THE IMPLICATIONS OF THOMAS BERRY'S COSMOLOGY FOR AN UNDERSTANDING OF THE SPIRITUAL DIMENSION OF HUMAN HEALTH

by

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A Thesis submitted to the Faculty of Theology of the University of St. Michael's College and the Department of Theology of the Toronto School of Theology in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Theology awarded by the University of St. Michael's College

Toronto 1998

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ABSTRACT

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THE IMPLICATIONS OF THOMAS BERRY’S COSMOLOGY
UPON AN UNDERSTANDING OF THE SPIRITUAL DIMENSION
OF HUMAN HEALTH

According to the authors of the new cosmology, the universe is the product of a continuously evolving sequence of irreversible transformations which have produced an increasingly differentiated, complex and interrelated cosmos. Some of these cosmologists also contend that the universe has had a psychic-spiritual dimension from its beginning fifteen billion years ago, not just a physical-material manifestation. Thomas Berry subscribes to this position. He employs this version of the new cosmology to address the ecological crisis facing humanity and to formulate alternatives to two primary causes of that crisis—a belief that the human is separate from the rest of the planetary community and that the non-human world lacks a sacred or spiritual dimension.

This thesis argues that adopting such a cosmological perspective prompts a revision of our understanding of spirituality. It permits a new awareness of holistic health which integrates us into cosmogenic processes. Furthermore, it informs a perception of the spiritual dimension of human health which recognizes the consequences of living in a universe enabled and guided by divine immanence. Accordingly, it ultimately addresses issues of the ecological crisis and the relationship between human and ecosystem health, and considers how our understanding of suffering and death might evolve when contextualized within a universe defined by cosmogenesis.
ACKNOWLEDGMENTS

While writing this dissertation, I have not only drawn upon many years of theological studies, but also twice as many years of clinical practice. Therefore I am beholden to many people and several institutions.

I begin by offering my deepest thanks to Professor Stephen Dunn for agreeing to direct this dissertation and for his assistance in all of its stages. I have been a hesitant apprentice to the ideas of Thomas Berry and the new cosmology, and Professor Dunn has patiently endured my often passionate objections. I am grateful for his forbearance and gentle direction, for his good humour and practical insights, and for his agreeable company and the generosity with which he has shared his knowledge and experience. He has been a wonderful mentor.

Professor Ellen Leonard has also directed this dissertation. I have benefited from her willing participation, her clear instruction, and kind demeanor. She has given freely of her experience and scholarship, and was the first person to encourage me to consider doctoral studies. Her unassuming graciousness made her gentle promptings easy to bear.

Professor Roger Hutchinson has graciously accepted the tasks of evaluating my comprehensive examination and my thesis proposal, and has served as a reader of this dissertation. I have appreciated his candor, his courtesy, and the integrity that he brings to his work.

I owe a special thanks to Thomas Berry. Not only have his many books and articles stirred my spirit and challenged my mind, but I have been moved by the generosity with which he has shared manuscripts of his current projects. The extent of his unpretentious nature and southern charm is only matched by his considerable scholarship and breadth of knowledge.
At the University of St. Michael’s College, I offer particular thanks to Wilma Stoyanoff and Sharon McGhie who have guided me through the administrative procedures of graduate studies with kindness and quick wit, more than once remedying my failures with “administrivia.” Professor David Whalen made possible my rather unusual theological field placement at the Abbey of Gethsemane, an experience which quietly fueled much of my studies. The staff at the John M. Kelly library have been both knowledgeable and approachable, providing ready service and accurate advice.

The staff of the Holy Cross Centre for Ecology and Spirituality deserve special mention. Anne Lonergan and Stephen Dunn have given freely of their considerable knowledge and experience, nurturing with skill and patience my gradual understanding of ecotheology, ecospirituality, and the new cosmology. Their hospitality, complimented by the warm welcome of Linda Nevins and Brother Conrad Federspiel, fostered a retreat where my education could continue and my spirit could be refreshed. I would be remiss if I did not also acknowledge the considerable contribution of that bioregion, particularly the brook.

Whatever writing skills appear in this dissertation have been resuscitated by the thoughtful care of Professor George Kilcourse of Bellarmine College. By engaging me in two writing projects and delicately editing my work, George has revived the pleasure that I take in crafting thoughts and feelings into sentences. I am also grateful for the time that he arranged for me to spend with the good monks at the Abbey of Gethsemane, and I extend my heartfelt appreciation to Abbott Timothy Kelly and Father Michael Casagram for their courtesy and hospitality.

Considerable support and encouragement has been provided by many friends and fellow students, particularly, Roberto Chiotti, John Oldaher, Maureen O’Connor, and John McLaughlin. I am also indebted to several members of the healing arts who have either contributed to my clinical education or to the support of my well-being, most

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notably Suzanne Labrie and Odette Oliver, and Drs. Brian J. Nelson, James L. McNamara (former dean of the Canadian College of Naturopathic Medicine), and Donald J. Henderson (former director of clinical studies at the Satellite Clinic of the Canadian Memorial Chiropractic College). I also wish to acknowledge the good cheer, unflagging support, and invaluable direction of Peter Larisey, S.J.

Finally, I thank my wife, Anne Marie Quinn, who avoided me when necessary and offered supported when needed. Her effervescent personality brought new life to many an arid day.
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INTRODUCTION

If theology is to remain a discipline establishing mutually critical correlations in theory and praxis between interpretations of the situation and interpretations of the tradition, then cosmology must once again be accorded a central place in all theological reflection.

David Tracy, On Naming the Present

A. PURPOSE OF THE THESIS

The primary purpose of this thesis is to explore the implications resulting from the claim that the universe has always had and continues to have a psychic spiritual dimension; more specifically, the impact that such a claim would have upon our understanding of human health, and particularly, the spiritual dimension of human health. It is believed that a perspective of the spiritual dimension of human health which is informed by both the new cosmology and the Christian tradition can significantly contribute to a holistic health paradigm and suggest how humanity can flourish with the rest of the Earth community in ways which are mutually enhancing for all.

I come to this project with a particular bias. Beyond the obvious interest in theology, I am deeply concerned about issues relating to human health and the destruction of the planet. And while I agree with others that the ecological crisis facing us is partly due to humanity's perception of itself as separate from the rest of the Earth community, I would also argue that a failure to recognize the spiritual dimension of creation has also contributed to that crisis. More importantly, I would contend that both of these factors have influenced our understanding of health in a negative way. These concerns are informed by a lifetime spent in the Roman Catholic church, and by over

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1 For instance, Willem H. Vanderburg maintains that "what is at the very root of the environmental crisis [is] the way modern societies have lost their sense of being an integral part of the biosphere." See, Willem H. Vanderburg, The Growth of Minds and Cultures (Toronto: University of Toronto Press, 1985), 66.
twenty years within the chiropractic profession and almost fifteen years within the naturopathic profession. I believe that, for at least some people, the new cosmology provides an invigorating perspective and a common language which permits issues relating to health, spirituality, and ecology to be discussed concurrently.

B. CONTEMPORARY INTEREST IN THE SPIRITUAL DIMENSION OF HUMAN HEALTH

In 1990, the Christian Medical Commission of the World Council of Churches defined health as "a dynamic state of well-being of the individual and society; of physical, mental, spiritual, economic, political and social well-being; of being in harmony with each other, with the material environment, and with God."²

This rather broad definition reflected a growing awareness that the determinants of a person’s health were many and varied. The proponents of this view claim that a comprehensive understanding of a person’s health would necessarily include the integration of physical, mental, and spiritual elements of the person, not to mention social, economic, political and environmental factors as well. That is, when speaking of human health—as opposed to ecosystem health, for instance—it is argued that the spiritual and psychological dimensions of the person must be considered, not just the physical.³

While this fuller definition of health is not a new concept, it is an understanding which has received renewed attention in the past thirty years. Various authors have observed how Western healthcare became less interested in the spiritual and

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psychological aspects of human health subsequent to the emergence of modern science during the Enlightenment. The application of the scientific method to the practice of medicine gradually caused the latter to focus almost exclusively upon the physical aspect of human health, an aspect which, unlike the psychological and spiritual dimensions of a person, could be quantified through empirical and reproducible studies, and categorized with precision. These traits of quantification, reproducibility and categorization seemingly authorized the medical science of the nineteenth and twentieth centuries to determine which healthcare theories and practices were valid, and which were to be ignored, dismissed or condemned. Indeed, with the scientific method being the final arbiter in healthcare, medical care became as much a scientific enterprise as a patient-centred service. The medical system became predominantly focused upon the treatment of disease rather than the promotion of health, partly because the former was more easily studied by the reductionistic, empirical techniques of the scientific methods.

In the latter half of the twentieth century, interest grew in returning healthcare to the promotion of health rather than the mere control of disease, especially in those Western countries with government funded healthcare systems. The Lalonde Report was a noteworthy herald of such interest in Canada, and marked a noticeable shift in government policy. Nevertheless, while both provincial and the federal governments in Canada spoke of the need for more holistic healthcare which would address more than

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the mere physical dimension of the person, implementation of these policies was meagre at best. This failure to provide more holistic healthcare within the healthcare system has generally been true in all Western countries which have fashioned their healthcare system upon the reductionistic biomedical model.

The Western allopathic medical model, crafted through the strict application of the scientific method, has consequently focused almost exclusively upon the physical dimension of health and the control and eradication of disease. Proponents of a broader definition of health would argue that this allopathic model was too narrow both in its philosophy and in its assessment and treatment of health. As a consequence, Western medicine was criticized for being too reductionistic and too atomistic in its understanding of the dynamics of the human body and the determinants of health. To correct this narrow and fractured vision, and to provide for a more integrated and inclusive form of healthcare, certain healthcare critics and policy makers determined that a broader and more holistic definition of health was required. This reformulated understanding of health would once again consider more than the mere physical dimension of the person; it would include psychological, sociological, spiritual, economic and environmental factors. But when this expanded definition was appended to the allopathic medical

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model by many of the proponents of a presumably more “holistic healthcare,” more parts were simply added to an already fractured and atomistic picture of the person and health. “Psychological” and “spiritual” pieces were merely added to the already segmented biomedical model. In true reductionistic methodology, it was believed that if one merely added all the parts together, a fuller understanding of the whole would necessarily emerge; it was believed that an atomistic model would ipso facto become holistic. Not surprisingly, this approach has been less than successful, a conclusion which is echoed in the continuing calls for a more holistic form of healthcare.

As long as the educational, investigative and therapeutic practices of modern allopathic medicine reflect a reductionistic methodology, it will be unrealistic to expect it to become more holistic. However, this is not necessarily an entirely undesirable state of affairs. Western medicine is remarkably accomplished at crisis intervention and surgical techniques—benefits which society would not want to do without. Therefore, Western medicine per se in its present form is not only desirable, it is indispensable. Not only is it unrealistic to expect allopathic medicine to also be holistic, such a transformation or such a schizophrenic identity might be unwise if it diminishes the positive contributions which Western medicine makes. Allopathic medicine cannot be the model for a holistic healthcare system; such a system would undoubtedly require an infrastructure which is initially and intrinsically holistic. If a more holistic system did become the predominant model, allopathic medicine could then become a very effective and important portion within that system. At the same time, a more holistic form of medical care is unlikely to be as effective at crisis intervention or heroic medicine as the present allopathic medical model. As Ray Jackson of the Science Council of Canada notes:

The reductionist approach is incomplete at the system level, and the holistic or systems approach is incomplete at the detail level. Therefore...
either-or contest between ‘holism’ and ‘reductionism’ should be banished to the intellectual nursery.\textsuperscript{12}

But before venturing further into this discussion of healthcare, it is important to note that this is an area of diverse opinions and sometimes confusing language. Assessments of the efficacy, cost effectiveness, appropriateness and even the definition of health and healthcare cover a breadth of contentious positions which are often vigorously defended. It is not the purpose of this thesis to become an arbiter in these debates. Nor is it my intention to engage in the sometimes polemical language which frequents these disputes. Therefore, when I describe Western medicine as “reductionistic,” I employ this word in a descriptive fashion rather than with pejorative or judgmental intention. In the same way, I will follow the suit of others and describe the Western biomedical model as “allopathic” in order to distinguish it from the form of healthcare which these same authors label as “holistic.” The reader should not infer from this that the former is a “bad” form of healthcare while the latter is “good” or preferred; they are simply different. I also recognize that allopathic medicine is not strictly allopathic in its methodology just as many forms of so-called holistic medicine are far from holistic in their scope or vision; such is the sometimes confusing language of these discussions.\textsuperscript{13} Of necessity, I will eventually describe a particular understanding of health and healthcare in order to provide a context for the remainder of the thesis. The reader should not infer from this that I am arguing that my position is the only appropriate form of health and healthcare; it is merely one of many possibilities.

\textsuperscript{12} Jackson, \textit{Issues in Preventive Health Care}, 60.

\textsuperscript{13} For instance, homeopathy is often touted to be a form of “holistic medicine” because it considers the physical and emotional dimensions of a person and the influence of environmental and life style factors upon the health of the patient. But homeopathic practitioners seldom query the patient’s spiritual state. Nor does homeopathy’s therapeutic methodology address biomechanical or biochemical aspects of a person’s health. Similarly, many so-called allopathic physicians take a keen interest in their patients’ nutrition and life style—concerns which run counter to a strict interpretation of the term “allopathic.”
However it is a perspective which I believe could effectively address some neglected areas of our present healthcare challenge.

At this point, it is enough to say that there exists a recognizable and credible opinion that argues for a more holistic form of healthcare which would address the spiritual as well as the psychological dimensions of the person. Such a proposed model would be initially and intrinsically integrative and holistic; it would incorporate the physical, psychological and spiritual dimensions of the person into an understanding of the economic, social, political and environmental determinants of health.

C. CONTEMPORARY INTEREST IN HUMAN HEALTH AS A PART OF ECOSYSTEM HEALTH

Such a holistic model must also consider a second trend which has emerged in the literature critiquing the modern evolution of Western healthcare. This further revisioning of the model for health has reasserted that human health and environmental health are inseparable. If ecosystem health is compromised, then humanity which is necessarily a part of that larger ecosystem will experience compromised health as well.

This expanded understanding of the context and complexity of human health emerged as various studies on health and healthcare delivery revealed an increasing array of determinants affecting human health. These determinants included, but were not limited to: social and physical environments, access to education, adequate housing, the ability to contribute in meaningful ways in the workplace, one's control over individual choices and responsibilities, the wealth and productivity of society, biological endowment and environmental factors. As the context within which humans live out their respective lives became a central focus among the determinants of health, the physical or geographic environment of that context received closer attention. This

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14 Ministry of Health, “Goals and Strategic Priorities,” 1; Healthy Public Policy Committee, “Nurturing Health,” 1-5.
stimulated the growth of literature exploring the interrelationship between human and ecosystem health.\textsuperscript{15}

Once again, some ambiguity of language has emerged. When the word “environment” is used in a healthcare context, it can refer to occupational health standards which consider the safety and “ambiance” of the workplace;\textsuperscript{16} it can deal with the toxicological and allergenic qualities of the person’s food, domicile, and clothing;\textsuperscript{17} or “environment” can refer to the geographic and ecological traits of an area which can range in size from the immediately surrounding region to the planet as a single, integrated ecosystem.\textsuperscript{18} In the context of this thesis, the last use of the word “environment” will be the one which I will tend to employ.

D. CONTEMPORARY INTEREST IN COSMOLOGY

I would suggest that the increasing interest in both the spiritual dimension of health and in the relationship between human and ecosystem health naturally leads to a consideration of cosmoology. By its very definition, spirituality—and hence a spiritual dimension of health—has a cosmological referent. Sandra Schneiders has argued that spirituality is the concern of everyone, not just a select ascetical or mystical few; that spirituality deals “with the integration of all aspects of human life and experience;” that


\textsuperscript{16} Bamberg, “Holistic Health.”


it is “affective as well as cognitive, social as well as personal;” and “that whatever enters into the actual living of this ongoing integrating self-transcendence is relevant, whether it be mystical, theological, ethical, psychological, political, or physical." She defines spirituality as “the experience of consciously striving to integrate one’s life in terms not of isolation and self-absorption but of self-transcendence toward the ultimate value one perceives.” She concludes that spirituality is “by definition, determined by the particular ultimate value within the horizon of which the life project is pursued.” The context or worldview within which one formulates such “ultimate value” becomes an influential dimension of one’s spirituality. Such a worldview in its broadest expression reflects one’s cosmological understanding of creation. C. Margaret Hall has observed that

cosmology is defined as a belief system based on a view of the universe as an orderly system characterized by complex interacting processes of energy or life-force. When this energy or life-force is assigned meaning through traditional religious symbols, cosmology and theology become synonymous as frames of reference for values and belief.

In the latter half of the twentieth century, our cosmological perspective has become uniquely recreated as the “new physics” has given birth to the “new cosmology”-a scientific understanding of the origin and history of the universe as an evolutionary, developmental, irreversible, cosmogenic process. The study of cosmology has shifted from being a primarily speculative inquiry into an empirical formulation. A new understanding of cosmology has emerged which necessarily prompts a new reflection on the values and beliefs connected with it, and for most religious believers, a fresh

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consideration of our understanding of the place of God within this new cosmic panorama.23

As ecotheologians wonder anew about God, theology, ecology and creation in view of this new cosmology,24 those studying the interrelationships between human and ecosystem health ponder factors of health, ecology, and the created world.25 Concurrently, some promoters of a more holistic approach to health are exploring an understanding of the spiritual dimension of health which broadens “the particular ultimate value within the horizon of which the life project is pursued” to include one’s relationship with the created world and the Divine.26 (See Fig. 1 on page 11 for a depiction of some of the elements which comprise ecotheology, the spiritual dimension of human health, and human-ecosystem health.)

Intersections of concepts are occurring as theology, ecology and health promotion touch on common areas, all within the context of the “new cosmology.” (See Fig. 2 on

Fig. 1
The three forms of inquiry in their microphase or individual states with some of their respective elements featured.

Fig. 2
The intersection of Ecotheology, the Spiritual Dimension of Health and Human-Ecosystem Health occurring within a single cosmological referent.
Ecotheology and some branches of healthcare include elements of ecology in their deliberations as they situate the human within Earth’s ecosystems. Both ecotheology and discussions concerning the spiritual dimension of health ponder humanity’s relationship with the Divine. And considerations of both the spiritual dimension of health and the interdependence of human and ecosystem health place a particular focus on human health. At the same time, all three forms of inquiry—ecotheology, human-ecosystem health, and the spiritual dimension of health—refer to the created world, although not necessarily in identical ways.

More importantly, I believe that all three of these inquiries and their overlapping intersections can be explored within the broader context of the “new cosmology.” That is, the various intersections among these three players constitute what Thomas Berry would call their microphasic dynamics which can be most fully understood when also considered within a grander macrophase context of cosmology. Admittedly, on a microphase level, separate discussions of ecotheology, human-ecosystem health and the spiritual dimension of health could involve three different cosmological perspectives; but it is also possible to discuss each within the context of the new cosmology. Such a common cosmology would become the macrophase dynamic within which an understanding of these three concepts could be explored and articulated. (Refer again to...

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27 At various times, Thomas Berry will capitalize both “divine” and “earth,” but not at other times. I will capitalize “divine” when it refers directly to God—i.e., the Divine—but not when it means god-like—i.e., divine presence. I will also capitalize “earth” when it refers to the planet as a subject, in keeping with Berry’s notion that the universe is a community of subjects.

28 Thomas Berry observes that “There are always two modes of any being, its microphase mode and its macrophase mode, in other words, its particular mode and its universal mode. We are not ourselves without everything else.” See, Thomas Berry and Thomas Clarke, Befriending the Earth: A Theology of Reconciliation, ed. Stephen Dunn and Anne Lonergan (Mystic, Connecticut: Twenty-Third Publications, 1991), 22. Elsewhere, Berry and Brian Swimme offer a similar definition of the terms. They state that “By microphase we mean that which pertains to the here and now of a particular creature. By macrophase we point to the larger realities involved in the moment, both in terms of the largeness of the universe and of Earth and the mystery of the unborn future.” See, Thomas Berry and Brian Swimme, The Universe Story (San Francisco: Harper, 1992), 55.
The new cosmology would provide a macrophase context or infrastructure in order to bring the three forms of inquiry into a more unified and interconnected discussion. Such a macrophase dynamic would reveal the intersections of the constituent elements and would provide a context for exploring the implications of these microphase intersections.

These intersections within a broader cosmological context—or this microphase dynamic within a macrophase infrastructure—suggest several questions: how does one understand Divine Presence within cosmogenesis, given the new cosmology; how is the spiritual dimension of human health understood within a human-ecosystem health context; and ultimately, how does one describe the spiritual dimension of health so that it reflects these new cosmological, ecological and theological perspectives?

This final question is the primary subject of this thesis, although the first two will provide fuel for that journey.

**E. REASONS FOR CHOOSING THOMAS BERRY’S WORK**

Terms such as “health,” “healthcare,” “spirituality,” and “cosmology” are unavoidably ambiguous. Their definitions vary significantly depending upon their authors’ perspectives and the arguments and evidence which each author musters to bolster her or his respective point of view. While it would be relatively easy to find an author who delves deeply into any one of these terms, it is more challenging to find a serious writer who provides a context for a synthetic integration of these concepts. Thomas Berry is such an author. From the earliest days of his academic career, Berry has reflected upon the development of human cultures and the way that these cultures have been fashioned within a particular cosmological perspective. He has critiqued the “pathological” cosmology of the modern era, its “addiction” to the paradigm of progress.
and the “cultural autism” which has resulted. He has examined the new cosmology and its understanding of evolutionary, developmental, irreversible time, and has proposed a functional cosmology and spirituality within this new context in order to reawaken humanity to its place within cosmogenesis.

Berry contends that in order for humanity to address the ecological challenges besetting it, people must come to know the “new story,” the story of cosmogenesis, which reminds us that we are not only formed and sustained by the processes of a sacred universe, but are integral to those processes. He argues that because the universe emerges through a process of ongoing differentiation and diversification, each component of this continuing adventure is a unique articulation or subject within an interrelated whole or communion. Furthermore, each subject within this fifteen billion year story, has had a psychic-spiritual dimension as well as a physical-material reality. According to Berry, a functional cosmology for our time will only be successful if the numinous and psychic-spiritual dimensions of the emergent universe, present from the primordial moments, are included in the scientific and physical understanding of that history. Such a functional cosmology provides an integrated context for exploring the physical, spiritual, and psychological dimensions of holistic health.

In addition to these cosmological and spiritual elements, Berry has described the Earth as our “primary healer” since “integration with [the] earth’s functioning [is] the primary basis of health for the human being.” That is, since the Earth provides the

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31 Berry, *Dream of the Earth*, 105-106; cf., 44-46, 120-121.
33 Berry, *Dream of the Earth*, 120.
34 Ibid., 104.
Prototype and primary resource for our health, human health is derivative from and remains dependent upon planetary health. But although Berry uses "health" metaphors and health terms from time to time (recall the use of "pathological," "addiction" and "autistic," above), his notion of the Earth as our primary healer is less developed in his writings than his positions concerning ecology, cosmology and spirituality. Nevertheless, his deeper articulation of these latter positions provides a context for exploring the implications of the new cosmology upon an understanding of the spiritual dimension of human health.

**F. METHODOLOGY OF THE THESIS**

This thesis will provide a descriptive study and systematic analysis of the implications of the new cosmology upon an understanding of the spiritual dimension of human health. It will describe the elements and dynamics of the spiritual dimension of human health as these might be understood within the context of the functional cosmology and functional spirituality outlined by Berry. The text will also discuss a practical application of the thesis to demonstrate the integration and consistency of the various elements of the argument.

To be about this task, the first chapter will provide an overview of spirituality, health, the spiritual dimension of health, and ecosystem health as it relates to the human. Unlike this introduction which has primarily established that these notions are of contemporary interest, chapter one will provide more substance and context. However, as in this introduction, this overview is not intended to be exhaustive; nor will it provide an in-depth critical analysis since these concepts are not the main focus of the thesis. Thus, although the contemporary interest in the spiritual dimension of health often

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35 Berry and Swimme, *The Universe Story*, 255, 257.
includes a critique of the Western allopathic medical model, for example, that debate
will not be explored since it is peripheral to the thesis.

Cosmology will be the focus of chapter two, including: a definition of the term, a
description of evolution, and the relationships between cosmology and theology and
cosmology and health. Particular focus will be given to the notion of cosmogenesis and
an articulation of the new cosmology. Thus, my discussion of cosmology will consider
three dimensions of that term as enumerated by David Tracy and Nicholas Lash, namely:

[i] theological accounts of the world as God’s creation; [ii] …observational and
theoretical study of the structure and evolution of the physical universe; [iii]
…‘worldviews’: unified imaginative perceptions of how the world seems and
where we stand in it.36

Any description of cosmology becomes a self-revelatory event since it necessarily
divulges something about the worldview of its author. For example, by choosing an
interpretation of cosmogenesis which tells a different tale than Genesis, the Enúma Elish,
or the procreative act of Kitchi-Manitou with Geezhigo-Quae, I have revealed something
about the perspective that I bring to my task.37 I will be describing a form of
cosmogenesis which has taken shape through the science of the new physics. I will not
attempt a comprehensive critique of the new physics since this is both beyond the scope
of this thesis and my scientific acumen. Nor will I offer a specifically feminist analysis
of the new cosmology, just as I decline from providing a feminist critique of healthcare
and spirituality. I believe that elements of the feminist perspective will be incorporated
into the vision that I am unfolding due to the influence of the various feminist authors
cited38 and the acknowledgment of the feminist critique within other sources.39

36 David Tracy and Nicholas Lash, “Editorial,” in Cosmology and Theology, ed. David Tracy and
37 Geezhigo-Quae is Sky Woman, a Manitou who re-created the Earth and is the mother of the
Anishinaabeg people and nation. Kitchi-Manitou is the great mystery of supernatural order who creates all
things and all beings, including manitous. For a discussion of Ojibway cosmology, see, Basil Johnston, The
38 Brennan, Clifford, Macy, McFague, Merchant, Ruether, Schneiders, Spretnak, Suchocki.
In chapter three, I will provide an overview of Berry’s critique of our current state of affairs and the alternative which he proposes. While it is not intended that this chapter should include all aspects of Berry’s arguments, it is nevertheless sufficiently comprehensive (and unavoidably long) to describe the elements of Berry’s functional cosmology and functional spirituality, including his understanding of divine presence in cosmogenesis. Since Berry is not alone in his perspective, although he has arguably provided significant leadership in this matter, I will concurrently indicate other authors who hold similar views, and will occasionally indicate when some variance arises. Again, since a critical analysis of Berry’s cosmology or the new cosmology is not the primary task of this thesis, I will not dwell on the same.

Chapter four will offer a comprehensive discussion of human health within the context of Berry’s cosmology, primarily focusing upon the spiritual dimension of health. It will detail the continuities and discontinuities with earlier working definitions for spirituality, health, and the spiritual dimensions of human health. Finally, it will consider some of the implications for both theology and healthcare if human health is defined using Berry’s functional cosmology and spirituality, using two applications to concretize this discussion.

The final chapter, chapter five, will examine the various advantages and disadvantages of using Berry’s functional cosmology as a context for describing the spiritual dimension of human health, and for defining human health itself. It will further propose the significance of this thesis to a contemporary understanding of spirituality, health, the spiritual dimension of health, and human health contextualized within ecosystem health.

30 Berry, Casey, Craine, Fox, Holland, Kaufman, McDaniel, Roszak.
CHAPTER ONE

DEFINING TERMS AND EXPLORING CONTENT

Measure your health by your sympathy with morning and spring.
If there is no response in you to the awakening of nature—
if the prospect of an early morning walk does not banish sleep,
if the warble of the first bluebird does not thrill you—
know that the morning and spring of your life are past.
Thus may you feel your pulse.

