

Introduction

“Thinking ecologically” is to be attuned to the multiple facets of our environmental relationships and our capacities that have evolved to deal with these facets. “Attunement” represents a mode of thought that, among other things, synthesizes more specialized modes of thought (e.g., rational analysis, deliberation, intuition, reflection on experience), especially in acts of judgment. The relationship between these specialized modes is often seen as oppositional and exclusionary. Owing to our tendencies to prefer one mode of thought over others and to devalue those in apparent opposition to it, environmental thought is divided into camps—those more analytical and science-based versus those more intuitive and experience-based. I argue against this division, partly because each mode is valuable for understanding ecology and its implications and, therefore, for developing ecological approaches to environmental thought. Becoming ecologically attuned, i.e., bringing our capacities into accord with the multiple modes of our relationship with the environment, is best illustrated in relation to wilderness. It is during wilderness experience that our primary capacities for survival are the most exercised and the sharpest. In this context, not only must our bodies be brought into accord with the exigencies of life, but our intellectual capacities of perception, understanding, analysis, decision making and strategizing must also be brought into accord with what we must face. Wilderness experience demands the full employment of our capacities. Hence, it serves as a good model for how we need to attune these capacities to operate in concert in order to understand and interact with the ecological conditions that can provide for, heal, kill or harm us.

The idea of attunement is raised for consideration in the context of criticizing more well-received ways of thinking about solutions to environmental problems. It is also raised in relation to conservative ways of thinking about ecology, which I argue are inadequate. Better-received and “conservative” approaches tend toward the strategy of retaining as much of the conceptual and methodological status quo as possible, so that the development of ecology is appropriated into already well-established modes of thinking, rather than allowed to challenge these modes at their

foundations. Part of my effort is to demonstrate that such approaches have either missed or dismissed the deeper implications of ecology. The vehicle for advancing the argument is the concept of world view. Where “world view” refers to a comprehensive set of assumptions that shape ways of understanding, knowing and valuing, it serves to capture the level of critique for which ecology calls. By using historical shifts in world view—e.g., that between Ptolemaic and Copernican systems—as models for how a systematic rethinking can occur at a fundamental level, it is possible to structure how concepts, explanations and values can be re-shaped in an orderly manner.

An historical approach is also used, particularly in Chapters One and Two, to explain why shifts in world view need to take place. Systematically criticizing each mode of thought and exposing its weaknesses allows us to advance to more adequate ones. As such, the approach is both radical, in that it attempts to get at foundational issues, and somewhat conservative, in the sense that it is directed by what has gone before. It does not try simply to replace the preceding system, but develops by superceding concepts one by one until a need for a new conception of the whole becomes evident.

The focus is on the dominant Western European world views, starting with animistic world views and progressing through Greek Antiquity, through the Modern Era (seventeenth and eighteenth centuries) and finally through the contemporary challenges to the Modern as formulated in evolutionary theory and ecology. Contemporary issues with ecology are thereby situated in a wider developmental context. Chapters One, Two and Three describe several features key to the erosion of world views. This erosion is owing to logical problems, anomalies in explanation, and promises of both greater powers of prediction and control and more elegant or simple explanations. Shifts also occur because of other powerful forces at work, such as economic forces (e.g., the Industrial Revolution) or political movements (e.g., the advent of democracy and the rejection of the monarchy), but focusing on the philosophical dimension (metaphysical, epistemological and axiological) can serve as a spearhead for thinking through these other dimensions as well. This work is, therefore, not irrelevant to economic and political concerns. It is in fact intended to address fundamental environmental policy issues (Chapters Six and Seven) and relevant economic and political concerns. Although it does not offer particular policy recommendations, it addresses fundamental policy principles, such as sustainability and conservation, to show where thinking ecologically can be effective in environmental policy making and management.

The historical perspective also helps to model how world views become normalized and how normalization sometimes leads to appropriation, enabling us to see how resistance to change influences the formulation of new concepts and moral principles. This, what might be consid-

ered the ugly side of conservatism, forms a foundation for cooptation, which constitutes an important focal point for the application of thinking ecologically. This theme of appropriation and cooptation of ecological concepts is emphasized in Chapters Six and Seven.

