in several capacities, for a number of reasons. To properly understand this, the Panel needs to be placed back within its historical and political context. As Dr. Lertzman stated "that we were empowered to do something as revolutionary as what we did is probably the single most amazing thing...I'm not sure that the government really intended to set off a process that would result in something as revolutionary as in fact they did." As Co-Chair Atleo concluded, the result was "literally a transformational process...a paradigm shift". We can see this in both the conceptual and political understandings of the term as it was originally offered by Thomas Kuhn.

Though I have focused most on the conceptual level, the political nature of the Scientific Panel needs to be underscored. I have done this, in part, by providing an historical context for understanding land-use issues as part of the ongoing colonial relationship between First Nations and the Canadian state. There are other political dimensions to the Panel more germane to the political sphere of sustainability within the cultural mainstream. We can also see the Panel as an interface between political allies for ecosystems advocacy in the First Nations and scientific communities. This was not necessarily a given at the Panel's outset, and we can see that the work of the Scientific Panel itself was constituted by a political process. Indeed, the Nuu-Chah-Nulth members were required to assert their position. Certainly, the Panel as a whole found it necessary to assert its independence from government, industry and public pressure in order to attain their procedural and substantive accomplishments. Having a Nuu-Chah-Nulth hereditary chief on the Panel seems to have made a difference in both instances. One should also keep in mind that the Panel's mandate was not merely an advisory one; they were writing policy in a quite contentious and politicized area of local, regional, national and international affairs. All of these political dimensions to the Scientific Clayoquot Panel deserve more attention.

Nevertheless, in examining the discourse on the Clayoquot Panel between scientists and TEK specialists, particularly through interviews with Panel members, research revealed that there were at least two, and likely, three levels of paradigm shift at work. The first is scientific. Even in the absence of the TEK specialists, there is a paradigm transition operative on the Panel in terms of their approach to ecosystem-based management. This was revealed in detail through interviews, particularly with Dr. Lertzman. While the recommendations made from this model are unprecedented in terms of forest management practices in British Columbia,²³³ it was the planning model itself which was the more revolutionary feature. This is understood as being part of larger developments in the scientific culture of resource management towards ecosystem-based management and planning models. The role of TEK methods in the planning process, and that played by TEK specialists, links the science based contributions of the Panel to another level of paradigm shift which exists interculturally.

The Scientific Panel thus constitutes a paradigm shift in terms of the dialogue between Western science and TEKS. Recognizing that TEK provides an external independently derived reference standard for science is a revolutionary statement to make, especially considering from where it is coming. Here, the paradigm shift is from the point of view of a science-based culture. That their approach to reality is an independent and internally consistent knowledge system is not something we can expect to be in question for First Nations. For Western society, however, this has not historically been the case. The recognition of TEKS as being an epistemologically credible model and reference criteria is a shift in perspective when viewed through the eyes of science, as it is for the cultural mainstream. This helps to establish a new epistemological terrain for theory and practice in planning between cultural paradigms.

As I have pointed out, the Panel was a special case and a special group of people working under extraordinary circumstances. Except for two notable individuals, the scientists had relatively little prior experience in working with First Nations. They were working on the leading-edge in application of an ecosystems-based management approach which recognizes humans, their values and social systems as components of ecosystems. This played a strong role in creating a more receptive scientific context for TEK. The scientists and their Nuu-Chah-Nulth TEK colleagues, working together, have put forward an integrated bi-cultural model of ecosystem-based management and planning, which occupies a special place of its own as the combined articulation of two cultural paradigms. So it is really the joining of these two different orderings of reality which is perhaps the greatest paradigm shift. We are justified in concluding that the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound is an example of planning between cultural paradigms. It provides a good model and a path to follow.

5.6.2 Implications for Further Case Applications: The Importance of Cultural Literacy

This short section is to provide a review of some key lessons learned for any possible case applications to follow. In particular, I will consider implications for case applications in

regard to the research and application of knowledge based on the TEKS model employed in the case study. This includes attention to the methods, cultural capital and social capital features of TEKS to develop the idea of planning between cultural paradigms with First Nations.

In as much as it was constituted out of some rather extraordinary circumstances, some features of the Scientific Panel experience will be very difficult, if not impossible to replicate. However, there are some things which are transferable. One is the model and components of TEKS. Planning must take into account all three chief aspects—cultural capital, social capital and its methodological features—as well as the other implied aspects, people, land (biophysical capital) and its TEKS historical nature. A more detailed review can be found at the end of the previous chapter and in the appendix of other important methodological considerations.

One of the most important things learned for planning between cultural paradigms with TEKS is that planning processes must involve key aspects of the methodological features of the culture with whom one is planning. One can not expect to experience or achieve planning between cultural paradigms merely by inserting traditional knowledge into an already established planning process or framework. This would fall into the old model of extracting knowledge from its legitimate social, philosophical and methodological contexts. Moreover, traditional knowledge must be represented by those who are its recognized custodians. That is a spiritual, experiential, one could even argue epistemological necessity for the credibility of TEK. First Nations voices must represent First Nations. The Panel study has also emphasized the importance of developing the skills of cultural literacy. Nothing can take the place of this experiential learning.

While many of the key cultural teachings of TEKS are transferable between different Nations, it is important that one draw on the cultural capital base which is particular to that specific area. From the point of view of cultural capital, one has to be guided and instructed on those teachings by qualified teachers. On the Scientific Panel, only Nuu-Chah-Nulth people can represent their culture. At the same time, non-Native Panel members did speak about *their* experience and understanding of traditional knowledge. Moreover, they had what seemed a sense of propriety for the outcome of the work which was the joining of their cultural wisdom with that of another. Yet learning is ongoing. One therefore needs to be constantly developing their cultural literacy. Once one learns how to read and write, then one reads, one writes, and improves. It is a tool or skill which enables one to work more effectively.

Having cultural literacy skills allows one to do certain things. One can learn, not only about protocol and cultural teachings, but to use them under the proper guidance. For example, one can learn to work respectfully within the institutions which form part of the social capital base of TEK. One can *plan* by working within such relationships and institutions. Planning in this case should hold as one of its goals, not only drawing on social capital but to bolster it. One can thus plan *with* cultural capital to build on the social capital base of communities. I think that this is an accurate description some of the Panel's recommendations.

People who have a developed sense of cultural literacy can become bi-cultural beings. As we have seen with the case of the Scientific Panel, such people are pivotal for planning between cultural paradigms. These people can learn to draw on cultural capital using the oral methods and cultural protocol to enhance social capital. This kind of planning is deep cultural immersion which is achieved by becoming part of the community and forging lasting bonds. Yet the inter-cultural planner has another role in facilitating the discourse between cultures. They are the bridge-builders. These are some of the lessons I employed in the *Spirit of Understanding*.

Another important lesson is the powerful utility of linking an ecosystem-based paradigm with TEKS. This is a promising and useful basis for building bridges between Western society and First Nations for sustainability. It is also a politically powerful basis for ecosystems advocacy. Thus, it is not just a way that traditional knowledge systems, in their material and non-material aspects, can gain support for community level initiatives. It is a link for gaining credibility and support in shifting cultural perceptions and social practices for sustainability within the cultural mainstream. These efforts are, by nature and of necessity, multi-disciplinary, even inter-disciplinary ventures. A meta-epistemological perspective guides theory in planning cultural paradigms, its practice is a way of life.

5.6.3 Initial Dissertation Conclusions

The purpose of this sub-section is to briefly re-visit the research question and overall context of my dissertation in order to consider some initial conclusions. I have changed the word "discourse" now to "interface."

What can we learn from the interface of TEKS and Western science which can contribute towards a sounder epistemological basis for planning theory and practice in the transition to ecological sustainability?

I have made a slight modification here which is to add the "S" to TEK in order to reflect more appropriately my focus of inquiry. One should keep in mind that I have adopted Friedmann's definition of planning as "knowledge into action" and that, as a field of inquiry and application, sustainability must entail the linking of ecological capital, social capital and cultural capital with an attention to methods, the material flows and energetic throughput of human systems as a component of ecosystems.

One initial conclusion which has been born out is the importance to stress the contexts of knowledge. Knowledge can not be fully understood outside of its various social, historical and philosophical or methodological contexts. Examining the discourse between TEKS and science has underscored for me the larger cosmological context of knowledge along with its ontological connections. This approach has helped draw connections between ecosystems and the spiritual life of individuals and communities. It demonstrates the importance for an holistic understanding of human experience of the different ways of knowing and manner of knowl-

edge to which they give rise. These different ways of knowing and realms of knowledge to which they give rise also require a diversity of means for expression.

Looking at the Scientific Panel in Clayoquot Sound, both as an example of planning between cultural paradigms and as an example of planning towards sustainability, we can see that both of these realms of the Panel's work were quite inextricably linked. We can also see how the legitimizing of different types of knowledge and different ways of knowing was built into the planning process. We can also see that this was instrumental, both in achieving their goal of bridging between cultural paradigms, and for planning towards sustainability. I have argued that the epistemological model which best characterizes the process and approach taken by the Panel was a metaepistemological one. It is "meta" because it supports developing an understanding for theory and application of two different culturally based knowledge systems i.e. two distinct "epistemologies". It is also "meta" because it gains an understanding into ways of knowing which are outside of the dominant rational empiricist model. It does not invalidate the rational empiricist approach but includes it into a larger perspective.

There are no easy answers when considering the problem of planning for the transition to ecological sustainability within Western society. We must take care not to commit "a fallacy of misplaced concreteness" when drawing inferences from the case study's example of planning between cultural paradigms in the interface of TEKS and Western science to the problem of planning for the transition to ecological sustainability within the cultural mainstream. It entails a conceptual leap from *inter-cultural* planning to *intra-cultural* planning. One important difference is that, in the case of the Panel, we are looking at a discourse between people from two paradigms of entirely different cultural origins, each with their own distinct history, language, social structures and beliefs systems about the nature of reality.

With Traditional Ecological Knowledge and First Nations, as we have seen, we are not talking about a modern social movement, or an incipient cultural paradigm. We are not creating something new but interfacing with long standing ways of life, with ancestral wisdom, grounded in people and place. With TEKS, we also have the good fortune of the elders who have grown up in this way of life and are trained in the cultural teachings of how such knowledge, wisdom and practices are passed on. Even still, we need to keep in mind that for the case of the Panel, it was no easy task; the way was challenging and a required deep commitment, a great deal of work, tremendous perseverance and mutual respect amongst the members. What is new, is the terrain of knowledge and experience which arises from this cultural interface.

That being said, I would like to proceed with drawing from the case study along with the other material of my dissertation to begin exploring the question. It seems that one of the more obvious answers to the question of what we can learn from the discourse between TEKS and Western science that can contribute towards a sounder epistemological basis for planning theory and practice in the transition to ecological sustainability, is that a metaepistemological perspective is most conducive to an holistic approach to planning theory and practice for

sustainability. It is far more inclusive to different ways of knowing and being than a purely technical or entirely empirically based approach. It recognizes the ongoing role of scientific and technical knowledge in an holistic model to guide its application. This also has implications for the style and nature of planning process. It requires *methods* which are inclusive and of a chiefly discursive character. This harkens back to Friedmann's point (he uses the term *dialogical*) in the epilogue of *Planning in the Public Domain* which I discussed earlier on.

It would be worthwhile now to revisit Tambiah's work, and also that of Morris Berman. At the outset of this dissertation, I quoted from Morris Berman's *The Reenchantment of the World*, where he said that "[s]ome type of holistic or participating consciousness and corresponding sociopolitical formation have to emerge if we are to survive as a species." I followed this with a quote from William Rees, who writes that "[s]uccess in this endeavour will obviously require a rewrite of the prevailing environmental myth and humankind's role in the scheme of things. People must acquire in their bones a sense that a violation of the biosphere is a violation of self." Berman is talking about the social transition to a participatory mode of philosophical and structural ordering. Rees is talking about a cosmological shift that involves a certain ontological insight as a basis for knowing. Tambiah's work is helpful in linking these ideas with the Panel case study.

I have been looking at the Panel as an example of planning between cultural paradigms for sustainability. Borrowing from Tambiah, I suggested that the Panel can also be seen as an example of planning between a causal ordering of reality and a participatory ordering of reality. We can start applying these ideas in terms of the transition to a more holistic, participatory model of the place of humans in their larger living ecosystem. We have now shifted the focus of inquiry to the question of different orderings of reality within the Western cultural mainstream. (i.e. inter to intra) The first obvious point is that there are many different ways of knowing our place in this larger living ecosystem, including empirical knowledge based on measurements in time and space, as well as other ways of knowing. Not only do these other ways of knowing bring a deeper level of understanding to our empirical experiences, they open us to the other realms of experience and knowledge not so accessible to the scientific method. Pursuing a metaepistemological approach to planning, as in the case of the Scientific Panel, means that all these ways of knowing can and must inform planning both procedurally and in substance.

The next step, then, is to begin applying this metaepistemological planning approach to the question of the interface between paradigms within the cultural mainstream. How do we broach the issue of finding the keystones for erecting a bridgehead of understanding between the dominant development model and one which is based on a more participatory mode within an ecological framework? Applying Tambiah's framework, commensurability becomes a key issue. Again, we need to refer back to the case study. With the Scientific Panel, the keystone was a recognition of humanity's inextricable place within the ecosystem. This then became the basis of commensurability. We must think of this in the larger political and economic context of

the Panel and the multi-faceted nature of all those issues, along with the development of the discourse on the Panel and how it unfolded. These political and economic exigencies are relevant to the larger issues of the transition to sustainability. Ecosystem-based management is one credible focus for such efforts. Yet, as in the case of the Scientific Panel, it must draw from an holistic approach to how we know and experience our place in ecosystems, in the ecosphere. This can support the transition to a participatory mode of consciousness in the mainstream that still includes science. It will also foster planning with a diversity of social capital and cultural capital forms.

The Panel was comprised of different types of specialists. Amongst these were two who had extensive experience and training in cultural literacy. Their role seems to have been pivotal in facilitating intercultural dialogue and understanding. My professional case application, *A Spirit of Understanding*, explores my role as a planner in this capacity in another community in one area of the Panel's recommendations, that of education. Could a similar function be played by planners as specialists for *intracultural* planning in the transition to sustainability? I believe that it could be. I will return to this discussion after having considered my experience of putting knowledge into action for planning between cultural paradigms.

NOTES FOR CHAPTER 5

¹ Please see "1.2.1: Posing the Question, Providing a Method" for methodological details.

² Lertzman, *A Spirit of Understanding*, 1996, p.24. Some archaeologists argue the date could be several millennia earlier given that there is hard evidence of settlement in South America from 12,500 years ago; see Tom D. Dillehay, *Monteverdi, a late Pleistocene settlement in Chile*, Washington: Smithsonian Institution Press, 1989.

³ See the Preface in Robin Fisher, *Contact and Conflict, Indian-European Relations in British Columbia, 1774-1890*, Vancouver: UBC Press, 1983. See also Diamond Jennes, *The Indian Background of Canadian History*, Ottawa, Canada: Department of Mines and Resources Bulletin No. 86, 1937 and also George F.G. Stanly, "The Indian Background of Canadian History," *Canadian Historical Association, Papers* (1952): pp.14-21, sources in Fisher, 1983.

⁴ Lertzman, 1996, p.25.

⁵ This is dealt with in greater detail in the historical section in Lertzman, *A Spirit of Understanding*, Province of British Columbia, Ministry of Education, Skills and Training, 1996. A good look at the self-serving social-psychology of European construction of First Nations stereotypes is Robert F. Berkhofer, Jr., *The White Man's Indian*, New York: Vintage Book 1979. Robin Fisher, *Contact and Conflict*, Vancouver: UBC Press, 1983, provides some worthwhile material of a similar nature but with more historical and socio-economic focus dealing specifically with British Columbia, while Paul Tennent, *Aboriginal Peoples and Politics*, Vancouver, University of British Columbia Press, 1991 deals with such issues in a more current context in terms of land issues in British Columbia. E. Brian Titley, *A Narrow Vision, Duncan Campbell Scott and the Administration of Indian Affairs in Canada*, Vancouver: University of British Columbia Press, 1986 is a telling and at times disturbing historical analysis of the material with regard to the development of Canadian "Indian" administration and is a critical text to read. Richard Price ed., *The Spirit of the Alberta Indian Treaties*, Edmonton: Pica Pica, University of Alberta Press, 1987 is a comparative analysis of historical government documents and interviews of living relatives of those who signed treaties. Little Bear, Boldt and Long, *Pathways to Self-Determination*, Toronto: University of Toronto Press, 1984 and J. Rick Ponting, *Arduous Journey*, Toronto: McClelland and Stewart Limited, 1986 deal with the subject matter from a broader perspective of political analysis while Norman Zlotkin and Donald R. Colbourne, *Imperialism, Nationalism and Canada*, Kitchner and Toronto: New Hogtown and Between the Lines, 1977, provide a rare but much needed treatment of the issues from the point of view of hard core political economy. David Lertzman, *Perspectives on Native Self-Government in Canada*, Masters Thesis in Political Science, Department of Political Science, York University, 1987, deals with political economy but from a perspective of the comparative analysis of First Nations and Euro-Canadian world views. Barman ed., *Indian Education in Canada*, Vancouver: University of British Columbia Press, 1986 is an excellent collection of material dealing specifically with education. *Basic Call to Consciousness*, Mohawk Nation Via Roosevelttown, New York, Awkwesasne Notes, 1978 provides well needed spiritual insights yet within a context of hard core social analysis from a First Nations perspective.

⁶ One can see different phases of the construction of First Nations stereotypes corresponding to various stages of colonial development. In early contact, First Nations people were often regarded as fearful and/or as noble savages and as skilled fur trade harvesters and wilderness guides during the Fur Trade. On the West Coast, there was also the perception of being shrewd traders. There was also, in Eastern Canada, the impression of First Nations as powerful trading partners and military allies. In the transition to settlement, these perceptions tended to switch to ones of increasing scorn and hostility. At this time, government relations switched from dealings between sovereign nations to the paternalism which still characterizes neo-colonialism in Canada. There have been the colonial "friends" of First Nations, often through Christian agency both officially and unofficially sanctioned by the government, who have sought to help relieve First Nations of the burden of their "heathen" and "pagan" cultures in order to become successful members of the body politic. The brutal legacy of residential schools is an ongoing example of the impact of such beliefs. Please see "Christianity and Education: Weapons of Assimilation" in Lertzman, 1996, *A Spirit of Understanding*.

⁷ There have been some similar efforts amongst First Nations and the Government of the Northwest Territories in the area of environmental impact assessment. While I am more interested in the BC case, the NWT example would also make a worthwhile case study.

⁸ Some may be more familiar with the previous colonial misnomer “Nootka” which comes from when West Coast people implored James Cook, “nootka” meaning “go around” for a better place to land.

⁹ Some might argue that the only reason for such apparent “sustainability” was due to scale and technical limitation; however, the fact remains that region has supported human life in relatively stable patterns of settlement for a very long time. The presence of humans in the Pacific Northwest is documented for at least eleven thousand years and possibly several millennia earlier. Archaeological evidence of the Potlatch, a central social and cultural institution of West Coast life, dates from as old as 4,500 years ago. (Lepofsky in Lertzman, 1996, footnotes 45 and 26)

¹⁰ Usufructuary refers to a recognition of rights to the “fruits of the land” such as fishing, hunting, gathering, agriculture, etc.

¹¹ See Brian Slatery, *The Hidden Constitution: Aboriginal Rights in Canada*, American Journal of Comparative Law, Vol. XXXII, Spring 1984, No.2 and “Aboriginal Rights, Natural Rights and Imperial Claims”, paper Toronto: Osgood Hall Law School, Sept., 1987; see also Cummings and Mickenberg, *Native Rights in Canada*, Toronto: The Indian-Eskimo Association of Canada, 1972.

¹² I have covered these issues in greater detail elsewhere. See, “The Eurocentric Nature of Canadian History” in the historical background section *A Spirit of Understanding*, Province of British Columbia, Ministry of Education, Skills and Training, 1996. This was based in part upon work from my Masters Thesis, *Perspectives on Native Self-Government*, Department of Political Science, York University, 1987 as well as historical political economy as part of the research in my doctoral work.

¹³ The Fur Trade, in particular the harvesting of sea otter, was responsible for the collapse of one of the most biodiverse habitats on the planet – the Pacific Northwest kelp forests. It would be worthwhile to investigate this as an historical case study of the interactions between First Nations and Europeans. In particular, it would be worthwhile to examine the impact of a monetary and profit seeking economic model on subsistence economies, as well as ecosystems, and the role of First Nations in this process.

¹⁴ See Robin Fisher, *Contact and Conflict, Indian-European Relations in British Columbia, 1774-1890*, Vancouver: UBC Press, 1983.

¹⁵ From Ponting and Gibbons, 1980, p.5.

¹⁶ See Lertzman (1996, 1987), also Price (1987), Titley (1986), Zlotkin and Colbourne (1977), Cummings and Mickenberg (1972).

¹⁷ The first of such treaties were initiated as a consequence of the discovery of minerals on the shores of Lake Superior and Lake Huron, these were the Robinson Treaties of 1850. The prairie treaties were obtained directly in advance of agricultural settlement. Treaty 11, including part of the Northwest Territories, was negotiated immediately upon discovery of oil in the Mackenzie Valley. Treaties in western Ontario were sought in recognition of the strategic importance of the region, both with regards to the railroad and the movement of troops during the Riel Rebellion. Other numbered treaties, such as those in parts of northern British Columbia, northern Alberta, Manitoba, Saskatchewan and Ontario were similarly sought with mineral and other natural capital in mind. See Lertzman, 1996; my Masters Thesis, *Perspectives on Native Self-Government*, Department of Political Science, York University, 1987; Norman Zlotkin and Donald R. Colbourne, *Imperialism, Nationalism and Canada*, Kitchner and Toronto: New Hogtown and Between the Lines, 1977 pp. 164-168; and Cummings and Mickenberg, *Native Rights in Canada*, p.2

¹⁸ Interestingly, *Delgamuukw v. The Queen* (1991) has brought recent focus to such notions, where the Crown was held to have extinguished aboriginal rights at the time of sovereignty and accepted in exchange the fiduciary duty to consult with First Nations where forest management activity may impact on

aboriginal "sustenance practices" (i.e. their usufruct). The Crown would breach its fiduciary duty if it arbitrarily curtailed aboriginal sustenance use on vacant Crown land. On June 25, 1993, the British Columbia Court of Appeal ruled that aboriginal rights were not extinguished on a "blanket" basis but did not extend to ownership and jurisdiction over land and resources on non-reserve land.

¹⁹ See, "The Poet and the Indians" in Titley, *A Narrow Vision*, p.32.

²⁰ This was read to the Members of Parliament in 1920 prior to the controversial amendments to the Indian Act contained in Bill 14 which was passed in spite of tremendous First Nations opposition with support by some members of Parliament. Quoted in Titley, p.50.

²¹ Ibid. p.34.

²² See Fisher, 1983, p. 103, who quotes the typical attitude in a settler publication, "every little point to which a white man would not dream of giving a name has its separate appellation."

²³ For example there are several different ways to refer to "land" in various First Nations languages. See *The Spirit of the Alberta Indian Treaties*, Richard Price ed., Edmonton: Pica Pica, University of Alberta Press, 1987. This book presents a review of official Canadian documents and historical records (along with some more general historical review) as compared with revealing interviews of elders regarding the content and meaning of the treaty process. Most of the elders were either relatives of those who attended the treaty making process or alive themselves at that time. This rare treatment is credible, indisputable and reveals starkly the misleading and draconian procedures on behalf of the Canadian government in the treaty process.

²⁴ See for example, Roy Haiyupis, *Land as the base of identity*, unpublished manuscript, 1994a, available through the Scientific Panel or *Land is spiritual*, 1995a, unpublished manuscript.