Henry David Thoreau, Journals

As was mentioned in the Introduction, the concepts of spirituality, health, the
spiritual dimension of health, and the human dimension of ecosystem health evoke a
wide range of opinion and disagreement. For the sake of advancing the project of this
thesis, it will be necessary to formulate working definitions of these terms through a
synthesis of these various positions. Although I will attempt to make these working
definitions as inclusive as possible, it will be necessary to tailor them somewhat lest they
become so comprehensive and unwieldy that they are effectively meaningless or
unmanageable. Thus, the working definitions which emerge at the end of this chapter
will necessarily reflect some degree of personal bias. Some partiality, which inescapably
reveals one’s own context and experience, is undoubtedly unavoidable in any case.¹

¹ Martin E. Marty, “The Intertwining of Religion and Health/Medicine and Religion, and Tradition
and the Traditions in Health/Medicine and Religion,” in Health/Medicine and the Faith Traditions, ed.
the Human-Environment Phenomenon,” 75.
**Contemporary Understandings of Spirituality**

In order to create a working definition of the term spirituality, it is necessary to weave together several threads of thought. Each element will first be examined prior to bringing about this synthesis.

*Spirituality is the essence of a person.*

Several authors have asserted that spirituality pertains to the essence of what it is to be human, to the inner essence of the person. It is recognized as a fundamental dimension of our personhood, a fundamental feature of how we are made, as intrinsic and necessary to us as our liver or our mind. Because it is an inherent and essential quality, Nagai-Jacobson and Burkhardt argue that “it is impossible to know the person if one disregards the person’s deepest reality” or their spiritual being since such an omission would ignore a fundamental aspect of the person. Furthermore, because they hold that spirituality is the essence of a person’s being, “it is to be recognized rather than made or built.” That is, it is a quality that is recognizable in another because it is already present; it is not conferred by the observer. This does not preclude the likelihood that a person’s spiritual dimension will grow and transform within the experiences of a life’s journey. Nor does it exclude the possibility that one person can offer spiritual direction to another. This perspective simply emphasizes that a person’s spirituality is such an important, intrinsic and essential quality that it must be respectfully acknowledged in the other in order to more fully appreciate who that other is.

Spirituality and religion are not synonymous. Religion provides a belief system which facilitates the way we reflect upon, articulate and actualize that which fires the

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4 Ibid., 20.
essence of who we are—our spirituality. It is partly a construct that emerges from the human mind and is added to the life of those who are already intrinsically spiritual.

**Spirituality is the unifying force or vital principle that integrates all other dimensions of the human being.**

Although spirituality is an inner essence which reflects the deepest reality of a person, it also provides a unifying force through which that person can intentionally seek to integrate the various elements which comprise a life. It is "the center or core of the human that interprets and unifies the whole person."5 One’s spirituality integrates the whole of the personal experience, including one’s sense of body and emotions, and one’s experience of that which transcends personal being.

The events encountered during one’s life, and one’s experience of the various constituent elements of one’s being, do not remain as isolated events or qualities. They are experienced as part of a unified whole which is constructed according to one’s spirituality. Accordingly, spirituality becomes "the experience of striving to integrate one’s life in terms of...the ultimate value one perceives...."6 Consequently, spirituality is identified as "the inner force that fuels the way we think and act and live.... [S]pirituality can also be described as the spirit that animates a person’s life."7 It is therefore recognized by some to be a vital, unifying force or vital principle that integrates all dimensions of human being.8

**Spirituality is a belief that relates a person to the world, giving meaning to existence.**

In seeking to provide a unifying force through which one integrates the various dimensions of human living, spirituality proposes a connection or relationship which

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6 Schneider's, “Spirituality in the Academy,” 1550.
unites the individual with the wholeness of existence—with self, others, the world and God. For some, such an attempt at harmonious interconnectedness with the Mystery or the Divine might not include a specifically religious, denominational connotation; for others, it will be explicitly denominational. Such relationship-forming beliefs are not so much proven, as they are experienced; not so much independently deduced by an observer, as they are conveyed to a listener. Spirituality is fundamentally relational.

**Spirituality is a personal quest to find meaning and purpose in life involving an adherence to an individual’s, a society’s or a denomination’s ultimate commitments, principles of order, or final values.**

The endeavor to find meaning and purpose in life seems to engage both introspective and transpersonal elements. A person seeks to integrate life’s experiences within a set of ultimate precepts that the individual has come to recognize and value. Spirituality consequently becomes an integrating and unifying referent through which a person can privately reflect upon and discern meaning and purpose in the events of her or his life. It calls for the pursuit and experience of the radical truth of things.

However, such introspection is not intended to promote self-absorption or narcissistic reflection; it prompts one to include a transcendence of the self. Spirituality involves a transpersonal element which instructs one on how to be and how to integrate one’s actions into a larger understanding of self within the context of a society or religious denomination (or both). It provides a sustained and lived-out vision of life which lies behind one’s thoughts and actions.

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13 Schneiders, “Theology and Spirituality,” 266.
ultimate value within the horizon of which the life project is pursued.”¹⁴ This “ultimate value” is often informed by a relationship or understanding of the Mystery/Divine and the moral tenets and belief systems which are subsequently derived, perhaps within the context of denominational beliefs, but perhaps not.

Therefore, as individuals and societies attempt to find meaning in existence, they articulate their ultimate commitments, their most comprehensive principles of order or their final values which become both the prism for evaluating their actions and the motivation for their rendezvous with life. The innermost concerns and values which inform the beliefs of a spirituality ultimately affect the behaviour of the person or society, their relationship with the world, and their perception of their relationship with God.¹⁵ The spirituality of a person or a society mobilizes existence toward a desired end which is held to be the goal by which an individual lives and a society’s character is fashioned.¹⁶

*Spirituality assumes a belief that there is an ultimate power, Higher Power or God with whom one has a relationship or sense of connection through personal transcendence.*

Spirituality attends to the invisible aspects of life which transcend the personal, concrete and finite particularities of our existence. Humans have a sophisticated capacity to experience and relate to a dimension of power and meaning which is transcendent of the self and even of this world.¹⁷ A spiritual experience is a unitive experience in which we feel significantly united with something typically considered to be apart and other than ourselves. Our sense of self expands beyond our physical body and our personal history to become a part of and in harmony with the transpersonal. As “distinct from

psychotic episodes, the observing ego is not overwhelmed or dissolved within the transpersonal. One is simultaneously conscious of both a separateness from and belonging to the beyond.\textsuperscript{18}

Generally speaking, spirituality assumes that there is an ultimate power or transcendent being in the universe. As has already been discussed, spirituality seeks to integrate life in terms of self-transcendence toward the ultimate value which one perceives. If such integration is with some understanding and experience of the Absolute or the Mystery or the Divine in the universe, then spirituality adopts a religious context.\textsuperscript{19}

\textit{Christian Spirituality}

When spirituality is considered to be religious, it necessarily becomes affective as well as cognitive. It will acquire a social dimension which will complement and expand its personal, introspective aspect. Such a spirituality will also be self-transcendent toward God. When spirituality integrates these elements into a relationship with God in terms of Jesus Christ through the gift and influence of the Holy Spirit active within the community of believers, then this spirituality is decidedly Christian. It is trinitarian, christological and ecclesiastical.

Due to its affective and social characteristics, Christian spirituality (and indeed, any religious spirituality) examines and informs all aspects of a person’s life, whether psychological, ethical, mystical, theological, political, ecological or economic. It will beckon the person to reform when his or her life experience is in conflict with the spiritual experience. Thus, while one’s spirituality might simply describe a state of being, when that spirituality is contextualized with a religious perspective, it requires a state of doing—and doing rightly.\textsuperscript{20} Consequently, one’s spirituality contributes to the

\textsuperscript{19} Stuart, Deckro, and Mandle, “Spirituality in Health and Healing,” 37.
\textsuperscript{20} Farran et al., “Development of a Model,” 187.
progress of one’s life; it is part of a process, a sacred journey. “Spirituality is the name we give to the ongoing process of knowing and responding to God in our lives”—a God who challenges, transforms, sustains and delights us.21 Since God is revealed to us through our daily experiences, our unique set of experiences influences both our knowledge of God and the responses which are demanded of us. Thus, just as suffering “varies not with the adversity apparent to the observer but with the meaning experienced and the character of our brokenness,” so too will our spirituality be flavoured by the particular experiences and process of our life.22

*Spirituality is holistic or inclusive*

Because spirituality is described as a unifying force which integrates all dimensions of the human being while concurrently relating that being to self, world and God, it would seem to be inconsistent for us to fragment the person, when we speak of spirituality, into isolable and independent parts and faculties, whether inner and outer, or personal and social, or profane and sacred. And while spirituality was once considered to be a matter of the soul—as something interior and private, rather than relational, as involving a God who was extrinsic to life’s experience and encountered only in religious activities—a more contemporary understanding of spirituality emphasizes integration and cooperation rather than isolation and control. “Current studies stress a more holistic, socially conscious, and even environmentally sound spirituality...”23 In such an understanding, God is experienced as a transcendent presence at the heart of life who remains the source and ground of all that is. Spirituality requires that we acknowledge the holistic nature of the human and the human condition which is inclusive of all its blended constituents. When it is necessary to isolate a constituent element for the

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purpose of reflection or discussion—as has been done during this discussion—such an action must be recognized as an artificial construct which facilitates understanding but does not reflect the integrated, multi-faceted reality. While spirituality as an academic discipline tends to partition the notion of spirituality into its various constituent parts, spirituality as life process is nevertheless an integrated, inclusive whole.24

The quality of “holistic” or “holism” is often attributed to both spirituality and health. Prior to defining the former, I will briefly examine the general principles of the notion, holistic.

**CONTEMPORARY UNDERSTANDING OF HOLISTIC**

When spirituality or health is described as “holistic,” this qualifier can be as varied as the nouns that it characterizes. Generally speaking, the word holistic “reflects a concern for wholeness, a desire for integration, and an attempt to understand the connections between the various aspects that constitute a given reality.”25

According to Dianne Cmich, holism is distinguished by four principles, namely that: i) entities and systems in the universe exist as unified wholes; ii) the parts of a whole are dynamically interdependent and interrelated; iii) a whole cannot be comprehended through an isolated examination of its constituent parts; and iv) the whole is greater than the sum of its parts.26 In contrast to the reductionistic and partitioning tendencies of modern science, holism pursues the integrated, interactive whole of the reality being considered.27 But whether one is considering reductionism or holism, one is often left with a list of parts; the difference between reductionism and holism results from the view of the latter that the parts must ultimately be discussed as an integrated,
interactive whole. Consequently, when the term "holistic" is applied to humans, spirituality or human health, different understandings of the term can result depending on the items or size of the lists that comprise the whole. Commonly, however, when "holistic" is applied to human health or spirituality, it tends to include an integration of the physical, psychological and spiritual aspects of a person. A person is regarded as a unity of physical body, mind and soul; of biological make-up, personality and spiritual orientation. For physician, Richard Gerber, it is the contribution of spirit to this triumvirate which is most critical since

it is the endowing power of spirit that moves, inspires, and breathes life into that vehicle we perceive as the physical body. A system of medicine which denies or ignores its existence will be incomplete, because it leaves out the most fundamental quality of human existence—the spiritual dimension.

More recently, this combination of physical body, mind and spirit have been joined by a reference to the environment within which the person resides. That is, the "holistic" perspective is extended beyond the boundaries of the person to include their

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28 For example, reductionistic medicine has been criticized for its apparently atomistic view of the body, for its tendency to partition the body into distinct cells, organs and systems, for seeing the body as a collection of parts. Holistic medicine has been heralded for its tendency to regard the body as a unified whole, as a single functioning unit. Yet holistic medicine also "partitions" the person into physical body, mind and spirit; it, too, creates a lists of "parts." The difference lies in the latter's position that these parts must be revisioned into a unified whole which more accurately reflects the totality of the person (since the sum is greater than its parts).


31 Richard Gerber, Vibrational Medicine (Sante Fe, New Mexico: Bear and Co., 1988), 419.
Such an extension often refers to the harmonious integration of the person into their social context. The holistic model increases its list to include the harmonious integration of the “physical, emotional, mental, psychic, spiritual and social dimensions” of the person.

A holistic model of the person, as it pertains to health or spirituality will consequently have intrapersonal and interpersonal dynamics. It will extend beyond introspective integration toward social relationships and even a relationship with the Divine. Perhaps with this understanding in mind, Morris Maddocks reflects on a sentence of Luke’s Gospel where it is said: “Jesus increased in wisdom and in stature, and in favour with God and man [sic].” (Luke 2:52). Maddocks notes: “In effect [the author of Luke] is saying that Jesus grew mentally (in wisdom) and physically (in stature), and also spiritually (in favour with God) and socially (in favour with man).” Maddocks contends that these four areas of growth need to be cultivated for “perfect health” to be attained. More importantly, he argues that one’s holiness is enhanced when wholeness or holistic integration is achieved in these four areas.

Other authors expand the breadth of the holistic vision to include a cosmic perspective. For them, it is not enough to say that a holistic approach will include a person’s social contacts since these contacts are either limited to human-human interactions, or treat the planet as merely a stage for human drama. For these authors, the planet—along with self, community and God—must be considered when formulating a holistic perspective of health or spirituality.

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Holistic Spirituality

Holistic spirituality recognizes that we live in a divine milieu. The creator God of Genesis and the protector God of Exodus is revealed to us as One who is profoundly involved in creation, choosing to be known by humanity and to be a part of human life. This is a God who is intimately involved with the cosmos, journeying with the people in their times of triumph and sorrow. Furthermore, through the incarnation of Christ, all of creation is impregnated with the sacred. All that humanity can experience—whether event or object—can be revelatory of God.36

Donald Capps believes that “the primary threat to spiritual well-being in our era is the inaccessibility of the sacred.”37 He contends that our narcissism causes us to demand that the sacred be immediately accessible. We subsequently tend toward a privatized religion. The sacred becomes inaccessible as we increasingly focus upon our narcissistic visions, and we neglect the revelation of the Divine in the world about us and in the events of social dynamics. In Capps’ view, because “awareness of the sacred is vital for maintaining a religious orientation to life, transformed narcissism is critical to spiritual well-being.”38

Holistic spirituality embraces the totality of a person’s existence. It seeks the integration of one’s personal being with one’s encounter with others, the rest of creation, and the Divine, but without risking one’s unique identity. Holistic spirituality is also informed by a person’s sense of social justice and ecological responsibility.39

36 Casey, Food for the Journey, 7-8.
38 Ibid., 251.
A WORKING DEFINITION OF SPIRITUALITY

Based on these discussions, it is possible to define spirituality as a fundamental dimension of our personhood, animating the way we think, act and live, and creating a unitive integration of the various dimensions of our unique being. Concurrently, our spirituality informs the way we engage life beyond ourselves, drawing us into a unitive relationship with that which is typically considered to be apart from ourselves—others, the world and the Divine. The purpose and meaning we find in life and the ends which we seek are coloured by the spirituality we hold, by the commitments, principles or ultimate values which we have come to accept through personal reflection and the instruction of society and church.

CONTEMPORARY UNDERSTANDINGS OF HEALTH

In the decades following World War II, many First World nations became increasingly interested in reviewing their respective healthcare systems, partly because of a concern that there was a marked disparity between the health of the richest and poorest segments of their societies, and partly because increased expenditures on healthcare had not resulted in the anticipated proportionate improvement in their society's health.40 As part of this review, many healthcare commentators and organizations attempted to define what was meant by the word “health”. Thus, when the World Health Organization was established in 1948, the preamble to its constitution defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” It declared that

the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being. ....[Therefore], governments have a

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responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures.\textsuperscript{41}

This definition attempted to re-define health as more than the mere absence of disease—an earlier definition which had tended to describe what health was not, rather than what it might be. The WHO definition was met with considerable criticism as well as some applause. Some of its critics argued that the mention of "social well-being" was reducing all human problems to health concerns which the medical doctor was now expected to remedy. Consequently, the WHO definition was judged by these critics as being too broad and vague.\textsuperscript{42}

There was some merit to these concerns. However, it seems to me that such criticism was fired by two assumptions which must be questioned. Firstly, the critics assumed that the existing biomedical system which was intrinsically reductionistic would be the sole means by which this more holistic notion of health would be addressed. They did not realize, and perhaps this was not entirely obvious to the WHO either, that if such an understanding of health was to be promoted, the healthcare system would require considerable reform. That reform would restructure the provision of healthcare to include a wider scope of professions in decision making and service delivery. Secondly, the critics of the WHO definition of health tended to assume that medical doctors brought about the health of their patients; that health was an outcome of a healthcare system functioning well; that health was determined by medical care. As was noted in


\textsuperscript{42} Callahan, "The WHO Definition of Health," 247; Dennis Krouse, "Health and Healing in Traditional Catholic Expression," in \textit{Liturgical Foundations of Social Policy in the Catholic and Jewish Traditions}, ed. Daniel F. Polish and Eugene J. Fisher (Notre Dame: University of Notre Dame, 1983), 56. I would also tend to criticize the WHO definition of health, but not because of its attempt at providing a more holistic understanding of health. I dispute its position that health is a right. Access to basic healthcare might be a right, but not health. A society cannot guarantee one of its members that he or she will be healthy since society can control neither the genetic make-up of that person nor his or her personal choices which will invariably impact upon health status. Society can, however, accept some responsibility toward creating an environment which is conducive to and supportive of one's attainment of health.
the introduction of this thesis, there are many determinants of human health, and medical care is among the least important. Nevertheless, the concern that a definition of health can become so inclusive and so vague as to be come meaningless is valid. On the other hand, a definition which does not reflect the complexity of its subject is also wanting. I will endeavor to find a middle ground. Before proposing a working definition of health, I will present various aspects of the notion of health, trying to be comprehensive without exhausting either the subject or the reader.

**Health is hard to define**

The word “health” is derived from the Old English word *haelth* which is itself derived from the word *hal* which means “whole”—hence, the term “hale”: to have sound health; to be whole. The implication is that to be whole as a person is to be healthy, and conversely, to be healthy one must become whole. This naturally raises the question: “What is a ‘whole’ person?” If the etymology of the word does not provide a clear definition, it at least suggests one of its features—health involves an integration or intactness of constituent elements.

Claude Bernard (1813-1878), the outstanding French physiologist and founder of modern medical research, concluded that words like “life, death, health, disease, have no objective reality.” He contended that attempts to define such words “would be entirely

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43 When examining the 10 leading causes of death in the United States of America for 1976, the Department of HEW determined that about 50% of deaths resulted from unhealthy lifestyles, 20% from environmental factors, 20% from human biological factors, and only 10% from inadequate healthcare, including access to healthcare. See, D. A. Hamburg, “Healthy People: The Surgeon General’s Report on Health Promotion and Disease Prevention Background Papers,” (Washington, DC: Department of Health Education and Welfare, 1979).

44 It is worth noting that the word “holy,” derived from the Old English word *halig*, also comes from the Old English word *hal*. This connection among “health” and “holy” and “wholeness” will be discussed further when Thomas Berry’s understanding of health is placed within a cosmological context.

wasting one's time in pursuing a phantom." Bernard is not alone in this assessment.  

Leon Kass suggests that while a precise definition is not possible, it is at least possible to recognize and describe what sort of "thing" health is. Kass notes that we tend to speak of health as if we know what it is, as if it were a real condition, as if we could recognize its presence or absence in another. Even if someone who is discerned to be "as fit as a fiddle" should be harbouring a fatal disease, we would conclude that appearances can be deceptive, not that we apparently have no conception of health. It would seem that we speak about health as if we know what it is, even when our conclusions concerning it are sometimes in error. Nor is this surprising since, in very practical terms, it is not necessary for us to have a precise definition of health in order to treat a high fever or bandage a cut. In practical terms, we at least know what sort of "thing" health is, or perhaps, what it is not.

Defining health—that is, setting its boundaries, the task of any definition—can also be a play with relativity. Health seems to vary in its standard and to be relative to our stage of life. Most people who would presently claim to be healthy can nevertheless remember being healthier at some earlier time. Health is not only relative to the age of a person, but also to their external circumstances. For instance, while paraplegia might not seemingly curtail the accomplishments of a theoretical physicist or a nation's president, an ingrown toenail could cripple the career of a ballerina. This does not prove that health itself is relative, but that the importance of health can be so. All other things being equal, the person without paraplegia or an ingrown toenail is healthier than the person with either of these conditions, but the impact of any diminishment of health can be relative to external factors or the importance we place on those circumstances.

47 Consider, for example, Dubos, Man Adapting, 364.
48 Kass, Toward a More Natural Science, 169.
Furthermore, while there seems to be a universal interest in health and an ability to distinguish between being healthy and being unhealthy, different cultures tend to have different concepts of health and ways to label disease, further complicating any universal definition of health (such as the WHO attempted to provide). What may be classified as sickness in one culture might be considered within the range of health in another. How far one can deviate from a perceived norm before being labelled “sick” seems to be arbitrary and ambiguous. René Dubos notes that “we are more exacting than our ancestors in matters of health, and especially are we less willing to accept the infirmities, pains, and blemishes, the catarrhs, coughs, and nauseas that used to be regarded as inevitable accompaniments of life.”

Presumably, even within cultures, the notion of health can vary with time.

Since health appears to be a subjective experience which is known intuitively and influenced by one’s cultural context, a definition of health or framework for healthcare is likely to be most intelligible and effective if it is based upon concepts rooted in one’s own culture and changing in step with the shifts of that society. Concurrent shifts in an understanding of health are increasingly necessary as today’s lifestyles create problems which either did not exist several decades ago or were less prevalent. For example, in affluent Toronto, we have replaced the microbial spoilage of food and possible food shortages with allergic reactions to synthetic “foods” and widespread over consumption, increasing the so-called “diseases of civilization.” Any contemporary understanding of health must take these types of shifts into account.

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51 Diseases of civilization include (but are not limited to): increased incidents of arteriosclerosis, carcinomas, asthma, diabetes, and osteoporosis—sometimes resulting from malnutrition. But civilized cultures also tend to experience less beriberi, pellagra, or scurvy which occur due to a deficiency of vitamins B1, B3 and C, respectively, resulting from inadequate nutrition.
In addition to our culturally influenced perception of health, our individual requirements also contribute to our sense of being healthy. A Bay street executive, a sole custodial mother with three children, a lumberjack in Clayoquot Sound and a monk rising during the night to chant vigil prayers will all have different physical and mental needs. Their subjective sense of health will be nuanced accordingly. Dubos concludes that

The criteria of health are conditioned even more by the aspirations and the values that govern individual lives. For this reason, the words health and disease are meaningful only when defined in terms of a given person functioning in a given physical and social environment. The nearest approach to health is a physical and mental state fairly free of discomfort and pain, which permits the person concerned to function as effectively and as long as possible in the environment where chance and choice has placed him.\(^{52}\)

Implicit in Dubos' tentative definition of health is the recognition that a healthy person has the ability to adapt to changing circumstances.

**Health is the ability to adapt**

A healthy person has the ability to adapt to an ever-changing biological and social environment in a creative, life-enhancing fashion.\(^{53}\) Such a person must also be able to adapt to changes within his or her internal environment—what Claude Bernard identified as the *milieu intérieur*. The internal stability which is intrinsic to any self-organizing system must be sufficiently flexible to accommodate the continual, multiple and interdependent fluctuations which characterize any living being. A decrease in flexibility and adaptability usually heralds a decrease in health, yet adaptability cannot be so flexible as to jeopardize the unique identity and needs of the person.\(^{54}\) A healthy response to environmental changes involves the innate intelligence of the body's self-regulatory mechanisms selecting sufficiently adaptive responses without compromising individual integrity.

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\(^{52}\) Dubos, *Man Adapting*, 351.

\(^{53}\) Michello, "Determinants of Health," 62.

\(^{54}\) Capra, *The Turning Point*, 321-323.
While our physical bodies automatically *react with* the environment just as do the physical bodies of other animate beings or the material qualities of inanimate objects, humans also have the ability to *respond to* the environment. We do not merely react, but can enlist our ability as self-reflectively conscious beings to create and select options; we can create and make choices. Such responses might simply be attempts to cope with the impact of environmental influences, but they might also be expressions of self-actualization. For humans, health means more than simply being physically suited and sufficiently adapted through autonomic mechanisms to the conditions of the surrounding environs. Health also requires that our personality have the ability to be creatively expressed.\(^5\)

Ironically, the remarkable adaptability of humans to changing environmental conditions has allowed us to become tolerant of conditions which threaten our survival, even to the point of becoming indifferent or unaware of that threat. For instance, most of us have become so adjusted to living in polluted urban centres that we seldom notice air and water pollution. While such toxic environments are neither enhancing nor neutral relative to our health, our adaptability permits us to live in these states oblivious to incursions on our health. Our health suffers, even while our adaptability flourishes. Consequently, biological adaptability is not a sufficient measure or criterion for human health for at least two reasons. Firstly, an apparently successful adaptation to an environmental challenge can concurrently expose us to an insidious undermining of our health. Secondly, the mere functionality of our physical body or survival in the midst of change fails to encompass the full scope of the notion of adaptation. The notion of adaptability must be expanded to include the genetically coded limitations emerging

\(^{55}\text{Dubos, *Man Adapting*, xviii, 256-257.}\)
from our past, the needs and challenges of the present time, and the invitation offered by a beckoning future.  

Therefore, while René Dubos will conclude that "health can be regarded as an expression of fitness to the environment, as a state of adaptedness," such "adaptedness," I would argue, must be qualified.  

Adapting to a daily change in weather is one thing, and surely to be regarded as a constituent of health. But adapting to environs which are ultimately and continuously life threatening is another, and is to be viewed with a more critical eye. Adaptation, it would seem, needs to be qualified by whether or not it ultimately enhances the health of the one who is adapting.

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56 Ibid., 278-279. For example, while our physical bodies might tolerate and adapt to the presence of certain organochlorides in our drinking water in the short term, our genetic programming—the product of our evolutionary past—places limits on such a compromise. A price is paid for such adaptation. Included in that price is health which appears normal in the present although adaptive processes are contributing to the gradual and covert development of degenerative changes in our body. In the case of organochlorides which we ingest with virtually every glass of tap water, our body adapts with such understated skill that our first realization that all is not well occurs when the symptoms of osteoporosis become apparent—a progressive disease which usually develops over the course of decades. Since osteoporosis can limit human activity, adaptation to the ingestion of organochlorides over many years can eventually lead to restricted human flourishing. Thus adaptability which is healthy must be in harmony with the way we have evolved and keep us not only healthy in the present, but open to health which is resident in the potential of the future. For further information, see, Sharon Faetien, The Complete Book of Minerals for Health (Emmaus, PA: Rodale, 1981),169-170; Ross Trattler, Better Health through Natural Healing (New York: McGraw-Hill, 1985), 468. Another example would involve our exposure to acid rain. While most of us tolerate living in a bioregion which is showered by acidified rain water, there are increasing concerns that this rain water is elevating the concentrations of certain toxic metals (most notably, lead, mercury, cadmium and aluminum) in the foods we eat and the water we drink. Since our tolerance levels for these metals is rather limited, it is feared that continued exposure to these sources might eventually lead to metal toxicity. See, L. Gerhardsson, A. Oskarsson, and S. Skerfving, "Acid precipitation—effects on trace elements and human health," Sci Total Environ 153, no. 3 (Aug. 1994): 237-245; G. F. Nordberg, R. A. Goyer, T. W. Clarkson, "Impact of effects of acid precipitation on toxicity of metals," Environ Health Perspect 63 (Nov. 1985): 169-180; I. Bensryd, et al, “Effect of acid precipitation on retention and excretion of elements in man,” Sci Total Environ 145, no. 1-2 (May 2 1994): 81-102. It is worth noting that some people do react to the airborne sulphur dioxide and nitrous oxide which contributes to acid rain, often becoming asthmatic or experiencing an asthma attack. Their ill-health can actually be beneficial in the sense that it warns of the dangers of these forms of air pollution, which if unabated, can ultimately lead to heavy metal toxicity which is very difficult to treat. For further information on the relationship between asthma and airborne pollutants, see, P. J. Barnes, “Air pollution and asthma: molecular mechanisms,” Mol Med Today 1, no. 3 (June 1995): 149-155; N. S. Zhong, “New insights into risk factors of asthma,” Respirology 1, no. 3 (Sept. 1996): 159-166.