When we consider the manner in which we have come to acknowledge and act on environmental problems, we witness a pronounced lack of attunement to the needs of the land and of people. Over the last century, environmental problems have taken the shape of deforestation and irresponsible forest management, land, air and water pollution, ozone layer depletion, global warming, landfill siting, nuclear waste disposal, depletion of fish resources, genetic mutations, diminishing fresh water supplies, etc. These problems continue and sometimes even appear to have become normalized, that is, we have come to accept and expect to have to manage these problems as part of daily life. More effort is being directed today at helping people adapt to environmental problems by, for example, helping people cope with ozone layer depletion by reporting danger levels. With this information, people can determine how much time they can spend in the sun without being dangerously exposed to ultraviolet radiation. We attempt to regulate damage through systems of fines or tax incentives to reduce pollution, which encourages business to view pollution as a cost of doing business. International agreements or protocols such as the Montreal protocol, designed to reduce CFCs, and the Kyoto agreement, designed to reduce greenhouse gas emissions, often adopt a trade-off system, according to which nations negotiate a right to pollute. Moreover, they can acquire an increased right to pollute, if they can get the international community to consider measures that have already been taken (e.g., replanting deforested areas) as credit toward the right to pollute. The U.S. resistance to the United Nations' resolve to protect biodiversity at the 1992 summit in Rio de Janeiro was demonstrated when then president of the United States, George Bush, refused to sign any agreement that would demand the sacrifice of many American jobs.

Our hunger for energy continues to place demands for damming rivers and constructing coal-burning electricity generators. We seem not to know when to stop exploiting fish resources, unless they are depleted beyond the point of financial feasibility, as has occurred in the east coast fisheries of Canada. Rather than learning to conserve water resources and curbing the obsessions of California's rich, which has so drained the Colorado River that water no longer reaches the Gulf of Mexico, we entertain lobbying efforts to divert Canada's fresh water resources to service this insatiable thirst. Rather than addressing the mismanagement and pollution of other countries' water systems, we entertain and lobby for shipping water from the Great Lakes as an export commodity. In other words, we are trying to manage our environmental disasters by describing

and analyzing them to accord with a particular view of the world and humanity's place in it.

But where the focus is placed on resources and economic viability, morbidity and mortality are seen as costs to the system. The destruction of communities engendered by these environmental problems is treated as an issue to be managed through retraining and relocation programs. Our methods of analyzing environmental problems and constructing solutions are determined by our perspective, which in turn determines how we understand problems, set standards of knowledge and identify our values. These assumptions, i.e., how we understand problems and respond to them belong to a world view that promotes both intellectual and emotional detachment from the local effects that environmental degradation has on the land and on people. In other words, they detach decision and policy making from being attuned to the particular effects of environmental degradation and, therefore, to particular places and people.

This effect of detachment is, in many respects, a product of the Modern world view. Concern for particular places, people and communities marks a particularly important feature of ecological attunement, requiring the same fullness of access to our capacities as is necessary in wilderness experience. Hence, ecological attunement is as relevant to the concerns of justice, cross-cultural communication and gender relations as it is to wilderness experience and healing. Since nuclear waste facilities, landfills and environmentally dangerous projects are more often than not sited near disempowered and poor communities, it is fairly obvious that a lack of attunement to particulars is endemic to dominant environmental policy and legislative systems. Many aboriginal and Third World peoples feel that the dominant economic influence of the Western European-based and industrialized countries has been imposed on their communities, so as to make culturally appropriate environmental practice impossible. Many women, especially in Third World countries, feel that their work on and knowledge of the land in the new economy are marginalized and devalued as monocultural, export-oriented agriculture replaces their traditional practices. But all of this unattuned intervention is "justified" by those in dominant positions through appeal to "development" initiatives under foreign aid programs.

It makes sense, then, to treat the array of environmental problems as world view issues. But there is yet another reason to focus on world views. Environmental managers and policy makers today increasingly are having to face a wide array of perspectives and stakeholders as they attempt to write sound environmental or resource policy to satisfy the values represented by this wide array. Finding a way to include all of these concerns requires a more comprehensive and holistic approach than specialists are trained to provide. Ecological approaches, as holistic and

inclusive, hold out the promise that we will be able to envision a means to satisfy the demands of this multidimensional environmental problem. Each of these perspectives can count as a world view, as long as it involves comprehensive ways in which people understand and direct their lives and not just momentary opinions. Given that, it is becoming ever more clear that environmental management is about managing for world views as much as anything else.