²⁵ Roy Haiyupis, "Land as the base of identity." Unpublished manuscript. 1994. Scientific Panel for Sustainable Forest Practices in Clayoquot Sound.

²⁶ Captain Walter Grant, quoted in Fisher, p.103.

²⁷ Ibid. p.103.

²⁸ See Dennis Madill, *British Columbia Indian Treaties in Historical Perspective*, Research Branch, Corporate Policy, Indian and Northern Affairs Canada, Ottawa, Canada, 1981 as well Fisher, 1983.

²⁹ These historical themes are discussed at length and documented in greater detail in *A Spirit of Understanding*, see also Madill and Fisher above.

³⁰ See, for example, the full page add in the *Vancouver Sun*, July, 8, 1997, "before aboriginal treaties are set in stone" sponsored by the Citizen's Voice on Native Land Claims.

³¹ Province of British Columbia News Release, "Interim Measures Agreement on Clayoquot Sound Signed by the Central Regional Chiefs of the Nuu-Chah-Nulth Tribal Council and the Province". March 19, 1994.

³² Ibid. p.2.

³³ Ibid.

³⁴ Ibid. emphasis added.

³⁵ The Interim Measures Agreement was signed not long after the commencement of the Panel's work.

³⁶ **INTERIM MEASURES AGREEMENT**, Between HER MAJESTY THE QUEEN in Right of the Province of British Columbia And THE HAWIIH of the Tla-o-qui-aht First Nation, the Hesquiaht First Nation, the Toquaht First Nations and the Ucluelet First Nation, 19 March, 1994, Ahousat British Columbia.

³⁷ Information obtained from, "Appendix I: Backgrounder" in the first *Report of The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound*, January 31, 1994. p.25.

³⁸ Ibid. p.25.

³⁹ Province of British Columbia News Release, "New Scientific Panel Will Ensure Forest Activities in Clayoquot Sound Stand up to World Scrutiny" October 22, 1993.

⁴⁰ Dr. Atleo was actually enstated after Panel was established on the insistence of Panel members.

⁴¹ Ibid.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Speech By Fred Bunnell at the announcement of the Scientific Panel, October, 22, 1993.

⁴⁵ *Report of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound*, January 31, 1994.

⁴⁶ Interview with Nancy Turner, Scientific Panel Member, Specialist in Ethnobotany (Ph.D. in Botany), Professor of Environmental Studies, University of Victoria, 7/24/97.

⁴⁷ Interview with Ken Lertzman, Scientific Panel Member, Specialist in Biodiversity and forest ecology, (Ph.D. in Biology), Professor of Resource and Environmental Management Science, Simon Fraser University, 7/22/97.

⁴⁸ Province of British Columbia News Release, "Clayoquot Scientific Panel Releases First Report on Sustainable Forest Practices Standards in Clayoquot Sound" February 1, 1994. Emphasis added.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ This was also pointed out in interviews and discussed at length, in particular with Dr. Turner. All members had inputs and worked directly with the Nuu-Chah-Nulth members; however Dr. Turner, being the only scientific member with extensive experience in working with elders and other TEK specialists, was the only non-Native member to sit on the Cultural sub-Committee.

⁵² Interview with Dr. Lertzman in his office at the School of Resource and Environmental Management, Simon Fraser University, 7/22/97.

⁵³ Ibid.

⁵⁴ Interview with Dr. Turner in her office at University of Victoria, 7/24/97. Dr. Turner is a professor of Environmental Studies and sat as a specialist in ethnobotany on the Panel.

⁵⁵ Further phone conversations with Dr. Atleo, supplemental to the initial interview; 16/12/97. I examine this discussion in greater detail below.

⁵⁶ Op. Cit.

⁵⁷ See footnotes 679, and 687 below.

⁵⁸ Op. Cit.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ See Report 5, *Sustainable Ecosystem Management in Clayoquot Sound*, 1995.

⁶² emphasis added.

⁶³ I think that the Panel deserves much more attention in general, both for its example as a discourse between TEK and science (between two knowledge cultures at large), and because of the model it provides of ecosystem management. There is quite a bit of information about the Panel which is not immediately accessible but can and should be.

⁶⁴ Ibid.

- ⁶⁵ Including authors cited in my chapter on TEK.
- ⁶⁶ who passed on this past summer (1997) which was experienced as a great loss for many people.
- ⁶⁷ From the "Executive Summary" of Report 3, *First Nations Perspectives, Relating to Forest Practices Standards in Clayoquot Sound*, The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, March, 1995, p.vii. Emphasis added.
- ⁶⁸ Ibid.
- ⁶⁹ Ibid. p.ix. Emphasis added.
- ⁷⁰ Ibid. p.vii.
- ⁷¹ Ibid. p.viii.
- ⁷² See the Panel's fourth report, *A Vision and Its Context: Global Context for Forest Practices in Clayoquot Sound*, the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, March 1995.
- ⁷³ Op. Cit. p.1.
- ⁷⁴ Some of these sources have appeared in my own literature review in the previous chapter.
- ⁷⁵ Quoted in *ibid*, p.2; from the World Commission on Environment and Development, 1987.
- ⁷⁶ Quoted in *ibid*. p.3.
- ⁷⁷ Quoted in *ibid*. p.3.
- ⁷⁸ Ibid.
- ⁷⁹ Ibid. p.5
- ⁸⁰ Ibid. p.5. The Panel also notes that the Nuu-Chah-Nulth approach to inclusive decision making does not deny the values of other societies.
- ⁸¹ Ibid. p.5. Emphasis added.
- ⁸² Province of British Columbia News Release, "Clayoquot Scientific Panel Releases First Report on Sustainable Forest Practices Standards in Clayoquot Sound" February 1, 1994.
- ⁸³ Interview with Dr. Turner in her office at Simon Fraser University, 7/24/97.
- ⁸⁴ Another factor cited by Dr. Turner is that people were excluded from the process; moreover, the process itself had the effect of either excluding people or not inviting their full participation and use or recognition of their insights. "They often excluded people...there were inequities in the structure of the committee and they never developed a way of solving problems or working together at the outset...they didn't operate within that realm of respect that was required and that's why they failed...people felt disenfranchised, they felt like they weren't being heard and after a while they just couldn't stay..."
- ⁸⁵ Ibid.
- ⁸⁶ Ibid.
- ⁸⁷ These interviews involve considerable time, networking, travel and expense as many of the Panel members live elsewhere and are very busy. Dr. Bunnell is currently on leave and has been for some time. I would have been able to possibly create interviews with other Nuu-Chah-Nulth members, however, this would have involved several boat trips as well as extensive car travel. Moreover, such inter-cultural networking is considerably time consuming and elders are usually quite busy with family affairs and community work. There was also the recent and tragic death of Roy Haiyupis (a great loss to his communities) and it is disrespectful to have elders work close to the death of such community members. These interviews could be the focus of future research. I had hoped to travel to Clayoquot Sound and conduct such research, but I have neither the financial nor temporal resources. Another point to make is that my

interview methods are discursive i.e. they are quite conversation oriented and open ended; as result, they generate a lot of analytical material. I still have considerable "data" which I would like to have used.

⁸⁸ It is likely difficult for most people to appreciate the significance of an hereditary Chief and what it means for one to be involved. When a chief of this character involves him/herself in official capacity, then his/her honour is on the line. I had an hereditary Chief "stand behind me" and advise on protocol while working on *A Spirit of Understanding*. Dr. Atleo told me that his training is, "as a statesman" and that his training as a chief certainly helped to contribute to the work of the Panel. As a Chief, his concern was to maintain the integrity of the Panel, its mandate, and help ensure its independence. In an interview, Dr. Atleo told me that, "there were often (political) forces brought to bear on the Panel, to deny the independence of the Panel; there were definitely attempts to sway the Panel in one or another direction... pressures, not only outside the Panel but also from within...which is natural." He added that, "It's a tremendous tribute to the Panel that it maintained its integrity."

⁸⁹ I put the word interpret in quotes because this is not interpreting language as in translating (a skill which was provided by one of the elders) but in the sense of interpreting meaning.

⁹⁰ This came out in my interviews with Dr. Atleo.

⁹¹ Interview with Dr. Turner in her office at University of Victoria, 7/24/97.

⁹² *First Nations 'Perspectives, Relating to Forest Practices Standards in Clayoquot Sound*, The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, March, 1995, p.3.

⁹³ Interview with Dr. Atleo in his office at Malaspina University-College, 3/11/97.

⁹⁴ *Ibid.* He pointed out that at the beginning, they may not have played the role very well; but as the processes continued and the work progressed, so did peoples ability (i.e. in cultural literacy skills).

⁹⁵ *Ibid.*

⁹⁶ Just to give another example, not all external pressure was from provincial government or industry. I was told that, during the Panel's work, the Co-Chair of the European Parliament, as well as other members (because of their economic interest in B.C.'s forest industry, to the tune of \$700 million in trade) came to meet with the Panel. The EEC Co-Chair remarked, "we understand that Nuu-Chah-Nulth members of the Scientific Panel are puppets of the Premier." When asked where he had obtained that information, the EEC Co-Chair replied, "Green Peace." He was told this was incorrect, that the Nuu-Chah-Nulth members of the Panel were selected by Tribal Council leaders and endorsed by the Premier. The anecdote serves to illustrate the kind of pressures and meddling, even by the supposedly well intentioned, that the Panel and its members had to endure. Source, *Ibid.*

⁹⁷ *Ibid.*

⁹⁸ *Ibid.*

⁹⁹ *Ibid.*

¹⁰⁰ *Ibid.*

¹⁰¹ This was in the same interview.

¹⁰² Sadler and Boothroyd ed., *A Background Paper on Traditional Ecological Knowledge and Modern Environmental Assessment*, International Study of the Effectiveness of Environmental Assessment, Center For Human Settlements, University of British Columbia, 1994, p.3.

¹⁰³ This was on a special edition of the CBC-1 Radio News at twelve noon which was debriefing on the decision. It was also quoted in Dec. 12 issue of the *Vancouver Sun*, "Gibbsan history set right", p.A14.

¹⁰⁴ See for example, "Natives win on land claim rights, Top court rules that oral history gives bands constitutional claim in absence of treaties" and other articles in *The Globe and Mail*, December 12, 1997; also "In Prehistoric Judgement, top court strengthens Indian land claims" and other articles in the *Vancouver*

Sun, December 12, 1997. Articles and commentary were prevalent for the next week. Not all indicated satisfaction with the ruling, some were quite supportive; all agreed the decision was momentous and that a major precedent had been set in the recognition of oral history. Commentary continues.

¹⁰⁵ See for example, Gibson, "The Land Claim Ruling is a Breathtaking Mistake", *Globe and Mail*, December 16, 1997, p.16. He described the ruling as a "big hammer" handed to First Nations. See also National Chief for the Assembly of First Nations, Phil Fontaine's response, "Colonialist approach to aboriginal issues", December 31, 1997p.23.

¹⁰⁶ Source: *Delgamuukw v. British Columbia*, File No.: 23799, 1997; June 16, 17; 1997; December 11, under General Principles, Item No. 84.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid., Item 85.

¹⁰⁹ Ibid. Item 80.

¹¹⁰ Ibid. Item. 86.

¹¹¹ Ibid. Item 87; emphasis added.

¹¹² Ibid. Item 96.

¹¹³ See Items 93-96.

¹¹⁴ Ibid. Item 97.

¹¹⁵ Article (e) Conclusion; Item 107.

¹¹⁶ Ibid. Item 98, emphasis added.

¹¹⁷ "Natives win on land claim rights" and other articles in *The Globe and Mail*, December 12, p.10; also on CBC Radio News.

¹¹⁸ CBC Radio News and CBC National Television News, December 11.

¹¹⁹ Op.Cit. p.1.

¹²⁰ For a good example of this disdainful non-Native backlash see Terry Morley's December 20 article in the *Vancouver Sun*, "A distant court, an imprudent decision". This is not the first of such articles, but is a good example of the niggardly sentiment towards First Nations which characterizes aspects of B.C.'s populist political sentiments. Much are current historical extensions of the settler mentality.

¹²¹ Quoted in the *Globe and Mail*, December 12, 1997, p.1.

¹²² Co-management is a growing paradigm in resource management. Most of its applications have been in fisheries (and some in hunting wildlife). Some worthwhile introductory theoretical and case study material can be found in Evelyn W. Pinkerton, "Local Fisheries Co-Management: A Review of International Experiences and Their Implications for Salmon Management in British Columbia", *Canadian Journal of Fish and Aquatic Sciences*, Vol. 51, 1994 and "Locally Based Water Quality Planning: Contributions to Fish Habitat Protection", Vol. 48, 1991; also "Translating Legal Rights into Management Practice: Overcoming Barriers to the Exercise of Co-Management" in *Human Organization*, Vol. 51, No.4, 1992; see also "Co-Management Efforts as Social Movements" in *Alternatives*, Vol.19, No.3, 1993 for a broader viewpoint.

¹²³ *First Nations Perspectives*, Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, 1995, p.8. Referred to in the footnotes as SPSFPCS, 1995. It is important to note that these principles are not just for their First Nations Report, but for of the all the Panel's work and are reproduced in this report from their first report, *Report of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound*, Victoria, 1994a.

¹²⁴ Ibid./ibid.

¹²⁵ Ibid. p.6.

¹²⁶ Ibid.

¹²⁷ Ibid.

¹²⁸ Ibid. pp.6-7

¹²⁹ Ibid. p.6.

¹³⁰ Ibid.

¹³¹ Ibid. p.15. I first read this several months after the Panel Report 3 was first published. It struck me as rather extraordinary that the Scientific Panel had adopted this, not just for their work with First Nations, but to describe their official position on ecosystem management. I knew then that I wanted to use this as my case study and as a basis for my work in Port Hardy.

¹³² I discussed this at length with Dr. Lertzman. Several of the Panel's scientific members, including himself were already of this persuasion. He sees ecosystem-based management as "a big movement...a cultural and intellectual movement within ecology and ecological management these days independent of the scientific panel. *The Scientific Panel's take on that was even more holistic than ecosystem management usually is, partially because of the involvement of the First Nations...but its more (a comment on) the holism of the Panel.*" Dr. Lertzman suggests that transformations in the US Forest Service are good example of such developments in "the culture of management". For relevant discussion on ecosystem management see *The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management, "Executive Summary"*, Washington, D.C.: the Ecological Society of America, 1996, p.2. See also E. Grumbline, "What is Ecosystem Management?", *Conservation Biology*, Vol. 8, pp.27-38.

¹³³ This seems to be an important point and really deserves more attention. It is evident to me that the ecosystem management approach is far more ammenable to TEK than are other management paradgims precisely because of its tenet of including humans and their values as a subset of ecosystems. This came out of my discussions with Dr. Lertzman.

¹³⁴ Interview with Dr. Ken Lertzman 7/22/97. I found it notable to discover that, for several years, Dr. Lertzman has had the phrase *hishuk ish ts'awalk* as a screen-saver dancing across the monitor of his personal computer.

¹³⁵ I have not said a great deal about the multi-disciplinary aspect of the Panel, but I regard it as one of its key features and necessary to its outcome. It has also been told to me that, while there were some technical language challenges as a result of multi-disciplinary nature of the Panel, this aspect was the source of tremenous learning for the members involved.

¹³⁶ Ibid.

¹³⁷ Haiyupis 1992 in *First Nations Perspectives*, p.9.

¹³⁸ Stanly Sam, 1993b. in *ibid.* p.8.

¹³⁹ *Ibid.* p.8.

¹⁴⁰ Haiyupis, 1988c, in *ibid.* p.9.

¹⁴¹ It would seem to me to be of a similar legal nature to the one established by Lamer in his ruling as it relates to the Gitksan and Wet'suwet'en institutions of *adaawk* and *kungax* .

¹⁴² Kluckhohn (1949) in *ibid.* p.11.

¹⁴³ *Ibid.* p.12.

¹⁴⁴ Nakashima in *ibid.* p.12.

¹⁴⁵ SPSFCS, 1995, p.12.

¹⁴⁶ Clarkson et. al, (1992), International Institute for Sustainable Development, Winnipeg, in *Ibid.* p.12.

¹⁴⁷ SPSFCS, 1995, p.12.

¹⁴⁸ SPSFCS, 1995, p.12.

¹⁴⁹ McCaskill (1969) in *ibid.* p.12.

¹⁵⁰ Clutesi (1969) a Nuu-Chah-Nulth of the *Tse-shaht* nation, quoted in *ibid.* p.12.

¹⁵¹ Quoted in Knudtson and Suzuki, 1992.

¹⁵² Simon Lucas (Klah-keest-ke-uss), 1989, "Klah-keest-ke-uss on the meaning of old growth forests" in *Forest Planning Canada*, 6 (1):44, quoted in *ibid.* p.13.

¹⁵³ From Marie Wilson, 1989, "Ecology, A Native Indian perspective", in *Legal Perspectives*, October, 1989: 10-11; quoted in *ibid.* p.13.

¹⁵⁴ *Ibid.* p.16; emphasis added.

¹⁵⁵ *Ibid.* p.16. This particular point which relates to the ethnobotanical uses and medicinal properties of plants was confirmed to me in my interviews with Dr. Turner. She reported that research of UBC graduate students into the medicinal properties of plants showed that 90% of the ethnobotanicals tested under the scrutiny of scientific laboratory methods confirmed the properties elucidated by the elders.

¹⁵⁶ While my treatment of the literature is extensive, it is difficult with such an emerging field to make an entirely exhaustive review. Even still, it is well representative.

¹⁵⁷ *Ibid.* p.16. They cite Popper here.

¹⁵⁸ *Ibid.*

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.* pp.16-17.

¹⁶² *Ibid.* p.17

¹⁶³ Boothroyd in Sadler and Boothroyd ed., 1994, suggests that TEK can balance the over-specialization of the Western approach and help bring a more humane and holistic understanding.

¹⁶⁴ Op.Cit.. p.17.

¹⁶⁵ *Ibid.*

¹⁶⁶ *Ibid.*

¹⁶⁷ *Ibid.*

¹⁶⁸ Interview with Dr. Lertzman

¹⁶⁹ *Ibid.*

¹⁷⁰ *Ibid.* In this instance, we can get a sense, not only of a progression of ideas and interchange on the Panel as it became more comfortable with itself, but also how there was more of an epistemological spectrum around evidentiary criteria for management. There is more a sense of fluidity rather than some rigidly cast set of rules about data or knowledge criteria.

¹⁷¹ *Ibid.* Dr. Terry Lewis sat as soils specialist on the Panel; Catherine Berris sat as a specialist on scenic resources, recreation and tourism.

¹⁷² *Ibid.* In a later conversation, Dr. Lertzman reminded me that adopting this was conditional to Nuu-Chah-Nulth involvement. They were quite skeptical.

¹⁷³ Interview with Dr. Turner 7/24/97.

¹⁷⁴ Further phone conversations with Dr. Atleo, supplemental to the initial interview; 16/12/97.

¹⁷⁵ Ibid. He also told me that, for a more traditional person, like Roy Haiyupis, some of these compromises were quite painful. "Roy Haiyupis was very pained by the compromises on the Panel, the values, perspectives, way of life...He related it to his family who had already been compromised by all of the logging practices."

¹⁷⁶ Ibid.

¹⁷⁷ Panel Report 3, p.17.

¹⁷⁸ Such as Freeman *et al.* (1993) in *Recommendations for a National Ecological Monitoring Program*.

¹⁷⁹ Quoted from Freeman *et al.* (1993) in *ibid.*, pp.17-18.

¹⁸⁰ Sallenave (1993) quoted in *ibid.*, p.18.

¹⁸¹ Ibid.

¹⁸² Ibid. This is an important point. I would add to it by suggesting the reader look at the appendix.

¹⁸³ Ibid.

¹⁸⁴ The Long Beach Model Forest project has also been involved with Rediscovery programs amongst Nuu-Chah-Nulth people in Clayoquot Sound.

¹⁸⁵ From James A. Schwarber, *Defining co-management*, U.S. Fish and Wildlife Service, Anchorage, Alaska, Technical Note #1, cited in the Panel's third report, p.19.

¹⁸⁶ Ibid. cited in *ibid.* p.19.

¹⁸⁷ Berkes has been an important influence on my work and for many others. I have not been able to get access to Gail Oreshenko's work, *Sharing power with Native users: co-management regimes for native wildlife*, Canadian Arctic Resources Committee Policy Paper No.5, 1988, but it has come up in one of my other readings and seems to be a worthwhile source.

¹⁸⁸ This one is noteworthy to me because it bears some historical and political consequence having some common features with Clayoquot Sound. Key members from the Rediscovery program have been involved with the South Moresby initiative. Rediscovery had its genesis amongst the Haida some 20 years ago.

¹⁸⁹ There has also been a Rediscovery program active for some years in the Kitlope run by the Haisla.

¹⁹⁰ It is the last large unlogged, unmined watershed in the lower mainland. There has been a minimal harvesting of one part of an upper tributary in the north-eastern corner of the watershed.

¹⁹¹ My adopted 'Nlaka'pamux family lives next to the mouth of the Stein next to some old *she'ishkin* (pit house sites) and still use the valley for traditional activities, as do many people. The Stein is recognized by many First Nations and other people as a sacred place. This is where I had my initial years of work with the Rediscovery program in 1989.

¹⁹² R2. p.50.

¹⁹³ This was in a follow-up phone call with Dr. Lertzman.

¹⁹⁴ R3 p.50.

¹⁹⁵ It should be noted that importance of language is discussed and recognized; sacred areas and other historic area types and locations are given in Nuu-Chah-Nulth and English where possible.

¹⁹⁶ Richard Atleo, personal communique, cited *Ibid.* p.21. A point to draw attention to is the difference between the short-term profit motives in the industrial economy and long standing sustainable use-patterns of the Nuu-Chah-Nulth, to which an "ecoforestry" approach would obviously be more am-

menable, see Drengson and Taylor eds., *Ecoforestry, the Art and Science of Sustainable Forest Use*, Gabriola Island: New Society, 1997.

¹⁹⁷ Ibid. p.22

¹⁹⁸ Stanley Sam quoted in *ibid.* p.22.

¹⁹⁹ Ibid. p.23.

²⁰⁰ Ibid. p.23. This is very similar to how my adopted family and other 'Nlaka'pamux people I've talked to feel for the Stein, especially the elders. It is like a huge living church, except that it's also like a parent or an elder, a grocery store, pharmacy, university, playground and healing center. More than all of this, it is a basis of identity – of a being of whom people are a part (even some non-Natives).

²⁰¹ Ibid. p.26.

²⁰² Ibid. p.28. This is a very good example of how a reductionist knowledge paradigm can seek to extract that which is known and valued from the context in which it has meaning and can be properly valued. The result is to miss entirely the cultural capital basis which is the source of determining value!

²⁰³ For example, ancient fish weirs have been destroyed by logging up to the edge of creeks. Cultural heritage objects are also removed without permission. Even well meaning loggers have unintentionally destroyed sites. For example, it is a Nuu-Chah-Nulth tradition that if a canoe maker dies with a work in progress, the unfinished canoe is left as a testimonial of respect to the deceased artisan. There are examples of well intentioned forest workers removing these unfinished works from the forest and bringing them to the Nuu-Chah-Nulth people, thus denuding the site's significance. See *Ibid.* p.28.

²⁰⁴ Randy Bouchard and Dorothy Kennedy, *Clayoquot Sound Indian land use*, prepared for MacMillan Bloedel Limited, Fletcher Challenge Canada, and the B.C. Ministry of Forests, B.C. Indian Language Project, Victoria B.C., 1990; Dorothy Kennedy, Randy Bouchard (B.C. Indian Language Project), Morley Eldridge and Alexander Mackie (Millenia Research), *Vancouver Island Cultural Resources Inventory*, prepared for B.C. Ministry of Tourism and Ministry Responsible for Culture, Heritage Conservation Branch, Victoria, B.C., unpublished report, 1993. Some of the elders who were consultants sat also on the Scientific Clayoquot Panel.