57 Dubos, Man Adapting, 350.
**Health requires the realization of human potential**

While Ivan Illich agrees with Dubos’ view that “health designates a process of adaptation,” he adds that health “is not the result of instinct, but of autonomous and lived reactions to an experienced reality.” Illich identifies personal autonomy as a fundamental element for realizing health. The greater choice that a person can exert in the decisions of her or his life, the greater is her or his potential for experiencing health. Freedom of choice permits creative self-expression and the charting of one’s own present and future.

The importance of realizing human potential and expressing self-autonomy have been increasingly recognized as key determinants of health. For instance, there has been considerable research associating poor health with those who are financially poor. Yet even when access to healthcare was essentially equal between the rich and poor, and when statistical analysis matched these populations according to habits (smoking, drinking, exercise) and gender, a health gradient remained between the two socioeconomic strata. Additional research revealed that a broader decision latitude during one’s employment was strongly aligned with a reduction in mortality and

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58 Illich, *Medical Nemesis*. 19. I would prefer the word “responses” rather than “reactions”. I also disagree with Illich’s position that health “is not the result of instinct.” While health is not solely the result of instinct, and instincts alone do not guarantee health, instincts do contribute to the protection of our health. Illich admits as much when he accepts that adaptability to changing environments is part of the processes which contribute to health. Sweating and shivering to changing weather conditions are attempts to maintain a healthy homeostasis, and both are instinctual responses. Virtually every “flight and fright” mechanism in the body is both instinctual and directed toward self-preservation; and self-preservation is central to the maintenance of one’s health.

59 The Ministry of Health in Ontario echoed these positions when it declared that “Health is the extent to which an individual or group is able, on the one hand, to realize aspirations and satisfy needs; and, on the other hand, to change or cope with the environment. Health is therefore seen as a resource for everyday life, not the objective of living; it is a positive concept emphasizing social and personal resources, as well as physical capacity.” See, Ministry of Health, “Goals and Strategic Priorities,” 7.

morbidity. That is, the greater the workers’ discretion when employing their skills, the
greater their skills were utilized and developed, and the more they felt in control at work,
then the greater was their mortality and morbidity reduced.\textsuperscript{61} Such breadth of self-
autonomy was found to be greater in those who were employed in higher paying jobs.
Even if the stress in these occupations and the number of hours worked was sometimes
greater, such employees tended to have better health. This research suggests that one’s
ability to be creatively self-expressive, to be able to actualize one’s potential and skills,
will significantly determine one’s health status.

The realization of human potential is seemingly a necessary aspect of human
health.\textsuperscript{62} At the same time, according to Edmund Pellegrino, health is “essential to the
realization of the ends of human existence and to the realization of the potentialities of
human nature.”\textsuperscript{63} I would add, however, that the loss or reduction of health does not
necessarily preclude the “realization of the ends of human existence, nor does it exclude
the “realization of the potentialities of human nature.” Such a loss or reduction of health
might constrain or alter such realizations, but it would not necessarily rule them out all
together. In discussions of health, it is important to avoid equating human “good” and
medical “good.” The former is larger and more significant than the latter, and while the
latter can contribute to the expression of the former, it cannot define or reduce one’s
essential nature. While health seems to be universally regarded as a good, it is certainly
not the greatest good, either for an individual or community. Leon Kass reminds us that

\begin{itemize}
\item an excessive preoccupation with health can conflict with the pursuit of other
important social and economic goals. …But more fundamentally, it is not mere life,
or even a healthy life, but rather a good and worthy life for which we must aim. And
\end{itemize}

\textsuperscript{61} M. G. Marmot and T. Theorell, “Social Class and Cardiovascular Disease: The Contribution of
John W. Frank, “Social Gradients in Health Status as Clues to the Determinants of Health,” (Toronto:
Canadian Institute for Advanced Research, 1991).
\textsuperscript{63} Edmund D. Pellegrino, “Science and Theology: From a Medical Perspective,” \textit{Linacre
while poor health may weaken our efforts, good health alone is an insufficient condition or sign of a worthy human life. Indeed, although there is no such thing as being too healthy, there is such a thing as being too concerned about health. To be preoccupied with the body is to neglect the soul, for which we should indeed care ‘first and most,’ and more than we now do. We must strike a proper balance. 64

That “proper balance” is weighed such that health is viewed within the fuller tapestry of life, so that health is seen as only a part of life which can contribute to the achievement of happiness without fully determining that realization. 65

Perfect health is an utopian concept

As part of this attempt to develop a “proper balance,” it is important to acknowledge that the concept of perfect health is an utopian creation of the human mind. Humans will never be perfectly adapted to the environments in which they reside since the environs are constantly changing and current levels of pollution exceed the adaptive skills of our physiological reactions. Furthermore, the adaptations which we do make can often exact a price on our health. We are also required to adapt to changing cultural patterns, socioeconomic status and political agendas which often impose a burden and to which we seldom adapt either fully or without anxiety. Adaptation is never perfect and immediate, but is at least a “reactive” step behind the changing dynamics we encounter; it is at best the most health-enhancing compromise possible. Since perfect health would require perfect adaptation, perfect health is an ideal, an utopian concept.

Nor is perfect health necessary. Most people have undoubtedly had times when they would declare themselves “perfectly healthy” or “as fit as a fiddle,” even though, if they were closely examined or carefully questioned, some minor malady would be found. This would not deter them from claiming full health, since proportionately speaking, they are effectively healthy. In fact, our society tends to scold those who scrutinize their

64 Kass, Toward a More Natural Science, 185-186.
65 Cf., Callahan, “The WHO Definition of Health,” 249.
health too closely, derisively labeling them as "hypochondriacs" (a term which tends to move beyond the merely descriptive to include disdain and ridicule).

Nevertheless, like other ideals, the ideal or desire for perfect health can motivate us toward goals which are worthy of our human struggle. And since health's scope is grand and its value great, our failure to achieve perfect health is mitigated by the loftiness of the goal. The process toward such a goal is itself a worthy endeavor, even if the goal is itself undoubtedly unattainable. Achieving only part of the goal brings proportionate benefit.66

**Health must be nurtured to be maintained**

Health is not a given. Unattended, it tends to slip slowly from our grasp. It must be nurtured and maintained through effort and self-discipline. Such effort and self-discipline is related to the lifestyle decisions which we make, decisions which can significantly enhance or undermine the health of our mind and body.67 However, it is important to note that individual effort and self-discipline directed at improving individual health can be significantly enhanced by public programmes of health promotion, and by socioeconomic factors such as full employment (vs. underemployment or unemployment), secure and affordable housing (vs. domestic violence, escalating rents or speculative house pricing), and stable economic and political systems (vs. economic inflation, recession, or depression, and oppressive governments). Thus, many of the determinants of health are not only beyond one's direct control, they are not even part of a public healthcare system.68 Consequently, one's responsibility for one's own health is not without limits. Furthermore, the extent to which the means for promoting health and

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66 This endeavor is analogous to striving for spiritual perfection in this life; no one really expects to attain such a goal, but the process and effort are seen as worthwhile.


coping with illness can be equitably distributed throughout a population will often reflect that community’s success or failure in its efforts to bring about a more healthy population.

Although our health can be nurtured and maintained through effort and discipline, these are no guarantee of health. Unlike more easily concretized tasks such as road repairs where a society’s increased expenditures predictably result in fewer potholes, increased expenditures on healthcare often do not lead to improved health, nor do determined effort and healthy lifestyles even guarantee health. Our health can take a dramatic and virtually instantaneous “turn for the worse” even while we are making every reasonable effort to live well. Accidents, genetic determinants or misfortune can instantly alter our health. Because our health has a tendency to slip away if left unattended, requiring nurture and an enhancing lifestyle if it is to be maintained or improved, our health is less an event than it is a direction. It is a dynamic process “that is always in flux;” it fluctuates depending on the success of our adaptation to ever-changing environmental and socioeconomic influences.

The complexity of this relationship between health and community (or health and social dynamics) is broadened by Dubos’ observation that “the prevalence and severity of microbial disease are conditioned more by the ways of life of the person afflicted than by the virulence and other properties of the etiological agents.” Thus, in order to better understand the pattern of human diseases, it is becoming increasingly necessary to study human society more closely.

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70 Dubos, Man Adapting, xxi.
71 Two examples of this need have been the reintroduction of cholera into Guatemala in 1991 when a Chinese ship traveling from Asia dumped cholera-infected water from its bilge into the port of Lima, Peru. Cholera quickly spread throughout South America which had been free of the disease for over 100 years. Expecting the disease to spread through the warm water currents moving up the South American coast, Guatemalan health workers prepared for the invasion from the south. When the disease arrived, however, it came via an infected person traveling from Mexico. Air travel, and not infected water, became the vector of
Furthermore, humans reside within a particular environmental context within which we must also seek a mutually enhancing existence.\textsuperscript{72} However, while our genetic coding is both determined by our environment and adapts us to the same—just like genetic coding adapts microbes, fish and butterflies to their respective environs—our social and technological abilities allow us to adapt to the environment in a more creative, choice-driven fashion. This latter adaptation is not only faster than genetic adaptation, it provides humans with a parabiological method for adapting to changing environmental conditions, potentially enhancing our chances of being healthy.\textsuperscript{73} Yet, as technological and social changes rapidly transform both environments and cultures, neither genetic nor cultural coding can keep pace. The experience of the parent becomes much less useful to the child, and “afflictions of civilization” affect entire societies.\textsuperscript{74}

\textit{Health is neither a commodity nor a right}

While describing “what belongs to our health,” Morris Maddocks contends that health cannot be possessed. It can only be shared. There is no health for me without my brother. … [M]an can never possess it for himself; it is something that he can only share in community as he learns to adjust to his environment. … Man is therefore always in the process of health: he can never cease his effort to obtain that wholeness….\textsuperscript{75}

I would agree with Maddocks that humanity must ever expend effort in order to remain healthy. I also share his conviction that health is more a process than a static state, and

\textsuperscript{72} Capra, \textit{The Turning Point}, 311-312; Dubos, \textit{Man Adapting}, 322-323.
\textsuperscript{73} Dubos, \textit{Man Adapting}, 13, 366.
\textsuperscript{74} Pelletier, \textit{Holistic Medicine}, 2, 31.
\textsuperscript{75} Maddocks, \textit{The Christian Healing Ministry}, 6-7.
that individual health is not isolable from either environmental or communal factors. But I find his language concerning the possession of health to be rather too slippery. In his book, *The Christian Healing Ministry*, Maddocks is arguing that humans are intrinsically motivated toward wholeness with God and the entirety of creation, a wholeness which is yet to come. To be healthy, he contends, we require “a vision of the fullness of human life” which will have God as its context. For this reason,

health has to do with the totality of creation, with the Creator himself. It is the divine gift and grace to creation by the Creator who ‘saw everything that it was good’, i.e. like the human psyche as Jung saw it, it was motivated towards wholeness.\(^76\)

It is this motivation towards wholeness, according to Maddocks, which prompts or even requires us to share our health.

I do not dispute Maddocks’ view that “whole” human health will inevitably require each of us to engage some understanding of the transcendent dimension of our existence, a notion which I will explore in due course while defining the spiritual dimension of health. And even if I accept that in an absolute sense “there is no health for me without my brother,” that if one of us is diminished then so are we all, in practical terms, such a broad understanding of health makes its scope so grand that practical solutions to immediate health concerns get lost in the breadth of the vision.

Nor am I comfortable with his claim that health cannot “be possessed. It can only be shared.” Perhaps health cannot be possessed in the sense that it is not static but is constantly in flux and adapting. Yet I would argue that health can be possessed in the sense that I can declare of myself, “I am healthy,” or a physician can say of a patient, “I find you to be healthy.” Nor do I see how health can be shared. Admittedly, it is possible to promote conditions which encourage health in others—like safer workplaces, pure drinking water, improved agriculture. In this sense we “share” health by sharing our

\(^76\) Ibid. 7.
resources, technology or wealth with those who have less. But we do not share our health with them. I believe that Maddocks has not made a sufficiently clear distinction between a determinant of health (employment, disposable income, clean drinking water, adequate and safe living conditions, for instance) and a constituent of health (a state of well-being.) Health is not a commodity or a service which can be purchased or traded or given to another. It is more a state of being, and as such, cannot be shared with another. Therefore, I do not agree with Maddocks’ perspective that health “can only be shared.”

For the same reason, I do not believe that it is accurate for any individual or group (such as the WHO in its constitution) to describe health as a right. Health can no more be given to a person than can compassion or wisdom. Like these, it can be enhanced or undermined by another or by society, but only indirectly. Health is a gift which requires our attention, nurture and virtuous self-discipline. It cannot be claimed as a right since it cannot become a duty which is the obligation of another. In one sense, it is a duty, but a duty which falls to each person—each of us has a duty to preserve our own health. It is also possible to argue that we have a duty not to undermine the health of others (through second-hand smoke or polluting a community’s water supply, for instance), or when possible, to choose to enhance the health of others rather than negatively impacting on the same (feeding our children wholesome rather than “junk” foods, for instance).

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77 Pelletier, Holistic Medicine, 65.
78 In the correlativity thesis of “rights,” any right entails a correlative obligation on others either to provide something (a positive right) or not to interfere with another’s liberty (a negative right). Following this understanding, person “A” has a right to “X” only if others have a correlative obligation to provide “A” with “X” or to not interfere with “A’s” pursuit of “X.” Such rights may be legal and guaranteed by a system of governance, or moral and requiring a system of principles and rules. See: Mappes and Zembaty, Biomedical Ethics, 39.
But that duty does not extend to giving health to another since health is not something which can be *directly* given to another.

However, it is possible to claim a right to healthcare since societies arguably have a duty to provide healthcare to their members as a means for the promotion of the good of society and as a service directed toward satisfying a basic human need—health. Societies have a duty to provide healthcare to their members because this furthers the purposes of society and contributes to the conditions necessary for people to engage a dignified life. Healthcare contributes to the common good, to the promotion of fuller human flourishing. But societies cannot provide health itself.

*Illness is a part of health*

It has already been argued that since health involves a creative and enhancing adaptation to our ever-changing environs, there will necessarily be times that our adaptation will be either less than perfect or tardy (i.e., there is always a delay between the stimulus and the reaction or response). While such occasions are not truly illness, nor are they optimal health in an absolute sense. There are also times when it seems possible to assert that being ill is part of being healthy. This apparent contradiction is perhaps best explained with an example. When an individual contracts a “head cold” due to a staphylococcal infection with the usual symptoms of a “runny nose,” a mild to moderate fever and a general malaise, being “ill” is the healthy response to this staphylococcal invasion. The fever is a natural defense of the body used to kill the over proliferation of staphylococcal bacteria; the “runny nose” or rhinorrhea is an effective cleansing method

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by which the body protectively surrounds and discharges the offending bacteria which have been attacked and digested by macrophages; and the malaise experienced by the person allows the body to direct more of its energy and resources to the site of illness, rather than upon daily tasks. The body’s “illness” is actually an effective response to the infection. Or, in a simpler example, should one ingest a noxious or spoiled food by mistake, the nausea and vomiting which might ensue would be a healthy, defensive reaction.

In both of these scenarios, becoming “ill” was the “healthy” reaction. In each case, the reaction was an attempt to overcome an imbalance which threatened the well-being of the individual. Any treatment under these circumstances—whether originating from within the body’s economy or offered by another—should seek to enhance the body’s creative reaction to that which is challenging its optimal function without nevertheless, interfering with a process which might alternatively (and ultimately) be a positive change or conversion for the person. (An understanding of illness as transformative will be explored in a forthcoming section on “Linking Spirituality, Health and Illness.”)

There are also times when the healthy response to a particular situation might include a temporary period of illness so that we might have time for restoration and reflection—times when emotional stress is overwhelming, or when changes in our life are too disruptive or too rapid for our adaptability to keep pace; times when we seem to need “a mental health day” or a way out of a particularly stressful situation. The optimal, healthy response at times like these might be a temporary phase of illness. To allow for these times is to remain open to “periods of illness [which] can be a precondition for a profound means for a transformation of the afflicted individual.”

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82 Pelletier, Holistic Medicine, 17. This perspective is not unlike St. Basil’s reflection on the use of medicines during illness. While acknowledging that the “healing arts” and their remedies are a “gift from God,” Basil is also aware that “when we are deprived of medical assistance, let us not put all our hope for
Such a perspective reminds us that symptoms are not simply annoying complications which are to be eradicated; they are a means by which the state of our body’s health is communicated. Such a perspective also recalls that the aim of therapy should be to assist the healing dynamics of the patient’s physical body, mind and spirit. The therapy should create the “terrain” or environment within which the body’s innate intelligence can most efficaciously function. In keeping with the Hippocratic tradition, therapy should be minimally invasive and respectful of the normal dynamics of the person (*primum non nocere*). It should be compatible with the “bioregion” of the body, recognizing and respecting that person’s innate healing power (*vis medicatrix naturae*). It should be directed at the cause of illness (*tolle causam*), and might properly entail the option of allowing the “illness” to “take its course.” Symptoms provide a dialogue which should not be silenced or hidden beneath a cacophony of prescriptive chemicals. Signs

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the alleviation of our ills in this art, but know that...not every illness needs the aid of medicine.... For often illnesses are...sent to convert us.” St. Basil the Great, “Longer Rule L.V: Whether the Use of Medical Remedies is Consistent with the Ideal of Piety,” in *The Ascetic Works of Saint Basil*, ed. W.K.L. Clarke, Translations of Christian Literature (London: Society for Promoting Christian Knowledge, 1925), 225-227.

83 A long debate existed between the physiologist and physician, Claude Bernard, and the developer of microbiology, Louis Pasteur. Pasteur argued that the cause of disease was the invasion of the body by “germs.” Hence, to cure diseases it was only necessary to discover ways to kill the germs. Bernard argued that the human not only adapted to the external environment, but had a *milieu intérieur* within his or herself. This interior “terrain” represented the body’s ability to adapt to the external environment; the two were intimately connected. For Bernard, illness occurred when the interior environment could not properly adapt to the changes required by the exterior. In the case of diseases “caused” by germs, the cause was not the germs but the body’s inability to cope with the bacteria entering the body; the “terrain” was unable to adapt to this bacteria and defend itself against it. Bernard rightly noted that many germs constantly lived within the body, but no disease resulted because the body coped with their presence. It is only when the body’s coping or adaptive abilities were compromised that the bacteria’s presence caused illness. Therefore, treatment should be directed at strengthening the terrain, not at introducing some foreign substance to fight the bacteria. In his later years, Pasteur recognized the value of Bernard’s arguments and attempted to shift the direction of medical research away from the “germ theory of disease.” However, the success attributed to his earlier theories would not permit this, and Pasteur’s conversion went virtually unnoticed. For other discussions of this relationship between Bernard and Pasteur, see., Capra, *The Turning Point*, pp. 110-111; J. Marshall Hoag, Wilbur V. Cole, and Spencer G. Bradford, *Osteopathic Medicine* (New York: McGraw-Hill, 1969), 17, 85; Hans-Heinrich Reckweg, *Homotoxicology, Illness and Healing by Antihomotoxic Therapy* (Albuquerque, New Mexico: Menaco, 1980), 114-120.

84 Capra, *The Turning Point*, 312, 323, 335.
and symptoms are a creative expression of one level of the human organism to another. They will naturally cease to speak when the cause has been correctly addressed.85

Health involves the integration and interaction of many levels

With so many factors involved in health—our physical body, mental state, spirituality, individual and social well-being, politics, economics, environment—a harmonious balance and integration becomes increasingly important for the individual, and for the individual’s relationship with other members of society, with the world in which they live, and with God.86 Dissonance with any one or more of these influences creates tension for the person, and if not engaged creatively and positively, can contribute to a weakening of that person’s health.87 Health includes a balance between one’s tendency for self-assertion and one’s need for integration into larger systems; between one’s individual autonomy and one’s harmonious integration and flexibility with one’s environs. Stress results when any organism is no longer adapted to its changing environment, with such stress providing a necessary and useful form of communication or prompting. Health prevails when that stress can be creatively engaged.88

Integration recognizes the reality of interrelatedness—that from the perspective of the new physics, “the universe is one enormous, interrelated process, from the galaxies, to this planet, to the mountains, trees, animals, molecules, atoms and subatomic realm.”89 Not only is each person a living system whose various components are interconnected and interdependent, but each person is subsequently interactive with larger systems such as the local community, the cityscape, the regional and national governments, the

86 Christian Medical Commission, “Healing and Wholeness,” 6 (emphasis added).
88 Capra, The Turning Point, 324.
89 Pelletier, Holistic Medicine, 95; cf., Burke, “Wellness,” 36; Gerber, Vibrational Medicine, 416-417.
bioregion, the climatic zone, and even the planet. Change in any level of the system invariably affects all other levels, even though we are often not conscious of such shifts. Integration also recognizes that humans have evolved in the context of certain conditions to which they have become genetically adapted. As economic development takes humanity further and further away from these conditions, "it produces increasing derangement of the human organism. These maladaptations, or diseases of civilisation, have their most serious impact in middle life and are probably responsible for at least two-thirds of all deaths in middle age." Accordingly, the less harmoniously integrated humanity is within its evolutionary stream, the more likely it is that humanity will experience compromised health. Evolutionary shifts which lead to further complexification and differentiation and which are within the reach of genetic adaptability are probably healthy developments; shifts which amount to "derangement" are too dramatic for adaptive capabilities and lead to compromised health. (The topic of evolution and genetics will be discussed in more detail in the next chapter.)

A more integrated form of healthcare recognizes and respects the complexity of organisms and life dynamics. It acknowledges the diversity of personalities, social influences, and environmental situations which comprise the human condition. It realizes that the impact and interaction of this diverse melange significantly affects human health. Consequently, the health of an individual can not ultimately be considered outside of the context of social and ecological health.

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**Innate intelligence**

As the product of an evolutionary process which passes along to successive generations the wisdom of its survival and progress, humans have innate self-regulating and healing mechanisms. As Hippocrates observed, living organisms naturally possess an intrinsic healing vigor which he termed “nature’s healing power.”92 This innate intelligence, this vital force, this “healer within” is also described as the “wisdom of the body.”93 It not only heals the body, it forms the body, directing its microevolution from ovum and sperm to differentiated adult. In the broadest terms, this innate intelligence has been incorporated into teleological speculations and certain anthropic formulations to explain the “guided” development of creation.94

**CONTEMPORARY UNDERSTANDING OF HOLISTIC HEALTH**

Like the term “health,” the notion of holistic health has a variety of proponents generally distinguished by the breadth of the holism envisioned and the distinction made between holistic and Western-style medicine.95 Once again, a thorough review of this topic is beyond the scope of this study. I will choose a perspective which tends to reflect the general tenor of contemporary discussions and which lends itself to the task at hand.

The “traditional,” “conventional,” or Western-style of medicine is often described as “scientific” medicine because its principles emerged as a result of the modern

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92 Capa, "Theoretical Perspectives," 31; Capa, The Turning Point, 311-312. This “healing power of nature” is often referred to as the *vis medicatrix naturae*.
95 The holistic health spectrum can extend from the allopathic medical physician who claims to be a holistic practitioner simply because he or she “listens” to patients, to the therapist who examines multiple layers of the patient’s life (e.g., the clinical ecologist); from those who employ ancient techniques like aromatherapy and acuotheraphy, to those who use the latest bioenergetic technology developed in the universities of Germany (e.g., BEV); from those who train for a few weekends (e.g., Traeger or Reikiki therapists) to those whose classroom time often equals or exceeds comparable medical training (e.g., chiropractor and naturopath).
scientific method and its discoveries were significantly influenced by classical, Newtonian science. “Holistic” medicine—sometimes referred to as “alternative,” “complementary,” “integrative,” or “traditional” medicine—tends to be modeled on principles which are more reflective of Einsteinian science, although few of its discoveries have knowingly employed Einstein’s discoveries. Neither these generalizations—nor the chart which follows—sufficiently communicate every nuance of either perspective. As was noted in the introduction of this thesis, each view tends to incorporate aspects of the other from time to time, and a clear separation of the two is not reflective of reality. Yet, scientific and holistic medicine generally differ in ways which are characteristic of their respective approaches. Contrasting the two can provide a useful overview of holistic health. (See the table on the following page.)

To this list can be added Patricia Haggard’s claim that holistic healthcare includes helping a patient develop the essential and vital elements of a faith-related life which may not necessarily include membership in a recognized religion. Haggard is arguing that holistic health must by its title include the spiritual dimension of a person, and such a dimension necessarily involves principles and beliefs which are held due to faith rather than irrefutable argument and objective findings.

Not surprisingly, universal acceptance of holistic notions of health does not exist. For instance, the April 21, 1983 editorial in the New England Journal of Medicine described “holistic medicine [as] a pabulum of common sense and nonsense offered by

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96 The allopathic medical model emerged through the application of the Cartesian-Newtonian model of reality which visualized the world as an intricate machine. While an Einsteinian perspective of interactive networks of complex energy fields has gradually shifted most sciences away from Newtonian models, the biomechanical medical model has continued to flourish. The latter cannot account for the vital forces which not only animate the “biomachinery” of living systems, but which also create a synergism among constituent parts to bring these to something greater than their sum. The Newtonian biophysical model ignores or dismisses bioenergetic or transcendent aspects of the person. See, Capra, The Turning Point, 101-126; Gerber, Vibrational Medicine, 39-44, 416-417.

Table 1
Contrasting Scientific and Holistic Medicine 98

<table>
<thead>
<tr>
<th>Scientific Model of Medicine</th>
<th>Holistic Model of Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>- reflects Newtonian, reductionistic, mechanistic thinking;</td>
<td>- reflects Einsteinian, integrated, process thinking;</td>
</tr>
<tr>
<td>- emphasis on physical reality &amp; objectivity which can be rationalized into discrete events;</td>
<td>- emphasis on energetic interplay of multifactorial events which form a continuum;</td>
</tr>
<tr>
<td>- employs a physical-sensory model which likens people to machines &amp; values individuality over interrelatedness;</td>
<td>- employs the psychological-humanistic model which values the individual within relationship, self-actualization &amp; search for meaning; OR the field model which includes the transpersonal or spiritual of the former, and regards the person as a multidimensional energy system within universal fields of energy;</td>
</tr>
<tr>
<td>- process of analysis: the whole is reduced to its parts for isolated viewing;</td>
<td>- process of analysis: the physical, mental and spiritual reality of the person is considered as a single unit;</td>
</tr>
<tr>
<td>- focussed attention (fragmentation) and specialization of care predominates as a consequence of this process of analysis;</td>
<td>- the individual is treated as an integrated whole within a complex milieu with therapies;</td>
</tr>
<tr>
<td>- the natural processes of the body economy are to be controlled, altered, and/or &quot;corrected&quot; in order to eliminate disease; treatment tends to be interventionist to correct the problem;</td>
<td>- the natural processes of the body are to be assisted or enhanced, when necessary, to permit the body to heal itself; treatment seeks to compliment the body’s healing energies;</td>
</tr>
<tr>
<td>- the practitioner is primarily in control of health delivery decisions; leader-follower model;</td>
<td>- the patient is primarily in control of health delivery decisions; team model;</td>
</tr>
<tr>
<td>- the healthcare system does not assist the patient to take an active role in his/her recovery, nor does it favour health promotion and disease prevention;</td>
<td>- personal responsibility for the development and maintenance of health is recognized; education is directed toward empowering the patient;</td>
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<tr>
<td>- seeks cause-effect relationships for understanding and treating disease;</td>
<td>- seeks functional relationships for understanding and promoting health;</td>
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<table>
<thead>
<tr>
<th>Scientific Model of Medicine</th>
<th>Holistic Model of Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>- focus on crisis intervention and disease control;</td>
<td>- focus on health promotion and disease prevention;</td>
</tr>
<tr>
<td>- the psychological dimension of the person is increasingly considered when seeking to understand the health of a person;</td>
<td>- the psychological dimension of the person is always a factor in human health and illness;</td>
</tr>
<tr>
<td>- the spiritual dimension of the person is at best ancillary to health decisions, but most commonly ignored;</td>
<td>- the spiritual dimension of the person is identified at every level of health and disease;</td>
</tr>
<tr>
<td>- wellness is the absence of disease</td>
<td>- wellness is measured relative to the individual’s potential; being “ill” can be a manifestation of being well;</td>
</tr>
<tr>
<td>- health is a static process from which any deviation is construed as illness or disease; it is a state of being;</td>
<td>- health is a dynamic process which is ever-changing, not a state of being; it involves a dynamic, harmonious balance among self, other, environment &amp; God;</td>
</tr>
</tbody>
</table>

cranks and quacks and failed pedants who share an attachment to magic and an animosity toward reason.”99

A WORKING DEFINITION OF HEALTH

Based on these discussions, health might be defined as an experience of well-being resulting from a dynamic balance that involves the holistic integration of our physical, psychological and spiritual dimensions as well as our interactions with our natural (cosmic) and social environments, so that we can adapt in a creative, joyful and life-enhancing fashion to the stressors which challenge us. Health exists when the innate intelligence of our being can function optimally and unrestricted, and when we can

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realize the aspirations we have chosen and strive to actualize our potential in harmony with each other, with the rest of creation and with God.