A primary reason for the focus on world views is to help prevent the appropriation and cooptation of ecological attunement. Thus, analysis and the reconceptualizing of personhood (i.e., our identity as persons) are tied to thinking ecologically. Since what we take to be persons affects thought at fundamental levels, as I will argue, effecting change in our conceptions of personhood that is in line with ecological attunement will also create a mode of thought that resists cooptation.

As mentioned, the central intent of this book is to advance what I am calling “thinking ecologically,” which is in contrast to thinking about ecology.¹ Ecology is treated not as one among many fields of inquiry nor as a separate discipline. When we begin to think ecologically, we begin to understand ourselves, perceive, judge, analyze, formulate concepts and assume responsibilities differently. The underlying thought process is fundamentally different from that of the now-present dominant mode of thought, when determining conditions of significance and legitimacy. Thinking ecologically and holistically may appear less determinate, less clear and less committed to finality in the methods of enquiry it adopts, but it owes this lack of determinacy to its commitments to being inclusive and comprehensive—principles that require a respect for oppositions—which, in turn, affects standards of inquiry in epistemology and ethics. The argument, as a result, moves from a critique of clear and determinate standards to a gradual shaping of less clear and indeterminate standards, as far as the majority of the audience I am addressing is concerned.

The first three chapters of the book address the historical development of Western world views, starting with the pre-Socratic era (i.e., pre-500 BCE). Environmental thought in this era is based on the belief that the natural world has both a purpose and a life force. Chapter One examines key conceptual and valuational features of this mode of thought and how it is supplanted by the emerging rational approach to explanation and knowledge in the Greek tradition. It serves two purposes: to characterize the nature of the rational and to examine why its development is such a powerful force in Western history; and to characterize the animistic and to examine why, in its early version, it could not withstand the onslaught of rational thought. At the same time, it helps to characterize the animistic and teleological, so as to prepare for a more generalized version to be reintroduced later in the discussion of ecology. Chapter Two leaps past the Dark Ages and the medieval period to examine the Modern world

view and its assertion of the strictly material character of nature, its inertness and its mechanical properties. This leap is justified in part because of the fact that the Greek cosmological commitments, captured in what is known as the “Ptolemaic cosmology,” reigned for well over a thousand years, including the medieval period. This chapter examines the confrontation between the Ptolemaic and the emerging Copernican or Modern world view, which takes the world to be a mechanically organized and inert place, rather than the divinely ordered and controlled place of its predecessor. Reason is seen as coming into its own, eliminating any remnants of a personality-driven cosmos. Chapter Three examines the more recent conflict between this Modern mechanistic world view and the emerging ecological world view with respect to ecological ideas in biology, politics and philosophy. We find a shift in thinking that takes wholes to be significant in explanations, as much as the mechanical relations between parts. But in so taking, the reductive and tidy forms of explanation acclaimed by Moderns are challenged by more complex and obscure forms of explanation, as different levels of explanation are invoked and what Moderns called “occult” qualities (e.g., animistic purposes or teleological explanations) begin to re-enter the explanatory scheme. Here, argument for the tolerance of less clear and less precise formulations of ideas and central concepts begins to develop.

Chapter Four examines value theoretical questions: what is of value, how are values formed, how is non-human nature to be valued? It utilizes the framework established in Chapters One through Three to show how value theory has been influenced and, indeed, limited by the world view in place, by showing how various metaphysical and cosmological commitments determine how nature can be valued. Chapter Five applies what has preceded in developing an ethical approach to how our understanding of environmental values established in Chapter Four should be acted upon. It does this by examining and criticizing the main ethical approaches in environmental ethics in a process of shaping an ethic of attunement and formulating a harm principle. It develops an ethical approach based as much on experiential (later to include cultural) awareness as on theoretical rigour. Chapter Six tests contemporary policy commitments (“sustainable development” and “conservation”) against this ethic and against an ecologically grounded value theory. Each is examined principally for its failure to take the implications of ecology adequately into account and for its use as a tool of cooptation. This chapter, consequently, is designed to illustrate how the distinction between thinking ecologically and thinking about ecology matters. It addresses the principle of inclusion in relation to traditional aboriginal, Third World and other disenfranchised communities. Without offering final solutions to the problem of inclusion, it nevertheless attempts to guide thinking about the policy process toward resolution of conflict

between divergent perspectives by examining how an ecologically informed harm principle should direct the policy development process.