²⁰⁵ This should give the reader a sense of the huge amount of work required to build credible data bases which are grounded in both knowledge paradigms.

²⁰⁶ Please see the Panel's third report for further reference, these are worth looking at.

²⁰⁷ Report 3, p.29.

²⁰⁸ Ibid. 34.

²⁰⁹ Ibid.

²¹⁰ Ibid. p.35.

²¹¹ Ibid. p.36.

²¹² I do not discuss the section between this and the one prior, but I mention it in my overview of the document. The fifth chapter of the report, which I do not present and analyse in my case study, is a detailed review the Panel provides of all existing documents relating to forest practices standards for recognition of First Nations in Clayoquot Sound; it is presented for at-a-glance viewing in Appendix III.

²¹³ Ibid. p.47.

²¹⁴ Ibid. p.47

²¹⁵ Ibid. pp.47-48.

²¹⁶ Ibid. p.48.

²¹⁷ Ibid. p.48.

²¹⁸ This is point which came up in several of the newspaper articles and commentary which have followed; please see appropriate references in section 5.5.3.1.2 which deals with the Supreme Court decision.

²¹⁹ This is from an interview conducted with Dr. Atleo in his office at Malaspina University-College on January 31, 1996. It was quoted in *A Spirit of Understanding*.

²²⁰ Ibid.

²²¹ Ibid.

²²² Ibid. Dr. Atleo mentions that the manner in which he is speaking here reflects more our current vocabulary. In the traditional cultural context such terms as management would not be appropriate, however management definitely took place and took place through strict social and religious protocol. In the traditional context, the appropriate term would, be "living in harmony with". This is a qualitatively different notion than the more heavy handed concept of "management". What Dr. Atleo is referring to here is, as he puts it, "a perspective of reality, the apprehension of it, then the action which informs you as to how to behave or react."

²²³ Op.Cit. pp.49-50.

²²⁴ Much, but not all of this, has come through my involvement with the Rediscovery program. The Stein Valley and my 'Nlaka'pamux family have particularly helped to facilitate this ongoing feature of my life. There are other nations with whom I have also had the privilege to experience this.

²²⁵ Ibid. pp.52-54. Any italicized emphases appearing below are my own.

²²⁶ W.G.B. Smith, *Metaphors, Models and Paradigms: Making Ecosystem Risk Management a Reality, the Role of Expert Judgment in Ecological Risk Assessment and Management*. Discussion Paper for the Institute for Resources and the Environment, UBC, 243/6/97.

²²⁷ Such activities are quite common for spiritual restoration of landscape and species; I have had first hand experience with some. These are similar to and common in traditional subsistence practices and protocol, often taking the form of songs, prayers and ceremonies which are part of hunting, fishing and gathering. Amongst other things, such practices help to affirm the ontological unity between species – including humans – ecosystems, and the Creator.

²²⁸ Tribal Parks are joint management initiatives in preserved areas. They go well with such programs as Rediscovery and Watchmen. Nuu-Chah-Nulth Tribal Parks would probably find support from the Long Beach Model Forest initiative. Meares Island already is a Tribal Heritage Park.

²²⁹ I myself have been interested in the prospect of overlaying TEKS components with GIS for computer models which can bridge ecological and cultural capital.

²³⁰ Access to information, as I discussed in my previous chapter, is very important in TEKS. There are many instances of sacred sites and areas which are purposely hidden, even from the community. There are, for example, sacred medicine caves in the Stein which are known only to a few elders and other traditional people. Watchmen programs help to protect the integrity of such places and knowledge.

²³¹ Environmental impact assessment is a professional field which has given more attention to TEK than others.

²³² Recent developments have underscored this again. On Feb. 2, in light of Delgamukw, the First Nations Summit has announced their request for a 60 day halt—an interim freeze—to development on Crown lands in BC as a "cooling off" period in order to come up with a process for moving forward. Joe Mathias of the First Nation Summit (hereditary chief of the Squamish Nation) suggests that this is an impetus for First Nations to begin restructuring a new and meaningful partnership. "Before Delgamukw, we had no say, now we have a legal interest in the land and the province must deal with First Nations." The Supreme Court of Canada has recognized that the "honour of the Crown" is at stake to fulfill their fiduciary

responsibility and protect the interests of First Nations. There is a legal precedent now to consult where "all future land-use decisions" will require "informed consent". All First Nations are reviewing their positions, as is the Province. This is an impetus for moving towards final treaty. "We ask for support...let's talk about joint management, lets talk about interim measures, so we all can be equal partners." Mark Forsyth Show CBC-1 Radio, Feb. 2, 1998, 1:00-2:00 p.m.

²³³ The term "variable retention stand" was coined by Dr. Lertzman in his work on the Panel to describe the silvicultural system they adopted. In their recent and unprecedented rejection of clear-cut logging practices (which caused a fervor in the news media) MacMillan Bloedel has adopted the variable retention stand system as their new model of silvicultural practice. Interestingly, it was this same silvicultural system which prompted significant significant grumbling from MacMillanBloedel with the release of the Reports from the Scientific Panel.

CHAPTER 6: CASE APPLICATION

A Spirit of Understanding:

Community-based Program and Curriculum Guidelines for First Nations Integrated Resource Management Programs

The following is an application of my professional work. It entails the implementation of knowledge gained through my personal and professional experience of living and working with First Nations contained in a document entitled *A Spirit of Understanding*. The document was contracted by the B.C. Ministry of Education, Skills and Training on behalf of North Island College up in Porty Hardy, where it was written whilst I was living on site at 'Tsakis (Fort Rupert) Reserve. The document contains community-based program and curriculum guidelines for a First Nation's Integrated Resource Management Program in Port Hardy and is intended to be used as a model and protocol for North Island College to develop other similar programs in other communities. It is currently being used in a number of areas by North Island College (and other institutions) including elders literacy, Early Childhood Education, resource management and for general program delivery.

6.1 Introduction

A Spirit of Understanding offers tools for bridging the cultural authorities and traditional knowledge of local First Nations communities with mainstream academic institutions. It serves as a kind of professional hand-book for working between these cultural paradigms particularly in education, which is one area of the Clayoquot Scientific Panel's recommendations. As *knowledge into action*, a large part of planning is learned through experience. Using *A Spirit of Understanding* in my dissertation gives the opportunity to reflect on what I have learned from doing this kind of intercultural work, allowing me to address some professional implications for planning between cultural paradigms less developed in the case study of the Scientific Panel. Interviews with two members of the Curriculum Committee who oversaw the document help me to assess my role in the community, and the ongoing usefulness of the project.

The question for the thesis is, what have I learned from my experience in doing this kind of intercultural planning that can help me:

- 1.) advance the theory and practice of planning between cultural paradigms at this level, and;
- 2.) address my primary research question of *intracultural* planning between cultural paradigms for the transition to sustainability?

The basic model of planning between cultural paradigms I use has five main features, including: metaepistemology; cultural literacy; the TEKS model; bi-cultural approach; discursive methods. It is an example, in particular, of:

- a bi-cultural, discursive research methodology of community involvement founded upon skills of cultural literacy;
- planning with social and cultural capital for enhancement at the institutional and community levels;
- a metaepistemological, mixed-model of cultural capital which honours both TEKS and Western academia;
- how this model can be applied to a number of academic disciplines and professional fields with a primary focus of education for sustainability in resource management;
- the delivery of practical tools for social/cultural learning as an example of planning between cultural paradigms.

The Port Hardy contract came as a good opportunity to improve my professional skills for intercultural work with First Nations. Most of my professional work in recent years had been with the Rediscovery program and I wanted to see how my training in that, community-based, intercultural context would serve my work in the more mainstream environment of the College. Were these intercultural skills transferable? Shortly after my arrival, I received the Scientific Panel's third report which became a major inspiration for my work in Port Hardy. It seemed a symbol of what could happen when the scientists and the elders—the best of both worlds—got together. I knew the Panel would make an excellent case study for my dissertation upon reading their introductory statement.

I also knew that the Port Hardy work was an obvious connection and would make good thesis material. Still, I felt the need to keep my personal agendas at an arms length from my professional role in the community purely as a matter of integrity. My work in Port Hardy was done before I completed the case study on the Scientific Panel. Thus, I do not want the reader to get the impression that I applied theory to a case study, developed a model from that analysis and then went to apply it in another community. Yet, the Panel's third report, which is the basis of my case study, had a significant impact on *A Spirit of Understanding*, as did my interview with Richard Atleo. Although still unformed, the basic elements of my analytical framework and overall perspective were present. Moreover, *A Spirit of Understanding* became a valuable tool to hone theory and case study analysis. Continuing my doctoral work after leaving Port Hardy, the connections between the Clayoquot Panel, *A Spirit of Understanding*, the Nuu-Chah-Nulth and their Kwak'wala speaking neighbours, and my own learning became more and more apparent. That process continues.

A Spirit of Understanding contains program and curriculum guidelines for the First Nations Integrated Resource Management Programs to be developed in conjunction with North Island College and local communities. These guidelines provide a template for community ownership, involvement and control of program and curriculum development. They serve as the foundation for a bridge of understanding between local First Nations communities and North Island College to link cultural authorities of traditional knowledge with the academic institution. This bridge of intercultural understanding is built upon foundations of social learning: institutionally, academically, personally, culturally.

The document offers background to the subject of resource management and education as First Nations issues. Along with this is a model for networking the program within local First Nations communities and a methodology from which to draw upon this network for program and curriculum development. The research for this project was conducted from an holistic approach based on community immersion and participation. It is intended for use by instructors, administrators, counsellors, program and curriculum developers, consultants, outreach workers and community members. It was designed to be modified to meet the needs and desires of local communities. *A Spirit of Understanding* is, thus, a "living document". The model is open ended and evolving, in a sense incomplete, in that it requires ongoing community input and refinement.

The process that created *A Spirit of Understanding*, and the document which was its outcome, amount substantively and procedurally to the same thing: a bi-cultural, mixed model that blends Western and traditional First Nations approaches to knowledge. It provides methods and tools for building cultural bridges between mainstream (academic) institutions and local First Nations communities at the grass roots level on educational issues in sustainability.

To help assess the document and how it was created, as well as my professional role of planner/researcher, I have provided material at the end of the case application from two interviews. These interviewees are members of the local First Nations community who sat on the Curriculum Committee that oversaw the project. They are both actively involved in issues of education in their community and have had the opportunity to use the document. One works in the College which sponsored the project as the First Nations Counsellor and holds a Master's Degree in Systems Counselling. The other was Director of the Gwa'sala-Nakwaxda'xw College, run from one of the local reserves (she is currently on leave to finish her Master's in Education). Each brings a different perspective based on their relationship to the process and professional background. One works directly within the institution of sponsorship, the other worked in a First Nations institution based more in the community. Both are committed to similar goals.¹ Both also played important roles in the project.²

6.2 Cultural and Social Background: The Area, Nations and Language

The northern portion of Vancouver Island is part of the traditional area of the Kwak'wala speaking peoples, referred to by some as the Kwakwaka'wakw.³ While many anthropologists and other non-Native aficionados have referred to these people as "Kwakiutl", or "Kwaguilth", there are numerous Kwak'wala speaking nations of whom the Kwaguilth are one.⁴ Kwak'wala is part of the *Wakashan* language group, which also includes Nuu-Chah-Nulth (West Coast of Vancouver Island), Heiltsuk (Bella Bella) and, more distantly, Haisla (Kitimat area). The Oweekeno, of Rivers Inlet, speak a northern Wakashan dialect close to Kwak'wala which has often received the confusing misnomer of "Northern Kwakiutl".⁵ There are two main Kwak'wala dialects. A northern one spoken by the Nakwaxda'xw and their neighbours to the north, the Gwa'sala, who border with the Oweekeno, and a southern version with many important local variations.

Traditional territories of the Kwak'wala speaking peoples extend from the Campbell River area, near Comox, to Cape Scott, south to Quatsino Sound and the headwaters of the Nimpkish on Vancouver Island; and, on the main land, from just south of Knight Inlet (Discovery Passage/Johnson Strait by Quadra Island near the mouth of Bute Inlet), including Kingcome Inlet and Blunden Harbour up to Smith Inlet near Rivers Inlet. There are a number of important islands in between, including Village Island, Malcom, Turnour and Gilford Islands, amongst others. Alert Bay is a well known island community. There are a number of Nations living there, including the 'Namgis (Nimpkish), Zawada'enuxw (some of whom still live in Kingcome Inlet) and several others. The Mamalilikulla, formerly of Village Island, live currently at Campbell River.

There are three reserves in the immediate vicinity of the town of Port Hardy. The Quatsino and Gusgimukw live in the village of Quatsino, near the old whaling port of Coal Harbour, having been moved from their traditional residences. The Gwa'sala and Nakwaxda'xw, for the most part forcibly moved in the 1950's, live now at Tsulquati Reserve, adjacent to the town of Port Hardy.⁶ The Kwakiutl live at Fort Rupert (T'sakis), about 15 km south east of Port Hardy. Fort Rupert has been occupied for some time, having been a well known focus for the Fur Trade. This is where Edward Curtis made his famous film, *In The Land of the Headhunters*, in the early part of this century and where Franz Boas pursued his anthropological efforts with George Hunt.

Historically, the Kwak'wala speaking peoples are a powerful group of nations whose art, myth and cosmology have become increasingly famous.⁷ The abundant seas and lush forests have provided great wealth since time immemorial. Many family histories trace their lineage to the Great Flood and the individual ancestor who survived. I know one hereditary chief whose lineage is of an unbroken oral history back to creation.⁸ The whole region was dotted with many communities, whose big houses hosted countless Potlatches, lasting for days on

end, with continual feasting, drumming and singing, dancing with magnificent masks, re-counting and making of oral history, grand oratory and spectacular gifting. The *klakwa*, or native copper “shield” is the traditional representation for this hereditary wealth and natural abundance.

Whole nations have since been re-located; many have people died from the introduction of smallpox. Much of the forests have been logged out and the fishing industry is undergoing massive changes and downsizing. The copper mine in Port Hardy has dried up and closed, leaving the deepest human-made hole on the planet.⁹ In spite of the residential schools and their impact, ongoing resource depletion and other social issues resulting from colonialism, First Nations in the Port Hardy area maintain a strong cultural continuity which has undergone a resurgence in recent years. After having been outlawed, the Potlatch is again practised,¹⁰ songs and dances are coming back¹¹ and some traditional resource activities continue to supplement peoples lives.¹² There are many challenges. Some of the most pressing issues at the community level, for local First Nations and for non-Native people, are associated with the efficacy of a resource based economy. In the face of a declining resource base and economic downsizing in commercial and sport fishing, logging and mining, the need for education in resource management has been identified as a top community priority.

6.2.1 Project Background

In November of 1995, I was contracted to write the curriculum guidelines for the First Nations Integrated Resource Management Program (IRM) at North Island College in Port Hardy, with funding through the Centre for Curriculum and Professional Development (Ministry of Education, Skills and Training). The intended outcome was to be a document which provides a protocol statement for networking curriculum and program development between North Island College and local First Nations communities. It was intended that the document could also be used for helping to develop similar programs for North Island College and First Nations in other communities where the College is based.

The First Nations Integrated Resource Management Program at Port Hardy was born from a one day workshop held at North Island College on March 26, 1992. Approximately forty two people attended this “Think-In”, including staff and students from Alert Bay and the Port Hardy area, elders, local band members, Education Coordinators, Band Counsellors, North Island College staff and administrators. Through a series of activities, three priority programming needs were identified. Of these three, two included (i) meaningful involvement of the culture and elders in North Island College, and (ii) the need for integrated resource management programs.

The first Integrated Resource Management (IRM) meeting was held at North Island College (NIC) in Port Hardy on December 7, 1992. Participants attended from a number of bands, Tribal Councils, First Nations organizations, provincial and federal ministries, NIC and

others. An "Integrated Resource Management Steering Committee" was established along with the broad parameters and goals of the program. Some of those included:

- The program must come from a First Nation's perspective towards resource management which incorporates Traditional Values.
- The program must be based upon a Holistic/Integrated approach to resource management
- Preservation and Maintenance are the first objectives of Integrated Resource Management
- The program must meet the needs of the First Nations in the North Island and be offered in First Nations' communities
- First Nations must have meaningful input into program delivery and curriculum content
- Integrated Resource Management can lead to economic development which is essential for self-determination
- Sustainability is the basis of criteria for the harvesting of resources
- Program content is to address natural stocks, enhancement, culture and enjoyment in habitats terrestrial and aquatic within contexts both socio-cultural and bio-physical.
- Students must exit the program trained with technical skills to work within the communities in the area(s) of resource management
- The program should be involved with North Island College
- The program must provide a bridge to further education
- The program may become a partnership among various educational institutions, organizations and/or federal and provincial ministries

The IRM Program Steering Committee was comprised of members and alternates from the T'sakis (Kwakiutl), Gwa'sala-'Nakwaxda'xw, Quatsino, and Nimpkish (Namgis First Nation) Bands. The Steering Committee met through a series of meetings and developed a model for the First Nations Integrated Resource Management Program which was proposed to the College in May, 1993. Shortly after this, the College initiated the search for program funding.

The development of curriculum was initiated in November of 1995 with funding from the Centre for Curriculum and Professional Development. Even though I am not of First Nation's ancestry, I was hired to do this for three main reasons: i.) because of my experiential and professional background in education with First Nations, particularly with the Rediscovery Program; ii.) my intention to apply a community-based approach to research which would involve broad based input of community members, in particular elders, traditional knowledge experts and other local specialists; and, iii.) my educational background in planning and sustainability. A contributing factor was also my enthusiasm to move to the community for the duration of the project in order to facilitate the cultural and community immersed character of

the research and its outcome. Another influence was the idea that the project would create a "living document" which could be modified as the program and community grew together.

The project covered a five month period with the bulk of this time spent on networking and community-based research. The contract was fulfilled, in March of 1996, with the completion of the document, *A Spirit of Understanding: Community Based Program and Curriculum Guidelines for the First Nations Integrated Resource Management Program*. The contract was originally intended for the writing of "curriculum guidelines"; however, due to its substantive merit, the decision was made that the document would also constitute "program guidelines".

A Spirit of Understanding is currently used by North Island College and another First Nations college in the area, the Gwa'sala-Nakwaxda'xw (GN) College. It is used by IRM teams in both institutions, as well as in other academic disciplines, and professional fields.¹³ It is also used in the Level II Guides Training Program for the Rediscovery International Foundation run from Calgary and the Ghost River Wilderness Area in Alberta, as well as community safety and needs assessments by the Rediscovery International Foundation. It is currently being reviewed by the Director of Native Student Services at the University of Alberta for the development a new Aboriginal Research Institute which includes a resource management sciences program. The document is cited in the recent development of an Aboriginal Land Stewardship Management Program which will be run from the Vancouver Native Education Centre. It is also cited in several Master's and Ph.D. level papers at the School of Community and Regional Planning at the University of British Columbia and in other institutions. The document is currently available through the Open Learning Agency.

6.3 Overview of The Document

The document is 105 pages long, including an Abstract and Author's Preface, with two primary sections in the main body, followed by an "Activity Guide", three Appendices and a Reference List. The two main sections include the "Introduction" and a section on, "Developing Community Based Curriculum and Programming". The introduction is comprised of seven sub-sections including research methods, background to the IRM program and model, theory and history. The second major section includes four sub-sections addressing cultural ownership, personal skills, community tools and instructional guidelines.

6.3.1 The Introduction

The Introduction contains, "A Note on Research Methods", some background on the program and the IRM model, a theory section with definitions of terms and concepts on sustainability, First Nations and resource management, including a discussion entitled, "Holistic Resource Management and First Nations: A New Vision?" There is also a substantial "Historical Background" section which presents an overview of Canadian colonialism and how it has historically shaped current land use and resource management issues for First Nations.

The section also covers historical materials which are of specific relevance to the Port Hardy region and the Pacific Northwest. Attention is given to insights which are relevant to the field of education with First Nations. This is capped by a conclusion.

The introduction is intended, not only to provide program background and a context for the document. The document is intended for use by a broad spectrum of professionals, educators, administrators, program planners, curriculum developers and other community members. Some of these specialists will be familiar with basic resource management theory and issues in their specific area. Others will need to be introduced to the topic. Even for those who do have technical knowledge in the field, they may not be as familiar with an ecosystems-based approach, or with current concepts of sustainability. For any person involved in education with First Nations, regardless of their professional field or academic discipline, a knowledge of history, both locally and nationally is crucial. The introduction to the document begins to deliver important theoretical information and historical insights which are crucial for curriculum and program planning, development and delivery.

6.3.2 Developing Community-based Curriculum and Programming

The second half of *A Spirit of Understanding* presents a guide for developing and working with community-based curriculum and programming in a bi-cultural context. While the focus is for the First Nations IRM program, it is recognized that the model and tools are applicable to other fields, disciplines and professions, or any one interested in such an approach to education and community development. The main features of the model are its emphasis on cultural literacy and its bi-cultural character, methodological tools for respecting the protocol of oral knowledge-TEK and other features of cultural capital—these become the basis for structuring a system of cultural ownership and accountability—and tools for networking and facilitating community involvement. Another key aspect of the model is the intention that it be shaped, changed and adapted to fit the needs of the community.

There is also an Activity Guide provided which is divided into two sections. It gives examples of activities from the perspective which recognizes that instructors and students, the institution and the community are all part of a larger process of learning. The first set of activities are geared toward the personal and professional development of instructors and other staff. This includes nine activities with follow up, in theme areas including: networking, personal and professional development, curriculum development, and ecology and culture. The other set of activities is geared more towards learning in the “class room” context¹⁴. These are intended to stimulate people’s thinking and creative process for curriculum development. This contains nine activities and follow up for program delivery in theme areas which include: history, community networking, culture, traditional technology, planning theory and practice, personal and academic development, sustainable management practices, community development, Traditional Ecological Knowledge, government policy, band government and research skills.

Of the three appendices, two are “curriculum maps” (please see Appendices 2 and 3 for my Dissertation).¹⁵ The curriculum integrates Western academic curricula in the natural and social sciences with cultural teachings, TEK and traditional technologies. One is a core curriculum comprised of four areas that include: life skills, culture and history; basic ecology; management; current issues. All are broken down further. The second curriculum map is theme area specializations including: forestry; wildlife; aquatic; and traditional subsistence skills. All would be taught by various content specialists, some of whom would be those trained in areas such as forest ecology, wildlife biology, social sciences, counselling, silviculture, etc. Other content specialists would include TEK specialists and people versed in oral history, hunting, fishing, trapping, traditional ethnobotany, food preparation, etc. The other appendix contains a checklist on “Community Educator’s Presentation”.