**CONTEMPORARY UNDERSTANDING OF THE SPIRITUAL DIMENSION OF HEALTH**

*Linking Spirituality with Health*

The spiritual dimension of our health organizes the values, relationships and meaning of our life—i.e., our spirituality—in a way which seeks to promote our physical, emotional and spiritual well-being—i.e., our health. It advances a cohesive relationship among our individual, relational and transcending aspects, and among our physical, psychological and spiritual dimensions. The spiritual dimension of our health can motivate us to optimize our health so that we can be of service to our community and to God, so that we can put into action the beliefs we hold. Accordingly, a meaningful life is not a discovery, but a creation; something which comes about because of the way we respond to the spiritual dimension of our being.100

As Vande Kemp notes, the “task of integration is...to construct a model which allows the process of soul-making (or mental health) to meet in the depths with the processes of sanctification, leading to a person who is both spiritually and psychologically whole.” Through the processes of intrapersonal integration, spiritual decisions are assimilated and spiritual growth is accommodated, “leading to a restructuring of the person which facilitates further psychological growth. Each function—psychological and spiritual—serves as a catalyst for the other, but they are not substitutes for each other. When either is neglected, the other suffers in response.”101

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Lawrence Seidl suggests that the spiritual dimension of health encourages us to adopt particular attitudes and ways of being: to find fulfilment in self, others, work, and leisure, often using our health to be of service to others and to God; to find illness as enabling not disabling; to believe that mortality is inescapable but redeeming; to investigate and interpret illness within a context of meaning; to balance dependence and freedom; to balance the spiritual, physical and emotional aspects of one’s self; to take time to meditate or communicate with God; and to take responsibility for one’s own health, while accepting the limitations of one’s humanity. Seidl also notes that since our spiritual dimension concerns that which gives importance and meaning to life, that which helps us to persevere in spite of difficulties, and those dreams which are yet to be realized, ill health can conversely be associated with a lack of meaning or belonging, a diminished will or purpose to live, and reduced self-esteem. However, a mature spirituality, informing one’s perception of health can reassure that illness does not diminish individual worth or the value of life and asserts that we are not solely valuable because of our tasks or performance.

Linking Spirituality, Health & Illness

When our life has hope, purpose, meaning and direction, there is a greater probability that wellness will result and be maintained, even in the face of stress. When these characteristics of living are present, our spirit is strengthened, further enhancing our wellness. Our spiritual dimension organizes the traits which enhance our well-being, and our well-being strengthens our spirit, each acting in reciprocity with the other.

There are a variety of ways to understand how spirituality, health and illness are related to the meaning of one’s life.

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103 Ibid., 50.
i. For a life to feel fully lived, it must have meaning

Robert Baird notes that a person must feel that her or his life is worthwhile or meaningful for it to be so in the fullest sense. Without this subjective appreciation, the fullest meaning of a life cannot be relished and life is not fully lived.\textsuperscript{105} When Carl Jung examined this matter, he is reported to have said that if there was ultimate meaning in the universe, and if human life expresses a high realization of that meaning, then whatever develops and enhances human life probably coincides with that universal meaning. Therefore, living life fully should be an expression of the meaning of the universe.\textsuperscript{106} Furthermore, Jung contended that there is a purposeful centre of reality with which each individual must be in conscious contact if she or he is to be fully healthy. Humanity, observed Jung, is seldom healthy unless it is able to relate to this centre of being whom it has called “God.” Humans are instinctually driven toward a wholeness of psyche which includes this purposeful centre.\textsuperscript{107}

ii. A meaningful life fuses subjective satisfaction with morally worthy projects

We tend to seek harmony, peace and fulfillment throughout the experiences of our life, as a goal of our existence. “Once we begin to notice this transcendental desire in ourselves, we discover that we want ultimate good in everything we do,” seeking to have all parts of our life contributing “to a single symphony that ultimately resolves all tensions and themes.”\textsuperscript{108} We seek to weave our experiences into a pattern which is not only significant and lasting, but which is also reflective of worthy endeavours. We desire the satisfaction that

\textsuperscript{105} Baird, “Meaning in Life,” 118.
\textsuperscript{107} Maddocks, The Christian Healing Ministry, 5.
comes with a life directed to projects of moral worth. The spiritual dimension of our being draws us beyond ourselves into relationship with others. It is in community that we become more fully human rather than an isolated individual, discover possibilities previously undreamed, care and are cared for, and learn that our life truly matters. For these reasons, healthy relationships are critical in the process of creating a meaningful life.

iii. A meaningful life includes healthy relationships

Human spirit mobilizes our existence toward a desired end which we claim as the cause by which we fashion our life and self. For such ends and goals to provide foundational meaning in our life, they need to be creatively and freely appropriated by the self and situated with an ultimate context. When this is done, our personal dignity can better endure the ravages of suffering and disease because our self-concept is defined in terms of an ultimate purpose, rather than in the vicissitudes of the present moment.

iv. A meaningful life includes ends and goals freely chosen

While much human suffering can be quickly “fixed” by Western medicine, it may be a disservice to the patient to manipulate suffering at the expense of meaning. For while some suffering is essentially meaningless, minimal and brief, not all suffering is necessarily so limited. This is particularly true of protracted pain. We “should look on chronic illness not

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as a tragedy to overcome, but as an experience to be understood. When suffering is framed within the context of the human spirit, it is possible to rescue it from an abyss of
meaninglessness. How we engage suffering and accept sacrifice is an integral part of our

discovery of our fuller humanity, allowing us to reach beyond ourselves for an understanding of

the meaning and significance of life.

If healthcare seeks for the meaning of suffering only within the dysfunction of the

physical body (the broken machine), then it tends to limit the response of the patient to

passively wait for “redemption” from this pain through the ministrations of the physician. It
diminishes an opportunity for the patient to experience his or her relationship with the
Creator in a new way, to experience the tragedy and triumph of suffering, and to engage the
meaning of human life in a fuller fashion. It tends to diminish the therapeutic benefits
which the stricken person could find in the support offered by family and community.

And should the medical treatment fail to alleviate the physical pain of this “broken
machine,” should modern medicine fail to remedy the brokenness of the body which is seen
as the sole cause of the pain, then no meaning for this suffering can be offered by the
physician; the patient can experience a profound abandonment in the midst of suffering.

Within a spiritual perspective, as people attempt to grapple for an understanding of
the meaning of suffering, they do not always find completely satisfying answers. Yet, they
come to realize that they are accompanied in their struggle and pain by a Deity who values
them; they do not pray within the mystery alone. While the spiritual dimension of a person is
always present in healthcare, it is particularly important to address it at those moments when
both our understanding and our responses seem to be exhausted. And when our dignity

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116 Donald W. Shriver Jr., “The Interrelationships of Religion and Medicine,” in Medicine and
117 Illich, Medical Nemesis, 12-13.
118 Michael E. Daly, “Towards a Phenomenology of Caregiving: Growth in the Caregiver is a Vital
has been assaulted by protracted pain, overwhelmed by invasive hospital technology, and diminished by a parade of medical specialists and technicians, a spiritual focus reminds us that our dignity does not arise from the accomplishments or status of our broken body, but is conferred by God. Even if our self-concept suffers in proportion to our infirmity, it can be renewed by the recollection that our value to God is undiminished by our illness. God's love is given unconditionally and is unaltered for those “who only stand and wait.” A spiritual focus does not seek to obscure the reality of illness or suffering, but offers hope when none emerges and purpose when infirmity restrains.\cite{119} People who draw on the spiritual dimension of their being can situate their suffering within a purposeful life, within a sacred cosmos.\cite{120} Subsequently, their suffering is often defined, and thereby somewhat contained; explained, and thereby given some meaning; and shared, and thereby made more tolerable.

vi. A spiritual dimension brings meaning to death

For the rationalist who has discarded her or his spiritual dimension, one’s deepest existential dimension is rigidly bounded by birth and death. Death terminates time. For the person who values his or her spiritual dimension as part of an integrated self, however, death is not final but is always transitional to new birth.\cite{121} Such a person recalls the trans-human, transcendent quality of being, and the cyclical and transitional features of human existence.\cite{122} These features are also applicable to death.

\begin{thebibliography}{9}
\bibitem{119} Rankin, “A Theologian's Perspective,” 332-333.
\bibitem{121} Eliade, \textit{The Sacred and the Profane}, 147, 157. Consider, as well, the first letter of Peter and Paul's letter to the Romans: “By [God's] great mercy he has given us a new birth into a living hope through the resurrection of Jesus Christ from the dead, and into an inheritance that is imperishable, undefiled, and unfading, kept in heaven for you....” 1 Peter 1:3. “Therefore we have been buried with him by baptism into death, so that, just as Christ was raised from the dead by the glory of the Father, so we too might walk in newness of life. For if we have been united with him in a death like his, we will certainly be united with him in a resurrection like his.” Romans 6: 4-5.
\bibitem{122} Eliade, \textit{The Sacred and the Profane}, 193.
\end{thebibliography}
When healthcare becomes preoccupied with the treatment of physical dysfunction within the human body, death is regarded as the decisive cessation of life and subsequently the cessation of our person. Death becomes the finality to be avoided; there is no benevolence in death. According to Christian teaching, our death is merely an event within the continuity of our life with the Creator. We are invited to eternal life with God and our “death” within this provisional world should be considered within that broader perspective of time. Within a spiritual understanding, death is not the penalty for loosing the battle with disease, but a meaningful event within a person’s continuing existence.

vii. Our spiritual dimension allows healing to occur even when curing is not possible

When healing occurs even when curing is not possible, a person is made whole despite the fact that the physical body remains “uncured”. Perhaps an obvious example of this is the situation of the amputee. Even if the person returns to a full, integrated, meaningful and healthy life—even if the person with the amputated limb feels fully recovered—they will never be cured in the sense that the lost limb has not been returned or regenerated.

According to Barbara Burke, while curing may not always be possible, healing is. She asserts that since healing means “to make whole,” the unity of the human person can be restored without all physical complaints being resolved. This is possible because we are not defined by our parts—physical body, mind and spirit—but by the integration of these. We are not defined by our physical body or valued for the same. Our spirit can help us to overcome the physical and emotional adversities which will punctuate our life. And when

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124 Burke, “Wellness,” 37. This sentiment is effectively summarized by a French motto, quoted by René Dubos: “Today as in the past, the French motto carved on E. L. Trudeau’s statue in Saranac Lake symbolizes the attitude of the true physician: Guérir, quelquefois To cure, sometimes. Aider, souvent To help, often. Consoler, toujours To console, always.” See, Dubos, Man Adapting, 409-410.
these adversities are beyond our control and complete resolution, we can nevertheless find a way to continue our life in an integrated and healthy fashion, partly by drawing upon the spiritual dimension of our being.

_The Spiritual Dimension of Health and the Caregiver_

The spirituality which informs the understanding of health being described in this thesis is concerned with the values of human dignity as reflected by autonomy, care and compassion as expressed through social support, recognition of the uniqueness of the person and serving those who suffer, which may lead to purpose and meaning in life for all concerned, patients as well as health professionals.¹²⁵

Michael Daly has argued that the act of “caregiving” ought to be as “perfective and changing” of caregivers as it is healing for those who receive the care. If caregivers experience no interior growth as a result of their ministrations given to others, then technique has been applied but meaning has probably been absent since “what has value, has meaning. What has meaning, instructs, is a sign.”¹²⁶ If caregivers are attentive to their own spiritual dimension, bringing that aspect to the application of their art, then they are open to the potential and mystery of the healing process. They are open to the realization that neither holiness nor wholeness (healing) can be achieved through human efforts alone for these require the spirit (rūah) of God to enable the person to become whole.¹²⁷ During any healing process, there is the opportunity for both the patient and the caregiver to experience the mystery of healing and the wonder of the innate intelligence of the person restoring homeostasis, all enabled by the Mystery behind a creative world. It is also an opportunity for the caregiver to be a sign of God’s caring, a witness of one’s faith.

¹²⁵ De Vries, “Question Mark,” 76.
¹²⁷ Ellison and Smith, “Toward an Integrative Measure,” 36.
Healthcare as Sacred Work

Fundamental to the Christian tradition is the belief that God is deeply immersed in human life, whether as the One who closes the ark’s door behind Noah or as a companion in the Exodus desert. Christ, entering into creation and living as a human, experienced and transformed human suffering. When Christ healed the sick, he provided a taste of the kingdom of God in which people are made whole.128 Christians continue to proclaim the good news of God’s reign by continuing to offer healing to the sick and afflicted. Divine intimacy has made, and continues to make all human experience potentially revelatory of the Creator. Through our openness to this intimacy, we are receptive to the gift of God’s grace and become witnesses of divine caring.129

For these reasons, healthcare can become a witness to God’s mercy and a testament to God’s compassion. It can become a ministry which “is sacred, a sacrament of encounter with the divine.”130 It can become a ministry where our creative care for those in need reveals the image of God, the image in which we are made and which confers upon each person a particular dignity. As caregivers care for the lives of others, they enter into partnership with the One who creates and nurtures all life. Through such partnership, caregivers help to reveal God’s healing presence. Through their actions, it is possible for them to meet and be transformed by God’s love; it is possible for them to meet the hidden presence of Christ in need of care.131 A Christian “healthcare ministry is rooted in a tradition that recognizes God’s special love for the fragile in our midst and

128 Concerning Christ as one who heals in accordance with the faith of those who seek healing, and Christ’s “holistic” approach to healing, see, Krouse, “Health and Healing,” 62-63.
129 “Witnesses” is used both in the sense of “those who see,” and “those who give evidence or proclamation of.”
130 Casey, Food for the Journey, 39; cf., 7-8, 15-16, 21-22; Chirban, “Healing and Orthodox Spirituality,” 11.
professes to continue that love.”132 Because our spirituality informs the way in which we experience and respond to God’s presence in our daily living, the spiritual dimension of our being significantly determines both our health and the way we formulate healthcare. It permits us to view healthcare as sacred work, as work which engages the sacred, opens us to the sacred, and makes our healing a sacred journey.

**CONTEMPORARY UNDERSTANDING OF HUMAN HEALTH WITHIN ECOSYSTEM HEALTH**

*Understanding Ecosystem Health*

To understand how human health might be related to ecosystem health, it is necessary to describe the concept of “ecosystem health.” Robert Constanza has extensively examined this notion and has concluded that ecosystem health is a comprehensive, multiscale, dynamic, hierarchical measure of system resilience, organization, and vigor. These concepts are embodied in the term ‘sustainability,’ which implies the system’s ability to maintain its structure (organization) and function (vigor) over time in the face of external stress (resilience). A healthy system must also be defined in light of both its context (the larger system of which it is part) and its components (the smaller systems that make it up).133

Constanza notes that there has been a tendency to identify healthy ecosystems as those which can resist perturbation or change, or can recover from such stress quickly. This sense of ecosystem health implies that the healthier a system is, the more able it is to resist change. Yet a dead system, Constanza observes, which can be particularly resistant to change, could hardly be considered healthy. Consequently, he argues that resilience is a better measure of a system’s health than mere resistance to change since

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132 Casey, *Food for the Journey*, 77; cf., 86-87. Of course, it is not only the Christian healthcare tradition which can recognize God’s love for the fragile and those who suffer. Other denominations (e.g., the Jewish tradition) would undoubtedly make a similar claim.

resilience measures the ability of the system to restore and maintain its structure and patterns of behaviour in the face of disturbance or stress. A focus on resilience emphasizes the adaptive nature of the ecosystem rather than the speed with which it can overcome perturbations. (A dead system does not display an adaptive nature.) Hence, "systems are healthy if they can absorb stress and use it creatively rather than simply resisting it and maintaining their former configuration"—a statement which, as noted above, seems to be true for humans, as well.\(^{134}\)

Because nature is in a constant state of adjustment, flux and succession, rather than stasis or equilibrium, the ability of a system to "maintain its structure (organization)" should not be construed as an ability to maintain a static configuration. When a system absorbs stress and uses it creatively, the system will invariably change but its essential organization will probably not be dramatically redefined, although it might shift. Nevertheless, if conditions do change sufficiently, the ecosystem can be replaced—through a process of succession—with another system which is better adapted to the new conditions. Constanza contends that "unless one can assess the relative value of the larger system before and after succession, then all successional changes must be considered harmful."\(^{135}\) (Constanza does not explain how one determines "the relative value of the larger system.") The successional change would be considered "harmful" if the system could not use the stress creatively and the succession led to an irreversible process of system deterioration leading to death. But, I would add, a succession can alternatively be part of a healthy evolution for a larger ecosystem. Perhaps this is why Constanza states in the definition noted above that "a healthy system must also be defined in light of both its context (the larger system of which it is a part) and its components (the smaller systems that make it up)."

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\(^{134}\) Ibid., 246.
\(^{135}\) Ibid., 245.
But determining when a system is healthy is a complex and inexact task, and the interpretation of the results is often disputed. For instance, "many of the signs of ecosystem pathology mimic the natural signs of early successional behavior in perturbation-dependent ecosystems." So, are the signs indicative of the early stage of ecosystem distress, or are they part of a natural and healthy process? David Rapport suggests that if the ecosystem exhibits certain fundamental properties known to be part of self-organizing complex systems—such as progressive integration or progressive differentiation—then perhaps the ecosystem is healthy. But, as he also notes, evaluations of integration and differentiation can be rather subjective.

For this reason, Rapport favours a model of salutogenic medicine which focuses on the mechanisms which promote health rather than those which identify symptoms or the cause of disease. (This parallels the emphasis on health promotion and disease prevention which is found in some branches of Western medicine and throughout holistic medicine.) Salutogenic medicine emphasizes a system's capabilities (rather than its "disabilities") such as how well its feed-back systems enable self-realization to occur via the system's energetic and productive processes. This approach focuses on the potential and capability of a system to respond to perturbations and stressors, rather than a focus on disease detection, identification of cause and prescription of cure. Using a salutogenic model, the health of an ecosystem would be determined by the ability of a system to respond to a carefully chosen stress test. This would evaluate the degree of

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137 Rapport, "What is Clinical Ecology?," 145.


139 For example, if nutrients are added to a healthy lake, the number of species tend to increase in proportion to the nutrient concentration, while adding nutrients to an already stressed lake tends to decrease species diversity. Rapport, "What is Clinical Ecology?," 150.
ecosystem integrity and perhaps reveal occult disease states before any overt signs of pathology appear. A salutogenic approach marks a shift away from curative approaches prescribed for identified disabilities to preventive approaches focussed on assessing system capabilities. Again, this parallels a shift in human healthcare from crisis intervention or disease-care medicine to health promotion and disease prevention.

David Ehrenfeld has commented that “a determination of ecosystem health can be a function of which process you are looking at, which in turn is determined by your own values.” It would seem that ecological theories, like theories concerning human health, are somewhat culturally dependent and consequently susceptible to societal trends. Nevertheless, for the purposes of this thesis, ecosystem health might be defined as a comprehensive, multi-scale measure of a system’s dynamic ability to adapt creatively to stress so that it maintains or enhances its structure and function, thereby promoting its sustainability. Such a determination of health must include an understanding of the ecosystem within its macrophase context.

**Human Health within Ecosystem Health**

As has already been noted in this section, certain parallels can be drawn between ecosystem health and human health. However, it is also important to consider the interrelatedness of the two. Not only are both ecosystems and human individuals “complex systems composed of interacting parts in a complex balance of interdependent function,” but human health is significantly dependent upon the health of the ecosystem within which humanity resides. If the environment is polluted or toxic, then human health will invariably be compromised. As was discussed earlier, humans may seem to flourish within a polluted environment, but in reality, their health suffers even if they are

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140 Ehrenfeld, “Ecosystem Health and Ecological Theories,” 141.
not consciously aware of its deterioration. Therefore, it can be said that human health is dependent upon ecosystem health. The converse is not necessarily true.

However, human activity can have—and has had—an enormous detrimental impact upon the health of planetary ecosystems, both locally and globally.\textsuperscript{142} The activities which bring about this degradation—e.g., deforestation, soil erosion, ozone depletion, toxic dumps, or oil spills—have their primary impact upon the environment and are consequently disruptive of ecosystem health. As a secondary consequence, human health suffers.\textsuperscript{143} For this reason, definitions of human health have long recognized that human flourishing is inextricably intertwined with a harmonious relationship with not only one’s self, the rest of humanity, and God, but also the rest of creation.\textsuperscript{144} The Hippocratic Corpus noted that human well-being was under the influence of the environment, including the air, water, and winds of a particular region, and the physician’s art required that the practitioner incorporate these factors into any diagnosis and treatment.\textsuperscript{145} Many authors have also argued that the same socioeconomic structures which are devastating to people are often equally destructive of the non-human environment. Technologies which dehumanize workers and/or threaten their health often inflict harm on the ecosystem (e.g., workers employed around smelters often suffer lung and cardiovascular damage while the effluent from these mills pollute both air and water). The drive to be a “corporate player” in the global economy frequently ignores both the welfare of

\textsuperscript{142} Many sources could be quoted to support this widely accepted position. A general overview is presented by Alvin Pitcher in: Alvin Pitcher, \textit{Listen to the Crying of the Earth} (Cleveland, Ohio: The Pilgrim Press, 1993), 1-42.

\textsuperscript{143} For example, acid rain is not only destructive of trees and buildings, it also contributes to human morbidity and mortality. See, Eugene P. Odum, \textit{Fundamentals of Ecology}, 3rd ed. (Philadelphia: W.B. Saunders Company, 1971), 444-445. In another example, insecticide and pesticide use with the intention of increasing agricultural yields has not only spread these chemical toxins into virtually every level of the ecosystem—fish, birds, reptiles, domestic and wild animals—but into humans as well. Such toxins alter many vital processes of normal physiology, leading to disease and death. For further discussion, see Rachel Carson, \textit{Silent Spring} (Harmondsworth: Penguin, 1965), 31-32.

\textsuperscript{144} Maddocks, \textit{The Christian Healing Ministry}, 11-12, 175; Morgan, “Theology and Healing,” 238.

\textsuperscript{145} Dubos, \textit{Man Adapting}, 322-323.
employees and any resulting ecological debt (e.g., massive "downsizing" in one locale is coupled with the employment of poorly paid "third world" workers in another, while the human and natural resources in these "third world" countries are exploited and drained).  

René Dubos extends this interrelatedness between human and ecosystem health. He contends that humanity's "ability to symbolize constitutes the one characteristic of man which most profoundly affects his own life and which makes possible his influence on the rest of creation." Dubos argues that humans not only react to those aspects of the environment which impact upon them directly—the weather, types of terrain, etc.—but also react to the symbolic value which has been associated with the environment. That is, the human propensity to symbolize that which happens to it prompts humans to react to symbols as if they were the actual environmental stimuli. Consequently, the response of humans to environmental stimuli is reflective of each person's past experience, socialization, and anticipation of the future. Thus, the response of humans to the environment is conditioned not only by genetic patterns, but also by the history of interactions and reactions to the environment which subsequently inform culture, symbols and habits.

Furthermore, Dubos notes, the human biological constitution developed in response to environmental conditions over which humanity had little control. Now, humans can easily alter external conditions to suit their needs or foibles so that innate human responses which reflect the evolutionary past are adaptive to conditions which no longer exist. Certain hormonal and metabolic responses are out-of-step with the times. They occur in anticipation of the physical effort required to protect or sustain one's being.

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in conditions which are no longer realized (e.g., the classic "flight and fight"
mechanisms). Or they are conditioned to environmental conditions which are seasonal
rather than human-made (e.g., body rhythms being disrupted by air travel resulting in jet
lag, or "colds" due to shifting from one climate to another in only a few hours). In part,
humanity's response to the environment seems to be conditioned by "obsolete" traits.148

Dubos is arguing that human health is not merely related to ecosystem health by
direct implication—i.e., if ecosystem health is enhanced or compromised then the same
will ultimately occur to its human inhabitants. He is recalling how this human-ecosystem
interrelatedness is more primal and complex. Like the clinical ecologists who would
succeed him, Dubos recognized that the innate biological traits which determine the state
of human health emerged from and reacted to specific environmental conditions as a
result of a long evolutionary process. If these conditions change, the entire being which
has emerged during these conditions can become out of tune with its environs.149 While
humanity has evolved slowly over many millions of years, capable of adapting to a
slowly changing environment interspersed with the "odd natural or man-made disaster,
... the rate of change has accelerated out of all proportion, and... ecological disease has
also increased in parallel."150 Human health does not flourish if human being is
asynchronous with bioregional parameters. To further complicate this interrelatedness,
the human ability to symbolize elicits an emotional response to chosen aspects of the
environment thereby involving mental and spiritual elements in addition to biophysical
responses.

149 It is for this reason that clinical ecology has developed a new interest in the cosmic and telluric
factors of health. And as skin cancers increased in the mid 1980's, dermatological medicine took a new
interest in ozone depletion in the atmosphere and such measures as the U.V. index.
150 Lewith and Kenyon, Clinical Ecology, 16.
This discussion has noted that there are parallels between human and ecosystem health; in many ways, the language which applies to one can be asserted of the other. It is possible for the language of human and ecosystem health to become sufficiently broad.