A common thread running through all chapters is the role and formulation of reason as central to the human-environment relationship. Modeling world view shifts is, at the same time, a modeling of how reason has to be both conserved and radicalized in the process of transformation to thinking ecologically. Each chapter forms a component in the project to transform our understanding of reason; we will come to view reason not as a condition of superiority and privilege but as a tool of attuned understanding and decision making. Rationality is attached to hegemony, but unlike the Modern conception of hegemony—a view toward dominance and superiority—ecologically attuned reason is attached to the responsibility of leading by following. Appeal to Taoism (an Eastern philosophical tradition) is used to help shape this idea. In the end, leading by following through attunement is a means for integrating ways of knowing (perceiving, cognizing, emoting, intuiting, remembering) in the process of protecting all members of the ecological community.

A contemporary illustration of why attunement needs to become a guiding force in developing an ecological world view is provided by Michael Hough (1990: 69). He describes how paradigm orientation is significant for the professional. As a landscape architect, he has become quite concerned about how we perceive and analyze our environment because our perceptions and analyses determine how we value and how we act toward the environment. He cites Robert Newbury's study on stream hydrology. Students from various academic and professional backgrounds were asked to describe a stream in a way that the others in the study group could understand, by drawing pictures. The biologists drew representations of habitats, food sources, a diversity of vegetative life and other features pertinent to life-sustaining conditions. The engineers focused on hydrological properties as they pertained to erosion and drainage problems. A carefully constructed system of grids and symbols indicated possible correction sites. For the sake of simplicity, the waterway was represented by a straight and uniformly wide drawing. Landscape architects drew an aesthetically pleasing coursing of the waterway as it wound its way through the terrain. They saw trees of uniform shape and size occupying spaces along the river bank and adjacent areas. These trees did not actually exist. In Hough's words, "the landscape architects saw very little but did a nice drawing" (1990: 71). The technicians attempted to represent the diversity of elements. Their drawing was the most crowded of the group. It was also the most empirically accurate of the four drawings. Hough concludes from the differences between these drawings that professional "world views" determine what exists for members of these professions and what should be identified as relevant. Specialized training, then, leads to fragmentation in the sense of responsibility each group adopts.

James Karr (1993: 84–85) also shows how specialization can lead to inappropriate modes of understanding. In attempts to determine the parameters of water quality and the impediments to improving that quality, hydrologists trained in chemistry have traditionally considered little more than chemical properties when analyzing water quality. Karr likens this specialized approach to determining the health of the nation's economy to taking the salaries of university professors as key indicators. Something as complex as a nation's economy requires a multiparameter evaluation, which is more than looking at the incomes of one occupational group. Evaluating water quality on the basis of chemical analysis alone is similarly insufficient; it is misleading or misrepresentative of our interest in maintaining water quality. Evaluating the health of an ecosystem, something even more complex, requires inclusion of an even greater number of parameters.

Professional training, like all forms of training, not only determines what we take as real and what is noteworthy; it also forms what we take to be a problem and what falls outside the realm of our responsibility. Limiting professional perspective tends to support ignorance of social and moral injustices and justifies this ignorance on the grounds that such understanding falls outside the purview of the professional. Of importance and value to the engineer *qua* engineer, for instance, are the technical conditions concerning water management. Concern for possible effects on aboriginal or other burial grounds falls outside the realm of concern; it is seen as external to the management agenda, a political matter. What responsibility, then, is there to address the general impacts on human health? Clearly, world views, or when applied to narrower contexts, paradigm issues, have wide-ranging relevance. Preparing ourselves to deal with them is a basic building block of environmental thought.

Note

1. I wish to express my appreciation to Wayne Antony, my publisher, for helping with the articulation of what is distinctive about the approach I am taking. During conversation, he pointed out this implicit distinction.