6.4 Methods of Research

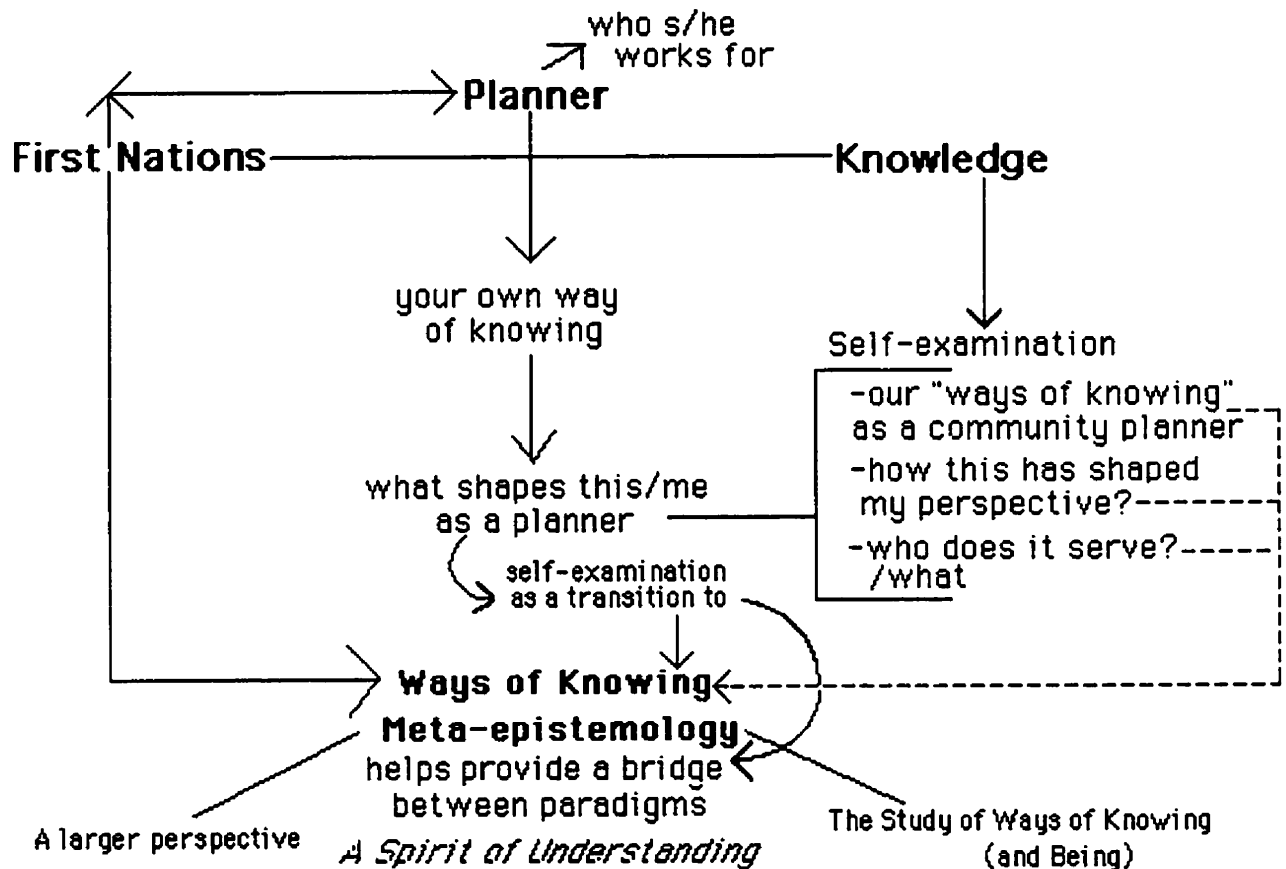
A Spirit of Understanding contains a methodological statement at the outset of the document. The sub-section on research methods (which is paraphrased below) helps provide a context to the document by lending an understanding into the process through which it was created. It thus gives guidance on how similar projects of this nature can be pursued again in this or some other community. The principles through which the document was created are seen as ones to be enacted by instructors, administrators and encouraged in students. The model is of a similar character to participatory action research.

The research for the project was conducted from a holistic approach based on community immersion and participation. This approach recognizes that necessary knowledge and information exists within the community and its members. It is up to the researcher to “show up”, participate and become a part of the community. It is the researcher’s responsibility to meet the community on their own terms, to align oneself with the community’s spirit and, as much as possible, become a channel for the community’s desires. The researcher/planner is, thus, both scribe and helper. This does not rule out the recognition of the pivotal role of the researcher/planner; on the contrary, it brings a deeper emphasis to it and a sensitivity to the cultural and professional parameters within which their own terms of reference are framed. The planner becomes a bridge builder in planning between cultural paradigms. I have tried to represent this idea below in Figure 12.

Another key feature of the approach is a recognition that the document which is produced is one of many outputs. The process through which the document is created is as important as the document itself. ‘The process is the product’. There are a variety of outputs which are integral, including: relationships, dialogue, feelings, learning, mistakes. All these are important aspects of the process and determine the nature of its outcome. A document is a physical thing which can be changed or corrected; people’s feelings are precious and less resil-

Figure 12

A Spirit of Understanding:
RESEARCH METHODS



ient. If the intended outcome of a process is to embody or convey values such as caring and respect, yet many people are hurt along the way, this will undermine both the product and the process. The point is that the process makes the product possible and both must be congruent with the *Spirit of Understanding*.

Also congruent with the *Spirit of Understanding* is a recognition of the cross-cultural context of the process. It is to have an appreciation for the historical nature of the relationship between First Nations people and Canada, and how this has shaped current realities. It also to call forth the need to practice and cultivate the qualities of *respect*, *caring*, and *acceptance*. These values are life skills which can be learned through experience. Although such skills may be dif-

difficult to teach in the class room, or may not generally be taught in courses on research methods, any research of this nature is impossible to achieve without them. The onus is on the researcher to become familiar with the social and cultural context in which one is placed, their impact and role within it. Performing in this context requires the researcher to go through a personal process of learning. The researcher may be the subject of greatest scrutiny.

The research included extensive community networking, group and one on one time with various community members. It was challenging, often difficult and very fulfilling. Establishing trust was the greatest initial hurdle, both because I was non-Native and a newcomer, also because I worked for the College. My skills of cultural literacy, sincere community involvement outside the scope of the project, and singing were most influential in establishing trust. There was a four member Curriculum Committee who oversaw the project, including the First Nations Coordinator of North Island College (NIC), their First Nations Counsellor, the Director of the Gwa'sala-Nakwaxda'xw College, and one of the GN-College staff members who has an education degree and extensive experience with elders, youth and other community members. All are local First Nations band members. I availed myself to become known to the three hereditary chiefs from the local reserves. They all contributed to my learning for the project, yet there was one in particular who took me under his wing. He was the chief who is said to have "stood behind me."

There were several people from the community who made inputs into the text of the document itself. This included members of the Curriculum Committee, a local Drug and Alcohol Counsellor, an English instructor at the College, and a couple of students. When people's words were quoted in the document, they were given opportunities to make changes to the text so as to best convey their meaning. In one case (for the educational guidelines) I had help from the First Nations' Counsellor at the College whilst brain storming for text in the document. A document draft was read by members of the Curriculum Committee, some of who gave extensive editorial input both stylistically and in content. It was a truly involved and amazing process. Although many people from the local communities did not make direct input, their spirits and thoughts are infused in the document.

There were also inputs from people outside of the community. These were largely interviews conducted with specialists in various fields. This included a well known hereditary chief who is active in the regional Potlatch system, my Doctoral Supervisor, an ethnobotanist, the Assistant Director of the UBC First Nations Long House, and two members from the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, including the Co-Chair. The Panel had a significant influence in this way, and also through their third report, *First Nations' Perspectives*, which is cited rather extensively in the introduction. There is also an activity in the Activity Guide which uses the Report as a basis for a curriculum module on TEK, sustainable management practices, community development planning and government policy.

Aside from direct member input and some of the theoretical materials from their document, there were two other key roles played by the Scientific Panel. One was the model which provided impetus and inspiration for the model developed in *A Spirit of Understanding*. This relates to the other role, which was likely of the greatest consequence—its symbolic power. It was not only a symbol for me of what is possible in the discourse between Western science and TEK. I walked around the communities, met elders and other people with their report under my arm. I held it up in the air and touted it as an example of the beginning of something: of scientists beginning to listen to the elders as the respected and qualified holders of traditional knowledge, of the possibility that people of the non-Native culture are starting to recognize First Nations people and their culture, and of what is possible when the best of both cultures come together.

6.5 Cultural Literacy: A Personal/Professional Foundation for Planning Between Cultural Paradigms

At the outset of the section for “Developing Community Based Curriculum and Programming”, is a discussion on the topic of *cultural literacy*. “Teaching and learning in the bi-cultural context” is the “educational posture” for which curriculum is to be developed. Cultural literacy is the set of skills which provides the foundation for this. These are professional skills based on learning styles keyed to personal development. This, thus, establishes the setting for my role as a researcher and planner between cultural paradigms in the First Nations-Canadian context.

It would be impossible to produce a planning document which puts the knowledge and skills of cultural literacy into action if the researcher/planner had not themselves the opportunity to develop and work with such skills. Even though many people may work and live with those from other cultures, perhaps for all of their life, they may never achieve cultural literacy and become bi-cultural people. The first point about cultural literacy is a recognition that “working and living in a bi-cultural context is a privilege. It holds the possibility for tremendously enriching and fulfilling experience.”¹⁶ The process, thus starts with a recognition of the nature of the bi-cultural context. While this may seem obvious, it takes a certain degree of openness, sensitivity to and an awareness of the historical relationship between First Nations and Canada.

Cultural literacy, therefore, requires that one be sensitive to the perceptions and needs of others, and to one’s own place as part of the larger bi-cultural world. This allows for opening to the process of learning from another culture’s members, and from within another cultural world. “Being bi-cultural is the ability to function comfortably and effectively within two cultures. It also means that members of those cultures experience you as an effective, comfortable communicator in their world.”¹⁷ Cultural literacy is basically about understanding and communication, and is something which must be acquired and cultivated. It is also something

which is gained almost entirely through experience and requires intuitive as well as intellectual learning. Cultural knowledge and understanding—cultural literacy—is gained through direct human experience.

Becoming literate is a certain kind of education and specialized training. A person who is literate has acquired the tools to understand the rules and protocols of a certain medium of communication. One must be taught by those who understand these rules and protocols and are capable of teaching them. Cultural literacy is also a form of education and requires qualified teachers. It means that someone has gained a degree of understanding and familiarity with the basic norms and protocol of a certain culture. A culturally literate person is someone who has acquired the tools to move and communicate effectively and comfortably within another cultural context and between cultural worlds:

Cultural literacy is about truly grasping the meaning of *The Spirit of Understanding* and learning to cultivate this spirit in one's day-to-day life as a means for building bridges between people and cultures. The Spirit of Understanding starts with oneself and grows when shared. It is founded upon *respect, caring and acceptance*. When we respect something or someone, we recognize their worth as an individual and the value they bring to the world. To care means that we have a sincere desire to be connected or involved with someone or something. It means that we have something personally and/or collectively at stake. Acceptance means that we are willing to see another on the basis of that person's own self-definitions, merits, needs and boundaries, rather than on what we want, need, perceive them to be.¹⁸

Being bi-cultural, therefore, is about knowing oneself and one's place in another cultural context. It is also about being accepted for this by members of that cultural world. It is not about leaving one's culture behind and picking up another. It is about understanding oneself as part of the larger whole. Cultural literacy provides the tools which make this possible. It is an ongoing process of learning, enrichment and growth.

The development of cultural literacy, therefore, is fundamentally a matter of *personal development*. Yet it is a set of skills which also has significant professional applications. As mentioned, for my role as a planner and researcher in Port Hardy, I would not have been able to do the work, had I not already have developed a base of skills in this area. Yet, these skills were to be tested, refined further and built upon. I was called to put these skills and knowledge into practice in capacities, and at a level I had not previously experienced. It was the greatest opportunity I have ever had to put such knowledge into action. Cultural literacy can be seen as a set of both cultural and social capital skills. These skills are both a professional and personal foundation of planning between cultural paradigms.

6.6 Planning With and For Social Capital: Investing Through Involvement

The goal here, is to build social infrastructure which links community-based institutions with the academic institution, in order to enhance the social capital base of both. There are a series of objectives which are necessary in order to achieve this goal. These include: becoming known to the community and allowing oneself to be tested by its members; becoming familiar with the community on a variety of levels; "showing up," getting to know people, becoming involved and participating in the community; building trust and creating quality relationships; developing a sense of belonging and attachment; fostering dialogue; networking; and eventually building institutional bridges which are an enduring outcome of the prior efforts. In this case, one of these outcomes would be a document that could serve as a guide for program planning and implementation.

My personal slogan became "to do the work, you have to become part of the community." I lived at T'sakis (Fort Rupert) with the Kwakiutl people. Here eagles nest in trees and alight atop the Bighouse. They perch on killer whale headstones over looking a sheltered bay. I'm told that *T'sakis* means, "her legs spread wide open" because of the shape of the geography and the fact that, up until the advent of commercial fishing, so much abundance came from the bay that it was as if one could never eat all the food which issued forth. My first home looked out onto the bay; when the tide was in, a rock could literally be thrown from the porch into the sea. The current owner did the art for the front cover of *A Spirit of Understanding*, and is a direct descendant of the famous artist Mungo Martin. My neighbour was a 90 year old hereditary chief with whom I used to visit for a game of pool, and jam sessions on his accordion and my guitar. I shall always think of T'sakis as a second home.

I identified key cultural sponsors and protocol advisors. These are people who would guide me, enhance the things I was doing right, flag or help prevent errors, and help me learn from mistakes. Bi-cultural planning and programming can never work without proper cultural sponsors. These people are vital:

First Nations community-cultural sponsors are exceptional people. They are bi-culturally literate. They are people who have the respect and cultural training of their own background and have found effective ways to link with mainstream institutions. There must be a team of these people who are linked with the development of curriculum and also with program development. As well as providing guidance and insights they also provide a critical checking function which flags problems before they arise. They are also linked to those highly respected individuals who are the wisdom and cultural mainstays of their community.¹⁹

These people provide practical insights for grass roots networking and institutional capacity building. They are also cultural gate-keepers, guardians and guides. If they don't have an answer, they can instruct the researcher/planner on who to approach, what kinds of questions to ask, and in the proper methods for asking, researching and finding answers.

It is important to remember that such people are a key part of community's resource base. When one involves such people, one involves the whole network. This is something to be sensitive to and respectful of:

One thing to know about community cultural sponsors is that they are very busy and in demand in their own community. This is where such people's personal priorities tend to lie and must be respected. Their time is most precious and must be treated as such, especially their personal and family time. When these people are drained or over taxed it creates stress for the whole community. Such people often find work in fields of community and social service, such as education, counselling and support functions; however, they may also be entrepreneurs, artists, traditional technologists or retired.

There should be a visible "pay-back"; the outcome of people's efforts must therefore be of direct benefit to the community. This also takes the form of a re-investment in the social capital base of the community by the personal and professional actions of the researcher/planner. For example, when I am invited to attend a feast, I make every effort to go. When they clean up the hall, I help put away chairs. It might be late, I'm tired and have a big meeting in the morning, but an elder (most likely a relative of a community-cultural sponsor) needs a ride to a more remote village. The family may be too shy or polite to ask, so I offer. Very often, some of my greatest teachings have come through such intimate moments. An appropriate image is of "one who brings wood to the fire" rather than just warming themselves.

Under these people's guidance, and with my own initiative, I participated in many community events and activities. I helped out in youth programs, attended elder's birthdays, various cultural celebrations, weddings, funerals and Potlatches. I participated in educational and public meetings, support groups, outdoor activities, feasts and parties. I did chores, cooked, set up tables and sang a lot of songs. The emphasis here is on the word *participate*. People know when you are sincere, when you belong and if you really care:

If we are going to be a part of a community, then we must participate in that community. Participating is about being actively involved. It means that we are involved in both the times of grieving as well as in celebration. If there is a death in the community, people may find that Band offices are locked, students are at home and even businesses are closed. When another community member leaves their busy schedule to show support for the family, this endears people to the community. These things are noticed, spoken of and appreciated. Similarly, when there is a happy event such as a celebration or feast and we show up, people feel supported. This is also noticed, appreciated and respected.²⁰

Communities have their own tests. Part of this is also knowing when to participate and when not. The process of involvement unfolds organically; it has its own cycles, rhythm, and intuitive reason. The researcher/planner, therefore, needs to learn to become sensitive to these and to the pulse of community life.

The experiential community training process of involvement, of testing, trust and relationship building, contributing, and finding one's place, is ongoing. Eventually, if one does find one's place, the researcher/planner will be able to focus their efforts into networking. Networking was almost all that I did for the first four months, it became my modus operandi:

This is what will make the program possible: it is its life blood...The work is very fulfilling and full of challenges. It is time consuming, labour intensive and requires a special set of skills. These are skills of understanding and listening—skills of the heart—in cultural literacy. In this arena learning takes place, trust is built, knowledge is shared and great things can be achieved. There is always a need for networking; it must be ongoing. Community networking is the foundation of program development, curriculum design and implementation.²¹

The things I did, the guidance I received, the mistakes that I made and lessons that I learned, all became part of the document. The initial research phase of experiential community training became the qualitative basis for a set of social capital skills or technologies. Therefore, after taking the community as a teacher, this knowledge outcome could then be put into action in service to the community. The following are some examples of how such experiences were built into the guidelines, tools and recommendations of the document.

Brain Storming on Community Belonging:

Get to know your community: People
History
Land, Water, Habitat, Species
Language(s)
Customs
Traditional Government
Contemporary Government
Regular Special Events

**Find community sponsors and stay in touch
support community sponsors with their projects**

**If you are invited attend
Invite people to your home, function, gathering, tea
Get to know people, cultivate relationships
Step over unhealthy cultural barriers, respectfully
"Show Up" at public events**

Sponsor a youth(s)

**Cultivate meaningful relationships with elders
help them with their chores and personal projects**

Participate in community activities and events; help out

**Join community groups and organizations
especially cultural ones if invited**

NOTE: It may not be appropriate to participate in all organizations and events; your participation may be of a very specific nature. Obtain guidance from community cultural sponsors.

**Keep a personal Language Work Book for your area
add new words every week
practice pronunciation**

**Keep a Journal
for personal health
for professional tracking and creativity
for tracking personal growth and creativity
for cataloguing important lessons and information
for keeping track of interesting or exceptional growth experiences
for FUN**

NETWORKING PROTOCOL

The most important word which sums up networking protocol is **RESPECT**. The Elders and Cultural Committee members, and the Protocol Officer will provide the details of protocol in this matter. There are, however, a few basic practices on which to focus and things to keep in mind.

- Practice the Protocol of Respect: Permission, Recognition, Accountability
- Everyone has something worthwhile to offer/everyone is important
- Treat People as Equals
- Consult with Nogat ("The Wise" i.e. the Elders)
- LISTEN!
- Have the "right" people in the right places
- Stay connected and practice good follow up
- Keep people informed
- This is not "just a job"
- Follow appropriate lines of authority
- See that issues are dealt with promptly and respectfully
- Networking is ongoing
- Create Support Circles
- Support the supporters; train the trainers

- **Stay in touch with Committees**
- **Spend quality time**
- **Show Up and be available**
- **Bring people together**
- **Be caring, interested and supportive**
- **Respect and create healthy boundaries**
- **When you involve individuals you involve their family**
- **We are helpers not “fixers”**
- **We are learners**
- **Allow for “ups and downs”**
- **Trust the process**
- **Have fun/create fun**

In order to empower such experiences, learning and outcomes, it is necessary to create the appropriate infrastructure and networks. This is done by building on the social capital base with infrastructural grafts to other, in this case, academic based institutions. These facilitate goals of community networking, ownership and control; they also bring people into direct experience and, if done properly, can enhance the social capital base of both communities. The first thing I did in this regard was to create a support persons community directory. All those on the directory were consulted, all gave their permission. Please refer to the “Directory” activity in the activity guide for examples.²²

There are seven networking structures recommended in the model of the document in order to achieve the above goals. A basic map to networking structures was offered for these, including: hereditary authority; elected authority; grass roots; students, faculty and staff; committees; other band, government and educational organizations; ecosystems; cultural systems; support persons directory. The five basic structures include: committees in general; program web; the steering committee; the elders and cultural committee; protocol officer; curriculum committee; community networker. (please see the document for further details). Much of this is congruent with the discussion from chapter 4, sub-section 4.9: Methodological Considerations and Implications of TEKS. One critical objective is the structuring of a system of cultural ownership and accountability into the institution. This requires drawing from the methodological features of TEKS cultural community capital so that it be can institutionally put into action.

6.7 Planning With and For Cultural Capital: A Methodology of Learning and Respect

Consistent with the methodological features of traditional knowledge is the recognition of its place in shaping research, planning and implementation. One of the greatest barriers to research was the general concern about issues of cultural appropriation. This issue was raised time and again by elders and other community members. My initial response to this was to en-

engage in dialogue with various key members of the community and encourage them to express everything on the topic about which they were concerned. It precipitated a process of self-examination on my own behalf, and a voicing of these concerns in my first report to the institution for whom I was employed. This was to have a significant impact on the document and is summed up in the following statement:

A curriculum of this nature can only work if a system of cultural accountability and ownership is structured into the program. ²³

The outcome was to be a structuring of the curriculum guidelines for the sharing of knowledge around traditional knowledge protocols—what is referred to in earlier chapters as the methodological features of TEKS. This impacted the networking structures and program guidelines with the impetus for creating a system of cultural ownership and accountability.

This places the issue of cultural ownership and appropriate methodological tools and institutional mechanisms at the centre of the document. It is recognized that the ownership of traditional and cultural knowledge must rest with those who are its rightful custodians. They must be the ones who exercise control of the flow of information and be able to oversee the long-term impact of its sharing, both within and outside of the community. The basic rule of protocol adopted for this is what I came to refer to as the protocol of respect: *permission, recognition, accountability*.

In the traditional First Nations context, there is a strict protocol and procedure for the passing of cultural information. One could regard this as a protocol of respect. The protocol of respect is founded upon: permission, recognition and accountability. How permission is asked and recognition is given may vary from region to region. Yet one will almost always find a procedure in place. In a community where knowledge is transmitted orally, people are held accountable by their actions, their words and the manner in which they conduct themselves according to protocol. Someone coming from outside the cultural context will have to demonstrate their sincerity and deservedness to know who to ask, how to ask and what to ask. Some things are not to be asked. It is up to the rightful cultural owner to determine what can and can't be shared, and the manner in which it should be.²⁴

The methodological feature of traditional knowledge systems is introduced as a key aspect of both program and curriculum development, and for implementation. It is not expected that reader will *learn* all there is to know, or that they will become a culturally literate person simply by reading a document.

The document begins to lay down educational guidelines and an institutional protocol based on traditional knowledge methods. It helps to provide an interface between experiential learning and the knowledge base of community cultural capital with the more literary knowledge culture of academia. It is an entry level introduction to the topic and gives basic tools for beginning the process.

When asking permission, it is important to know exactly what one is looking for in advance. It is important to know who is the right person(s) to ask. It is also important to find out the best way to ask. This requires research. By research, we do not mean studying in a library, although it could include that. By research, we mean becoming familiar with the people, the culture and the land. This research requires being connected and staying connected to knowledgeable people who can advise, teach and provide guidance for how this process can best take place. These guides must not only be culturally literate, they must be culturally empowered to teach, direct and speak on the matters of concern.²⁵

The most important point is to underscore the importance of the **people** who are the custodians of a community's cultural capital base. One could look at this from the methodological point of view discussed earlier, as part of the TEKS epistemological protocol for validating and passing oral knowledge. It is methodologically incorrect and out of order to by-pass the community structures and individuals from where knowledge comes. Part of this is respecting regional and local variation.²⁶

The fundamental issue, however, is really about respect. This is the bottom line. **"If we are to value cultural knowledge we must recognize and value the people and the culture from where it comes."**²⁷ The document goes into this further, and includes a discussion on recognition, both culturally and financially. Suggestions and guidelines are given for working with elders and traditional people. Examples include: remembering that elders are people, like anybody else, with their own strengths, weaknesses, likes and dislikes; "researching", i.e. getting input, and guidance from community cultural sponsors about the background of elders prior to meeting them; remembering to bring a gift, even if small; making sure that there is a proper snack as many elders are diabetic; seeing that elders have transportation; practicing good listening skills; remembering that a family or community matter may take an elder or cultural person away at the last minute. These few examples may seem obvious, but they are very important. Underneath these examples are traditional values of caring and respect. These values are embodied within the traditional protocols (the methods of social and cultural capital) which must be learned and cultivated (cultural literacy).