<table>
<thead>
<tr>
<th>Human Health</th>
<th>Ecosystem Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>- in a state of constant flux</td>
<td>- in a state of constant flux</td>
</tr>
<tr>
<td>- involves the integration and interaction of many levels</td>
<td>- is multi-scale and defined in light of both its context and its components</td>
</tr>
<tr>
<td>- its standards vary depending on cultural and personal, subjective norms</td>
<td>- the way we grade ecosystem health is subjective, dependent upon the values chosen by the evaluator</td>
</tr>
<tr>
<td>- a measure of the body’s ability to remain within homeostatic and physiological limits; i.e., to maintain the status quo</td>
<td>- the system’s ability to maintain its structure (organization) and function (vigor) over time</td>
</tr>
<tr>
<td>- illness is a part of health</td>
<td>- succession is part of a healthy ecosystem but may appear as ecosystem stress or illness</td>
</tr>
<tr>
<td>- to be able to sufficiently change and adapt to the new conditions</td>
<td>- to be resilient in the face of external stress</td>
</tr>
<tr>
<td>- to be able to adapt creatively</td>
<td>- to be able to adapt creatively</td>
</tr>
</tbody>
</table>

Table 2
Language common to Human and Ecosystem Health

that the one is no longer distinguishable from the latter; the definition for one could equally apply to the other. This is particularly true when ecosystems or planetary systems are described—either metaphorically or literally—as behaving like self-organizing organisms. (This description is itself a contentious issue.\(^{151}\))

For this reason, I formulated a definition of human health which placed particular emphasis on uniquely human qualities: psychological and spiritual attributes, joyful adaptation, and the ability to choose. (Refer to Appendix A for my definition of human health.) A definition of human health contextualized within ecosystem health is further enlarged by the following notions:

i. human health is dependent upon ecosystem health, with the norms of the former developing in reaction to life in the latter; if ecosystem health is significantly compromised, then human health will suffer;

ii. since the biological traits of human health emerged over millions of years within the context of a slowly evolving environment, rapid change in ecosystem parameters can result in a person so ill-suited for her/his environs that disease occurs;

iii. since humans can attribute symbolic significance to specific elements of the ecosystem, these elements can become associated with emotional and spiritual importance.

During this chapter, there has been occasional mention of humanity evolving within the processes of Earth’s evolution. Such references bring the dissertation to a contemporary understanding of cosmogenesis and the new cosmology. An overview and definition of the term “cosmology” will lead into those discussions.
CHAPTER TWO

COSMOLOGY AND HUMAN PRESENCE

"Hydrogen is a light, odorless gas, which, given enough time, turns into people."


While a brief overview of cosmology was offered in the Introduction of this thesis, the first section of this chapter—“Defining Cosmology”—will expand upon that preliminary discussion. This broader perspective is then sharpened to focus on a particular cosmology which utilizes the Big Bang theory. (For a telling of the “Big Bang” story which features aspects of that history particularly important for articulating a spiritual dimension of health within cosmogenesis, see Appendix B.) Further collimation occurs as attention then focuses on evolution, an examination which is even further refined with an exploration of two versions of the Anthropic Principle. Next, the connections between cosmology and myth are considered, including how each informs and invigorates the other. Finally, in order to provide a template for building a model of health within a cosmological context, an extremely brief and selective overview is presented of a healthcare approach which already has such a cosmological perspective—Traditional Chinese Medicine. Such an example demonstrates that it is possible to articulate health within the context of a functional cosmology. But since this thesis is also interested in a functional spirituality for health, a brief section on cosmology and theology follows to pose questions which will guide the next chapter’s presentation of Berry’s functional cosmology and functional spirituality.
DEFINING COSMOLOGY

In the Introduction, it was noted that the cosmological perspective of one person might not mirror that of another. Different people—reflecting their particular cultural heritage—can articulate a worldview which might contrast quite sharply with the cosmological vision of others. Indeed, in a multicultural society, several cosmologies might be found within a single country. Nevertheless, each cosmological perspective tends to address certain common elements: how the universe is ordered and how it came about; where humans fit into this ordering of the universe; and in many instances, how and perhaps why a creator brought the universe into existence at all.¹

A cosmological perspective informed by scientific study uses empirical observations to derive what it considers to be an objective description of the structure and evolution of the physical universe as a whole.² A theological or philosophical reflection on the origins of the universe generally goes a step further. It also ponders the purpose and teleology of the universe and humanity's place within creation—considerations which are often excluded by the very nature of the scientific method, yet central to the task of theology and philosophy. If a theological perspective adopts and provides a meaningful context to a scientific cosmology, then the two can share a common frame of reference which might make the former more relevant to a wider audience, and give animation and mystery to the otherwise stale factual tale of the latter.³

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¹ Tracy and Lash, “Editorial,” vii.
³ Science cannot be expected to discern whether or not there is purpose or promise in cosmic processes, or whether or not our existence is meaningful, since its methodology deliberately excludes such considerations. But for philosophy and theology, such formulations are central to their purpose. If science seeks a completely rational explanation of cosmic history and an evolution bereft of wonder, mystery, or purpose, then it runs the risk of aspiring to a nihilistic skepticism which is as ideological as any religion which it endeavors to supplant or “debunk.” It might justly wish to eliminate the need for a Designer God or a God-of-the-gaps, but science is ill equipped to be the receiver of revelation or the writer of myths. This, again, is the role of theology, philosophy, and religion. See John F. Haught, Mystery and Promise: A Theology of Revelation (Collegeville, Minn.: Liturgical Press, 1993a), 153; John F. Haught, Science and
In the modern era, the scientific community described a cosmological order which adhered to the apparently universal laws articulated by Newtonian physics. Isaac Newton (1642-1727) had validated the Cartesian view of the mechanistic universe by developing mathematical formulations which seemingly proved that the universe was indeed one enormous mechanical system. He discovered the general mathematical laws of motion which governed all objects in the universe, from the small stones under foot to the large distant planets. According to this Newtonian perspective, once God had created the material particles of the universe and the laws which governed their motion, the cosmos was set in motion and continued to run indefinitely and regularly like a machine, governed by immutable laws. Knowing these laws and the initial conditions of any system, it was purportedly possible to predict with absolute certainty the future motion or state of any part of that system. Consequently, it seemed to such modern thinkers that it was equally possible to control any part of the universe if one simply knew the state and the laws pertaining to that part of the cosmic machine. When the behaviour of liquids, gases, heat and sound were later successfully described using this same Newtonian mechanistic paradigm, the veracity of this cosmological perspective was further reinforced.4

As might be expected, when the scientific foundation of the modern cosmology was shaken by the new physics as developed by such people as Albert Einstein (1879-1955), Niels Bohr (1885-1962), and Werner Heisenberg (1901-1976), a new and revised cosmology emerged. This new view of the universe has come to be known by the rather bland title of “the new cosmology.”5 Yet it is not because of this dull designation that it

4 Capra, The Turning Point, 63, 66-67.
is worth remembering that this cosmology, like each one prior to it, is incomplete and biased, and is at best an approximation of reality. Every new cosmological story tends to reflect the limits of the data considered and the interpretation that its authors read into that data, perhaps tailoring their rendering to address new challenges which are facing their society, and the new cosmology is undoubtedly no different in this regard. When the data, the interpretation, or the social challenges shift, then the cosmology becomes proportionately outdated. Furthermore, even though we have a tendency to crown scientific descriptions of the universe with an unwarranted certitude, history reminds us that the cosmology of each era has inevitably been replaced by another deemed more accurate. "The new cosmology" will undoubtedly experience a similar fate.

Nevertheless, because scientific "facts" and theological convictions both employ a critical realism to describe reality, neither is simply proclaiming wild guesses. Both attempt to formulate a cosmological perspective which employs the most current and reliable information about the universe in order to address the challenges confronting humanity. Considering that the enormity of either the universe or God is too grand for the human mind to comprehend fully—not to mention the additional theological difficulty of describing God become incarnate in such a universe—it is not surprising that our

109-131. I hasten to add that while I consider the term "the new cosmology" to be rather dull and unimaginative, I do not apply the same evaluation to these texts.


8 Mary Hesse in "Cosmology as Myth" reminds us that the "realistic claim that science can ideally attain true universal theories of the world does not follow from its instrumental success. Scientific theories are always in fact undetermined—there is always a multiplicity of theoretical interpretations that fit the facts well enough.... Scientific theory, as it is accepted within the scientific community and hence by the wider public, is the result of a complex of decisions and persuasive arguments of individual scientists which reflect their ideological and evaluative commitments as well as their instrumental motivations. Scientific theory has its place in the dynamically interacting mythologies of Western culture just as cosmologies have in primitive cultures." See, Hesse, "Cosmology as Myth," 50, 51-52.
constructs require revision from time to time.\textsuperscript{9} For these reasons, a cosmology is perhaps better classified as representing a critically derived explanation rather than an indisputable account.

Recalling C. Margaret Hall's definition of cosmology quoted in the Introduction of this thesis, our working definition of cosmology can then become:

a critically derived narration which describes the origin and order of the universe as a whole. It tends to reflect the worldview of its author(s). If it is informed by theology or philosophy, it is more likely to consider the place and purpose of humanity within creation, and in the case of theological reflection, the significance and role of the Creator.

With these provisos and this definition in mind, the cosmology presently emerging from the new physics can provide a context for rethinking the place of humanity in creation. The version of that cosmology used in this thesis is one that has wide acceptance, although authors will differ on specific details.\textsuperscript{10}

\textbf{Evolution}

The theory of evolution fits comfortably into the Big Bang story.\textsuperscript{11} The theory proposes that all forms of matter, life, or mental capability which presently exist have originated by descent from earlier forms, and that retracing each modification in this process leads to the more rudimentary forms. In the context of the new cosmology, this retracing would eventually lead to \textit{the} most rudimentary form—the primal singularity. A simplified progression from the primal singularity forward to our present state begins with matter manifesting from the energetic dynamics of the primal fireball. With the further differentiation and complexification of matter, there came the dawning of life; and from within life, there eventually emerged mental capabilities. Then, through this process of advancing complexification and differentiation, humans evolved who had the

\textsuperscript{9} Haught, \textit{Science and Religion}, 20.
\textsuperscript{10} Stephen W. Hawking, \textit{A Brief History of Time} (Toronto: Bantam Books, 1988), 118.
\textsuperscript{11} Clifford, “Postmodern Scientific Cosmology,” 68.
ability to be self-reflectively conscious. Some authors speculate that the next level of emergence will bring about cosmic or global consciousness, when human self-reflective consciousness attains a more ecological perspective. A linear representation of this evolution would appear as:

energy → matter → life → mental capabilities → self-reflective consciousness → cosmic consciousness

Fundamental to this view of an evolving universe is the assertion that every new level of complexity contains within it all the previous levels of complexity. Hence, “all of the systems that evolved in the course of time, going back to the very origin of the universe, are present today. Everything... consists of the same atoms over and over again.” Furthermore, a later more differentiated level of complexity in the evolving universe (e.g., a coyote) can not emerge prior to earlier, more primitive stages of complexity (e.g., matter); evolution proceeds irreversibly through increasing levels of complexity. Consequently, the emergence of the universe is a process of evolution, not revolution, since the old is included within the new and not replaced.

Just why evolution occurs at all has been debated since Charles Darwin (1809-1882) popularized his theory of evolution. Darwin’s theory was considered revolutionary in his time because the science of 19th century Europe tended toward determinism while Darwin championed notions of change and chance. Nevertheless, his theories concerning natural selection and the survival of the fittest did seem to be remarkably in step with the social, economic and political ideology of his time. As Mae-Wan Ho observes:

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15 Ibid., 83-84.
Darwin’s theory of natural selection encapsulates the ideology of Victorian English society, the belief that progress is to be achieved on the one hand, through ‘man’s’ domination and exploitation of nature by means of science and technology, and on the other, through competition in a capitalist free market whose frontiers are to extend as far as the horizons of conquests of the imperial armed forces. It is not an accident that the full title of Darwin’s epoch-making book should be: The Origin of Species by Means of Natural Selection or The Preservation of Favoured Races in the Struggle for Life. The emphasis on competition between individuals and the implied superiority of the ‘favored races’ in the ‘struggle for life’ were most easily taken to be justification—on the basis of natural law—for the economic exploitation of the masses as for the colonization, oppression and persecution of ‘inferior’ races.  

Darwin argued that evolutionary change occurred through the survival and proliferation of species which were better suited for their environment. Because this change was random and occurred by chance alone, it was apparently separated or insulated from the environment. Random change was deemed to favour the survival of a species if the change made the species better suited for its environs, thereby enabling it to compete more successfully than its fellows; hence, it flourished and eventually dominated or even replaced its more poorly suited relatives. If the random change made the being less well adapted to its environs, then it inevitably and rightly perished and its mutation was thankfully not passed on to successive generations. Many present-day thinkers challenge some of Darwin’s assumptions. Firstly, evolutionary changes seem to be neither random nor insulated from the environment. They are more like what Stikker calls “pre-patterned.” That is, evolutionary change, like any event, occurs within the context of cosmic history, influenced in part by that which has transpired before it (just as coyotes cannot exist before matter) and by that which is presently occurring. Evolutionary change occurs to a species which is a participant in an environmental community—a participant which is influenced by the other members of that community in all aspects of its existence. Furthermore, structural

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changes, which tend to be the hallmark of identifying evolutionary changes, might actually result from functional changes which were a response to a changing environment.\(^\text{19}\) It might also be the case that “mutants not useful in one environment may turn out to be highly adaptive in other surroundings.”\(^\text{20}\) Consequently, evolutionary changes are not really insulated from the environment. And if the evolution of a species or any level of complexity is affected by and contextualized within an ecological setting, then such evolution is also necessarily coupled with the evolution of the planet.\(^\text{21}\)

Darwin’s view that evolutionary changes occur randomly is also being challenged by some. Contemporary understanding of evolution suggests that a new system or being emerges whenever an existing system or level of existence reaches a limit to its expansion, complexity and differentiation.\(^\text{22}\) At this critical threshold, the evolutionary drive toward complexity prompts the old way of being to transform into a modified mode of existence. The new system incorporates the elements of the previous system into its nascent manifestation. Thus, every new level of complexity contains within it all the previous levels of complexity while introducing a new way of being. And every level of

\(^{19}\) Consider the situation of food scarcity in a forest during which a particular species of birds adopts a new habit of seeking insects beneath the bark of trees. Mutations in the population which favour longer beaks will foster the survival of these particular birds. A new behaviour has brought about a structural change. See, Barbour, *Religion In An Age of Science*, 157.

\(^{20}\) Ian Barbor notes that “among a species of light-colored moths there occurs a rare dark mutation, which is conspicuous against light-colored tree trunks and is picked off more rapidly by birds. But on the soot-darkened trees of industrial areas, the dark moth is less conspicuous; in the past century it has completely supplanted the light-colored form in parts of England.” See, ibid., 156.

\(^{21}\) Devereux, Steele, and Kubrin, *EarthMind*, 149.

\(^{22}\) Recall how the prokaryote population (which was mentioned in the telling of the Big Bang story in Appendix B) reached a climactic stage from which the eukaryotes emerged. The prokaryote population had expanded to such a number that it had increased the concentration of oxygen in the atmosphere to a critical level. Firstly, oxygen is for prokaryotes as useless and as toxic as an inhaled gas as carbon dioxide is for us. The very atmosphere that the prokaryotes were creating was endangering their existence. Secondly, as oxygen concentrations in the atmosphere climb to 21%, the risk of spontaneous explosive combustion greatly increases. The prokaryotes were bringing oxygen concentrations closer and closer to this critical level. As the population reached a critical threshold, as their demise seemed imminent, a new order of complexity emerged—the eukaryotes—which would both consume oxygen (and consequently reduce the risk of explosive combustion) and exhale carbon dioxide—the gas which prokaryotes inhaled.
complexity seems to be innately driven to strive for further complexity and differentiation.\(^23\)

Darwin's theory of natural selection as the principal explanation of creativity in evolution has also been critiqued. Natural selection alone does not explain why matter would be self-emerging or why evolution would move toward increasing complexity or even self-reflective consciousness. Natural selection has focused on the dynamics involving living organisms, yet according to chaos theory, the universe displayed an inherent tendency toward emergent complexity and self-organization long before living organisms came into existence.\(^24\) Accordingly, John Haught concludes that "it is increasingly clear from science that evolutionary selection joins up with and fosters, but in no way initiates, the cosmic creativity upon which it feeds."\(^25\)

While Darwin's theory emphasized competition and survival of the fittest, some contemporary theories of evolution contend that these factors are much less dominant in evolutionary processes than Darwin believed. Current theories of evolution also stress the symbiotic and co-operative relationships which permit the growth, health and evolution of the interrelated members of the ecological community.\(^26\) "What evolutionary theory based on competition ignores is a number of other processes: nurturance [sic], tolerance, and collectivism."\(^27\) In some instances, the symbiotic

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\(^24\) Consider the work of Nobel prize winner, Ilya Prigogine concerning nonequilibrium thermodynamics. Prigogine has demonstrated that physical systems far from equilibrium will often establish a new collective order in order to achieve a stable form. Disorder at one level will lead to order at a higher level with new laws governing the behaviour of the new order of complexity. The new order of complexity cannot be predicted from the dynamics of the lower level of chaos since divergent solutions can arise from the dysequilibrium state. However, that a self-organizing, self-perpetuating event should spontaneously occur is predictable. See, Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos* (New York: Bantam Books, 1984).


\(^27\) Clifford, "Feminist Perspectives on Science," 58.
cooperation between two species makes it possible for both to survive.\(^{28}\) Or a division of labour within a social group (such as a beehive) might be the key to its survival. Certain sociobiologists also speak of the altruistic behaviour which favours the survival of a kinship group. For example, while the warning cry of a bird might make it more obvious to a predator, the cry warns the other members of its group of immediate danger and consequently increases the likelihood of their survival.\(^{29}\) Each of these examples of cooperation would promote the survival and flourishing of a species and would undoubtedly be as important as any ability to compete.

Thomas Berry echoes these new perspectives on evolution and evolutionary processes. He, too, examines how evolution proceeds irreversibly through increasing levels of complexity, asserting that evolution at any level is contextualized within, influenced by, and influences the evolution of the planet. Berry contends that the universe displays an inherent tendency toward self-organization and increasing complexity, and recognizes that symbiosis and co-operation, together with competitive struggles for survival, influence evolutionary outcomes. From these reflections, Berry discerns the implications that an evolutionary understanding of the universe might have on the way the human sees itself as part of a cosmogenic adventure.\(^{30}\) But before his position can be presented in detail in the next chapter, it is necessary to consider first

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\(^{28}\) For example, consider the cellulose degrading microorganisms which inhabit the gut of certain termites. The flagellate microorganisms digest the wood that the termites eat, providing nourishment to the insects. The termites not only provide the cellulose fibre of the wood to the microorganisms, but more importantly, provide the safe and suitable environment of their digestive tract. Odum notes that "the symbionts are so well coordinated with their host that they respond to the latter's molting hormones by encysting, thus insuring transmission and reinfection when the termite molts its gut lining and ingests it." See, Odum, *Fundamentals of Ecology*, 229.


how humanity has described itself within this evolutionary story of the universe. Such a consideration necessarily entails a discussion of the Anthropic Principle.

**THE ANTHROPIC PRINCIPLE AS A WAY TO UNDERSTAND HUMANITY'S PLACE WITHIN COSMOGENESIS**

According to Herman Brück, the “Anthropic Principle... states that our Universe is unique in the sense that no other could have led finally to the appearance of intelligent life within it. The phrase ‘Cogito ergo mundus talis est’ has been coined by the proponents of that principle.” Just as René Descartes’ observation “Cogito, ergo sum” became the ontological statement for his description of reality, the somewhat parallel statement “Cogito ergo mundus talis est” can play a similar role for the anthropic principle. After a retrospective glance at cosmic history, the anthropic principle concludes that because human life exists in the way it does, the universe had to evolve along a very particular path for thinking, intelligent life to attain its present form. Should any change in that path occur, then human life would not exist. Or stated in the folksy manner of Freeman Dyson: “As we look into the universe and identify the many accidents of physics and astronomy that have worked together to our benefit, it almost seems as if the universe must in some sense have known that we were coming.”

The anthropic principle arose when cosmic physicists determined that the physical laws of the universe as they now exist seem to be the result of a series of coincidences of enormous statistical improbability. For instance, “if the rate of expansion [of the universe] one second after the big bang had been smaller by even one part in a hundred thousand million million, the universe would have recollapsed before it

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reached its present size.” Or, if the rate of expansion had been greater by a similar extremely minuscule amount, the universe would have expanded too quickly for the stars and planets to form in the midst of such relatively rapid change. This rate of expansion, which according to Stephen Hawking remains constant even today, depended on the initial explosive energy, and the mass of the universe and the strength of gravitational forces being exactly what they were. Any variation at all in any of these factors would have altered the initial conditions of the universe, thereby precluding the emergence of life.

This is a rather dramatic assertion, yet its veracity is commonly accepted in cosmic physics. However the finding that the emergence of life is dependent upon such precise initial conditions has been interpreted in various ways which can be summarized in three mutually dissenting views. Some argue that these initial conditions came about by chance alone; others promote either a weak or a strong version of the anthropic principle.

The Emergence of Life Happens by Chance Alone

Many of us have heard the proposition that if 100 monkeys were left in a room with 100 typewriters for a sufficiently long period of time, then a Shakespearean play would eventually result. While such a claim is usually judged absolutely outrageous by those of us who relish the brilliance of the Bard of Avon, its statistical possibility can be granted even if its realistic probability seems completely absurd. Scientific materialists make a similar proposition concerning the emergence of life in the cosmic story.

Scientific materialism is the view that all phenomena in the universe including alive and conscious organisms consist of matter alone, and that they can be

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34 Hawking, *A Brief History of Time*, 121-122. Christopher Mooney notes that if the density of the primal singularity had been altered by one trillionth of one percent, then the universe would either not have expanded (because the gravitational forces holding the initial state together would be too great) or would have expanded too quickly (because the momentum of expansion would not have been sufficiently restrained). See, Mooney, “The Anthropic Principle,” 112.

adequately understood only by a chemistry and physics that explores their molecular and atomic makeup.\textsuperscript{36}

If mindless and lifeless bits of "stuff"—i.e., atoms and molecules—are shuffled long enough and in enough variations, then all sorts of life, sentience and consciousness will eventually emerge. Scientific materialists also assert that all sentience and intelligence is reducible to mere physical and chemical reactions. No transcendent agency is necessary for the emergence of life; chance and sufficient time are all that are required.\textsuperscript{37} For instance, Richard Dawkins argues that chance and natural selection, when coupled with the enormous length of the universe's existence, are sufficient conditions for the tremendous diversity present in creation, including humanity. Accordingly, Dawkins rejects both any divine role since such is clearly unnecessary and any teleological goal in the patterns and order of creation since randomness and teleology seem to be mutually exclusive.\textsuperscript{38} Stephen Weinberg echoes this sentiment when he concludes: "The more the universe seems comprehensible, the more it also seems pointless."\textsuperscript{39} For Weinberg, neither the universe nor any of its inhabitants have any intrinsic purpose; life is merely an accidental outcome, adrift in a meaningless cosmos.\textsuperscript{40} Stephen J. Gould similarly notes that human life is the "accidental result of an unplanned process."\textsuperscript{41} If the universe emerges by chance alone, then it does so without a meaningful context or teleology.

Critics of the "chance alone" perspective for the emergence of life on Earth dispute that view on many fronts, but perhaps the most usual rejection is that which employs the same "objective" analysis which the scientific materialists tend to favour. Critics contend that neither the age of Earth nor even the much larger age of the universe

\textsuperscript{40} Cf., Fabel, "Environmental Ethics," 303.
affords sufficient time for evolution to reach its present level of complexity by random chance alone. For example, Theodore Roszak quotes the study by Hoyle and Wickramasinghe.

In the late 1970s Fred Hoyle and Chandra Wickramasinghe calculated the odds that life could have arisen by blind chance from some sort of primordial soup. Rather than trying to compute the probability for an entire organism evolving into existence, they limited the problem to twenty or thirty key amino acids in the enzymes of a hypothetical cell. The number they came up with was one chance in $10^{10,000}$.\(^2\)

The enormity of this number is perhaps made more sensible by the belief that the number of particles in the entire universe is only on the order of $10^{80}$—i.e., Hoyle’s and Wickramasinghe’s calculation results in a number that is $10^{39,920}$ times greater than the number of particles in the universe.\(^3\) (For comparison, the number of stars in the universe is surmised to be about $10^{22}$.\(^4\) However, the calculation of Hoyle and Wickramasinghe has been contested. Ian Barbour notes that when amino acids couple, they become attractors for thecoupling of other amino acids. Subsequent meaningful couplings will happen more rapidly than by chance alone due to these emergent attractors.\(^5\) Therefore the odds reported by Hoyle and Wickramasinghe would apparently be significantly reduced. But even if this amino acid coupling speeded the process so that the calculated time were reduced by 99%, Hoyle’s and Wickramasinghe’s prediction, modified accordingly, would still be one chance in $10^{39,998}$—a possibility which remains absurdly remote.\(^6\) More recent calculations have determined that the


\(^3\) Bruce Bochte, *Canticle to the Cosmos: Study Guide* (San Francisco: The Tides Foundation, 1990), 46.


\(^6\) For additional positions which contend that the combination of the present age of the universe and the emergence of new structures or beings through chance alone would result, at best, in the existence of primitive bacteria at this point in history, consider: Hoitmar Difurth, *The Origin of Life* (San Francisco:
odds of the universe evolving to its present state of complexity in fifteen billion years by chance alone are $1 \times 10^{229}$.47

Do any of these calculations or retrospective presumptions prove that the universe was not the result of chance alone? No. These calculations merely show how very, very improbable it is that the universe could have been formed by chance alone (at least based on our present understanding of cosmic physics); they do not prove that it was not. Collectively, however, they seem to provide a very convincing argument since it is not just the exact rate of expansion of the universe from the primal singularity, or just the total energy of that initial explosion, or just the very uncharacteristic uniformity of that explosion or just the exact initial mass of the universe, or just the specific strength of the strong nuclear forces, or several other such factors which had to be just a particular constant or value—all of these factors had to be exactly as they were if life was ever to emerge.48 Consequently, Roszak has observed that

until our day, believing in anything other than randomness as the basis for all that exists in the universe required an act of faith that defied rationality. Now, believing that the universe came into existence by random physical processes requires an even more heroic leap of faith. Ours is no longer that simple mechanistic universe in which something like guiding intelligence can be blithely ruled out as a way of accounting for self-organization and self-regulation.49


47 This statistic was mentioned by Brain Swimme at the Annual Summer Lecture of the Elliott Allen Institute for Theology and Ecology held at the Sam Sorbara Hall, University of St. Michael’s College, Toronto on June 26, 1997. Whereas Swimme’s calculation relates to the present state of complexity of the universe after fifteen billion years, Hoyle and Wickramasinghe consider the complexity of a simple enzyme resulting from about 4.25 billion years of evolution on Earth. Ludwig Boltzmann (1844–1906), who confidently asserted that the universe had emerged by blind chance alone, calculated that it would only require $10^{80}$ years for this cosmos to reach its present state of affairs. Unfortunately for him, the universe was later discovered to be merely fifteen billion $(15 \times 10^{12})$ years old. Consequently, Boltzmann’s proposition tends to be rejected by those who critique the “chance alone” perspective. See, Paul Davies, God and the New Physics (Harmondsworth, Middlesex: Penguin Books, 1983), 168.

48 “Other factors” would include, for instance, the view that the weak nuclear forces and the force of gravity had to be exactly what they were and are for the universe to produce life. See, also, Davies, God and the New Physics, 179; John Gribbin and Martin Rees, Cosmic Coincidences: Ark Matter, Mankind, and the Anthropic Principle (New York: Bantam Books, 1989), 15-18; Barbour, Religion In An Age of Science, 136; Haught, Science and Religion, 123.

49 Roszak, “Nature and Nature’s God,” 19 (Roszak’s emphasis). Gordon Kaufman also injects the aspect of faith into the debate of the random emergence of humanity, but from a different perspective.
Once the "chance alone" position has been rejected—and it is worth remembering that some very credible scientists still defend that perspective—then its critics tend to support either the weak or strong version of the anthropic principle.

The "Weak" Anthropic Principle

Given the statistical improbability that life emerged by chance alone, supporters of a weak form of the anthropic principle restate the rejection of the former perspective into a positive assertion. Simply stated, the weak form of the anthropic principle observes that the universe requires specific properties for intelligent life like humans to exist. These properties, including the physical constants of the universe, are the result of a vast number of contingencies being resolved in our favour. The fact that a life force such as ourselves exists simply means that the conditions must have existed which permitted us to come into being. Our existence is related to the fundamental characteristics of the universe.\(^50\) "So life seems strongly contingent on the fine tuning of the constants of nature."\(^51\)

Some critics of the weak form of the anthropic principle assert that it is too anthropocentric. They claim that this form of the principle makes humanity the focus of

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Kaufman notes that taking a retrospective look at our evolutionary and historical development, there seems to be at least one cosmic "trajectory" which brought about the emergence of beings capable of experiencing history. However, "neither the 'creative advance' nor the 'directionality' visible in this trajectory need be attributed to some causative power pushing evolution and history forward toward a particular goal." Granting the above perspective, Kaufman argues that we do not need to consider the cosmic trajectory leading to the emergence of the human to be due entirely to chance, although chance undoubtedly played some role. The trajectory which brought about the emergence of the human could be regarded "as a significant expression of the serendipitous creativity manifest in the cosmos as a whole" and reflective of the ultimate nature of reality couched in the ultimate mystery. However, he notes, "such a view clearly requires an act of faith...." Yet that "act of faith" is reflective of the faith we put in our daily life and our scientific exploration of the universe. We accept on faith that there is an order which is discernible, that our search for other intelligent life in the universe presupposes that there is a universal historicity pressing the cosmos forward in time. See, Kaufman, "Nature, History, and God," 387-388.

\(^{50}\) Mooney, "The Anthropic Principle," 107, 114.


the universe story, as if the prism for understanding cosmogenesis is the existence of humanity. Others feel that it is an unnecessary restatement and artificial sophistication of the obvious. Nobody disputes the existence of humanity and to say that we exist simply because the conditions necessary for our existence were satisfied seems to be stating that which is plainly evident (perhaps parallel to saying that in order for a fried egg to exist, an egg must first have been broken over a hot skillet). Still others note that the weak form of the anthropic principle—if it is indeed a principle and not just a bland statement—cannot be proven by any scientific method. Hence it lacks any scientific value and is an unlikely “principle” since it has no explanatory value.\footnote{Mooney, “The Anthropic Principle,” 116-117.}

However, the critique that the weak form of the anthropic principle is too anthropocentric should not be too readily accepted. Firstly, it is not at all surprising that a principle which purports to be descriptive of humanity’s place within the universe should be focused primarily on humanity.\footnote{Although the title “principle” might seem to be too lofty a characterization for some, and perhaps “statement” would be a more tolerable choice, I will follow the general practice and use “principle.”} Secondly, the principle itself does not champion the perspectives which are usually condemned as being “anthropocentric”—that the non-human elements of creation merely form the stage upon which humanity plays out its drama, that the non-human world is merely an object for the use of humanity, or that humanity as the pinnacle of creation can dominate and legitimately utilize the non-human world as it sees fit.\footnote{For the purposes of this discussion, I have not made the distinction between “anthropocentric” and “androcentric,” even though I think that at times that distinction is both useful and necessary. For an example of such a distinction, consider McFague, \textit{The Body of God}, 36. However, here I am asking if the weak form of the anthropic principle can legitimately be critiqued as too anthropocentric. If that critique is denied, then it might be useful to determine if it might suffer from an androcentric focus—i.e., it is too patriarchal. But that discussion is not really germane to the task of this thesis.} Forms of the anthropic principle might become attached to these nefarious positions, but the principle should not become instantly tainted by association alone. For example, the anthropic principle marvels at the many contingencies which had to be resolved just as they were in order for humanity to come.
into existence, and it regards humanity as a unique achievement within cosmogenesis. Implicit in this position is an acknowledgment of the necessity and value of all previous developments in the cosmic story; without them, humanity would not exist. Some who reflect on the anthropic principle might then contend that the earlier phases only have value because they are the stepping stones necessary for the emergence of humanity. Such a rendition would associate the anthropic principle with an anthropocentric perspective. However, a second group can look at the earlier phases of cosmogenesis, respect the intrinsic value inherent in each player in that story, and acknowledge that that value would exist even if humanity never came into existence. Humanity is one unique player among many. The second group would argue that the emergence of humanity in cosmogenesis is neutral vis-à-vis the intrinsic value of the non-human elements of creation.

\[55\] I believe that Thomas Berry could be included in this second group.\[56\]

\[55\] I would consider Alfred North Whitehead to be representative of this position. Consider John Cobb Jr.’s and David Ray Griffin’s exposition of Alfred North Whitehead’s position that “each stage of the evolutionary process represents an increase in the divinely given possibilities for value that are actualized. This advance is experienced as intrinsically good… The increase of intrinsic value in the advance from chaos to events at the electronic-protonic level, and on to the atomic and molecular levels, is real but trivial. The increase is primarily in instrumental value… The living cell is evidently another story… However, as before, this advance in intrinsic value has its instrumental value for the future. Cells can be so organized that a yet higher series of experiences can emerge from them. The reference here, of course is to animals, especially those with a central nervous system.” See, John B. Cobb and David Ray Griffin, Process Theology: An Introductory Exposition (Philadelphia: The Westminster Press, 1976), 67-68. Later in that same text, Cobb and Griffin continue Whitehead’s position that those aspects of creation which lack an originality of response—rocks, oceans, mountains, plant, stars, books, etc.—“are not higher-level actualities. Hence, their intrinsic value is simply that of the sum of their lowly members. In other words, while there is no ontological dualism between some things that are subjects of experience and other things that are mere objects, there is an organizational duality. Those things which seem to be mere objects are still affirmed by process thought to be mere objects. They are composed of subjects, but they themselves are not subjects. Hence, as such they have no intrinsic value. The only value that needs to be considered…is the instrumental value.” See, ibid., 78 (emphasis in the original text).

\[56\] If one argues that the reliance of humanity on the existence of earlier stages of cosmogenesis enhances the value of the latter to the former, then one might also be accused of being anthropocentric.

\[57\] Consider Berry’s statements: “[In the anthropic principle,] the human is seen as a mode of being of the universe as well as a distinctive being in the universe. Stated somewhat differently, the human is that being in whom the universe comes to itself in a special mode of conscious reflection…. Our own presence to the universe depends on our human identity with the entire cosmic process.” See, Berry, The Dream of the Earth, 16-17. Berry goes on to say, “[A] reenchantment with the earth as a living reality is the condition for our rescue of the earth from the impending destruction that we are imposing upon it…. Our sense of reality and of value must consciously shift from an anthropocentric to a biocentric norm of reference…. We seldom consider ourselves as species among species.” See, ibid., 21.
Therefore, I would contend that the anthropic principle need not be anthropocentric—as that characterization is normally employed—but may appear so through association.

The "Strong" Anthropic Principle

If the weak version of the anthropic principle has been charged with being too anthropocentric, then the strong version would assuredly be instantly found guilty and condemned. As a much bolder statement, it asserts that the existence of intelligent beings like ourselves was built into the evolution of the universe from the very outset. The reason that the universe appears to be so finely tuned is because it is so finely tuned—tuned in such a refined way in order for humans to come into existence. There is an definite order, purpose and goal to the universe and we are part of that telos.58

The so-call “cosmic coincidences” that account for life are not coincidences at all. They are the grammar of destiny articulating the arrival of the human mind. The universe is delicately arranged to support life because that was its purpose from the start.59

John Haught proposes the acorn as a model for understanding the strong anthropic principle. Why does an acorn have the properties that it has? So that it may grow into an oak tree. Similarly, why was the universe so finely tuned at its inception? So that beings with conscious capabilities would come into existence. The universe has been the way it is from the beginning because of its “impetus toward evolving into beings with minds.”60

Haught observes that the principle can be stated in even more dramatic terms. It is not simply that the universe was directed toward the emergence of beings with minds, but more importantly, “mind somehow causally shapes the evolution of matter so as to bring conscious beings into existence....”61

60 Haught, Science and Religion, 126.
61 Ibid., 135; cf., Haught, Mystery and Promise, 154. This view is reminiscent of Teilhard de Chardin’s contention—echoed by Thomas Berry—that the psychic-spiritual dimension has been present in the
Not surprisingly, teleology is a central feature of the strong version of the anthropic principle. Because our existence is so intimately intertwined with the unfolding story of the universe, the status and emergence of that universe as a whole is profoundly determinative of our own identity. Our unique subjectivity is subsequently regarded as cosmos contextualized. Consequently, a claim that the universe has no purpose or teleology becomes a revealing statement about ourselves. Although supporters of the strong version may not be able to articulate a complete teleology of the universe—since such would entail a deeper understanding of divine intention or universal design than is possible—they nevertheless contend that cosmogenesis is meaningful.

The anthropic principle and the questions it raises prompt reflection on the place of humanity within cosmogenesis. I have reviewed various positions which arise from those discussions, not to choose and defend a particular viewpoint, but to prepare the way for an exploration of Berry’s proposal of a functional cosmology and a functional spirituality. Like the anthropic principle, Berry’s stance will include a consideration of teleology and the place of humanity in the cosmic story. And like the anthropic principle and theories of evolution, intersections with theology will inevitably occur as Berry’s position is detailed. Therefore, to complete our exploration of cosmology and to set the stage for presenting and analyzing Berry’s work, three aspects of cosmology will now be considered: cosmology and myth, cosmology and health, and cosmology and theology.

**Cosmology and Myth**

Humanity forever seeks to interpret the reality it knows in order to discern meaningful wholes within which it can feel at home in an ordered rather than a chaotic world.

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physical-material from the very beginning, and did not suddenly appear at some later stage of evolution. This perspective will be discussed in fuller detail in the next chapter.
Myth rescues whatever happens to us, as well as what we value, from meaningless contingency, discontinuity, and fragmen
tation. Myth roots us in the human community, enabling us to become part of an inherited, shared way of life. Through
myths...we tell stories of our existence, thereby escaping the tyranny of seemingly pointless and accidental events, as well as the terror of a world that appears indifferent to our needs and hopes.\(^{62}\)

The past three centuries of astronomy and physics and their related disciplines have brought a new story of creation to the
human imagination—a story which challenges us to rethink our understanding of our place in creation. A Copernican
revolution is upon us. If “myth relates to a sacred history, that is, a primordial event that took place at the beginning of
time, ab initio,”\(^{63}\) then science is perhaps stimulating a creative and mythic energy for humanity to reinvent its understanding of the world and itself. It is not surprising, that as the probing of science has dismantled the previous cosmology and tentatively unveiled a new version, that its purveyors are faced with the task of defining new meaning and direction for humanity; or that others, perhaps better suited for such imaginative reframing of the human adventure, adopt the new scientific explanation of cosmogenesis to recreate an understanding of the human. A new story must be told and its implications discerned. For some, the new story will be read, and the pursuit for its purpose will be satisfied by a determined rejection of any teleology or divine role. But for most, the task will be a compelling search for an understanding of the relationship among humanity, the rest of creation and the Creator. Accordingly, this brings us to a discussion of cosmology and theology, and perhaps unexpectedly, cosmology and health.

**COSMOLOGY AND HEALTH**

For people raised within and formed by North American culture, the connection between cosmology and health is not always obvious. In more recent times, we have

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\(^{63}\) Eliade, *The Sacred and the Profane*, 95.
once again become increasingly aware of the relationship between human and ecosystem health as we realize that the destruction of the environment undoubtedly poses a serious threat to our own survival. But our new awareness actually involves a connection made between cosmos and health, rather than cosmology and health. The former recognizes the interrelatedness of human and ecosystem health while the latter contextualizes human health within a cosmological perspective. The former is about place; the latter about process. "Cosmos and health" observes the human resident in a specific domain and notes the health consequences; "cosmology and health" imagines the human actively engaged in an ever-changing process of universal proportions and speculates on how all aspects of that spectacle affect each other for better or worse. The former might consider questions of ethics and purpose while the latter invariably does. It is not common for us to employ an outlook which blends cosmology and health. This thesis is about such a task.

Before an understanding of health is constructed within the context of the new cosmology in the following chapters, it might be useful to consider how another culture has formulated such an approach. Traditional Chinese Medicine (TCM) is articulated and practiced within a specific cosmological perspective. A brief and selected overview of its constructs can demonstrate how health and cosmology can be interwoven. The principles of health articulated in this very limited overview of TCM will also provide a template for our later efforts to link Thomas Berry's functional cosmology and functional spirituality with health.

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64 Traditional Chinese Medicine integrates the practices of acupuncture, moxibustion, Qi gong and Chinese herbal remedies. Moxibustion is a therapeutic technique which involves the burning of cones of mugwort or Artemisia vulgaris placed on selected points on the body (usually acupuncture points). Qi gong is a breathing and movement technique used to stimulate the flow of Qi in the body and to enhance one's inner peace. It is also worth noting that Chinese herbal remedies can be decidedly non-herbal when they are made from animal parts, so the description "herbal remedies" is not an entirely accurate generalization.
While the origins of acupuncture are obscure, its most authoritative reference is generally deemed to be the *Huang Di Nei Jing* or *The Yellow Emperor's Classic of Internal Medicine* ascribed to the Yellow Emperor, Huang Di, who lived from 2697 to 2596 B.C.65 Hence, Traditional Chinese Medicine (TCM) is generally considered to be almost five thousand years old. TCM, like other theoretical traditions in China, emerged from an understanding of the relationship between the human and the rest of the universe. The individual was regarded as a microcosm within a universal macrocosm. Thus, just as the universe was organized around a principle of *yin* and *yang*, so too was the individual; just as the universe was constituted of five elements—namely: Fire, Earth, Metal, Water and Wood—so too was the person; and just as vital energy or *Qi* pervaded the entire universe and motivated the Tao, such was also the case for the human.66

The uncreated universal organism, whose every part, by a compulsion internal to itself and arising out of its own nature, willingly performed its functions in the cyclical recurrences of the whole, was mirrored in human society by a universal ideal of mutual good understanding…67

The forces which ordered the universe were the same forces which ordered the person; the patterns evident in the universe, thereby influencing the action of the universe were the same patterns which could be found in the person, consequently influencing how each person acts.

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65 The oldest extant copy of this classic text dates from the third century B.C. Some authorities contend that the *Huang Di Nei Jing* was a collaborative work written about that time and antedated to enhance its value and authority. See, Anton Jayasuriya, *Clinical Acupuncture*, 6th ed. (Colombo, Sri Lanka: The Acupuncture Foundation of Sri Lanka, 1980), 15. Other authorities offer archaeological evidence to argue that acupuncture emerged in a primitive form during the Mesolithic or Neolithic period—i.e., between 6,000 to 8,000 B.C.—so such antedating is less likely. See, Academy of Traditional Chinese Medicine, *An Outline of Chinese Acupuncture* (Peking: Foreign Languages Press, 1975), 6.

66 *Qi* is sometimes spelt *ch'i* or simply *chi*. *Qi* or life energy is “the manifestation of any invisible force, whether it be the growth of a plant, the movement of an arm or the deafening thunder of a storm.” See, Felix Mann, *Acupuncture: The Ancient Chinese Art of Healing and How It Works Scientifically*, 2d ed. (New York: Vantage Books, 1973), 46-47.

Yin and Yang

The Chinese believed that in the beginning the world was a formless indivisible whole. There was no distinction between heaven and hell, fire and water, day and night; there was neither birth nor death... all imaginable things were merged together without definition in an unchanging unity.... For life as we know it to be possible with all its richness and variety, ...this world had to be split in two. The Unity had to become a duality; and from this duality arose the idea of the complementary opposites... which the Chinese called the Yin and the Yang.68

The perpetual interplay between yin and yang is central to Chinese thinking. Maintaining a dynamic balance between yin and yang is essential for any state or being to be healthy.69 This does not mean that a state or person is expected to be fifty per cent yin and fifty per cent yang, however. Both the universe and humans move through endless cycles of change which might require more of one dynamic than the other to be present at any given moment. For instance, should a child be attacked by a rabid beast, the parent would draw on yang energies within his or her body to repel the beast, acting in a very yang fashion. Afterward, when the child would need to be comforted following such a traumatic ordeal, the parent would present more yin characteristics. The situation demanded sequentially a yang response followed by yin, and the parent’s physiology and biochemistry appropriately responded with both yang and yin actions. In this example, yin and yang operated or manifested on social and personal levels. Social and human health required the appropriate balance—neither too much or too little—of yin and yang according to what was required at that moment. This example also illustrates a fundamental quality of yin and yang as described in TCM—within the dynamics of a universe which is in constant flux, there is an intrinsic tendency for states and beings to move toward a dynamic equilibrium of yin and yang, inherently seeking the appropriate

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68 Mann, Acupuncture, 59.
69 Yang qualities: male, active, generative, aggressive, sun, day, hot, expansion, exterior, heaven, hard. Yin qualities: female, passive, destructive, comforting, moon, night, cold, contraction, interior, earth, soft.
Consequently, every event is eventually followed by its opposite. This principle not only applies to both the universe and the individual, it unites the two. Furthermore, as the example demonstrates, everything is both yin and yang. While males are considered to display yang qualities more frequently, they can also manifest yin features; females are comparably inclusive but tend to manifest more yin qualities. Therefore, either parent could have rescued and comforted the child in the example above. The duality of yin and yang in TCM is not a Cartesian duality which tends to more rigid and confining classifications. Both yin and yang qualities exist in every event, every being, and in every object, and the manifestation of these qualities will shift according to the dynamics of the moment. The emphasis is on inclusive, dynamic interrelationships in TCM, not reductionistic isolation.

**The Five Elements**

TCM stresses that not only do we live in the Five Elements of the universe but we are those Five Elements, subject to the same cycles and influences which the planet experiences. For the Chinese people steeped in Taoist teachings, just as Nature all around them is going through its natural process of change, they instinctively know that the Nature inside them follows these same patterns, that intuitively human beings go through the cycle of the seasons within themselves, that the Elements are recreated within them. ...It is not just in the world around them that the tender shoots of spring are born bursting into life; it is also within themselves. ...We are the seasons. We are the Elements. Nature is without and within us, each of us every moment. We are a replica of the universe passing from season to season in a natural unending cycle of life.

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70 Capra, *The Turning Point*, 313.
72 The title "The Five Element Theory" translates a system which TCM calls *Wu Hsing*. Manfred Porkert suggests that an alternate translation might be "The Five Evolutive Phases" since *Wu Hsing* deals as much with "elements" as it does with "phases." When the system is fully described—a task beyond the scope of this thesis—it integrates every aspect of the universe into a dynamic, ordered whole. For a fuller discussion, see, Manfred Porkert, *The Theoretical Foundations of Chinese Medicine* (Cambridge, Mass.: MIT Press, 1974). For a more detailed description of the qualities related to the Five Elements, see Appendix E.
Table 3 on the following page can be used to recognize this macrocosmic-microcosmic or universe-human representation of the Five Elements. Each year cycles through various seasons which can be compared to the phases of a person's life (spring = birth; summer = adolescence; late summer = early adulthood; autumn = mature adulthood; winter = approaching death). Stages of growth which could be applied to the evolution of a wheat field—birth, growth, transformation, harvest and storage—might also reflect a student's experience during a semester at school. These parallels constantly remind the individual that he or she exists within a cosmological framework; the patterns and traits of the universe coincide with those of the individual and society.\textsuperscript{74}

But the Five Elements also define a therapeutic link between cosmology and health. The Yellow Emperor observed that "in order to bring into harmony the human body, one takes as standard the laws of the four seasons and the Five Elements."\textsuperscript{75} Health requires that \textit{Qi} energy flows through each of the Five Elements in a harmonious, cyclical and unrestricted manner whether one considers the health of humans, agricultural lands, seas, or forests. In keeping with the ordering and duality of \textit{yin} and \textit{yang}, the Five Elements are related by two cyclic interactions: a generative or \textit{Sheng} cycle (\textit{yang}), and a destructive or \textit{Ko} cycle (\textit{yin}). (See Figure 3 on the next page.) In the \textit{Sheng} or generative cycle, when Wood is burnt by Fire, Earth (ashes) results; Earth forms Metal (ores) and Water emerges from Metal (fluid arises from solid states); Water nourishes trees which produce Wood, and Wood feeds Fire. In the \textit{Ko} or destructive cycle, Fire melts Metal which cuts Wood which penetrates the Earth with its roots, and

\textsuperscript{74} It is also possible to discern how the characteristics which describe an Element comprise an intelligible whole. Consider the Element Wood described briefly in Table 3. The sun rises in the \textit{East}, signaling the \textit{Birth} of a new day, much like \textit{Spring} heralds the birth of a new year. In spring, the new shoots of \textit{Wood} are \textit{Green}. \textit{Winds} from the east suck the \textit{Qi} energy out of the liver (a \textit{Wood} organ). See, Connelly, \textit{Traditional Acupuncture}, 21-27.

Table 3
Characteristics of the Five Elements

<table>
<thead>
<tr>
<th>5 Elements</th>
<th>5 Directions</th>
<th>5 Seasons</th>
<th>5 Climates</th>
<th>5 Stages of Development</th>
<th>5 Colours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood</td>
<td>East</td>
<td>Spring</td>
<td>Windy</td>
<td>Birth</td>
<td>Green</td>
</tr>
<tr>
<td>Fire</td>
<td>South</td>
<td>Summer</td>
<td>Hot</td>
<td>Growth</td>
<td>Red</td>
</tr>
<tr>
<td>Earth</td>
<td>Centre</td>
<td>Late summer</td>
<td>Humid</td>
<td>Transformation</td>
<td>Yellow</td>
</tr>
<tr>
<td>Metal</td>
<td>West</td>
<td>Autumn</td>
<td>Dry</td>
<td>Harvest</td>
<td>White</td>
</tr>
<tr>
<td>Water</td>
<td>North</td>
<td>Winter</td>
<td>Cold</td>
<td>Storage</td>
<td>Black</td>
</tr>
</tbody>
</table>

*Based on: Jayasuriya, *Clinical Acupuncture*, 294-296.
*Based on: Jayasuriya, *Clinical Acupuncture*, 298.*
Earth dams the Water which extinguishes Fire.\footnote{Gerber, \textit{Vibrational Medicine}, 178-180; Jayasuriya, \textit{Clinical Acupuncture}, 294-296.} Since the natural world exhibits both generative and destructive phases, the Five Elements which constitute the world are necessarily related in a similar fashion. Similarly, our health involves both generative and destructive phases.

Each person also has these Five Elements represented within her or his body. Each bodily organ tends to be predominantly characterized by one of the Elements, although all Elements are present in each organ. Accordingly, each Element in Figure 3 has listed within its schematic representation two organs—one \textit{yin} and one \textit{yang}—reflecting the organs which are characterized by that Element.\footnote{The Element Fire is an exception. It includes two meridians which are not related to what we would normally define as organs—Pericardium and Triple Warmer. Triple Warmer refers to \textit{Sanjiao} which is the tissue enclosing the organs of the chest, abdominal and pelvic cavities. The “warmers” in each of these three cavities are like energetic furnaces which move life-giving \textit{Qi} or vital energy about the body, and are commonly called the upper, middle and lower warmers. Pericardium refers to the tissue which blankets the heart. TCM considers the Pericardium to be an organ.} Should the \textit{Qi} energy become deficient or too abundant in any of the Five Elements, the \textit{Sheng} and \textit{Ko} cycles can be used to move energy from organs of abundance to organs of deficiency. Energy is shared in a way which is mutually enhancing for all areas of the body.

Each of the organs is further associated with a meridian or \textit{ching-mo}—a conduit which guides the flow of energy throughout the body. Hence, the lung is associated with the lung meridian, and the stomach with the stomach meridian, and so forth. Each meridian is joined at both of its ends with another organ meridian so that energy constantly flows along a continuous channel throughout the entire body.\footnote{Academy of Traditional Chinese Medicine, \textit{An Outline of Chinese Acupuncture}, 33-35, 55-56; Capra, \textit{The Turning Point}, 314.} Should any organ become either deficient or overly abundant in \textit{Qi} energy, or should a constriction occur to the flow of \textit{Qi}, acupuncture points found on the various meridians can be used to correct the flow of this energy, thereby restoring the person to a more harmonious state.
This correction occurs when needles inserted into these points either draw Qi energy into the body from the cosmos to rectify a deficient state, or release Qi to the universe to remedy an excess accumulation.\footnote{Porkert, \textit{The Theoretical Foundations of Chinese Medicine}, xiv.}

\textit{Qi Energy}

The type of Qi manipulated by acupuncture needling is called Jing Qi. There are many types of Qi, but for our purposes it is worth noting just a few in keeping with the task of demonstrating how health and one’s person can have a cosmological referent. Humanity resulted from the joining of Heavenly Qi and Earth Qi. Xian Tian Qi is the Qi which is inherited from one’s ancestors (this might also be called Pre-heaven Qi). Qin Qi or True Qi is nourishing energy circulating to the various internal organs and originates in the Lungs from the combination of Ku Qi (physiological energy derived from the essences of foods) and Ta Qi (external energy derived from inspired air). Consequently, while one’s Qi is depleted by the daily activities of living, it is augmented by the intake of food and air which are resplendent with vital energy.\footnote{Jayasuriya, \textit{Clinical Acupuncture}, 851.} (This helps to explain why Qi Gong breathing exercises are so important for revitalizing the body.) The gift of the universe, once external to oneself, now courses throughout one’s body. Qi can be condensed into material as when a person is conceived (a transformation which recalls Einstein’s equation of $E=mc^2$). Conversely, if one’s Qi becomes too dispersed, death results as one’s Qi returns to the universal source of Qi.\footnote{Ibid., 391.}

As was discussed in the Introduction of this thesis, illness can be considered a normal, natural and healthy response to life’s ever changing dynamics. At times, the flow of Qi can become restricted or lack proper balance due to malnutrition, social or familial disharmony, infection, psychological or physical stress, maladaptation to

\begin{itemize}
\item\footnote{Porkert, \textit{The Theoretical Foundations of Chinese Medicine}, xiv.}
\item\footnote{Jayasuriya, \textit{Clinical Acupuncture}, 851.}
\item\footnote{Ibid., 391.}
\end{itemize}
seasonal changes or other similar predisposing factors. Such imbalances lead to illness. But such illness also serves to make us more attentive to when we are out of synch with the ever shifting processes of a dynamic universe. Health and illness are part of a continual process of adapting to an ever changing environment. Accordingly, since illness will at times be inevitable in the ongoing process of life, perfect health is not the ultimate goal of either patient or doctor [in TCM]. The aim of Chinese medicine, rather, is to achieve the best possible adaptation to the individual’s total environment.84

Traditional Chinese Medicine evolved from an empirical knowledge of the universe. It has always endeavored to remind the individual of her or his functional place within the dynamics of one’s family, society, and the universe itself. It recognized and continues to assert that humanity is inextricably a part of a vital universe, and consequently, the health of the person, society and cosmos are intimately interrelated, mutually dependent and inseparable. The cosmology which explains the rhythms of the universe also serve to explain the intricacies of a person’s health. The human is always a microcosm of the universal macrocosm.

COSMOLOGY AND THEOLOGY

When cosmology and theology are brought into dialogue, several issues invariably come to the fore. Among these issues are the following: how do we understand God to be both transcendent yet immanent, and what are the implications of that understanding for human activity; how do we understand the relationship between the Divine and creation vis à vis providence, creatio continua, and concursus; what role does the Divine expect humanity to play in creation—as one who holds dominion over the rest of creation, or as steward, co-creator, or participant; or how do redemption, eschatology and teleology apply to humanity and the rest of creation? Different commentators attach

84 Capra, The Turning Point, 315.
different answers and varying importance to these questions. For our purposes, it is necessary to understand how these issues might be answered within the context of the new cosmology. More specifically, it is necessary to explore how Thomas Berry, as a proponent of the new cosmology, speaks to these issues, and what relevance his perspective might have upon an understanding of the spiritual dimension of human health. The next chapter will describe the functional cosmology and functional spirituality of Thomas Berry, and in so doing, recount how Berry weaves cosmology and theology together.
CHAPTER THREE

THE COSMOLOGICAL VISION OF THOMAS BERRY

Finally we begin to recover a reverence for the material out of which we were born, for the nourishing context that sustains us, the sounds and scenery, the warmth of the wind and the coolness of the water — all of which delight us and purify us and communicate to us some sense of sacred presence.