The other main component of the protocol of respect is accountability. The statement is made that the **"practice of cultural accountability must become a standard way of life if we are to bring substantive meaning to living and working in a bi-cultural context."**²⁸ This is followed by the insight that even those who have grown up with such protocol will continually re-visit and practice these principles. "Going back to the protocol is an ongoing source of learning."²⁹ I recognized a need for ensuring *long term* accountability. The protocol for ensuring this accountability is found in: follow up, openness and visibility.

Follow up provides the opportunity for those who haven't given knowledge to track the course of its impact and oversee the implementation of its use. This builds integrity into the process; it also provides an avenue to build on the knowledge and its sharing through further

relationship. Part of creating a context for long term cultural accountability involves *openness* and *visibility*. When cultural knowledge is shared, the process for sharing, and the outcome of that process, must be open to the scrutiny of the larger community. It is also recognized that, at certain times, the utmost of care must be taken to follow protocols of confidentiality. Matters of a more personal nature do not necessarily require public scrutiny. Moreover, there are some things which are shared but are not intended to be passed on. This is when the skills of cultural literacy must be honed and explicit guidance must be sought from those who are most knowledgeable. The basic idea, however, is that when cultural knowledge is shared, those responsible for sharing knowledge can oversee its long term impact.

6.8 Personal Skills and Instructional Guidelines: Supporting the Human Basis of Cultural Capital

As much as it is important to create a support system which interfaces with the community, it also important for this bi-cultural planning project to offer tools which support those on the academic institutional side of the equation. *A Spirit of Understanding* takes an holistic approach to education which recognizes that instructors, students, the institution and the community are all part of a larger learning process. There are many levels to this, personally, academically, culturally, institutionally. The "Personal Skills" section, which follows the material on cultural ownership and accountability, introduces above the idea from the point of view of an holistic approach to health. This is founded in the connection between personal health, community health and ecosystem health.³⁰

The teaching of "you have to become a member of the community to do the work" is introduced with the concept of "showing-up", an idea that comes from the field of counseling.³¹ It relates to one's personal development, and learning to be present and accountable for all the various aspects of oneself, as part of being a healthy individual. Personal health is based upon an ontological model comprised of four components of our self or being: physical, emotional, mental and spiritual. ³² For the sake of brevity, I have produced verbatim aspects of this below:

An holistic understanding of being healthy recognizes that everything we do is a part of the larger system. We are a part of the local ecology and this is part of something larger—the Earth. *Our physical well being is based on the well being of the Earth as a whole*, and that part which we occupy. How can we be truly healthy individuals if the very things upon which we depend for life are sick: the waters, the forests, the soil beneath our feet, and the air we breath?

If we are a part of this larger system—the Circle—then the whole is compromised when any aspect is hurt or undermined. Thus, we must also recognize that we are a part of many communities. Not only are we a part of the community of creatures who use water, forests and air, we are also a part of the human social community. Community is about being connected...togetherness

...communing...the more aware we are of our connectedness, the more we are able to commune...While being healthy has a physical basis, it also has a...feeling side. We are feeling, emotional beings. Being healthy means that we are emotionally healthy. **A healthy community is based upon healthy individuals.**

It is clear that meaning is as much a human need as is food, clothes and shelter. Emotional health is related...to *mental health*....the two are so intertwined that they are difficult to separate. It can be similarly challenging to be at our full mental capacities when we are experiencing physical stress or ailment. All these things are interconnected. To be mentally healthy requires a certain degree of stimulation and challenge, as well as a context that can support our full mental development. One context is our community. Community is where we get support and validation; it is a source of great meaning.

There is another source of meaning. This is our sense of *relationship with 'the Whole'*. This sense of relationship with the whole is also something which requires cultivation. It is something which requires support and guidance. This aspect of being healthy relates to our *spiritual self*; that is, the sense of self which includes all of us as part of, or connected with, the larger whole. This is what we mean when we speak about Self-Knowledge. Cultural wisdom, passed on from time immemorial through ancestral and cultural teachings is where we obtain guidance for our spiritual self. This is something which is common to all peoples of the world.³³

Thus, when we speak about "showing up" we are speaking on many levels. We are speaking about our "selves", the aspects of our larger Self. Through the cultivation of Self-knowledge, and being healthy, we begin to understand more about who we are, what our place is in the world, and how we can use these gifts to contribute to the betterment of the whole. As we ground this process of cultivation in our experience with and reflections from others, we begin to truly "show up". This is a process of constant inward looking and outward reaching which forms the basis for our evolution as beings and as a community.

These personal skills, thus become the basis for community and institutional skills, which are focused onto the educational model of the document.³⁴

The section on instructional guidelines applies these insights in three areas of discussion. These include, "Why Ecological Education Must be Holistic", "Thoughts on Holistic Education" and "Teaching in the Bi-Cultural Context: Cultural Literacy as an Educational Posture". It recognizes that an holistic approach to education in resource management requires learning to think and act holistically. This requires integrating various styles of teaching and learning, including experiential and more academically recognized techniques. One can not teach "about" being holistic, rather, it requires *being* holistic and learning holistically, which requires teaching tools and methods that support the learning process of whole beings:

People have many needs which may not be primarily academic in nature yet still affect, not only one's academic performance, but one's well being on the whole. When we teach holistically, our teaching process is part of the learning process

of **whole people**. A more holistic approach to learning is much like that found in many traditional First Nations cultures, where education is community based, involving experiential, intellectual, artistic and spiritual training. Such a manner of educating is able to bridge the gap between thinking and feeling so that learning becomes more experiential, more whole. Rather than occurring as a purely intellectual exercise, learning takes place in the whole body; it becomes **emotional, intellectual, tactile and spiritual**.³⁵

In this way, learning becomes personally meaningful. When the teacher “shows up” this supports students to “show up”. Teachers and students are thus part of a larger learning process, as is the institution and the community. The instructor is a *facilitator* in this, a helper and guide.

Effective instructors are perpetual students. These are people so impassioned with the process of learning that they draw people in. They inspire and empower the learning process in others. Education in the bicultural context—learning between cultural paradigms—takes special people. It takes people who are willing to work on themselves and develop their skills of cultural literacy. This involves recognizing that different people teach different things; there are content specialists. A program planner does not teach what a systems ecologist does. A systems ecologist does not teach what an elder does. Yet they all share something in common as part of a larger “community of learning”. The educator between cultures, in all of these fields, learns to draw on the larger cultural, social, and methodological resources of both communities.

Teaching from the place of cultural literacy is greatly enriching for students and educators. There are many resources which become available, because here we become an active part of something much larger than our individual self. “Teaching from this perspective is like receiving a huge inheritance. However, the wealth we receive is not cold hard cash, it comes in the form of warm hearts and supportive hands.”³⁶ The following are some examples of how this approach to teaching might look:

- There are things about which the student knows more.
- Students are teachers.
- Teachers are learners.
- Treat students respectfully, as equals. Do not speak down to students or treat them as children.
- Be accepting of differences.
- Flag your own bias.
- When you involve a student you involve the whole family; this may include years of cultural training with very specific skills, it may not.
- Consult with *Nogad*. (“the Wise” i.e. the Elders)
- Cultivate the *Spirit of Understanding*: respect, caring and acceptance.
- Practice the Protocol of Respect: permission, recognition, accountability.
- Recognize that certain things are taught by certain people.
- Have appropriate educators for appropriate subjects. Use “content specialists”.

- Involve the community in curriculum delivery **REGULARLY**.
- “Show up”.
- Share yourself.
- Support the learning process of the whole person.
- Empower the learning process.
- Practice good listening skills.
- **NEVER** humiliate a student, publicly or privately.
- Cherish trust, do not break with confidentiality. (Practice disclosure protocol; see your counsellor if you are not familiar with this.)
- **NEVER** use sexual innuendo.
- Nurture enthusiasm.
- Create healthy personal relationships with students.
- Invite student participation without demanding it.
- Create an atmosphere of inclusion.
- Use non-threatening body language.
- Respect personal space and boundaries.
- Work the group.
- Pay attention to subtle feedback.
- Learn to understand silence.
- Be aware of your impact and solicit input from students on it.
- Create the space for students’ expression: their thoughts, feelings, desires, insights and suggestions. Be open to and act upon these inputs.
- Avoid singling students out.
- Challenge students in a supportive manner.
- Change the physical space, structure, location, your teaching style.
- Be aware of and open to the seasons and their influences.
- Allow for spontaneity.
- Go with “teachable moments”.
- Have good lesson plans and be able to let go of them.
- Be able to give away and give up control.
- Delegate responsibility.
- Create opportunities for self directed learning.
- Remember that you are a helper.
- Allow for ups and downs.
- Stay with the process.
- Be aware that even the most sensitive person will make mistakes; learn from them and encourage others to do so.
- Remember that there is help.

- Create Support Circles; allow yourself to be supported.
- Have fun/create fun.

Enough has been presented in order to get a sense of the document, of how it was researched, what it contains and what are its main features. I would like now to turn to the two interviews in order to assess and help debrief the document, as well as my role in the community as a planner.

6.9 Debriefing and Assessing

In order to assess the document and gain some further perspective, I have interviewed two community members who sat on the Curriculum Committee that was struck to oversee the project. Both made crucial inputs to the document and both have used it in two separate educational institutions in the community since my contract ended. One is Trish Rosbourough, who is the First Nations Counsellor from North Island College. The other is Fran Hunt-Jinnouchi, the Director of the Gwa'sala-Nakwaxda'xw College at T'sulquatie Reserve. Both are active individuals in their communities. Both have served or serve currently as Trustees on the local School Board. I have also maintained ongoing friendships with both of these women. The reader will notice that, whereas other interviewees are referred to by a formal name or title, I refer here to "Trish" and "Fran". This is not done out of disrespect but at the request of the interviewee.

There are three main observations made by Trish Rosbourough about *A Spirit of Understanding*. These are: an emphasis on its methods; the positive impact of the document on the community and its broad utility; and, the need for more efforts, that the document is not enough on its own. She also had a concern which is dealt with below. Her observations are of a largely positive nature. Those made by Fran Hunt-Jinnouchi corroborate the positive observations made by her colleague with regard to my role in the community, the process of research and writing, and the nature of the document itself. Yet she underscores largely the critical cultural, social and institutional constraints on the project and its implementation.

The first observation Trish made was to emphasize that the "the process is the product". In other words, the procedural techniques and substantive knowledge through which the document was created are the most important feature of what it contains:

It was built in a consultative process. I'm thinking about all the ground work that went into it and all the time it took to build up to the actual writing...it's important because you started without any assumptions and you didn't get the definition of the assignment from the institution, you needed to go out and get the vision by being in the community by doing the same stuff that's talked about within in the document.³⁷

Her point is well taken, yet I would say that I did carry assumptions into the project. One is that the necessary knowledge is in the community. I had an agenda in this regard, both from the

point of view of the research, as well as making this idea tenable for curriculum development and credible for implementation. I also assumed that both the knowledge of the community in its cultural teachings, social institutions and day to day experience are a necessary and credible feature of the planning process, along with the scientific and institutional criteria of program planning and curriculum development.

Trish sees the document as a work largely on protocol, not so much in the sense of a clearly delineated set of procedures, although it does contain tools. It is more about sharing tools which give people and institutions the opportunity to gain access to the people and community who hold the protocol. One of the most important aspects of this is the recognition of the protocol itself, which is daunted by ingrained perceptual and institutional barriers:

I see it as a paper on protocol, and yet it's not as though *A Spirit of Understanding* delivers a prescribed protocol, it's more that *it gives somebody the tools to go out and find the protocol...*first of all, even to recognize that there may be protocol different in other cultures as we cross them...most of us know on an intellectual level that there is a different set of protocol but...often miss it because it can be in the simplest things. I think in the non-Native world often its missed because people don't recognize that they are going against protocol, that they are stepping on toes, that they are setting up barriers by doing that. That in turn limits...the kind of work that can be done, the kind of communication that can happen in the educational area, in the business area, in many ways.³⁸

The perceived institutional and perceptual barriers between mainstream academic and institutional thinking, and local First Nations traditional ways of thinking and doing, represent a constraint on their relationship and the institutional efforts of partnership.

Trish recalled, that at the outset of the project, these were quite intimidating. For her, the document became an opportunity to broach some of these perceptual and structural constraints which impinge on "First Nations students getting their needs met and the broader community being served." Yet she emphasized that these mistakes were not intentional, but more the result of a lack of education and proper training. They were outside of the realms of people's perceptions and the structures of experience within the institution:

The mistakes which were being made at that time, I don't think they were intentional, and again that's really the need to spell out some of the things that were spelled out in the *Spirit of Understanding*, I really don't believe that the College was aware that they were not speaking the same language as the clientele...the cultural barrier is so thick that they couldn't see through it, without realizing it...³⁹

There is a need for developing skills of cultural literacy. Thus, one of the more significant contributions of *A Spirit of Understanding* is to help people to develop the tools to begin to think and learn outside of their own cultural context, outside of their own worldview or paradigm:

The *Spirit of Understanding* can help people go into any culture, not just the First Nations culture, although that's definitely the focus...One can't expect to know all there is to know about another culture, all the differences, but can develop a

sensitivity for differences, an awareness and a willingness to look, and to see. That's how I see *A Spirit of Understanding* working, it gives people the tools to be aware, to look, to not make assumptions...⁴⁰

I then brought up the topic of methodology. I suggested that what she was saying is that the main contribution of the document is about methods. She replied:

Yes, and it seems funny to call it a method because it's really about a *way of living*, which is what you had to do to write the document, which is live within the community...method is kind of linear and academic, its more process, being in it; I also get that its method. The elders consult for hours, and viewed from the outside, people may not understand it, it may not seem as important.⁴¹

I suggested that both scientists and elders get very caught up with this protocol or that method. Not unlike with a Ph.D. dissertation, it's very hard for people from the outside to appreciate the rigours of methods, and why it takes so long. It is really about structuring a certain type of learning which respects the community that it comes from. If not, then the learning or knowledge outcome is not considered legitimate, it is spurious, which is what epistemology is all about.

Curriculum is about structuring a certain type of learning. In this case of *Spirit of Understanding*, however, here there are two models—one which is the scientific model and is based institutionally in an academic community, the other is the First Nations traditional model, which is based in cultural institutions at the grass roots level. She replied that the document helps to build bridges between the two. She saw it as:

A protocol of cross-cultural interaction...but it's also a useful document for people that are within the First Nations culture as well; it certainly has application for people like myself working within my own community...when I work in an institution, I somewhat "belong" to that institution, no matter who I am or where I come from, and I'm seen as part of that institution even though I'm still Kwaguilth...and with that institution, in belonging to it, there is the assumption that I've bought into certain values...

...It gives me license or reminder to check those procedures that I've bought into by joining an institution outside of my community...I look at the...learning centre ...created within our community by First Nations people for First Nations people, and still they're taking an educational model that doesn't necessary belong to our people so it's has application there...in a model that is culturally different.⁴²

It is notable that the tools and recommendations in the document have application, not just for non-Native people. They are also useful for First Nations people in their community, and in their own organizations, both in the academic setting and also at the band office. This led into a further discussion of institutional barriers for the kind of learning required by the guidelines and methods of the document.

She recognized that some of the things recommended in the document are often “paid lip service” to in many institutions. Even when, recognized, however, there is rarely given any substantive application. Part of this has to do with the nature of institutions in general. This discussion led into what she regarded as one of the most important aspects of the *Spirit of Understanding* model:

One of the most important components is the section on personal skills, of one “doing their own work” ...it’s certainly a part that institutions support, they give them lip service, but there are certain things in the environment that don’t support that...there’s no structure in place. People may intellectually be supportive, but a lot of those community building things are simply not allowed, even from the point of view of schedules, not that people couldn’t create that...⁴³

There are institutional constraints, therefore, not just on inter-cultural learning, but on the kind of personal development that is its basis. Yet it is this manner of personal, self-reflective process at the individual level which, in the case application of *Spirit of Understanding*, would seem to be the basis for shifting at “the macro” scale:

Without self-awareness, without having the personal skills, without understanding ourselves, it’s difficult to understand differences, if not impossible. It’s impossible to know how our behaviours affect other people if we don’t even know what our behaviours are...so many of us live in the world without even really knowing what our values are, so how can I notice when my values are bumping up against those of another culture when I don’t take the time to question, or even know what they are?

So, in the case of *A Spirit of Understanding*, it looks like larger scale, institutional barriers are rooted in individual perceptual barriers; personal perceptual barriers are perpetuated by institutional and structural ones. There is a process of institutional learning which needs to take place as part of larger social structural change.

She recognized that *A Spirit of Understanding* has enhanced the quality of life in the institution. It has for the community, partially in the role that I played through the networking and involvement. In the current context, it has enhanced more the quality of life “between the communities” by serving “as a bridging tool”.⁴⁴ She sees it as a start. “It has caused people to step back and take a look...I’ve seen a number of people that it has caused them to step back and start asking questions. That’s the place to start.”⁴⁵ She pointed out that the document is being used by early childhood educators, in adult education, the elders literacy program, by the English teacher, by administrators, and by the IRM teams, in both NIC and the G.N. College, which includes natural sciences. The document is seen to have a broad application in a number of academic disciplines and professional areas. The point that this is a start, is one that needs to be emphasized; there is considerable work to do.

When I asked her what is the most transferable aspect of *A Spirit of Understanding*, she replied, “it frames a method for searching out protocol.” She also added that it is a “protocol of

engagement". "The big piece that stands out for me is questioning our behaviour, why we do what we do and how we do what we do, the personal skills stuff, but also the history. Without that kind of knowledge, it leaves room for a lot of misunderstanding. Those pieces are certainly important."⁴⁶ In the G.N. IRM program, she said that the document, "is definitely a piece that we keep coming back to...it's given stability to the program. It brings us back to why we do what we do, and how we do what we do."⁴⁷ In noting this, she also recognized that the document is not enough on its own. It requires sponsorship institutionally. It also requires more generalized institutional support, such as in scheduling for the activities and follow-up. She recognized the need for experiential learning and training with proper contexts to support such efforts. She also recognized the need for more and ongoing networking.

Trish also added a note of caution or concern. She felt that the tools in the document are "so powerful", that she feared the possibility of exploitation, possibly through commercial applications, or in cultural and environmental (i.e. resource) areas. "Not that there couldn't be respectful and supportive financial applications, but there is a trust issue due to past experiences of cultural appropriation." She capped this concern with the insight that, these would not be an issue, "if they got the *Spirit of Understanding* ." In other words, if people really got the spirit of the document, did the personal and community work, then this concern would be not be an issue. What about those who do not?

In many ways, the interview with Fran Hunt-Jinnouchi takes up where the one with Trish leaves off. She agreed with Trish's overall assessment of how I chose to involve myself with the community and engaged in dialogue with community members as part of the research process. She also agreed that this became the most substantive aspect of the document. She reminded me of all the difficulties I experienced, especially at the outset of the research process, which were experienced as mistrust and anger, and fractures between the academic institution and the First Nations community. She even questioned whether it is worth trying to pursue such efforts within mainstream academic institutions, or whether such efforts would be more usefully served in a more disengaged approach. At the same time, she saw that some good things did come from the process, including the document itself: it is applicable in a variety of contexts and was used at the College where she was director. Another positive point she made was to draw attention to my role in the community, both within and outside of my work context. The other thing that she stressed was the lessons learned, which will lead into the next phase of the work.

Fran emphasized to me that the reason I got as far as I did was because I had respected the protocol, the culture, established trust and created real relationships. For her, there were enough "external factors" impinging on the project that would have otherwise caused her to "have closed the door". She suggested that, while it's important to recognize what worked, "so much more can be learned from what **didn't** work, and that's what I think is exciting."⁴⁸ The

crux of the matter is *how* the work is approached, which really comes down to respect and cultural literacy:

What did work was almost common sense, common courtesy for those that know protocol and know our culture and have a song⁴⁹... that may be the important point, because it (the song) certainly gave you a link. You're one of the links in the chain for sure...which was a natural. Imagine someone who didn't ...they could find themselves ostracized really quickly because a lot of the work is built on trust, and it's built on an understanding that's really *unspoken*, and unless a person gets in there, like you did, and spends that time in the community **beyond the work**, and firstly they establish trust, with trust they establish a relationship, with a relationship they can become part of the extended community into the extended family, and then into the core of the culture...until that process takes place, I really don't think there is any authentic questioning because you don't get any authentic answers...that's the nucleus of it all.⁵⁰

This establishes, not just a sense of what works, but also the usual situation, where this does not take place. It is noteworthy that she makes the point about "authentic questioning" and "authentic answers" because this was really a core problem for the document's research phase. It is indicative of the larger context of the work, and the usual state of affairs.

There are three main points Fran made about the barriers and constraints on this work, and the project in which I was involved, in particular. One relates to the situation prior to the project, the second to its implementation phase, and the third to the role and constraints on First Nations people who work in institutions:

F. Hunt-Jinnouchi:

The first issue was the fact that, this (the document) was all compiled, correctly, with lots of merit...with community support not at the level that it should have been, because it was already not on the right track,

D. Lertzman:

there was a lot of networking that I had to do for the research...

F. Hunt-Jinnouchi:

that should have been done before...

The second point, with regard to implementation, is really a result of the same basic situation. As a result, she felt that the document was not being used to its full institutional potential. "In a nutshell...I didn't see the document or the intent of the document being intimately linked in the actual processes of communication (and) networking in the implementation of the program." I asked whether it had not been "fully linked in the implementation, or was it de-linked, after the document was written?" She replied "I think it got de-linked even before the document started" and cited the general lack of communication between the institution and similar efforts in the community. The document was not fully used "once it was in place to assist in the plan-

ning and implementation of the program.”⁵¹ This underscores the points made by Trish about institutional barriers, and the need for sponsorship as part of an implementation program.

The third point she raised relates to the constraints on First Nations people who become involved in working in mainstream institutions. This is challenging for individuals who are hired to advocate for their community from within an institution which is not really structured for it and is perceptually blind to what is required for change. “Some of our own people get caught up in the mainstream and lose sight of why they may have come there in the first place, and who put them there.”⁵² This is difficult for people and can lead to contradictions worth questioning:

...it becomes, economically driven, we pursue programs in institutions to justify our position there. Or are we working through the mandate of our communities because ultimately that’s why First Nations positions are there, but then if you’re doing that, are you institution or are you community?...when you become too much community, you kind of get ostracized by your colleagues, or...you have someone...who tries to stay neutral, who also can become ineffective in a sense, “I’m just pushing paper”...and yet, there’s other things that happen that are really good. My question, of that larger scheme and where our place is, is there greater benefit or reward or relevance in assisting a few within the system or using your talents within your community for the same cause and that becomes the question.⁵³

This helps to problematize further the issue of institutional constraints. Underneath all this are issues of power, power structures, and the question of real power sharing and partnership.

...were forming a supposed partnership, we maintain that we have the same objectives and goals, if so, let’s get back to what the basis of this all is and that is a partnership; were going to work together, now what does that mean? shared resources, shared control, the benefits of both worlds. You have the technology, access to higher level institutions, we have tradition, we have the community, we can easily access the community resources and people we need, people can be right in our own villages, the comfort level is greater, environment is greater...we can draw a pretty good balance if we actually look from that perspective in partnership, but where it comes to logger heads is around the financial dollar, because the institutions, not all of them, are not willing to let go of the purse strings and really share the power...It’s all relationship based, and no one can have sense of community until trust is built, there has to be give and take...⁵⁴

As long as power issues are not substantively addressed, “...it’s a smoke screen...built on sexism, paternalistic attitudes...the old forked tongue.” This places the discussion in the larger historical context of Canadian society, which if properly addressed, does hold potential:

There’s so much history locally, that’s part of the larger North American history of contact and conflict...we do have the same goal, and that is the betterment of all of us, whether it be Native or non-Native or whatever. Education, the love of it, seeing education as a tool for quality of life, being able to question, being able

to make decisions, we're all pretty well agreed on that and that's the beauty of it all, there are a few people that can look at things like that, it isn't too late, if we look at what doesn't work, along with what does.⁵⁵

She compares the situation to that of the recent *Royal Commission on Aboriginal Peoples*, which is the most comprehensive effort of its kind.

When we're talking about the benefits of the document, we can compare it to the Royal Commission; it was the first time that government came into the communities, they had a panel of people from all walks of life, but what's actually been implemented?...the Native people are getting researched and documented out.⁵⁶

Her point here, with regard to *A Spirit of Understanding*, is that some of the most important lessons are the difficult ones. Taking them into account, along with the things that are effective, then leads into the next phase of work:

You've built one stage here, one step, and now that you go into the next level of your own learning and what you can offer, you're really doing the same thing, you're still gathering the resources, the people, the theory, the thought, and now you're coming up with the next phase of bringing it all together. It would be amiss if some of the steps were gone. And some of those steps are what can actually limit the next step of being even more productive and more powerful.⁵⁷

Having considered what are three of the key problem areas, now we can move on to de-brief more of those things which were most effective in creating positive outcomes. Some of these are points that have been raised, but are worth considering in light of the above discussion.

Again, aspects of what worked so well are in many ways the most simplest of things and seem quite obvious. Yet, they are not so obvious to someone who is not culturally trained or familiar with protocol. For example, Fran cites one of the most significant things that I did was simply to say "thank you" to the community and the members who supported me, in the form of a feast. It seems obvious, but is something which is rarely done by non-Native researchers.

From my experience in working in our communities, you probably had one of the strongest impacts in the way you thanked the community. Thanking those that assisted you was powerful, especially in spite of all the difficulties. I admired that, I thought that it was really needed.⁵⁸

This also underscores the importance of ceremony in community. Fran pointed this out as well. "Even if we do something wrong, or if we're hurt, we have a cleansing in order to celebrate the fact that we have forgiven...how can you celebrate without washing that stuff away, through the cleansing and celebration is the renewal." The idea of a ceremony to say thank you came to me from attending feasts. I realized that I needed to say thank you to the community and its members, for my work could never have been done had they not taken me into their homes and into their hearts. I also recognized how involved I had become with the process of the document and how connected people had become to me. It was very important to create a sense of

completion for that stage of my involvement with the community and release the document to its own life. A feast seemed to me the appropriate way to do this.

Creating the “thank you feast” was not easy. I had to consult deeply with the chief who was standing behind me. He questioned my reason and motives. Satisfied with the answer, he then gave me many tasks from food preparation, to appointing a speaker, consulting with other hereditary chiefs, the protocol of the feasts, finding singers and speakers, as well the money to pay them and all of the witnesses, which is part of the oral protocol. I had to enlist the support of the College, which I received, both institutionally and financially, to the credit of both the First Nations Coordinator as well as the Director of the College. Again, I would not have been able to accomplish all of this without great support from many community members. This includes all those who attended and thus gave their “blessing” to the event and to my efforts.

Another point that Fran raised was the importance of music and song. I have indirectly referred to this earlier, but it needs to be underscored. My musical gifts and reputation as a singer and maker of songs, has served me more than anything else. It is the source of great learning, both culturally about protocol, and on a personal level. Music has been the venue for much of my theoretical learning and practical application of cultural literacy. Many people are aware that music is an important to First Nations, yet few realize the extent to which songs play a role in defining and transmitting the culture, in facilitating community and a healthy, rich quality of life. I asked Fran why my role as a singer/song-maker could have such a powerful impact on my work and place in the community.

I would say, for one, the music is who we are as much as our language. Our songs make us distinct from bands, our songs tell us our history, much like our language. But also with the infiltration of religion and Christianity, there was a new song, and many of our people took that on as well, and took on the other instruments...so we bridge those two based on music. Our Church life in Sunday school, as well as going to the Big House, is based on music. The core of it all is music, there's a message in it, there's a message whether it's behind the pulpit or a speaker in the Big House. Often times, 90% of the time, the message is delivered in music and song. It can carry you to places...it connects with the chemistry in your body; it's “pre-history”...and (part of how) our ancestors came to know the patterns of reality.⁵⁹

We could say that a song is one of the most powerful features of cultural capital. The more one spends it, the more its value increases. Yet songs are also a vital feature of social capital, they facilitate community and bring people together. This underscores the “Spirit” of understanding. Listening to Fran speak about the role and power of songs reminded of my neighbour who is a ninety year old elder.

D. Lertzman:

I remember Adagila, going over to his house and jamming together. I'd bring my guitar and he'd play saxophone. or accordion, and sing Amazing Grace in Kwak'wala...that was for me the Spirit of Understanding...its not called the *Spirit*

of Understanding for nothing. Its not about "the data", those abstract pieces of knowledge, its about what puts it all together...even to have the word "Spirit" in there, its something that you can connect with and be taught by, rather than go out, try to study and capture it..

F. Hunt-Jinnouchi:

I don't really think that it can be captured or contained.

These are things well known to the First Nations communities, but little known or experienced by non-Native people. It is evident that music, ceremony and song are powerful and credible ways for building bridges between cultures. It is also worth considering to what extent ceremony and song can help play a role in building the social and cultural capital base of the cultural mainstream, in particular, in terms of the transition to sustainability.⁶⁰

Fran mentioned that the document had been especially useful in serving as an introduction to the culture and community for their non-Native staff members. I asked her if it was also useful for the First Nations staff.

Oh yeah, it re-emphasizes the need for networking, the need for drawing on the elders, there's a lot of times that we tend to get caught up in our own structure. Whether we're First Nations or not, we become a mini-institution, not unlike any other, just on a smaller scale, so we need to be careful that were not just duplicating the mode of operation that we see in other places, with the planning...I see myself doing things that I detest and I need to step back and check my own motives, I think that's probably going to be the key to success, to have self reflection.

This closing point on self-reflection is much the same conclusion at which Trish also arrived in terms of finding keys to change. On the point of self-reflection, I need to make note of my own "learning curve".

The challenges that I received in the *Spirit of Understanding* project, while difficult, were a significant source of learning. My prior skills in cultural literacy, experience in working with First Nations people, protocol, and my own willingness to learn from the community gave me the tools to access the proper support system. As a planner, perhaps my greatest challenges were within the institution itself, by whom I was employed. I have had far less professional experience with mainstream institutions than I have with involvement in First Nations communities. It seemed to me that there was a whole set of protocol and institutional culture that I was less prepared to engage. Perhaps I could have respected this or included it more, I was so focused on networking, building trust and credible relationships in the First Nations community, that I might have neglected or alienated people in the institution.

My focus was on building bridges with the First Nations community. Yet any stable bridge must have a firm foundation at both ends. I could have possibly done more to support the foundation on the institutional/non-Native side. I think I was feeling the kind of pressures and split loyalties that Fran described for Native people who work in the mainstream institu-

tions. Some of the staff may have been threatened by my position and approach to it. The way I was eventually adopted by the community may have somehow exacerbated this. I can certainly cite my own lack of familiarity with mainstream institutional culture as a contributing factor, as well as my lack of experience in such capacities. Perhaps if I was more sensitive to the needs of this side, I could have better served the whole bridge. I did have a strong sense of commitment to both sides. I also had a heavy workload and a huge task in a new context. Several community members told me outright that I was crazy for taking it on, some avoided me outright for a long time, others had a good chuckle. On the whole, it was a great opportunity for me to make an initiatory contribution, mature both professionally and as an individual, and get to put into action my ideas about planning between cultural paradigms.

6.10 Summary

A Spirit of Understanding is an application of a certain approach to planning that I call planning between cultural paradigms. This approach is informed by a larger epistemological perspective which recognizes that there are different kinds of knowledge which can inform an holistic approach to framing a planning problem, to researching and implementation. The “problem”, in this case, is the researching and writing of a planning document that establishes curriculum and program guidelines for education in a First Nations Integrated Resource Management program. Framed as a task of planning between cultural paradigms, this takes a bi-cultural model that treats both the cultural paradigms of Western academia and the TEKS of First Nations communities as “parallel and complementary” knowledge systems; both are necessary components of understanding the task, of framing the work and of its outcome.

This bi-cultural approach recognizes that there are substantive and procedural features of both knowledge cultures that must inform the planning, research and outcome of the project. This requires a special set of learned skills I call “cultural literacy”. Cultural literacy is founded on personal learning that can become the basis for professional skills which have institutional applications. As in the case of *A Spirit of Understanding*, such skills were the professional basis of the planning process. The planning process took the form of intensive community immersion and dialogue. This required me, as the researcher/planner, to become part of the community in an active and participatory sense, both in the direct context of my professional work, and in terms of my place as a person in the community at large. My approach and methods for doing this work became major substantive features of the document. The knowledge outcomes of this experiential, discursive community process were, thus, structured into the document as a basic model and tools for curriculum and program planning, and development.

The institutional thrust of the model is to plan for building bridges between the local academic institution and the cultural institutions of local First Nations communities for the networking of the program and for curriculum development. This required drawing on the community's social capital base, cultural teachings and methodological features of the local tra-

ditional knowledge authorities in order to structure a system of cultural ownership and accountability into the program. The model and its tools are thus relevant to a variety of professional areas and academic disciplines: they are *transferable*, as has been pointed out in the interviews.

The *Spirit of Understanding* is also an example of what planning with social and cultural capital can look like. Further relevance to sustainability can be found in the context of the work in resource management education, and First Nations, all of which are areas of increasing importance in British Columbia. As planner/researcher, I took the proactive attitude that “the knowledge is in the community”. I had to draw on the social and cultural capital base using traditional knowledge methods of the local community in order to accomplish the planning task. It was an example of planning *with* and *for* social capital in that it built on the local community to enhance the relationships between the social institutions of the academic community and at the grass roots level. It is also an example of planning with and for cultural capital in that these institutional connections were based upon guidance from cultural teachings to enhance the flow of cultural capital in the form of TEK and other procedural knowledge. The methods used for both research and application were informed by the planner's professional and academic background, and by methods of traditional knowledge. Creating a professional handbook out of the experience makes such skills available to people which help them gain access and contribute to the local social capital base.

Critical analysis of the document and its process of creation reveal ingrained issues of power and cultural perception which posed limitations on the context of the document and its implementation. The situation is a somewhat of a “catch-22” in that these are the same problems which served to structure the impetus for my efforts. These can be understood as part of the ongoing structural and perceptual realities of the colonial origins of the Canadian state and civil society. Efforts such as *A Spirit of Understanding* lose both meaning and utility if not addressed as part of this larger context. Ongoing issues of power and perception seem to have impinged in some fashion on the document's implementation, while playing a role in structuring the context in which the document was created. Ongoing constraints on institutional change and power sharing which are necessary features of the kind of learning the document seeks to inspire render it less effective.

At the same time, *A Spirit of Understanding* is a step in the right direction; it is a start. Fran describes it as “a best case scenario—an ideal...like a guiding spirit.” In this regard, it offers a model and tools for beginning to build bridges between First Nations communities and the academic mainstream. Such an approach may not be appropriate for all those interested in First Nations education issues on the topic of sustainable resource planning. Nevertheless, there are also features of the document which seem to have utility within local institutions in the First Nations context. The document is useful for Native and non-Native professionals in a variety of institutionally based fields. It is up to communities and individuals to decide for themselves

whether or not it is in their best interest to focus their efforts on bridging with the mainstream or on de-linking the community as much as possible.

Several contributions are made in *A Spirit of Understanding*. One is its methodological contribution of helping to provide tools which can be used as a basis for bridging between cultures. These help as a foundation for structuring cultural ownership and accountability if provided proper institutional support. The document offers 'protocol for accessing protocol' in communities and their members. It emphasizes the need for networking, which is ongoing, and gives practical theory and practice for doing so in the First Nations context. The document underscores simple, but powerful concepts such as respect, caring and acceptance, and delivers guidelines for achieving these process goals institutionally. Again, this builds on social capital resources by drawing on cultural teachings. That could be seen as a form of "investing in social and cultural capital". The document also fosters an important "self-reflective" quality which is important for social change and the discourse between cultures. This is embodied in a set of concepts and skills called cultural literacy. Cultural literacy is a kind of personal and cultural learning and practice of necessary intercultural skills which serves as a professional foundation for planning between cultural paradigms.

As a planning document, *A Spirit of Understanding* may get greater use in the community at large than in the institution who sponsored it, yet this remains to be seen. It is being used at the College, more extensively by some individuals than others and as a basis for new programs.⁶¹ North Island College and the First Nations Coordinator, in particular, are to be credited for initiating the project. We also know that it is being used in a number of other capacities there in Port Hardy, and more and more in other places. It has relevance and utility for a number of different academic disciplines and professional fields.

It would be worthwhile to consider research which assesses the utility of *A Spirit of Understanding* in planning in other areas in education and other professional efforts in fields of public health, community economic and development planning, resource management, tourism, arts and entertainment. I believe would be found useful in both the public and private sectors.

It was an honour for me to have had the opportunity that I did in Port Hardy. I learned a great deal and have formed lasting friendships as a result.⁶² *A Spirit of Understanding* has provided an excellent opportunity for me to learn about applying the concept of planning between cultural paradigms. As a result, there are worthwhile lessons to explore in terms of the concept's application to planning for the transition to ecological sustainability and making changes within the cultural mainstream. It is to this that I shall now, finally turn.

NOTES FOR CHAPTER 6

¹ It should be mentioned that the First Nations Counsellor at the College also works in the community outside of the College. The other has had professional dealings with the College. Both received the academic upgrading in adult basic education at the North Island College.

² Please refer to the methods section for further details.

³ See Robert Galois, *Kwakwaka'wakw Settlements, 1775-1920*, Vancouver: UBC Press, 1994. This is considered, by many, to be one of the more extensive and credible literary sources on the subject. There is certainly a staggering amount of information and research in the volume. However, aspects of it are in dispute, such as certain family and other oral histories. The term *Kwakwaka'wakw* is itself controversial. I have heard several traditional knowledge and language experts dispute, either the credibility of the term, or associate it with a derogatory meaning. The subject is complex. Many non-Native anthropologists regard this as the definitive text, but are unaware of its controversial features, yet it remains an important book. Most of the information I share in this section is knowledge which was passed to me directly through conversations with elders and other traditional knowledge specialists; yet, I do use Galois as a reference, especially for maps, spellings, and other historical materials. I am most familiar with the people who live closest to Port Hardy.

⁴ Galois offers a list of the 22 names, according to the '*nami'ma*' which is the rank-order of the Potlatch system. The oral origins of this are to Wilson Duff through Mungo Martin. Some of these nations have been amalgamated as a result of smallpox, economic hardship, government policy and political need.

⁵ Galois notes that some actually referred to the Heiltsuk and even the Haisla as being "Northern Kwakiutl". In the old system, the "Kwakiutl" were divided into "Southern Kwakiutl" (i.e. Kwakwaka'wakw) and "Northern Kwakiutl" (i.e. Heiltsuk, Haisla and Oweekeno). In truth, these are all quite separate nations with their own languages and history. They do share the Potlatch, as well as some similar figures and mythical cycles. It is ignorant, however, to lump all these nations together, as it is offensive to give them all the convenient and incorrect title of Kwakiutl. It is similarly incorrect to refer to all Kwak'waka speaking peoples as Kwakiutl.

⁶ A friend of mine who is a hereditary chief, for example, told me how the Indian agents waited until his people had left the village for a Potlatch and then burned the village down. The people were told that it was too dangerous for them to cross Queen Charlotte Strait and that it was for their own good.

⁷ See Audrey Hawthorne, *Kwakiutl Art*, Vancouver: Douglas and MacIntyre, 1979. Many of the poles and masks at the Museum of Anthropology, here at UBC are from these nations.

⁸ This is the Kwaxsistala lineage, currently held by Chief Adam Dick, of the Dzawada'enuxw Nation (Tsawatainuk; Kingcome Inlet). See *A Spirit of Understanding*, footnote 44 and also "Holistic Resource Management and First Nations: A New Vision?".

⁹ The Utah Copper Mine operated as a mainstay of the community for over twenty years. In the whole time, it only employed one local First Nations person. It starts at about sea-level, so this is how it has come to be the deepest.

¹⁰ There are actually two places where it is reputed to have continued in spite of the persecution and incarceration of people by the Canadian government. One is at T'sakis-Fort Rupert, the other is at Gwaiyi-Kingcome Inlet.

¹¹ For example, there are several homes, a gymnasium and a youth centre where I was invited to either witness or participate. The issue of involving youth in cultural activities is ongoing. There is also the Owit'na Gula Rediscovery program. It was through Rediscovery that I first became involved with people from Port Hardy.

¹² This is a growing local "herring roe-on kelp" industry. This traditional, and sustainable aquacultural practice of harvesting herring spawn on kelp (or hemlock boughs) does not harm the fish. It is practised more and more with commercial fishing boats. Many people still gather clams, and there is a continued

food fishery. Although less so, there is cedar bark gathering, hunting and herbs gathering. Much of the habitat for these practices has been impacted upon by logging and commercial fishing.

¹³ Confirmed in an interview with Trish Rosborough, First Nations Counsellor for North Island College, 7/31/97.

¹⁴ The class room may or may not be indoors.

¹⁵ Appendices 2 and 3, pp. 97 and 99 in *A Spirit of Understanding*.

¹⁶ Ibid. p.45.

¹⁷ Ibid. p.46.

¹⁸ Ibid. p.47.

¹⁹ *A Spirit of Understanding* , p.57.

²⁰ Ibid. p.57.

²¹ Ibid. p.61.

²² Ibid. p.79.

²³ Ibid. p.49. This was written originally in that initial report.

²⁴ Ibid. p.48.

²⁵ Ibid. p.49.

²⁶ What may be “right” or “true” in one area, may be different in another. There may also be family variation. Basic issues of permission, recognition and accountability, however, will generally be replicated in some manner. To provide proper cultural recognition, it is important to consult with the cultural knowledge holders of one's area as to proper protocol. Do not assume that what is a proper in one area is appropriate in another. Please see the section on “Cultural Ownership” for further details.

²⁷ Ibid. p.50.

²⁸ Ibid. p.51.

²⁹ Ibid. p.51.

³⁰ These can be seen to correspond to the holistic model of sustainability developed earlier which includes biophysical capital (ecosystems), social capital (social-systems), and cultural capital (the meaning system). The “methods” aspect are somewhat addressed here and also under the sub-section “support circle” and in the activity guide under the “Talking Circle” activity in the document.

³¹ The “showing up” motif comes up throughout the document and was developed in conjunction with the First Nations Counsellor from NIC.

³² You can see more elaborated example of this in the document *The Sacred Tree*, and *The Sacred Tree, Teachers Guide*, Four Worlds Development Education Centre.

³³ It is recognized that people also find that guidance for this process of spiritual learning and growth can come from other sources of spiritual guidance and illumination, including cross-cultural experience, relationship, direct experience of nature, counselling and therapy.

³⁴ Please refer to the sections on “Showing Up: Being Healthy and Being Present”, “Belonging: Participating, Role Modelling and Being Visible”, and “Support Circle”.

³⁵ Ibid. p.71.

³⁶ Ibid. p.73.

³⁷ Interview with Trish Rosborough, 7/31/97.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid. She made the point that, at first, many of the things I had originally included seemed rather obvious to her, but that she later realized because this was how she had grown up; the things she had learned as a child needed to be taught as base line skills in the institution. "People need assistance with real basic stuff." She related the example of the teacher who had read about the idea of asking students to her home, and that while this had never occurred to her, it was a standard thing to do in Native communities. The teacher said this had a significant impact on the class. Many of the "common sense" things in the document are acquired cultural literacy skills.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Interview with Fran Hunt-Jinnouchi, 12/1.97.

⁴⁹ She is referring to a song of mine called "The Dream Song" which has been adopted and spread to a number of First Nations communities through the Rediscovery program. It has been translated into Kwak'wala.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid. Many of such positions have been the result of ongoing lobbying.

⁵³ Ibid. Fran mentioned that she has to deal with some of these issues even within her own community institutional context .

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Another vital professional "tool" I have failed to mention but is invaluable is humour.

⁶¹ I was contacted by the head office of NIC in Courtenay regarding use of the community-based skills section as part of the foundation for an First Nations Early Childhood Education Program.

⁶² I was "balled out" when I returned to Port Hardy for having stayed away too long while working on this thesis. It is good to know that people care enough to do so!

CHAPTER 7: CONCLUSIONS

Planning Between Cultural Paradigms: Learning From TEK for the Transition to Ecological Sustainability

In as much as I have already had the opportunity to focus on conclusions for the TEKS and Western science interface at the end of my case study on the Scientific Panel, I will focus first on the primary research question (please see the section "5.6.1: Summary Conclusions: the method, the model, the people, the path" for details on the TEKS-science interface; please see also section "5.6.3 Initial Dissertation Conclusions in the same chapter). I will return later in the conclusions to the relevance to sustainability of the TEKS-Western science interface.

I have appended a supplemental discussion (section 7.5) to the conclusions on planning between cultural paradigms for the transition to ecological sustainability. This allows for further discussion of primary points and raises some secondary ones without detracting from the main body of conclusions. These are followed by some final, "Summary Conclusions."

7.1 Addressing the Question: Epistemological Wholeness

Let me restate the question in the form to which it has now evolved. "What can we learn from the interface of First Nations TEKS and Western Science that can contribute towards a sounder epistemological basis for planning theory and practice in the transition to ecological sustainability?"

I began to address this in the initial conclusions in chapter 5. The basic answer was that planning for sustainability requires a variety of ways of knowing which includes our rational empiricism along with other modalities of knowing. Learning from TEKS, we see that traditional knowledge offers an example of an approach which has successfully achieved this. The example I have termed an *epistemology of the sacred* can be described as an holistic-metaepistemological-approach to knowing. In the TEKS context, the foundations for this are spiritual teachings. I have provided substantive reasons for characterizing this an holistic approach. I will now refer to this as an *epistemology of wholeness*.

An epistemology of wholeness is a certain *meta* perspective which recognizes that different ways of knowing can all inform the understanding we bring to our experience, or to a planning problem. This helps establish a new epistemological foundation for planning theory and practice which does not reject the rational empiricism that has traditionally guided planning as an application of scientific reason and technical knowledge; rather, it places it within a larger point of view. This larger point of view makes available to planning a diversity of forms of knowledge which can be put into practice. This helps to establish new terrain for planning theory in the transition to ecological sustainability. This is necessary because the transition to sustainability requires exploring beyond the rational empiricism of the modern scientific world

sustainability requires exploring beyond the rational empiricism of the modern scientific world view in order to address the broader implications of sustainability, including its ecological, socio-political, and existential elements.

7.2 Planning as Healing: Theory and Practice for the Transition to Sustainability

I have adopted Friedmann's definition of planning: *knowledge into action*. As knowledge into action, planning has been guided by a special type of "rational" knowledge which is the basis of planning theory. Looking at the historical and philosophical origins of planning theory, we saw that they are founded in a certain view of reality described as the Cartesian-Newtonian paradigm which is basically the worldview of modernity. Central features of this involve the separation of humanity from nature, nature from culture, mind from body, thought from feeling, and the individual from the world. This perspective seems contrary to the picture of the Earth arising from systems ecology and other areas of current research.

One of the most profound outcomes of the modern industrial worldview as a basis for socioeconomic development is that humans appropriate biophysical capital from the ecosphere at a greater rate than it is created. This reveals one aspect of the unsustainable character of our modern industrial path of development. Yet there are other areas of challenge for the modern industrial way of life. I have, thus, considered that the transition to sustainability needs to address, not just our biophysical needs and those of the planet, but also our need for equitable and viable (i.e. healthy) social formations, as well as our existential needs. We can now begin to consider what planning could be, guided by an epistemology of wholeness in order to address the challenges raised.