Thomas Berry, The Dream of the Earth

Since receiving his doctorate as a cultural historian from the Catholic University of America in 1949, Thomas Berry has been a dedicated student of human history, whether studying the classical civilizations of the West and Far East, the revolutionary thinking of Teilhard de Chardin, or contemporary concerns with the ecological crisis. More recently, he has not simply focused on human history but has considered the story of humanity within the context of planetary and even cosmic history. It is difficult to condense such a breadth of subject matter and the commitment of so many years into a single chapter.

To facilitate this task, I will limit my consideration to those parts of Berry’s work which provide information particularly relevant to this thesis. I will begin by briefly considering why Berry feels compelled to contextualize his reflections within the new cosmology. Then I will present an overview of Berry’s analysis of the reasons for the emergence of the ecological crisis. These first two sections will introduce the larger concern of this chapter—Berry’s vision for an alternative. In this third section, I will modify each of Berry’s “Twelve Principles for Reflecting on the Universe and the Role of the Human in the Universe Process” in order to sharpen its focus to the task of understanding human health in the Ecozoic era, finally arriving at ten principles for the
purpose of this dissertation. In each modified principle I will consider aspects of what Berry has described as the Ecozoic era, a time when the “human community [will] become present to the larger earth community in a mutually enhancing manner.” While each principle articulates a fundamental feature of the new cosmology, the inclusion of an ecozoic perspective will illustrate how each principle can awaken humanity to a new understanding of itself and consequently suggest the implications inherent in the adoption of such a principle.

INTRODUCTION

The Need for a New Story

As was discussed in the previous chapter, all peoples have tended to formulate a story of the universe’s creation and the role of the human within that story in order to provide a “primary source of intelligibility and value.... [Consequently], the deepest crises experienced by any society are those moments of change when the story becomes inadequate for meeting the survival demands of a present situation.” Thomas Berry contends that we are presently facing such a crisis. While the Genesis story has diminished influence on our cultural development, the sterile chronology emerging from modern science has tended to lack any depth of meaning or inspiration. Neither of these stories, Berry concludes, can adequately provide a context for our meaningful and sustained existence since neither can motivate the cultural transformation required to address the ecological crisis. In fact, Berry argues that each of these stories has contributed to the ecocrisis which threatens our survival. Therefore, there is a need for a

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1 For a list of these principles in both their modified and original forms, see Appendix C.
2 Berry and Swimme, *The Universe Story*, 3.
3 Berry, *The Dream of the Earth*, xi.
4 I am using the word “modern” in the sense of “that which has emerged in the post-Enlightenment period,” rather than “that which is recent or current.”
new myth of creation, incorporating both the credibility derived from the scientific
telling of the universe story and the meaningfulness instilled by the spirituality of a faith
tradition.\footnote{Berry and Clarke, \textit{Befriending the Earth}, 5-7.}

\textit{The Change from Cosmos to Cosmogenesis}

Berry considers our shift from an awareness of cosmos to a sense of
cosmogenesis as perhaps the most significant change in the twentieth century, the single

We have moved from that dominant spatial mode of consciousness, where time is
experienced in ever-renewing season cycles, to a dominant time-developmental
mode of consciousness, where time is experienced as an evolutionary sequence of
irreversible transformations.\footnote{Berry and Swimme, \textit{The Universe Story}, 3.}

In the classical period of Western civilization it was thought that celestial bodies
and the Earth were not only made of different matter but were governed by different laws
of motion; that "the Sun and the Moon and the five known planet stars revolved around
the Earth in seven celestial spheres, moved by angels...";\footnote{Denis Edwards, \textit{Jesus and the Cosmos} (Mahwah, New Jersey: Paulist Press, 1991), 3.} that the Earth—which was flat, the centre of the universe and only five thousand years old—came into being with the
various species of plants and animals neatly and fully arrived; that humans, who were at
the pinnacle of the hierarchical ordering of the universe, were temporarily resident on the
Earth to mature spiritually; and that the most reliable source of understanding could be
gleaned from ancient teachings rather than empirical evidence.\footnote{Berry and Swimme, \textit{The Universe Story}, 228; Thomas Berry, "Art in the Ecozoic Era," \textit{Art Journal} 51, no. 2 (1992a): 48.} When modern science
asserted that the order and intelligibility of the universe could be discerned through
empirical investigation, a revolution began. Later, Einstein pronounced the
Cosmological Principle which declared that all places of the universe are alike. In other words, “ping-pong is ping-pong” since the matter and physical laws applicable on the Earth will be the same matter and laws of physics found elsewhere in the universe. Hence, wherever one plays ping-pong, the same rules will abide.\footnote{11} Berry and Swimme have extended Einstein’s Cosmological Principle to what they call the Cosmogenetic Principle: that “every point in the universe is the same as every other point, and additionally, that the dynamics of evolution are the same at every point in the universe.”\footnote{12} This Cosmogenetic Principle somewhat balances the Second Law of Thermodynamics which states that “the amount of energy in the universe remains the same but that the amount of useful energy declines in proportion as the energy is used.”\footnote{13} While the Second Law of Thermodynamics refers to the dynamics of the universe which involve the breaking down of order, the Cosmogenetic Principle refers to the building up of order. Prior to an understanding of cosmogenesis, the universe seemed to be winding down to chaos; it was not surprising that the potent Second Law tended to breed a particular cosmic pessimism.\footnote{14} The Cosmogenetic Principle as articulated by Berry and Swimme again counters with a sense of optimism when it asserts that “in some sense, the

\footnote{11} This colourful summation of Einstein’s Cosmological Principle belongs to Robert Armstrong of the Faculty of Physics at the University of Toronto. It succinctly notes that no matter where one plays ping-pong in the universe, the game will adhere to the same laws of physics. See, Robert L. Armstrong and James D. King, Mechanics, Waves, and Thermal Physics (New York: Prentice Hall, 1972), 35-36. 
\footnote{12} Berry and Swimme, The Universe Story, 66.
\footnote{13} Ibid., 234. Cf., Armstrong and King, Mechanics, Waves, and Thermal Physics, 488-489; Davies, God and the New Physics, 10-11.
\footnote{14} For a discussion of “cosmic pessimism” resulting from the Second Law of Thermodynamics, see, Haught, Science and Religion, 148. Michael Heller recalls that the “winding-down” of the Second Law of Thermodynamics was often seen to be contradicted by the “winding-up” of increasing complexification and evolution. The two tendencies were seen to be in conflict. However, Heller notes that nonlinear thermodynamics has replaced linear thermodynamics, eliminating the apparent conflict. “If the universe were only a linear system, nothing really new could emerge out of its dynamics. Nonlinear equations are totally different in this respect. … If we ‘superimpose’ two solutions of a nonlinear equation, they can produce an extra effect that was not present in any of the original solutions.” For this reason, Heller argues that it is no longer necessary to invent Teilhard’s non-physical radial and tangential energies to explain the universe’s tendency toward increasing complexification and evolution. Such tendencies are simply intrinsic and self-emergent, and explainable by physical laws using nonlinear thermodynamic equations. See, Michael Heller, “Teilhard’s Vision of the World and Modern Cosmology,” Zygon 30, no. 1 (1995): 20.
structures of the universe were ‘aimed at.’ The structures are not entirely accidental in the sense of being the result of random collisions in an otherwise indifferent universe.”15

The Cosmogenetic Principle suggests that we live in a meaningful universe, a universe that is going somewhere.

That the universe and the planet Earth were the product of a multi-billion year irreversible series of transformations was astounding enough; but even more extraordinary was the realization that humans were both product and part of this emerging, meaning-filled universe, a realization which has yet to penetrate fully into the human psyche, in Berry’s estimation.16

Previously, in the earlier stages of the modern era, the scientific construction of a cosmology and the metaphysical articulation of the role and purpose of humanity could be considered as mutually exclusive since the universe could reasonably be considered to be “out there.” Now, however, science contends that the universe is also “in here,” that the emergence of the universe and the emergence of humanity are part of the same story. Accordingly, Berry observes, the endeavors of science and metaphysics are no longer seen as intrinsically incompatible.17

Adopting a perspective of cosmogenesis integrates humanity into the dynamics of the planet in a more profound manner than could be envisioned in a static cosmos. “The final benefit of this story might be to enable the human community to become present to the larger earth community in a mutually enhancing manner.”18 This is perhaps the central theme which encapsulates Berry’s cosmological vision.

15 Berry and Swimme, The Universe Story, 69-70.
16 Ibid., 236-238; Berry, “Art in the Ecozoic Era,” 48.
17 Berry and Swimme, The Universe Story, 22-23. Joanna Macy notes that the absolute and clear separation of “self” from “other” is not only no longer supported by current scientific understanding, it denies that we are open, self-organizing systems whose very breath, nourishment, activity and thoughts inexorably engages us with our environments. See, Joanna Macy, “The Greening of the Self,” in Dharma Gaia, ed. Allan H. Badiner (Berkeley: Parallax Press, 1990), 58.
18 Berry and Swimme, The Universe Story, 3; cf., 23. Mae Wan Ho shares Berry’s view. She argues that “in thus relocating ourselves within nature where our substance, our very essence is interfused with the whole, we are thereby empowered to know, and hence to shape our evolutionary future.” Such an
Extent of the Ecological Crisis

The universe as told in Appendix B noted that the Earth and its life forms have faced extinction on more than one occasion, whether from a critically high concentration of oxygen in the atmosphere or due to dramatic climatic changes. The present threat to the survival of the planet is the result of the destructive intrusion of human technology upon the land, water, air and biological systems of the planet.\(^\text{19}\) The geological, hydrological, atmospheric and biological components of the Earth’s ecosystems are being consumed and spoiled in an unprecedented manner and volume which precludes their conceivable replacement or regeneration within the scope of human historical time. Furthermore, Berry notes, we have developed a “technosphere” which is incompatible with the biosphere; we have created an industrial infrastructure which is in constant decay, often at the expense of the biosphere and in contrast to the infrastructures of the natural world which continually seek to renew themselves.\(^\text{20}\) We have evolved a society which apparently cannot halt, reduce or mitigate its industrial production, commercial distribution or consumer economy without incurring the collapse of large segments of its present activities.\(^\text{21}\)

This pending extinction is unique among Earth’s extinctions because, for the first time, the agent of the extinction is conscious of its cataclysmic actions. We are conscious of our deadly disruption of the natural rhythms of the planet yet we have resisted changes which would address this crisis.\(^\text{22}\) Humanity and the rest of the planet

\(^\text{19}\) Berry, The Dream of the Earth, 34-35.
\(^\text{20}\) Ibid., 51.
\(^\text{21}\) Thomas Berry, "The Meadow Across the Creek," 1996, TMs [photocopy], Thomas Berry, Greensboro, NC, 198-199.
\(^\text{22}\) Ibid., 198. For a discussion of “Why Our Social Institutions Are Not Responding Well to the Ecological Crisis,” see, Pitcher, Listen to the Crying of the Earth, 43-67.
have never faced an ecological crisis of this magnitude—the termination of the Cenozoic era, the most life-filled era in Earth's creativity.  

**Berry's Critique**

*The Six Transcendencies*

When Thomas Berry examines the ecological crisis, he concludes that a particular context fostered the attitudes which instigated and permitted the emergence of this planetary devastation. This context resulted from what he has described as the "transcendencies".

We have, then, four of what I call 'transcendencies'—transcendent deity, transcendent human, transcendent redemption, transcendent mind. We also have transcendent technology, which enables us to evade the basic biological laws of the natural world. And we have not only a transcendent technology, but also a transcendent destiny or transcendent goal, a millennial vision in which, within history, we get beyond the human condition.

By examining the consequences of each of these "transcendent" perspectives, Berry demonstrates how each helped to precipitate the ecological crisis.

**Transcendent Deity**

Berry contends that "we biblical people" set the stage for the desacralization of the world. He recalls that the Divine has generally been experienced by peoples as an all-pervasive presence of mysterious power, existing throughout the universe. The Bible constellated the pervasive divine presence throughout the phenomenal world into a transcendent, monotheistic deity who held a covenant relationship with an especially chosen people. "We appear to give up that primordial, inherent relationship between the

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23 Berry and Clarke, *Befriending the Earth*, 5-6.
24 Ibid., 115. A similar exposition of these transcendencies can also be found on pages 2 to 5 of the first chapter of: Anne Lonergan and Stephen Dunn, eds. *Gaia's Elegant Gnome: Thomas Berry on the New Cosmology and Christian Imagination* (Port Burwell, Ontario: unpublished manuscript, 1983). In this instance, Berry excludes transcendent redemption.
human and the divine within the natural order of things... even when the natural world is explained as good and as created by the divine. Once the Divine is determined to be transcendent, a direct human-divine covenant relationship results which tends to preclude the natural world as a locus where the Divine and the human might come together. When the natural world becomes less capable of communicating divine presence it is more easily regarded as mere object, lacking intrinsic value.

**Transcendent Human Spirit**

Approximately 100,000 years ago when humans began to bury their dead, implements and goods were often added to the burial sites apparently to aid the deceased in their new journey or new “life.” Seemingly, humans had come to believe that there was more to being human than mere physical presence; there was also a spiritual reality. While humanity also came to believe that the natural world was imbued with spiritual presence, people speculated on the unique nature of the human spirit and its relationship with the non-human natural order. Berry contends that our present tendency to value the spiritual dimension of the person over the physical has been significantly influenced by metaphysical speculation during the era of the classical civilizations.

Midway in this five-thousand-year period of the classical civilizations, extending from 3500 B.C.E. to 1500 C.E., came the moment of deepest intellectual and spiritual reflection associated with, if not consequent on, a sense of the pathos of the human condition. The tragic dimension of existence established itself as a widespread and permanent concern.... This sense of the phenomenal world as oppressive to the more sublime aspects of the human, as a situation to be escaped from by spiritual discipline or some form of intellectual insight, constituted the ambivalence of the human situation. Life was full of entrancing sights and

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26 Berry, *The Dream of the Earth*, 113.
27 Berry and Swimme, *The Universe Story*, 274.
28 Berry identifies five stages in the emergence of human cultures: the emerging human, primarily the Paleolithic era (2.6 million to 12,000 years ago); the neolithic village (12,000 years ago to 3,500 BCE); the classical civilizations (3,500 BCE to 1607 CE); the rise of nations (1600 CE to date); and the modern revelation (1543 CE to date). See, ibid., 273–278.
sounds and fragrance and feeling; yet it was also a threatening reality on every side. 29

The sense that the phenomenal world was a domain from which humanity must strive to escape through the adoption of spiritual discipline was a position articulated in Platonic philosophy, and a perspective which influenced the early Christian church as the faithful strove to clarify their new understanding of the divine-human relationship. 30 Humans were exalted as spiritual beings while the rest of creation was deemed to lack a spiritual dimension. It was more important for the human, whose soul was directly created by God, to focus on the next world, the realm of the spiritual life, than to find divine presence in the present state of affairs. Consequently, humanity and Christians in particular, were less associated with the creative processes of the earth, and more with the eternal glory of heaven. Humans were separate from the natural order. 31 Even when more recent scientific discoveries situated the human as emerging from cosmogenic processes, those processes were described in physical terms only; the spiritual dimension of the story was missed. Human spirituality remained alienated from the natural order. 32

Berry notes, however, that this sense of “the human as a being transcendent to the natural world and to the earth community” may well have been “a prior condition needed for the development of science and technology.” 33 As such, a sense of transcendent human spirit has brought humanity some benefit since we have undoubtedly benefited from modern science and technology. But at the same time, it has permitted the rest of the natural order to be treated as mere physical object, and has subsequently set the stage

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29 Ibid., 188.
30 Berry, “Wonderworld,” 415; Berry and Swimme, The Universe Story, 204.
31 Berry and Clarke, Befriending the Earth, 115; Berry, The Dream of the Earth, 113-114.
32 Berry, "The New Story," 192; Berry and Swimme, The Universe Story, 1.
33 Berry, "The Meadow Across the Creek," 148. Berry notes, however, that even in religious traditions which had "extensive teaching concerning the intimate rapport between the human and the natural world," people still adopted practices which were devastating to their bioregions. "China is a foremost example of theoretic intimacy with the Earth by a people who seemed not to understand the harm they were doing in denuding the country of its forests to obtain larger areas for cultivation." See, Berry and Swimme, The Universe Story, 198; cf., 204.
whereupon we could consume and pollute the planet with diminished awareness of the significance of our actions. We could give little thought to an ecosystem which was seemingly so distanced from ourselves.

Transcendent Redemption

According to Berry, as Europe entered the fourteenth century, the ever-increasing sense of the pathos of the human condition was unexpectedly heightened due to the devastation caused by the Plague or Black Death. Berry notes that between 1347 and 1349, a third of the population of Europe died. He contends that this extraordinary event was a significant impetus for the emergence of the next four "trancendendencies": transcendent redemption, technologies, millennial vision and human mind. Faced with such horrific and extensive death, it is not surprising that Europeans tended to conclude that they lived in such a hostile world that attachment to or intimacy with this world risked personal survival. With no other explanation for the catastrophic death toll of the Black Death forthcoming, they concluded that the world was not favoured by God. "This led to a more absolute commitment to salvation from the Earth rather than to an integral relation with the Earth as a single sacred community."

To deal with the sorrows of this finite and apparently corrupt world, many Europeans sought to be redeemed from the natural world into the spiritual realm of eternity. Berry observes that an understanding of the cosmic dimension of Christianity as expressed by St. Paul, and any sense that the natural world could be a revelation of the divine were perspectives which subsequently

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34 The Black Death or Plague is an acute infectious disease caused by the bacterium Pasteurella pestis (Yersinia pestis) and is usually transmitted to humans by fleas from infected rats, although when the bacterium attacks human lungs, the resulting pneumonic plague can be transmitted to other people via droplet infection. When the Plague swept through Europe and parts of Asia in the fourteenth century it is estimated that as much as three quarters of the population was killed in less than twenty years. See, The Concise Columbia Encyclopedia on CD-ROM. (Columbia University Press, 1991). Berry reports that in Florence, close to half the population died within three months. See, Berry, "The Meadow Across the Creek," 89-90.

35 Berry and Swimme, The Universe Story, 199.
fell into decline. Redemption from a fallen world captured Christian imagination and practice, diminishing emphasis on the goodness, sacredness, and spiritual dimension of creation. The Christian redemption model focused on the Saviour, and the relationship among the Saviour, the human and the believing church. It implied that human emergence and destiny were separate from the world's emergence and destiny. It emphasized the relationships between humans and the Divine, and humans with other humans, but it tended to exclude the mediation between humans and the rest of the natural order. There eventuated "an acosmic, ahistorical religious mood as a dominant response to the awesome experience of the earth and its demonic powers."

Transcendent Science and Technology

The pathos of the human condition in a hostile plague-threatened world prompted other people, such as Francis Bacon, to seek control of the surrounding world rather than escape through a religion of redemption. That is, since the world was increasingly seen as ordered and structured according to particular laws and principles, these people concluded that it was merely a matter of learning these laws and principles and the methods of their manipulation. Then, one could control and convert a hostile environment to one less demanding of and more useful to humanity. This was a world for

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36 Berry, "The Meadow Across the Creek," 90; Berry and Clarke, Befriending the Earth, 71-73; Berry, The Dream of the Earth, 25, 81, 125; Wonderworld," 15. Berry is certainly not alone in his belief than the Christian tradition has placed a disproportionate emphasis on redemption over creation. For example, see, Sallie McFague, "An Earthly Theological Agenda," in Ecofeminism and the Sacred, ed. Carol Adams (New York: Continuum, 1993b), 88.

37 Berry and Clarke, Befriending the Earth, 72-73, 115; Thomas Berry, "The Third Mediation: The Christian Task of Our Time," in Riverdale Papers (Riverdale, New York: Riverdale Center for Religious Research, 1979). David Tracy offers a similar caution. He notes that "contemporary theology is in danger of developing interpretations of God and self (including the social self in society and history) while quietly dropping the traditional third category of 'world' or 'cosmos.'" See, David Tracy, On Naming the Present (Maryknoll, New York: Orbis, 1994), 76.

38 Berry, "The New Story," 191. Again, Tracy offers a similar view. He argues that "the Christian tradition needs the doctrine of creation even to understand fully its own doctrine of redemption. Contemporary Christian theology needs to recover a theology of nature—even to develop an adequate theology of history." See, Tracy, On Naming the Present, 77.
the taking, a world lacking in meaning but ever-abundant in resources. Humanity need not suffer in a demanding world; it could seemingly rise above the "human condition" by means of its technological wonders. It could transcend "the biological law that every mode of being should have opposed modes of being or conditions so that no single being or group of being could overwhelm the other modes of being." For many in Western society, the industrial age brought longer, less threatened, more comfortable and seemingly better lives.

However, Berry notes, we have developed an industrial system which seems determined to increase the volume and speed at which natural resources can be extracted, manufactured, consumed and discarded onto the waste heap, rewarding those managers who can speed this process even more. The type and magnitude of our present industrial development cannot be managed or sustained by planetary processes. The Earth lacks the resources and we lack the finances either to rebuild or sustain the crumbling infrastructures of our society. Nor is it likely, now that we know the dark side of the industrial revolution, that we would be willing to endure the demands implicit in such a rebuilding. For these reasons Berry surmises that "it is already determined that our children and grandchildren will live amid the ruined infrastructures of the industrial world and amid the ruins of the natural world itself."

Yet, until recently, to question the tenets of the scientific-technological age aroused suspicion or ridicule. The wonder-world of science had been accorded the

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40 Berry, "The Meadow Across the Creek," 91.
41 Willem Vanderburg provides a succinct critique of this myth of happiness, prosperity and progress in Vanderburg, The Growth of Minds and Cultures, 242-255.
43 Berry, "The Meadow Across the Creek," 170. I would argue that we are perhaps unwilling to tolerate the "dark side of the industrial revolution"—child labour, unsafe working conditions, and 72-hour work weeks—only when it directly confronts us. So long as such conditions are either "underground" in our own society or relegated to third world economies, Canadian society seems to be rather indifferent to this "dark side."
spiritual devotion of the classical religions. Neither form of devotion—to the age of science and technology, or to classical religion—would tolerate any challenge of the view that humanity was ruler of the planet. If redemptive spiritualities had grown apart from the story of the earth into a preoccupation with spiritual matters, then secular scientific society had committed to a utilitarian and physical universe devoid of a spiritual dimension. If the redemption focus of Christianity provided one impasse for truly valuing the Earth community, then lack of spirituality in the scientific age contributed another.44

Transcendent Millennial Vision

Science and technology promised to give humanity the means to transcend the pathos of the human condition, to become liberated into a grand millennial age. For Berry, the biblical symbolism of exodus from a land of affliction to a place of peace and plenty schooled this desire for transformation from suffering. The prophesied Day of the Lord and the forthcoming millennial age of John’s Revelation further fostered this sense of freedom from strife and suffering into abundance and peace. Prior to the most recent centuries, this millennial period was expected to come about as a result of divine power; now there was (and remains) a tendency to seek this transformation through science and technology. Confidence in the ability of science and technology to bring about a better world acquired such power that it was no longer seen as a utopian vision.45 Because this transformed future came to be seen as inevitable, it took on the characteristic of a millennial vision.46 Accordingly, Berry notes,

When this millennial drive is joined with the conviction that humankind is somehow transcendent to the natural community of the earth (with no inherent

45 Berry, “The Meadow Across the Creek,” 89, 149-151.
46 According to Berry, “the note of inevitability is what distinguishes millennial vision from utopian vision.” See, ibid., 150.
rights to be respected) then we have the stage on which the grand scenario of the past two centuries has been acted out with all its glories and all its miseries.47

When the splendour and abundance of the millennial age beckons, the toil and threat of our present state of affairs becomes a greater burden to endure. It evokes from within us a deep, hidden rage against the human condition.48

We decide that we cannot accept the disciplines that strengthen from within. We want to control the outside, we want to change things. We want to control the very structure and functioning of the natural world. We want air conditioning in summer.49

The vision of a millennial age not only strengthens our resolve to conform the natural order to our desires, it asserts that such a re-ordering is possible and even right.50

Transcendent Human Mind

Scanning across the ages of human history, Berry observes that in the Paleolithic era, humans lived in a world where the physical and psychic were related forms of reality. We engaged the spirit forces in the world about us and fashioned our vision of self and cosmos to include an intimate dynamic with the powers all around. Over the millennia, as our ability to reason came increasingly to define our sense of self, we sought to extricate ourselves from the controlling rhythms of the universe. The ancient mystique was replaced with an alienation from our past and from the planet. Our fascination with the mystery of life diminished as reductionistic science provided certain answers or the promise of inevitable clarity.51 Ironically, despite increasing knowledge concerning the world about us, “our existence seemed ever more meaningless.”52 With the ascent of Descartes and Cartesian philosophy we became assured of the

47 Ibid., 151.
48 Berry and Clarke, Befriending the Earth, 116.
49 Ibid.
50 Berry, The Dream of the Earth, 18-20, 114-115, 154-156.
transcendence of the human mind from the material, mechanistic world. The natural world was spiritless, lacking soul, meaning or purpose since there was only mind and extension. Sentience was perceived as separate from the material universe rather than as the result of a long and complex genesis beginning with the great flaring forth of the primal singularity; and that sentience was sequestered within the human mind. Consequently, the non-sentient, “non-human world could be seen only as a collection of objects to be exploited not as subjects to be communed with.” The transcendent human mind, the quality that made us uniquely human and above the rest on a hierarchically ordered planet, further separated us from the rest of the earth community.

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53 Ibid., 91; Berry and Clarke, Befriending the Earth, 115; Berry, The Dream of the Earth, 114; Berry, “The Gaia Theory,” 10.
54 Berry and Swimme, The Universe Story, 40. Theodore Roszak, seemingly in agreement with Berry, notes that our cosmological perspective “cannot sensibly set aside the stuff of consciousness. What is inside the mind…is also inside the universe, as much contained by it as any molecule or star. …[E]cology…must embrace the human mind as an integral part of any ecosystem it would study fully….” Roszak, The Voice of the Earth, 46.
56 Berry notes that the problem of “transcendencies” is limited to neither Christianity nor the West. He recalls that the Hindu world emphasizes the transcendent realm of that Supreme Reality which is beyond all knowing. This metaphysical preference to the cosmological, he contends, is further increased in Buddhism. And the classical Greek world emphasizes the human psyche and the dialectic between this and the external world, with the former being of greater value. Berry suggests that there is even a sense of the individual being transcendent from the rest of the community. “The emphasis on the individual and the personal rights of the individual belongs to the modern world as one of its more impressive achievements. Yet the harmony between the concerns of the individual and the concerns of the community have never been satisfactorily worked out…. The western world begins with individuals and seeks to establish community by association of individuals. The individual is primary; community is derivative. This is different from the mainly Asian concept of the individual coming into existence within the community. The community is primary; the individual is derivative.” See, Berry and Swimme, The Universe Story, 211. As a theoretical ideal in this regard he proposes the Chinese tradition where there is greater emphasis on living in a total harmony with the deepest rhythms of the universe. The Taoists look to the primary causality of the Tao rather than the secondary causality of the human agent. Accordingly, the person derives identity with every other being in the universe—i.e., from a universe of interrelated subjects. See, ibid., 204.
Some Consequences from adopting the Six Transcendencies

Separation from the Earth Community

Clearly, Berry is concerned that humanity has become too separated from an awareness and experience of the integral relationship between humanity and the rest of the Earth community. While earlier spiritual disciplines had centred the human within the Earth’s natural rhythms so that the human, nature and the Divine could meet, the modern era focused less on the spiritual energies of the world and more on its physical power so that humanity could control rather than reside within its environs. With the birth of the “objective” world in the modern era and our disassociation from the Divine and natural, the planet was no longer a place for encounter with a divine, gracious creator, but a resource for consumption and exploitation. Modern realism considered talk of experiencing a sacred communion with the Earth as a poetic conceit divorced from reality and riddled with magic, mysticism and superstition. Yet, according to Berry, the new modern scientific “realism was as pure a superstition as was ever professed by humans, their devotion to science a new mysticism, their technology a magical way to paradise.”