In order to address these arenas of challenge and human necessity, I have proposed an holistic model of sustainability. This model is based on *biophysical capital*, *social capital*, and *cultural capital*, with an attention to what I have referred to as *methods*. (These corresponded to my analytical criteria for examining the literature on TEK which developed into the idea of TEK-Systems, which I then applied to the Scientific Panel case study.) I developed from this approach some practical implications for sustainability which I described as a *qualitative model of development*. The central idea of qualitative development is to decrease our consumption of biophysical capital by generating more meaning in people's lives through an implementation of planning for social and cultural capital. There are some indications of what this might look like for planning as a result of my empirical research into the TEKS-Western science interface.

The first insight relates to planning practice. The central feature of the planning model employed by the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound was its adoption of the Nuu-Chah-Nulth inclusive process. Arising from TEKS oral methods, this takes the form of what I have referred to as a *discursive* approach, and seems to correspond to Friedmann's use of the term *dialogical*. In my research, I found that this planning style was a pivotal element for the Panel's success in achieving its outcome. Coming from a TEKS which

employs a variety of ways of knowing, this planning model was effectively able to include in the planning process the forms of knowledge necessary to solve the kind of complex, multi-faceted and multi-disciplinary decision-making problems which attend issues of sustainability. More research needs to be done in this area.

There may be resources within mainstream planning which can be examined in this light, for example, in the area of negotiation. There are also other, new areas in planning theory which are important to consider. These include three which I have already raised, including feminism, postmodernism and another I have referred to as ecological thought.¹ All seem to address different, but connected arenas of challenge to the planning mainstream in both theory and practice. *Constructive postmodernism* may offer a helpful perspective for bridging these bodies of theory from an holistic perspective. There also seem to be important gaps not covered by these three areas, in particular on topics of race, class and ethnicity. One body of theory which I have flagged but not explored is that of *postcolonial* theory. This needs to be examined in terms of its implications for planning theory more generally and sustainability in particular.

The next topic relates to social and cultural capital. I can draw from my experiences in Port Hardy for this. Surprisingly, the most important lessons here seem to be the simplest. Some of the most important social capital resources for community planning and development take the form of common courtesy, respect, sincerity, tolerance, enthusiasm, and compassion. These relationship skills and the general approach taken in *A Spirit of Understanding* must certainly be transferable to the mainstream. There are other inferences to be drawn. It seems that much of the wealth in the community is in its social capital, in its people and their relationships. Yet the foundation of the community is in its cultural teachings, its cultural capital.

There are ways for linking social and cultural capital that the mainstream can learn from First Nations communities. For example, I have discussed only briefly the power of song. This is the tip of the iceberg and would be an excellent focus of inquiry into social and cultural capital. Songs have great power and meaning. The ability to bring people together in profound or fun communal experiences is the heart of the qualitative social development model and indicate whole new areas of research and professional development. Traditional celebrations, feasts, dance, art, story telling, games, and ceremonies are all forms of public participation and celebration which build on the social capital bases of communities, even under socioeconomic adversity. These are sources of wealth that can not be priced but have a value of great meaning. Planning for the transition to sustainability can find significant currency in such pursuits as means for enhancing quality of life in potentially more biophysically gentle ways.

With respect to biophysical capital, perhaps the single-most important finding of my research is that we need to bolster its *ontological* capacities. In other words, we must begin to explore ways of knowing which make more apparent our connections with other forms of life, and the living Earth, that reveal the being or spirit in biophysical systems and their components. This will help invoke a more *participatory* mode of consciousness. For planning, it will

entail, amongst other things, giving more credence to the social and cultural elements discussed above as tools for social learning and community development. In particular, it will have to involve exploration into the practices which can best structure the settings for such experiences. This will require more research into new areas.

One of those areas of investigation is historical. Another lesson of my intercultural research "learning from our ancestors." This can be summed up in Toulmin's insight that we can reconsider pre-17th-century traditions and "try to recover the lost ("pre-modern") topics that were side-tracked by Descartes" that can be usefully taken up for the future. Based on a "bi-cultural standard of verification" it was empirically confirmed that some people receive traditional knowledge from spirits. Perhaps, as those in the Western mainstream begin to move to an epistemology of wholeness, we too can learn to receive guidance from the ancestors. From the point of view of planning, it might be useful to consider what kinds of questions are worth asking through historical research into the theory, design and planning of ancient sacred sites in North and South America, Europe, the Near East, Asia, and elsewhere on the planet. This would make the notion of a "participatory mode of consciousness" more available to planning. It might also yield ideas for social and cultural capital planning and design in sustainability.

I spoke on "planning as healing" in my introductory chapter. This was derived from origins of the word "holistic". One, the Greek origin, I related to the idea of thinking in wholes and an holistic approach to knowledge. If planning is knowledge into action, then planning, as an holistic practice for the transition to ecological sustainability, would need to be grounded in an holistic perspective on knowledge. That would be one informed by an understanding of the whole "being of knowing" and experience encompassing the whole, not limited to any one way of knowing, or aspect of knowledge: an epistemology of wholeness. The other meaning for holistic, derived from the Saxon origin of heal, as in, "to make whole", I related to the re-linking of things previously perceived or acted upon as separate. This re-linking could pertain to the perceived separation of humanity and non-human nature: a healing of our relationship with the Earth. It could also relate to a re-linking of the disparate functions of being and features of knowing I have referred to as cognitive dissonance: a healing of ourselves. If planning is to play a role in facilitating the transition to ecological sustainability, it is not a difficult conceptual leap to think of planning as healing. One obvious focus for planning between cultural paradigms is to facilitate intercultural healing between the mainstream and Aboriginal peoples.

7.3 Planning With First Nations

For planning with First Nations, planning between cultural paradigms is an idea whose time has come. The recent Nis'ga Treaty, the Delgamuwx decision, land claims, all point to this. This is an area which needs to be addressed by planning in a manner which does not merely include First Nations in mainstream planning models and processes but can restructure dialogue on the basis of respect and real power sharing. TEK is a new paradigm for planning

theory and opens many possibilities. None of this will have meaning if planners do not examine their own world view and address their place in the ongoing colonial history of Canada.

The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound offers a credible model for co-decision making and co-management. One of the main reasons for this is because it uses traditional knowledge protocols as part of the planning process. This is an approach which can structure meaningful dialogue and effective outcomes. Planners will have to become conversant with such intercultural skills if they are to be useful in any of these processes which facilitate intercultural work with First Nations. This means that planners will have to receive a new kind of education which I have referred to as *cultural literacy*. This could give birth to a whole new type of planner and planning field. The knowledge and experience of such planners as intercultural bridge-builders will also be helpful for developing new planning styles within the cultural mainstream.

Planning between cultural paradigms helps to give planners the theory and practice for working with people whose cultural backgrounds are so different that they comprise wholly alternative world views to the mainstream. As “epistemologies”, these can all inform planning and shape the planning process in ways that can not be predicted but will bring planning in new directions. Planning education should encourage this, and actively seek the involvement of First Nations planners and cultural teachers in the development and delivery of curricula which i.) serve immediate planning needs of First Nations; and ii.) educate non-First Nations planners for this kind of specialized intercultural work.

7.4 Planning Between Cultural Paradigms and the Transition to Ecological Sustainability

Perhaps the most relevant outcome of my research is to draw a connection between the shared needs and potential goals of First Nations' communities and the Canadian mainstream. The linking of intercultural and intracultural planning is a necessary component of the transition to ecological sustainability. Ecosystem-based planning and management offers a credible model for bridging Traditional Ecological Knowledge and Western science if the appropriate planning methods and management perspective are used. Appropriate methods would involve a mutual determining of the planning process by TEK specialists and scientists that integrates traditional knowledge protocols and decision-making processes. The appropriate management perspective would be an approach to ecosystems which recognizes humans, their values and social systems as management categories of ecosystems.

This intercultural approach to ecosystems-based planning and management may not be desirable to every First Nations community or every group of scientists. Planning theory and practice in this area needs to be case specific and generalized from credible research scenarios which are consistent to the approval of all communities involved. The protocol of respect: *permission*, *recognition*, and *accountability* should be practiced. Both scientific and oral sources strengthen the credibility of research. TEKS are relevant to both the natural and social sciences.

Traditional knowledge methods require special professional training and skills, and have both *inter* and *intracultural* relevance

When these basic protocols are met within scientific and First Nations' communities, a political alliance can be the result of the interface of TEKS and Western science. This can be a powerful bi-cultural basis for ecosystems advocacy. A functional alliance of this kind may give both First Nations and non-Native people a strong voice for influencing government policy. As First Nations exercise increasingly their constitutional rights, political and economic powers, the face of Canadian politics will change. All non-Native Canadians can benefit from developing skills in cultural literacy with First Nations. In doing so, we may not just be facilitating the discourse of cultures, we may be bringing together our ancestors.

7.5 Supplemental Discussion

Presented below is a general framework of planning between cultural paradigms for the transition to sustainability. It is a basis for new research, theory and practice:

- **Holistic Model of Sustainability**
Biophysical Capital/Social Capital/Cultural Capital/ (Methods)
- **Ecosystem-based**
- **ECO**
Epistemology is metaepistemology: an epistemology of wholeness
Cosmology is organic: human systems and individuals are a sub-set of a living system
Ontology is an ecology of being: being is not physically reducible or truncated
- **Power Sensitized**
- **Historically Connected**
- **Discursive Methods**
- **“Situated” Reason**
- **Existential Inquiry**
- **Cultural Literacy**
- **Inter/intracultural Planning**

7.5.1 Holistic Sustainability

The first feature relates to the original problem statement based on an analysis of the three-fold unsustainability of the dominant cultural development in paradigm: ecosystems, social systems, meaning-producing systems. I thus pose an holistic approach to sustainability as needing to address, at the least, these three features of human development. This is linked to the current literature on sustainability by developing the model with concepts of biophysical capital, social capital and cultural capital (corresponding to the three problem areas). Another

consideration is methods (addressed on its own below). I have also stipulated for the *constant natural/biophysical capital stocks* criterion of "strong sustainability".

Development is emphasized its qualitative sense. In *A Spirit of Understanding*, I was able to get an initial idea of what planning with social capital might look like at the community and institutional level. I also got to consider planning which *enhances* social capital (this is akin to what some have referred to as "investing"). There is considerable work to be done in this area. We could consider such an approach useful, for example, in the restructuring of a resource based economy (e.g. communities of the forest sector, mining, fishing) along more ecologically sustainable lines. It brings new concepts and tools to the process. It would also inspire new models for assessing community resources, inventories and economic development potential, as well as general quality of life and other features of "qualitative development".

The concept of cultural capital needs more development, yet, it is just as important. This is an area where the TEKS has much going for them; there is a much which the mainstream could learn in this area. Other qualitative development features which, as I found in cursory fashion in *A Spirit of Understanding*, can be facilitated by social capital, and vice versa, are the cultural capital features. For example, ceremony is a vital feature of community life but is conspicuously missing from our lives. I have seen the impacts of this in my work with youth who are in need of and demanding rights of passage. Public celebration, symbolic interaction and ceremony were all used effectively by our ancestors for thousands of years, along with music, theatre, and other art forms, to regulate their day to day lives, bond communities, support personal development, and foster a rich and healthy quality of life. We can learn from our ancestors, as well as First Nations people.

There are many other areas of cultural capital development which sit largely unexplored (or over-commercialized) as a veritable treasure trove of social and economic development. Personal development, education in a variety of areas, the arts, spirituality, are just a few; these are things which many people want and lack—inner growth is limitless. Some of the greatest sources of meaning we have available to us are to be found in relationship and our place in the world. Cultural and social capital do have the potential for facilitating one another. Methods, process and planning are key factors.

7.5.2 Ecosystem-based

This is a non-negotiable feature of the model. We saw how the touchstone of commensurability between the scientists and Nuu-Chah-Nulth on the Scientific Panel was the ecosystem-based nature of their fields of inquiry and application. Getting people to agree on this is a key factor for the transition to sustainability. Some have a vested—and misplaced—interest in obfuscating the nature of human dependency on the ecosphere. Some of these people come from the neo-classical camp, others from a more relativistic perspective. Yet most people are coming to recognize the ecological exigency the humanity condition which is existential,

both materially and philosophically. What we as planners have needed are tools, theory and practice which can begin to coalesce these substantive features of human life.

A credible model which has come from resource management that is a good candidate for development is the *ecosystem-based management* model. Here humans are known as a sub-set of their ecosystems, including their systems of meaning and material through put, as well as the organizing features of both. We need to develop the planning capacities of ecosystem-based management with appropriate and broad based interdisciplinary input. Communities need the opportunity to explore for themselves what this means, and planners could help facilitate the process. This will require appropriate planning methods, further research and development.

7.5.3 ECO-System

I have worked consistently with the concept of planning as “knowledge into action”. I have de-constructed it and built on it. This has helped me to stay focused and connected with the theory and practice of my discipline. It has been a doorway to many issues (and at times a philosophical Pandora's Box). Planning may be knowledge into action, yet knowledge is developed within a certain perspective and employs procedural rules. These describe a model of reality. What we know is mostly the model. What we know about the world is a projection of our self. Yet these things are not separate; they are *discursive*. While we may not be able to predict them entirely, or control them effectively, we can *participate* with all our faculties.

I have learned that the subject of epistemology is not separate from the manner in which it is socially constructed and mediated, and how these are all regulated materially and philosophically. We can also learn, therefore, that the topic is as much one of context as it is content, process as it is product. We can also learn that a critical feature of this discussion is the topic of *being* and inquiry into being, both critically and creatively – ontology. We learn that a more useful epistemological model for planning in the transition to a world of ecological and cultural sustainability is to be found in a metaepistemological one. This epistemology of wholeness is the postmodern constructivist version which corresponds to the TEKS *epistemology of the sacred*. It recognizes substantive features of empirical observation and deductive reason, of body-based ways of knowing, and other spiritual – less empirically verified – modalities. It recognizes the multiple orderings of reality, including both *causal* and *participatory* ordering principles as well as the possibility of others.

The metaepistemological approach is open-minded, but not uncritical. It is analytical and synthetic, or creative. It fosters inquiry into a diversity of topics and means for answering questions. It is culturally *located*. It recognizes that different ways of knowing exist and use different methods. It tends to see truth as a *socially posited* phenomenon which is lent to discursive transformation (for example, this could be seen as a rigorous and scientifically grounded process of inquiry, as a participatory and cooperative exercise, or even a highly politicized and combative one). Planners need to develop our analytical tool kits in these areas.

I will suggest what the ECO-system of planning between cultural paradigms looks like for the transition to sustainability:

- **Epistemology** is metaepistemology: an epistemology of wholeness
- **Cosmology** is organic (humans are a subset of a living system(s))
- **Ontology** is an holistic ecology of being
(being is not physically reducible or truncated; it is an *emergent* property)

7.5.4 Power Sensitive

Planning between cultural paradigms is power sensitive. Drawing on a thermodynamic approach to holistic sustainability, I would say it recognizes that:

organizing features of cultural systems structure social relations in ways which regulate both material flows and energy through-put as well as people's perceptions. These social relations create gradients of energy which can be referred to as power (both biophysically and perceptually)

Planners need to learn to be informed, critical and creative regarding the categories of meaning upon which these organizing principles are based: e.g. gender, race, class, ethnicity, species. Equity is a necessary feature of sustainability, yet the concept is also problematic in that, while it can serve to address issues of distributive justice, it may not foster a questioning of the categories of distribution and the larger cultural model upon which those categories are based. Principles of *respect, caring* and *acceptance*, as I have found in *A Spirit of Understanding*, while seemingly simplistic, are often the most practical and powerful.

7.5.5 Discursive Methods

The methods of planning between cultural paradigms largely *discursive* in nature. I am referring especially to planning processes. I suggested earlier that planning could be seen in this context as including the "practical articulation of various pre-analytic visions." Planners between cultural paradigms are specially trained individual in both theory and practice. Their job is facilitating discourse amongst actors in the public and private domains.

The standing body of planning theory has much to offer. Current debates in planning theory are important and must be brought to bear on planning practice. This includes both critical and functionalist schools of thought. New areas of planning theory have helped push debate into a more discursive terrain. Examples could include Friedmann's transactive model, communicative action, feminist and ecofeminist contributions, bio-regionalism and ecological thought, inquiries into the implications of postmodernism, participatory action research, and planning between cultural paradigms as I have offered it.

Rather than delineating and assessing all the different possibilities, I am interested in helping to establish a *metatheoretical* terrain in the scope of planning theory which can support the discourse between these various approaches and articulate new ones. Seen in this light, the rational comprehensive model and the various contingency models all have contributions to

make. My perspective on planning theory is grounded in the insight that the dominant paradigm in planning is not the synoptic or rational-comprehensive model followed by a spectrum of competing paradigms. The dominant paradigm is the one we have inherited from the Scientific Revolution and the Enlightenment that has established the broader philosophical terrain of the whole spectrum of planning theory. It is the paradigm of *modernity* that we must address. This problematizes the field of planning as an historical and philosophical endeavour of modern culture. It helps focus, not only critical inquiry into planning theory, but serves to reveal substantive features of what are alternatives to the whole spectrum. It also points to the need for recognizing those aspects of the dominant spectrum which have made and continue to make contributions in the development of planning theory and its practice.

7.5.6 Historically Connected

The above discussion leads into the next point. This is that planning between cultural paradigms is *historically connected*. In other, words, it does not reactively reject the existing body of theory and practice. The process is more one of critical and active *retrieval*. Part of this relates to Toulmin's point I raised earlier, of reconsidering pre-17th-century traditions in order to "to recover the lost (i.e. "pre-modern") topics which were side-tracked by Descartes...". Practitioners of the new areas in physics have not rejected Newtonian mechanics any more than we are advised to reject all prior planning theory and practice; yet they must be seen in a new light. By the same token, we are not served by rejecting all the wisdom of our ancestors who preceded the Scientific Revolution. This means learning from mistakes as well as contributions. We are the inheritors of tradition, as planners as a civilization, and as humanity as a whole.

7.5.7 Situated Reason

Some might suggest that the above discussion has dispensed with "reason". I disagree. There is a role for reason in planning between cultural paradigms. In this case, we could say that reason has been *situated*. By this I mean that we understand reason as functioning within a certain cultural context. Both forms of reason described by Friedmann, for example, as "market rationality" which directs societal guidance and "social rationality" that inspires critical theory and radical planning practice are situated within the Enlightenment. We can understand reason in a new context. It would be a disservice to First Nations to cast TEKS as not using reason. I'm advocating reason, in the Western sense, as part of a larger approach. Reason is guided, it is not all that guides. So in situating reason, the whole idea has shifted. It is one aspect of a larger context, bracketed, not only by its limitations but also by its contributions, along with other ways of knowing which can help inform and direct it.

7.5.8 Existential Inquiry

Ecological thought is a form of existential inquiry. Our existence depends on the healthy functioning of the ecological systems of which we are part. One feature of such existential in-

quiry addresses our place within this larger living system. Such questions of meaning and existence have always been with us and always will be. It is myopic to cull them from the realms of legitimate inquiry and relegate them to a less important or circumscribed status. Meaning is the most powerful tool and form of cultural production we have. Planners are involved intimately with mechanisms, processes and institutions that affect people's day to day lives. The transition to sustainability needs to address such issues, not definitively, but in an open-ended sense. The qualitative approach to development which includes planning for sustainability in ecosystems (biophysical capital), socioeconomic systems (social capital) and meaning-producing systems (cultural capital) begins to address this.

7.5.9 Cultural Literacy

The concept of cultural literacy needs to be re-thought in the context of the transition to ecological sustainability. As we have seen, cultural literacy is a kind of learning. It offers a set of concepts and skills that are demonstrated to be a powerful and indispensable tool-set for planning between cultural paradigms with First Nations. The culturally literate planner between paradigms is a professional bridge of knowledge systems, methodological protocols, social institutions and the people and communities who engage within and between them. Many of these are transferable to the mainstream as people and process skills; they instruct on human ideas of respect and sharing, as well as the instrumental features of social and cultural capital.

It will require further empirical research and practical application in order to understand what cultural literacy means in the current context of the transition to ecological sustainability. Yet I would suggest that its function will be very similar. Again, the role of the planner here is as a bridge-builder between cultural paradigms. It will take specialized skills and concepts to inform the professional practice of such endeavours. It would mean that the planner is well versed in the language and concepts of the "old" model as well as the "new" and can demonstrate substantive knowledge and respect for both. Here the planner between paradigms is, again a facilitator, yet their specialized knowledge and skills puts them in a good position to help establish a *common ground* for discourse. An area of relevance in the literature for this would be the ecology-economics interface. I would cite my earlier example of the restructuring of resource-based economies and the need for planners in those communities who are able to assist the process. This can be underscored by the ongoing presence of First Nations and the increasing role they play in the process, especially now with the Delgamukw ruling.

7.5.10 Inter/intracultural Planning

Planning between cultural paradigms for the transition to sustainability recognizes the role that intercultural learning plays in intracultural transformation. The intercultural terrain of learning is a good school house for intracultural planning. As mentioned above, First Nations play a special and important role in Canada for the transition to ecological sustainability. They are the spiritual authorities of their areas.

7.6 Summary Conclusions:

Addressing my primary research question, we can say that planning between cultural paradigms recognizes that different knowledge systems exist, and that including different ways of knowing strengthens planning for sustainability. A sounder epistemological approach is one which recognizes that different ways of knowing can all inform the understanding we bring to our experience or to a certain planning problem. This *meta* perspective establishes new terrain for planning theory which does not reject the rational empiricism—the scientific and technical reason—which has guided our tradition, but includes it in a larger perspective. This is important and necessary to address the broader implications of sustainability including its ecological, socioeconomic and existential dimensions. A holistic approach to sustainability recognizes our material as well as our non-material needs.

I have offered an approach which does this based on biophysical, social and cultural capital. It highlights the importance of further research and professional development in areas of social and cultural capital, and the need to bolster our philosophical resources, the spirituality of biophysical capital. Our sense of place in the Universe, of who we are, of how and with whom we relate are powerful sources of meaning and offer vital resources for the transition to ecological sustainability. Material growth has serious biophysical constraints; inner growth is limited only by our imagination and the people with whom we share it.

Ecosystem-based planning has demonstrated its ability to incorporate multiple dimensions of sustainability within metaepistemological terms of reference. This requires the right methods and links back to what we can learn through work with First Nations. The need for such integrated, inclusive planning styles is underscored politically, ecologically, economically, even by the Supreme Court of Canada. This work takes special skills which are transferable from the intercultural to the intracultural context. We need new kinds of planners whose professional specialty is to negotiate the visions and teachings between cultures as well as those within their own. We may find spiritual, community, ancestral resources we didn't realize we have.

NOTES FOR CHAPTER 7

¹ Another to examine further is the one referred to as "communicative action."

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APPENDIX 1: Barriers to the Research and Application of TEK

1. Barriers

Many of the barriers are perceptual, some are structural, are others are of a methodological nature. There are legal, procedural and institutional barriers. There are also historical, ecological, political and economic barriers. There are those both endogenous and exogenous to First Nations communities. Some barriers relate to a lack of familiarity of First Nations people and cultures within the dominant society, and the general lack information and culturally grounded research available to government and other agencies.¹ The material below is based on a combination of literature review, historical research, my own professional and personal experience over ten years of cultural immersion. In a sense, the material on barriers can be seen as "findings" from my literature review and experience. I present it to help structure the methodological context of the upcoming chapters on empirical research.

2. Colonial/Historical

The persisting reality of Canadian and British colonial history has created an array of perceptual and structural barriers to understanding and researching TEK and to the persistence of TEKS.

Perceptual

Perception of First Nations in Canada by the dominant society is a general liability.² The lack of recognition of First Nations peoples and their culture remains an ongoing barrier to TEK.³

Founded upon a racist colonial ideology, the persistence of these stereotypes and other cultural perceptions have caused damage within the communities where TEKS are based. This has taken place largely through the educational policies of the Canadian government (e.g. residential schools) and also the influences of colonialism through religion.⁴ This has disrupted the tools and transmission of TEK as well as the relationships for mentorship and other institutions of TEKS.⁵

These same colonial attitudes and racist perceptions also constitute an ongoing constraint in the tolerance, acceptance and support of TEKS within First Nations communities and society at large. Attitudes may be changing, but many of those stereotypes and beliefs persist today.⁶

Structural, Legal and Institutional

The structural legacy of colonialism in Canada is a set of institutions which were designed specifically to curtail the access of First Nations to their traditional land base.⁷ Given that land is one of the main features of TEKS, this is an obvious liability. Some of the main institutions and legal components include: the Indian Act, the reserve system, historical treaties, national parks along with other structural and institutional barriers including access of First Nations individuals to academic, technical and other resources. Historic and ongoing disruptions of social institutions, technologies and economic practices which are the structural mainstays of TEKS is a crucial factor. This can also be seen to impact the inter-generational transmission of TEK.⁸

The Report of the Traditional Knowledge Working Group (NWT, 1991) writes that the major obstacles to the practical application of TEK in northern institutions

relate to lack of commitment and coordinated effort to act on the issue; also deficiency in information, lack of access to and sharing of information.⁹

The Assembly of First Nations and the Inuit Circumpolar Conference cite lack of legislative authority as the greatest barrier to implementing of traditional knowledge, particularly in environmental protection. Legal and political barriers to land claims continue to exacerbate the problem while the slowness of the courts and other legal processes are continuing to frustrate efforts to preserve TEK in spite of a growing cultural revival in many communities.¹⁰

3. Political and Economic

Political and economic barriers are enmeshed. Current political and economic barriers to the persistence, research and implementation of TEK and TEKS are framed within a colonial history, its social, institutional and political outcomes. The focus on more current factors, however, reveals further substantive insights.

Political

Land use and accessibility is an ongoing political issue for First Nations having both endogenous and exogenous components.

Endogenous

There are variety of endogenous political constraints generated from within the communities where TEKS are based. This may include differences of opinion with regard to resource use and planning processes amongst political leaders, and the community at large, as well as economic and other social pressures¹¹

Other endogenous political issues that constitute barriers to the persistence of TEKS, a well as research and implementation, are a reflection of weakening traditional hereditary and other cultural authorities at the local level (i.e. diminishing of social capital).

Exogenous

The climate of regional, provincial and national politics has in the past and continues to exert an ongoing impact on communities in which TEKS are based. One current example of such influences are the impact of citizens and other interest groups on land use, accessibility and the treaty process.¹²

Changing positions and policies towards First Nations at various levels of government has long been an ongoing issue. This has a variety of impacts. One example are changing jurisdictions and criteria for funding, programming other institutional and capital support for community-based research and other initiatives which rely on or supplement specialists and institutions of TEKS.¹³

Economic

Economic factors which constitute constraints and represent barriers to TEKS exhibit similar exogenous and endogenous variables. They are often quite influenced by, and exert an influence on the political barriers discussed above.¹⁴ One historic factor which still has influence today is the impact of market based economics on subsistence economies, such as those associated with TEKS, which are often far more sustain-

able.¹⁵ Local resource users are rarely isolated from the impacts of the global economy.¹⁶

Socioeconomic factors have a profound impact within many First Nations communities. Amongst other elements, the historical and ongoing disturbance of the economic basis provided for communities by TEKS has resulted in entrenched cycles of poverty and community health issues. Many communities and programs are overwhelmed or preoccupied with day to day survival which makes more proactive and long term economic and community planning a challenge.¹⁷

Traditional technologies and economic structures require a base of social, biophysical and cultural capital to function effectively.¹⁸ Market and other economic structures of the dominant culture tend not to value these. This is exacerbated by market structures tending to place more value on less sustainable practices (e.g. in fisheries, forestry, mining) which offer short term financial gains but disturb the ecological systems upon which TEKS depend.

4. Ecological

TEKS simply can not function without the ecological base from which they are born. Much of the withering of TEKS biophysical capital can be attributed to colonial and other political, social and economic factors. One obvious barrier to the persistence of TEKS, as well as research and application in the field, is the ongoing degradation of ecosystems and their components by current resource practices, industrial and other development.¹⁹

5. Fear/Mistrust of the Dominant Culture; Cultural Appropriation

Cultural appropriation is an ongoing issue for First Nations. The sharing of traditional knowledge opens this possibility and the research of TEK by Western scientists and others not been immune. The Assembly of First Nations and the Inuit Circumpolar Conference raise this as a critical issue, saying that TEK is a growing field in which Native people have been "increasingly dominated by non-Native experts, analysts and consultants." The result is that knowledge which "could – and should – be used for the benefit of Native people and their communities (in accordance with their own priorities and values) has tended to be appropriated and defined by non-Native researchers."²⁰

Johannes (1993) also flags this concern as a key issue. While some cultures are more "proprietary" than others and researchers are invited into communities, especially where TEK is being lost, a certain degree of autonomy and loss of status is often associated with the sharing of TEK; it is a great disincentive when no obvious benefits are accrued to the communities who are the source of TEK or if such disclosures might possibly be of benefit to competitors, or have negative impacts on the community and their resource bases.²¹

I have been told a story by different people from different communities. The story involves non-Native specialists (e.g. linguists, botanists, etc.) who often wind up having more control and "authority" over traditional knowledge and its uses than those people who are actually its source. Moreover, these academic specialists are typically making far much more money from the project, if they pay TEK specialists at all. Perhaps the greatest insult I have been told is that, often beyond a hand shake, no real thanks or recognition is given and the person may never be seen or heard from again. This breaks the cycles and methods of TEKS, disrespects the people and impoverishes communities.

This cultural/historical factor was the most influential research barrier for the *Spirit of Understanding*. The greatest concern of elders, TEK specialists and other community mem-

bers was the cultural appropriation. There was also the concern that research would tax elders and other community members without really achieving any positive feedback or inputs at the community level. Networking trust building and seeking guidance was the most time consuming, rewarding aspect of the project. This type of culturally appropriate and community-based research has its own procedural demands and methodological requirements.²²

6. Dangers

The above discussion alerts us to some of the dangers of TEK research. The term 'danger' is not one with which I came up myself. It was provided to me by Richard Atleo²³. This is an good term because it describes the perceptions and experiences of many people with whom I have spoken. It is an important point. There are substantive and perceived dangers, economically, politically, culturally and institutionally. There may even be ecological dangers when people become privy to certain TEK regarding its use values and resource locations.²⁴

7. Epistemological, Methodological and Other Perceptual Barriers

There are a variety of epistemological, methodological and perceptual barriers to TEKS research and implementation, not all of which are due to the cultural and epistemological chauvinism of the dominant model. These may constitute more constraints than barriers, many of which will be encountered by even the most sensitive and eager of researchers and professionals who are interested in the practical applications of work with TEKS.

Inter-Disciplinary Nature of Research

Much of the research is of a very interdisciplinary nature, applications are even more so. For example, to deal effectively with First Nations issues and forest practices standards in Clayoquot Sound, the Scientific Panel required 15 distinguished scientists and professional as well as three elders and an hereditary chief, all of whom comprised together a staggering diversity and depth of knowledge in a very broad range of fields.

Another example is *A Spirit of Understanding*. This required substantive and procedural skills in a number of areas often not readily available to planners, researchers and planning students, and are usually the skill set of specialized individuals, these include: cultural literacy, communication and facilitation as well as the special skills required to work with elders and English as a second language; community involvement, networking and mobilization; community-based research skills/methodological knowledge; healthy community skills practices; educational planning, curriculum and program development; basic familiarity with ecology and resources practices in both marine and terrestrial based industries.

Temporal Constraints

Time is always a factor in research. Community work and cross-cultural work is largely experientially based and is ongoing, labour intensive and very time consuming. It takes quality time and follow up. The relationships which are formed often go beyond those related strictly to research and become friendships, family ties and community connections. One positive outcome is the enhancement and building of structures and relationships that build social capital.²⁵ Interdisciplinary work is also generally labour intensive and time consuming.²⁶

Language/Communication Styles

Languages are critical to TEKS and many TEK specialists are people who have a First Nation language as their mother tongue. Language differences can pose time and other constraints.²⁷ Language is not so much a barrier as is the lack of familiarity with language differences and communication styles. Learning languages and different styles of communication, especially those which are culturally based, can be an enjoyable and fulfilling pastime. It can also be personally challenging. These are specialized skills requiring time, effort and experiential training to develop.²⁸

Epistemological Barriers

These will be of greater significance for some researchers, planners and professionals than they will for others. Traditional knowledge is founded in beliefs and practices, some of which are recognized by Western science and others which are not. This may have nothing to do with prejudice but is reflective of cultural differences and learning capacities. TEKS involve certain types of knowledge and 'ways of knowing' which either lay outside the dominant model or have not been properly investigated.²⁹ In other cases, chauvinism does play a role, both culturally and epistemologically.³⁰

Methodological Barriers

The above barriers and constraints pose methodological challenges for the persistence, research and implementation of TEKS. Aside from the various intercultural, interdisciplinary, colonial, perceptual, institutional, political-economic, legal, temporal, linguistic, epistemological and community-based factors, there are challenges relating to the lack of methods themselves.

Lack of familiarity with the cultural protocol and its grounding in the community context poses a critical constraint on research. This has implications, not only for being able to understand and evaluate knowledge, but merely in gaining access. Ignorance or ineptitude with the methods of oral tradition can not only result in closing doors, it can open the "wrong" ones or lead to spurious information³¹

Science has strict rules of protocol for accessing and assessing knowledge. Graduate students who are well versed in these still require constant input and guidance from senior academics, who often confer amongst themselves to see that research is carrying out in the appropriate fashion. It is similar in First Nations communities. Those who are well versed in the protocol will often consult or defer to elders and other recognized cultural authorities who confer amongst themselves. If a researcher is unfamiliar with the methods, rules and procedures, how will they know if they are getting the right information or even if they are approaching the appropriate sources?

NOTES FOR APPENDIX I

¹ For example, in *Land, Landscape, Culturescape: Aboriginal Relationships to Land and the Co-Management of Natural Resources*, (Royal Commission on Aboriginal Peoples, 1994) Chapeskie cites one of the critical challenges to Co-Management with Anishnaabe people in Ontario as being, "the severely limited extent to which Anishnaabe relationships to land in Northwestern Ontario are known to or appreciated by the Government of Ontario and the non-aboriginal residents of the area. This problem persists in terms of a limited awareness both about the character of Anishnaabe relationships to land and how they are reflected in Anishnaabe landscapes." From the "Executive Summary", p.ii.

² This is discussed in somewhat more detail in my thesis. See 4.1.2 "Background: Land Use Issues and Colonialism in Canada and Clayoquot Sound" and also "5.1 INTRODUCTION: The Historical and Symbolic Importance of the Panel." I have dealt with this historical material in greater detail in two other pieces of research. See the "Historical Background" in Lertzman, *A Spirit of Understanding*, Province of British Columbia, Ministry of Education, Skills and Training, 1996; and my Master's Thesis, *Perspectives on Native Self-Government in Canada*, Department of Political Science, York University, 1987. My thesis deals with political economy from the perspective of a comparative analysis of First Nations and Euro-Canadian world views. Other worthwhile background materials can be found in: Robert F. Berkhofer, Jr., *The White Man's Indian*, New York: Vintage Book 1979, presents a social-psychology of European construction of First Nations stereotypes; on British Columbia, see Robin Fisher, *Contact and Conflict*, Vancouver: UBC Press, 1983; Paul Tennent, *Aboriginal Peoples and Politics*, Vancouver, University of British Columbia Press, 1991 deals with such issues in a more current context in terms of land issues in British Columbia. E. Brian Titley, *A Narrow Vision, Duncan Campbell Scott and the Administration of Indian Affairs in Canada*, Vancouver: University of British Columbia Press, 1986 is a telling and at times disturbing historical analysis of the material with regard to the development of Canadian "Indian" administration..

³ See "A Preliminary Research Prospectus", The Assembly of First Nations and the Inuit Circumpolar Conference, in Sadler and Boothroyd, 1994, p. especially pp.63-64.

⁴ See sources in *Ibid.*, especially, "Christianity and Education: Weapons of Assimilation" in Lertzman, *A Spirit of Understanding*. See also excellent background materials in Barman ed., *Indian Education in Canada*, Vancouver: University of British Columbia Press, 1986.

⁵ See, "Barriers to Traditional Science" and "Apprenticeship With Elders" in Pam Colorado, "Bridging Native and Western Science" in *Convergence*, Vol. XXI, Number 2/3, 1988.; see also "The Limitations of the Indigenous System" in Dene Cultural Institute, in Boothroyd and Saddler (1994) and in Gaffield and Gaffield (1995).

⁶ See pertinent discussion in this Dissertation, 4.1.2 Background: Land Use Issues and Colonialism in Canada and Clayoquot Sound, in particular, current issues in treaties in British Columbia and fn.25.

⁷ See *Ibid.* as well as Lertzman (1996; 1987) for the broader parameters. For specifics on the subject, with a particular focus on the criminalization of TEK and management systems, see the Masters Thesis (History) of J. Michael Thoms, *Illegal Conservation: Two Case Studies of Conflict Between Indigenous and State Natural Resource Management Paradigms*, (1996). See also Doubleday, "Finding Common Ground: Natural Law and Collective Wisdom" in Inglis, 1993 for discussion on issues of law and TEKS.

⁸ See, "Barriers to Traditional Science" and "Apprenticeship With Elders" in Pam Colorado, "Bridging Native and Western Science" in *Convergence*, Vol. XXI, Number 2/3, 1988.; see also "The Limitations of the Indigenous System" in Dene Cultural Institute, in Boothroyd and Saddler (1994) and in Gaffield and Gaffield (1995).

⁹ See some worthwhile discussion and practical methodological recommendations in the *Report of the Traditional Knowledge Working Group*, Yellowknife: Department of Culture and Communications, Government of the Northwest Territories, 1991, p.22 and pp.23-39.

¹⁰ "A Preliminary Research Prospectus", The Assembly of First Nations and the Inuit Circumpolar Conference, in Sadler and Boothroyd, 1994, p.61.

¹¹ I lived on a reserve, for example, which has clear cut a large section of land for development of housing. The company who was contracted offered a very financially lucrative package with a demand that work be done immediately. The quick economic-based political decision resulted in the removal of a traditional cedar bark harvesting site, it also disturbed a small spawning bed which many people on the reserve regret.

¹² For example, the Citizen's Voice on Native Land Claims lobbies various levels of government, particularly provincially, and politicizes its views locally and in the polity at large. Recent impetus for such activities has been the *Agreement in Principle* of the Nisga land claims and treaty process. See the recent full page add in the *Vancouver Sun*, July, 8, 1997, "before aboriginal treaties are set in stone" . These trends have intensified since the *Agreement in Principle* has been signed.

¹³ This has been a constant feature of experience within several programs, such as with those involved with the Rediscovery International Foundation. RIF is a loose affiliation of community based cross-cultural wilderness program for youth run out a number of First Nations communities. While working as consultant in the winter and as co-director in the summer with the *Splats' in Rediscovery* program, our reliance on elders and other TEK specialists was affected. Access to information alone is a daunting task, even for professional researchers. While working on the *Spirit of Understanding*, we experienced the same "moving targets" while involved with members from my Curriculum Committee on other community based projects. To stay in touch with the political climates locally, regionally and at other levels is an ongoing and daunting task. These types of constraints are also experienced by academics and other researchers.

¹⁴ The example of the clear cut mentioned above displays such connections between political and economic constraints both within and outside of communities.

¹⁵ Dene Cultural Institute (1994) in Saddler and Boothroyd;(1995) in Gaffield and Gaffield. They cite Johannes (1978) and Berkes (1981) who parallel over fishing in Northern Quebec and the South Pacific with the commercialization of subsistence fisheries as well other Canadian examples by Feit (1988). Thoms (1996) also points to this, in particular the current dissembling of the sustainable traditional management of Karen hill tribes in Thailand as a result of global trade and conservation pressures.

¹⁶ Ibid. (1995), p.348; also Feit and Thoms.

¹⁷ Working as a community consultant and program planner for a number of years with Rediscovery has demonstrated this to me time and again. It is hard enough to deal with long term goals when a program is struggling to stay alive; however, it is even more discouraging when participants, teachers and other community members are dealing with suicide and other health related issues. Moving from crisis management to long term proactive planning has been an ongoing issue for us in Rediscovery, as it has been for other communities and programs.

¹⁸ A significant example of this is the loss of rules, protocol and other methods for sustainable resource practices. See "The Limitations of the Indigenous System" in Dene Cultural Institute (1994) above.

¹⁹ For example, in 1994, at the Annual Rediscovery International Conference which was hosted by the Heiltsuk at Bella Bella, we spent the whole day with a group of us fishing for the feast. Our guide was a well known Heiltsuk elder and cultural speaker. I was astounded at how the Heiltsuk navigated the endless maze of islands which characterize their area. In spite of this and other impressive skills, we got one medium-sized rock cod and a few smaller fish. Paraphrasing the elder, he told me that, "not 10-15 years ago, I could row my dingy 15 minutes out into this harbour and catch enough fish in an hour to feed my family for a week. Now we can't even get enough for a feast." He said that commercial fishing was responsible, in particular foreign factory boats, draggers, urchin and abalone. I have been told the same basic story by elders and other TEK specialists in several other villages of different nations (e.g. Helstiuk,

Hesquiaht, Kwaguilth, 'Nakwaxda'xw). I have heard similar stories amongst these and other nations in the interior with regard to forestry practices.

²⁰ "A Preliminary Research Prospectus", The Assembly of First Nations and the Inuit Circumpolar Conference, in Sadler and Boothroyd, 1994, p.61.

²¹ See "Proprietary TEK" pp.37-38 in Johannes (1993) in Inglis ed.

²² Being a singer, involved community member and a sincerely interested individual with a functional base of cultural literacy skills and experience resulted in far more research results than being a Ph.D. candidate in a professional planning school. Still, my professional and academic backgrounds were key for the institutional/academic component.

²³ Interview in his office at Malaspina University College, December 3, 1997.

²⁴ At the location of Rediscovery camp where I worked for some years, the are stands of West Coast Yew in an old growth temperate rain forest. I told people how it was found by scientists to have curative powers for cancer in its bark, but that it took a great of bark. We all wound up making a pledge not to tell anyone where the YEW are because some people were scared that the pharmaceutical scientists would come and cut them down.

²⁵ The research and other outcomes of *A Spirit of Understanding* are a good example.

²⁶ As was exhibited with the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound.

²⁷ Interview discussions with Dr. Nancy Turner, 7/24/97; this was a subject which also came up in my interviews with Dr. Lertzman.

²⁸ I have enjoyed very much the opportunity to learn and practice the bits and pieces of different First Nations languages in the communities where I have spent time (I sometimes think that the elders get an even bigger kick out of it; takes me years, for example, to learn to form the name 'Nlaka'pamux). If one is sincere, the effort is appreciated and there is much that can be learned. Inter-cultural communication skills are a must in this field, especially to those who are involved in any community based efforts.

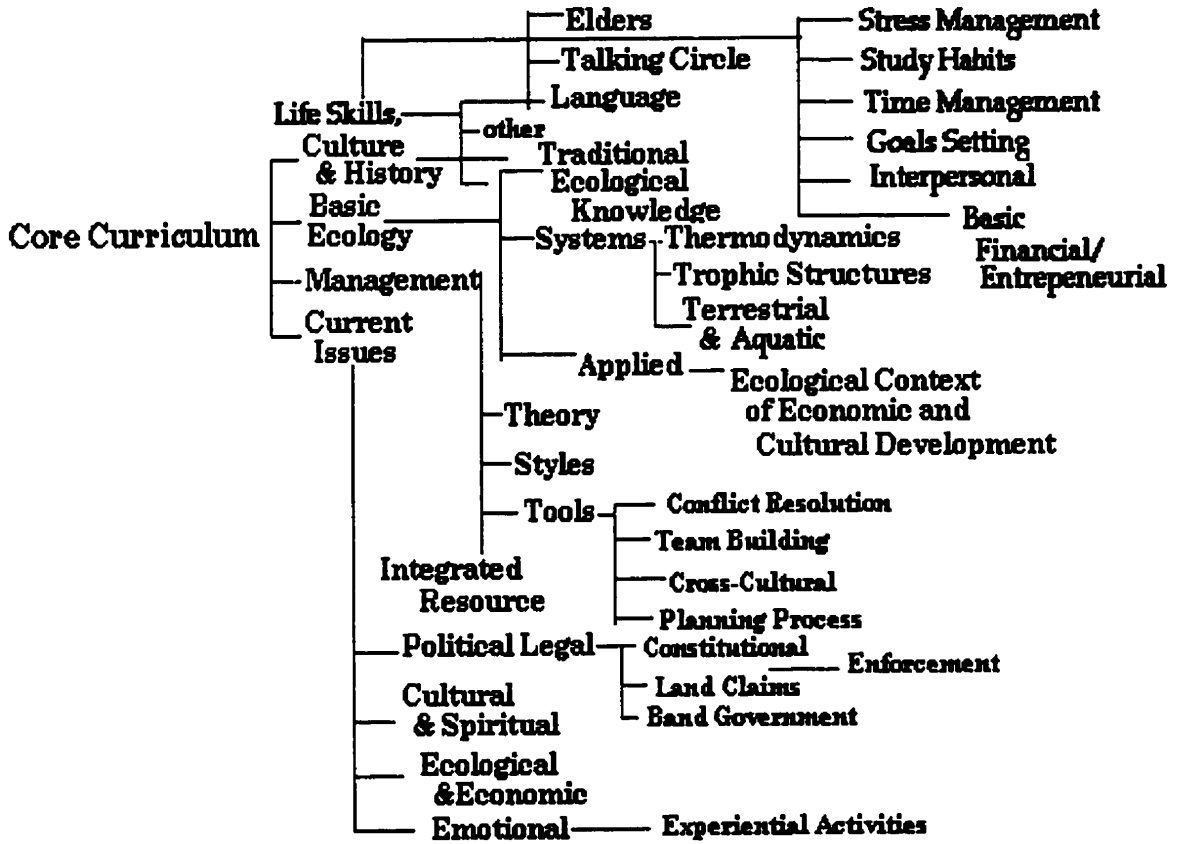
²⁹ For example, there is plenty of research which chooses First Nations spirituality or cosmology as the 'object' of its study. Many First Nations communities have become generally fed up with this kind of research. Treating people and their traditions as objects of study is experienced as disrespectful and a doorway to cultural appropriation. This is qualitatively different than the type of research which involves actual dialogue of learned people as part of a larger discourse between cultural systems. There are increasing examples of such research. e.g. projects taking place at the 'Umista Cultural Centre in Alert Bay, the Clayoquot Interim Board, the Secwepmec Ethnobotany project, etc.

³⁰ This point came up in interview discussions with Dr. Nancy Turner, 7/24/97.

³¹ I have experienced this and observed it with others. My own mistakes, ignorance and learning in this capacity have been ongoing, not only for "research" but generally in cultural literacy and dialogue. Luckily, by learning "how and who" to ask, many of these barriers can be surmounted and mistakes can be corrected. Some communities have protocol for corrections. These barriers are often rooted in romanticized notions and other cultural projections. See the section on "Attitudes of Researchers to TEKMS" in Johannes, "Integrating Traditional Ecological Knowledge and Management With Environmental Impact Assessment" in Inglis, ed., 1993.

APPENDIX 2

Core Curriculum



APPENDIX 3:

Theme Areas