Because we value divine-human and human-human relations but not those between humanity and the rest of the natural world, we have not accorded non-human beings any rights to life, habitat, food supply or fulfillment of their cosmogenic role. Berry acknowledges that humanity has a right to its own niche and to the necessities which support human life, and that these rights will place a stress on other modes of being. Such stress is reasonable and tolerable within the normal functioning of the planet. But the same life forces that were at play as humanity and the rest of the planet negotiated their places within the Earth’s ecosystems are the very life forces which are

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presently threatened by human egocentrism.\textsuperscript{58} It is astounding, notes Berry, that we dedicate such enormous amounts of talent, knowledge and research to develop "a human order disengaged from and even predatory on the very sources whence we came and upon which we depend at every moment of our existence."\textsuperscript{59} Such self-destruction reveals a culture that is behaving pathologically. Such wanton indifference can only occur when we have cultured ourselves to being autistic to the world that creates and sustains us.\textsuperscript{60}

Cultural Autism and Cultural Pathology

Berry claims that while we recognize that the biosphere is in a state of crisis which threatens our survival, we nevertheless turn to the primary cause of this crisis for our salvation—the industrial economy. Thus, the adoption of a new ecological vision which might address the ecological crisis is being retarded by the mythic power of an industrial vision. The psychic fixation of what Berry identifies as a "paradigm addiction" is causing us to resist adopting a new vision despite the overwhelming evidence that the present course cannot continue, and that it is threatening our survival.\textsuperscript{61}

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\textsuperscript{59} Berry, "The Meadow Across the Creek," 6; cf., 165. J. Baird Callicott presents a position similar to Berry's, and argues from a very practical and utilitarian view. He argues that if quantum physics demonstrates that all of the universe is inherently and internally related within a cosmic web, and if the human is intrinsically valuable, then so is nature. In a rather direct fashion he notes that "if it is rational for me to act in my own best interest, and I and nature are one, then it is rational for me to act in the best interests of nature...Since nature is the self fully extended and diffused, and the self, complementarily, is nature concentrated and focused in one of the intersections, the 'knots' of the cosmic web of life...[then] nature is intrinsically valuable, to the extent that the self is intrinsically valuable." See, J. Baird Callicott, "Intrinsic Value, Quantum Theory, and Environmental Ethics," Environmental Ethics 7, no. 3 (1985): 274-275.

\textsuperscript{60} Berry, "The Meadow Across the Creek," 5-9, 86.

\textsuperscript{61} Consider, for example, the comments of the Hon. Christine Stewart, Minister for the Environment for Canada, as an example of "paradigm addiction." In a April 29, 1998 press release entitled "Canada signs Kyoto Protocol on Climate Change," she asserted that Canada's commitment to reduce greenhouse gas emissions by 6% below 1990 levels could not come at the expense of economic prosperity. Accordingly, economic growth was given priority above ecological reform or responsibility, even if that growth continues to threaten our viability. From her perspective, jobs must not be put at risk, even if her
compelled to cling to "established" or "traditional" ways since we have been schooled in
the scientific-industrial myth of progress which will supposedly guarantee a promising
future. 62

Mythic addictions function something like alcohol and drug addictions. Even
when they are obviously destroying the addicted person, the psychic fixation does
not permit any change, in the hope that continued addiction will at least permit
momentary survival. Any effective cure requires passing through the agonies of
withdrawal. If such withdrawal is an exceptional achievement in individual lives,
we can only guess at the difficulty on the civilizational or even the global scale. 63

Berry hastens to add that it is not the preoccupation with a myth per se which is
problematic, but rather a myth which has become dysfunctional. Transformation of the
magnitude demanded of us requires a myth which can provide the context and psychic
energy adequate to the task, he notes. We currently require a myth which recovers a
mystique of the land to counter the industrial myth. 64

The fact that we can knowingly devastate the planet in a fashion which threatens
our existence and can concurrently have our actions sanctioned by Western norms reveals
the depth of our cultural pathology. Because we refuse to deal with this deep cultural
pathology, Berry observes, we display a denial and an addiction which requires a
comparably deep cultural therapy. 65

Our deliberate separation from the Earth community has atrophied our ability to
discern and respond to the "voices" of the universe. Since we became preoccupied with

62 Berry and Swimme, The Universe Story, 254-255; Berry, The Dream of the Earth, 19, 31-2, 57,
154-156, 167-174; Thomas Berry, "Creative Energy," Cross Currents 37, no. 2-3 (1987a): 183-184; Berry,
"The Meadow Across the Creek," 141-142. Others share Berry's concern that to remain on our present
course, or to rely on the same hubris which got us into this ecological dilemma, is to court disaster. See,
Faber, Manstetten, and Proops, "Toward an Open Future," 91.
63 Berry, The Dream of the Earth, 32.
64 Ibid., 33.
65 Berry and Clarke, Befriending the Earth, 40-41, 46. Similarly, Theodore Roszak notes, "the
species that destroys its own habitat in pursuit of false values, in willful ignorance of what it does, is 'mad' if
the word means anything." See, Roszak, The Voice of the Earth, 68.
the transcendent human which distanced itself from the rest of the creation, since we became locked up in ourselves so that no one and nothing else could get in, and since we treated the rest of creation like objects with which relationship or kinship was impossible, we can now describe such behaviour as autistic. Berry diagnoses that autism is “the basic metaphor for understanding the cultural pathology of our times.” Our autism denies that we are part of the cosmogenic processes of the universe with a particular niche and a unique contribution; it denies that anything other than humanity might have rights. Our autism allows us to ignore how the degradation of the planet becomes a degradation of our imagination and emotional life since these are activated by our experience of the world about us.

Yet, Berry asserts, our growing interests in cosmogenesis and our role within an evolving transforming universe, and our attraction to the spirituality of the First Nations and eastern philosophies perhaps herald a renewed attentiveness to the primordial splendour and the numinous mystery of the universe. Perhaps these are early signs of an emergence from our autistic ways. And perhaps because we can feel overwhelmed by the immensity of the problem, we have in the past understated the urgency of the crisis. Berry notes that the energy for such a deep cultural therapy can arise either from terror, or from attraction to a mythic dream which will drive the action and sustain us in the enormity of the task. Whichever source we draw upon, a sufficient response is critical;

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66 Berry and Clarke, Befriending the Earth, 20. Berry is not alone in the use of the language of “voice.” For example, Anne Clifford contends that “we must listen to nonhuman nature speak its wisdom of ecological harmony.” Moreover, she argues, we must listen to Sophia, present in the world as continuing creator, knower of God’s works and one who understands what is pleasing in God’s sight. “To really listen to Sophia immanent within nature as God’s creation, demands we attempt to be attuned to the inner dynamism of our complex global ecosystem and discover ourselves as humans in continuity with it.” See, Clifford, “Feminist Perspectives on Science,” 90. Cf., Fox, “A Mystical Cosmology,” 22; Theodore Roszak, “Beyond the Reality Principle,” Sierra, March/April (1993): 62; Roszak, The Voice of the Earth, 25.

67 Berry, “Art in the Ecosiotic Era,” 47.

68 Berry, “The Meadow Across the Creek,” 68-69, 92, 167-169.

69 Berry, The Dream of the Earth, 17.

70 Ibid., 112.
and for Berry, the only source which can meet the task and sustain the effort is a new myth suitable for the ecozoic era.71

Myth of Progress

In the past few centuries, we have measured progress “by the extent of human control over the nonhuman world and the apparent benefits that emerged for humans.”72 Berry contends that our commitment to the industrial myth and the myth of progress was a condition for the modern industrial achievements which have supposedly benefited humanity, rather than the consequence of them. In Berry’s estimation, the myth is primary to the activity.73 Because the belief that the industrial era would inevitably bring new bounty to humanity, and because control over Earth’s resources enjoyed early success, it was readily embraced by and incorporated into Western cultures, and later much of the planet. The myth drove the industrialization of our societies and our exploitation of the planet.74

A Diminished Planet leads to a Diminished Human

What Berry finds perhaps most disquieting about the myth of progress, the industrial model, and the transcendent perspective that have been adopted at various times are the ways they have permitted us to consider “the inner spontaneities guiding the

71 Berry and Clarke, Befriending the Earth, 94-95.
73 Berry, The Dream of the Earth, 31-32; Berry, “Creative Energy,” 184. Others have argued otherwise. Vanderburg tends to argue that a myth must emerge from within a society, unbeknownst to the conscious processes of its members, coming about through shifts in the collective unconscious. From Vanderburg’s perspective, Berry is not so much proposing a new myth as he is providing society with a vision on which it can reflect and be moved, and to which its collective metacosnscious might respond; he is providing the fuel which might fire the creation and emergence of a new myth for our times, but he cannot provide the myth per se. See, Vanderburg, The Growth of Minds and Cultures, 237-242, 252.
destinies of the natural world [as] irrelevant.”75 This has had a tremendous and rather occult impact on humanity on many levels. Berry observes that

As the natural world recedes in its diversity and abundance, so the human finds itself impoverished in its economic resources, in its imaginative powers, in its human sensibilities, and in significant aspects of its intellectual intuitions.... We are progressively alienated from any depth experience of the mysterious forces at work throughout the universe. The human soul shrivels into its own being and loses its life-giving contact with all those invigorating experiences of natural phenomena that have guided and energized human activities over the centuries.76

In Berry’s analysis, as the planet is diminished and as humans distance themselves from the planet, humanity is diminished. If we have powers of imagination, if we have words which can poetically describe either the splendour of a sunrise or the mysterious love felt for a child, if we have words which can unravel our inner experience of the Divine, it is because of the impressions we have received from the rich diversity of life, colour, activity and majesty about us. If we lived on the moon, Berry intuits, “our mind and emotions, our speech, our imagination, our sense of the divine would all reflect the desolation of the lunar landscape.”77 If a beautiful Earth furnishes us with the means to imagine an exalted idea of the Divine or to dream new possibilities in the midst of encompassing concerns, an industrially despoiled planet will bring forth equally

75 Ibid., 241. Berry emphasizes the benefits which derive from a greater focus on divine immanance and the harm which has resulted from a preoccupation with divine transcendence. He also celebrates the spontaneity which emerges in cosmogenesis. However, Clifford argues that it is divine transcendence which creates the space for this spontaneity to occur by permitting a degree of autonomy—a benefit of transcendence which is worth including. Like Berry, however, she notes that this spontaneity nevertheless requires divine presence. She states, “As the Vivifier, the Holy Spirit pervades the cosmos and enables life-giving and life-sustaining novelty to occur,” instigating change and transformation. Thus divine immanance and transcendence are not mutually exclusive. See, Clifford, “Postmodern Scientific Cosmology,” 83. I am not suggesting that Berry is in error when he critiques cultural or religious constructs which emphasize the transcendence of God at the expense of divine immanance. I agree with him. I am merely suggesting that Clifford adds an additional perspective which could be linked with Berry’s understanding of spontaneity.

76 Berry and Swimmme, The Universe Story, 242.

77 Berry, The Dream of the Earth, 11; cf., Berry and Clarke, Befriending the Earth, 9; Berry, “Wonderworld,” 416.
deadened and denatured images and dreams. Even more clearly, an industrially despoiled planet threatens human health since we cannot expect to have healthy humans on a sick planet. Consequently, Berry concludes, "any progress of the human at the expense of the larger life community must ultimately lead to a diminishment of human life itself. A degraded habitat will produced degraded humans. An enhanced habitat supports an elevated mode of the human."80

BERRY'S VISION OF AN ALTERNATIVE

1. The universe is the primary revelation of the ultimate mystery from which all things emerge into being.

Berry recalls that prior to certain developments during the classical period of Western civilizations, an all-pervading mysterious energy was seen to be articulated in all forms of natural phenomena. The human, the rest of the natural world and the Divine were considered to be a joined in a great society, communicating and evoking a single energetic reality. "Within this context the human community was energized by the cosmic rituals wherein ultimate meaning was attained, absolute mysteries were enacted, human needs fulfilled."81 However, during the classical period and especially in the modern era, humanity came to be seen as separate from the rest of the created world and destined for spiritual fulfillment only once the shackles of physical existence were

79 Berry and Swimme, The Universe Story, 257.
80 Berry, The Dream of the Earth, 165; cf., 81.
81 Berry, "Creative Energy," 179-180. Like Berry, John Buchanan recalls that "archaic homo religiousus experienced himself in terms of a radical participation within a sacred cosmos. In this mode of being, the numinous finds expression in terms of the cosmos itself. Cosmos, in both its spatial and temporal dimensions, participates within its own sacred presence." This numinous quality manifests both spatially as rocks or trees, for instance, and temporally as the time of origin, and is actualized in these two manifestations during rituals. Both the space and time held sacred dimensions. See, John. Buchanan, "Creation and Cosmos: The Symbolics of Proclamation and Participation," in Cosmology and Theology, ed. David Tracy and Nicholas Lash, Concilium: Religion in the Eighties Series. (Edinburgh: T. & T. Clarke, 1983), 37.
transcended. Not surprisingly, as our sense of a cyclical cosmos now changes to a new understanding of irreversible cosmogenesis, our perceived place in the universe is re-defined yet again. Once again, an abiding multiform energy is seen to pierce all aspects of the universe and the great society of human-nature-Divine re-emerges in our understanding of self. In this new understanding, it is from ultimate mystery that cosmogenesis emerges, and through ultimate mystery that cosmogenesis continues. This story reveals the ultimate mystery, the story maker. 82

The Emergence of the Cosmos

Thomas Berry reminds us that in John’s Gospel we learn that the Word, through which all that is has been made

by its own spontaneities brought forth the universe. ... This spontaneity as the guiding force of the universe can be thought of as the mysterious impulse whereby the primordial fireball flared forth in its enormous energy, a fireball that contained in itself all that would ever emerge into being. 83

When Berry states that the Word is “the guiding force of the universe,” he means that God “enables” the universe to function “from within its own spontaneity,” in order that the universe might reveal its “capacity of self-articulation.” 84 That is, God is not controlling the universe as if it were “a puppet show.” 85 Although other cosmologists might disclaim this

82 Berry and Swimme, The Universe Story, 198, 243; Berry, The Dream of the Earth, 81, 105; Berry, “The Earth,” 37; Berry, “Wonderworld,” 417.
83 Berry, The Dream of the Earth, 196-197; cf., Berry and Clarke, Befriending the Earth, 73, 77-78; Thomas Berry, “ Teilhard in the Ecological Age,” in Riverdale Papers (Riverdale, New York: Riverdale Center for Religious Research, 1982), 7.
84 Berry and Clarke, Befriending the Earth, 25. Berry’s view that God is both the source of intelligible order as the Word, yet enables creation to emerge through its own spontaneities, parallels the view of Anne Clifford. She believes that God is the source both of order and novelty, as logos—rational principle and divine Word—and freedom which permit creativity and uncertainty. See, Clifford, “Postmodern Scientific Cosmology,” 79. For a similar perspective, see, Haught, Science and Religion, 68-69; Russell, “Cosmology from Alpha to Omega,” 563, 567. However, Russell also contends that while “nature is intrinsically open, ontologically indeterminate, authentically spontaneous...we can conceive of God as free to act in these ontological indeterminacies of quantum nature. When a quantum event occurs, it occurs by God’s direct and immediate action.” See, ibid., 567. This is perhaps more “deterministic” than Berry would support.
85 Berry and Clarke, Befriending the Earth, 25.
divine origin.\(^ {86} \) Berry maintains that God, as numinous mystery, is the "source whence the universe came into being as articulated energy particles acting together in some ordered context."\(^ {87} \)

For Berry, this "ordered context" is neither simply a fabrication of human imagination retrospectively discerned nor the product of random interactions. He contends that "the dynamics of the universe" have from the beginning shaped the evolution of the cosmos through its various stages.\(^ {88} \) It is this dynamism which has brought about the ordered context of the universe. In fact, it is this same dynamic of the universe, "this same guiding process...[which] has awakened in humans their present understanding of themselves and their relation to this stupendous process."\(^ {89} \) And it is this guiding process which has helped to bring humanity to an awareness of the tremendous ecological desecration of the planet and the threat that this poses to human existence, and to its interrelationship with the Earth and its ecosystems. According to Berry, this dynamic, this guiding process is ultimately related to the Divine.\(^ {90} \) He argues that since God is not manipulating a puppet universe, it is clear that God is not going to intervene directly and remedy the present ecological crisis.\(^ {91} \) Yet, at the same time

God gives us the capacity to deal with these things. ... God is functioning through ourselves. God is telling us what to do. The natural world is telling us what to do.

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\(^{87}\) Thomas Berry, "The Dream of the Earth: Our Way into the Future," *Cross Currents* 37, no. 2-3 (1987b): 210; cf., 201. Of course, while Berry maintains that the new cosmology provides a convincing description of the emergence of the universe, and while he contends that God is the source from whom the universe emerges, Berry is not stating that the new cosmology proves that the universe originated through God's agency. Cf., Clifford, "Postmodern Scientific Cosmology," 71.

\(^{88}\) Berry, "The New Story," 198.

\(^{89}\) Ibid., 199.

\(^{90}\) Berry, *The Dream of the Earth*, 137. Berry connects our desire for a solution to the ecological crisis with our awakening to the divine invitation in the dynamics of the universe. He argues that "our own dreams of a more viable mode of being for ourselves and for the planet Earth can only be distant expressions of this primordial source of the universe itself in its full extent in space and in the long sequence of its transformations in time." See, ibid., xv.

\(^{91}\) Berry and Clarke, *Befriending the Earth*, 46, 52.
God speaks to us through the natural world. ... *there* is this ultimate, numinous dimension of the universe that is offering guidance.  

Humanity’s task is to become “sensitized” to both the voice of the Earth and God’s guidance through the Earth so that we can address the ecological challenge before us. Humanity is being invited to live and act once again in accordance with the dynamics of the universe, the same dynamics which have successfully guided us “safely through the turbulent centuries” and have shaped cosmogenesis from the primordial flaring forth to our present comprehension of ourselves.  

By acting in harmony with the spontaneities of the universe which arise to an interior conscious expression within us, we can make choices which are more responsible, meaningful and creatively enhancing for ourselves and the planet.  

Admittedly, Berry recognizes that control or administration of the Earth is beyond human capability, 

just as the movement of the arm to pick up and drink a cup of tea would hardly be possible if we were required to consciously manipulate each movement of the eye, the arm, the nervous system, the oxygen, and the blood flow. Yet we do the act spontaneously, with extensive awareness and control. There is deliberation, but also spontaneity.  

This is the integration that Berry seeks—deliberation and spontaneity with a measure of humility so that we might respond to and cooperate with the numinous mystery and dynamic guidance present within cosmogenesis.  

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94 When the guidance of the universe comes to an interior conscious expression within us, Berry proposes that several “voices” are blending into a coherent communication which ultimately represents divine concern. For it is through the psychic-spiritual dimension of the universe in general and of the individual in particular, and through the numinous mode of being within ourselves and the greater reality, that God’s guidance is communicated to creation. According to Berry, this communication by way of a psychic-spiritual dimension and numinous presence is realized in a mode of greater complexity and organization in the human through our unique combination of genetic coding and cultural coding. See, Berry, *The Dream of the Earth*, 117.  
95 Berry, *The Dream of the Earth*, 48.  
Berry reminds us that humanity has previously become attentive to the ordered
dynamic and intelligibility of the universe, identified as the Logos of ancient Greece, or as
the Tao, ch’eng and jen in the Chinese tradition.\(^{97}\) By recognizing and acting according to
these principles, it was believed that we could live rightly with the rest of human society and
the planet.\(^{98}\) Regardless of how it is identified in various cultures, for Berry it “is this
ultimate, numinous dimension of the universe that is offering guidance... through the forces
that are structured into the universe.”\(^{99}\)

**Divine Presence in the Universe**

The emergent process of the universe, like ourselves, is neither random nor
determined, but creative; a creativity which is neither wholly rational nor irrational, but
mysterious.\(^{100}\) This mysterious, creative process of emergence is influenced and guided by
the “numinous powers ever present in the phenomenal world about us...”\(^{101}\) Because of its
self-reflective consciousness, humanity has the freedom to respond critically to these
invitations to grow “toward an ever more complete expression of the numinous mystery”; we
have the opportunity to reflect critically upon the nonrational, creative spontaneities and
“numinous powers... that possess us in our high creative moments,” inviting us to a fuller
expression of the human and a continuing evolution of the planet.\(^{102}\) Consequently, cosmic
and human evolution are neither random nor determined since a numinous presence is
guiding the primal and continuing inventiveness of the universe, while at the same time

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\(^{97}\) Berry states that the “Chinese word, jen, a term translated as love, benevolence, or affection, is
not only an emotional-moral term, it is also a cosmic force. This can be said also of the virtue of ch’eng,
translated as sincerity or integrity. See, Berry, *The Dream of the Earth*, 20.

\(^{98}\) Ibid., 20.

\(^{99}\) Berry and Clarke, *Befriending the Earth*, 52.

\(^{100}\) Berry, “The Gaia Theory,” 13; Berry, *The Dream of the Earth*, 199.

\(^{101}\) Berry, *The Dream of the Earth*, 211.

\(^{102}\) Ibid.; cf., Berry, "The Meadow Across the Creek," 223-224.
permitting creative and free self-expression. "The universe is [consequently] always in a state of...creative turbulence."\textsuperscript{103}

Berry maintains that if humanity is to value the planet and all of its inhabitants in any vital way, then a functional spirituality which is integral with our understanding of cosmogenesis must emerge. Yet for such a functional spirituality to be successful, the "universe itself, but especially the planet Earth, needs to be experienced as the primary mode of Divine presence...."\textsuperscript{104} That is, the living forms of this planet must be experienced as modes of divine presence, as voices of the Divine. They are to be understood as our primary revelation of the Divine, our primary scripture.\textsuperscript{105} To reinforce this position, Berry appeals to Thomas Aquinas’ \textit{Summa Theologica}, (Prima Pars, Question 47, Article 1). Quoting Aquinas’ reply, Berry notes that

because the divine goodness ‘could not be adequately represented by one creature alone, [God] produced many diverse creatures, that what was wanting to one in the representation of the divine goodness might be supplied by another. For goodness, which in god [sic] is simple and uniform in creatures is manifold and divided; and hence the whole universe together participates the divine goodness more perfectly, and represents it better than any single creature whatever.’ From this we could argue that the community of all the components of the planet Earth is primary in the divine intention.\textsuperscript{106}

\textsuperscript{104} Berry, \textit{The Dream of the Earth}, 120. For a comparable view, see, John F. Haught, \textit{The Promise of Nature} (New York: Paulist Press, 1993b), 94-96; Haught, \textit{Mystery and Promise}, 147-148. Leonardo Boff expresses a similar perspective in rather lyrical language: “Above all, we should see the creation as the expression of God’s joy, as the dance of God’s love, as the mirror of both God and all created things. In this sense every creature is a messenger of God, and God’s representative as well as sacrament.” See, Boff, \textit{Ecology and Liberation}, 46.
\textsuperscript{105} When describing the Earth as “our primary revelation of the Divine,” Berry notes that “St. Paul says that by the things visible, we know the invisible things, the Divine reality.” See, Lonergan and Dunn, eds. \textit{Gaia’s Elegant Gnome}, chapter two, page 6 of that transcript. I suspect that Berry is referring to Romans 1: 19-20 wherein Paul is arguing that the pagans are accountable for their idolatrous and sinful ways, since, even though they did not have the benefit of Christ’s teachings, they had the evidence of God’s existence, power, divinity and will by means of the created world. Thus, Paul judges, "\textsuperscript{19}For what can be known about God is plain to them, because God has shown it to them. \textsuperscript{20}Ever since the creation of the world his eternal power and divine nature, invisible though they are, have been understood and seen through the things he has made. So they are without excuse...." (Romans 1: 19-20)
\textsuperscript{106} Berry, \textit{The Dream of the Earth}, 79; cf., Berry, “Economics,” 14.
Berry is arguing from Aquinas that God not only desires and chooses to communicate God's self with creation, but that that communication through the various forms of creation ultimately manifests as a participation of the Divine. Furthermore, the sum of the differentiated and interacting diversity of creation is the greatest measure of its perfection, since the greatest totality of the divine representation in creation most closely reflects divine perfection.

When Berry describes creation as our primary revelation of the Divine, he recognizes revelation as "the awakening in the depth of human psychic awareness of a sense of ultimate mystery and how ultimate mystery communicates itself." He recalls that when the biblical prophets spoke about revelation, it is unlikely that they saw or heard God directly, but rather became aware "in the depths of their being of a special type of divine communication" which originated beyond the confines of creation. Similarly, as we become increasingly aware of the universe as a revelatory experience, we are becoming attentive to "a special interior depth of awareness" arising beyond ourselves yet from within creation.

Since creation is a revelation of the Divine, any obliteration of the planet by humanity is a destruction of the sacred presence within that reality; it is to "silence forever a divine voice." Furthermore, such wanton destruction diminishes our experience and knowledge of God since the way we come to know the world becomes the language by

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107 "[T]he reason there are so many different things in the world is because God...cannot communicate God's self totally to any one being, and so creates this array of beings so that the perfection lacking in one would be supplied by the other, and the total universe of things would manifest and participate in the divine more than any single being." See, Berry and Clarke, Befriending the Earth, 17; cf., Berry, "The Gaia Theory," 18.
109 Berry and Clarke, Befriending the Earth, 7.
110 Berry, The Dream of the Earth, 46, cf., 80-81; cf., Berry, "The Meadow Across the Creek," 113.
which we come to speak of God, for “if a beautiful earth gives us an exalted idea of the divine, an industrially despoiled planet will give us a corresponding idea of God.”

**Divine Presence and the Earth**

Berry reminds us that “the divine always appears in some embodiment; no one ever worshipped matter as matter. Whatever is worshipped is seen as a mode of divine presence.” Furthermore, with perhaps the exception of the modern era, humanity has generally tended to be aware of an all-pervading mysterious power present within the universe. We have tended to believe that there is an ineffable, pervasive presence of the Divine in the world about us. And while every form of existence is subsequently considered to be a mode of divine presence, we recognize that each existence is not itself divine. Thus, while the planet itself and every other existence might be regarded as awesome, intrinsically valuable, and a sacred community in their own rights, they are not seen as specifically divine; there is a difference between the sacred and the divine. Berry explains, however, that “if there were a difference in the sense of separation, the created world would not be. I could not exist except for a divine presence.” Without God, there simply is no world, no creation.

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111 Berry, “Economics,” 17; cf. Berry and Clarke, Befriending the Earth, 8-10; Thomas Berry, "The Cosmology of Religions," 1997a, TMs [photocopy], Thomas Berry, Greensboro, NC, 4.

112 Berry and Clarke, Befriending the Earth, 19. Cf., “…immersion into matter might also be considered as immersion in the divine.” See, Berry, The Dream of the Earth, 151.

113 Berry, “Creative Energy,” 179; cf. Berry and Clarke, Befriending the Earth, 11.

114 Berry, “The Earth,” 37-38; Berry, “Economics,” 17; Berry and Clarke, Befriending the Earth, 43.

115 Berry and Clarke, Befriending the Earth, 19.

116 Ibid., 10. Wolfhart Pannenberg would seemingly concur with Berry that the new cosmology easily incorporates the theological belief that the universe “proceeds from an act of divine creation,” that “every creature is in need of conservation of its existence in every moment,” and that, therefore, creation is continuous. However, Pannenberg also notes that while Descartes’ formulation of the theory of inertia had fostered the belief that divine force did not act in natural processes (or at least, there was no need for such a force) and subsequently deism flourished, the new cosmology points to the contingency of the universe, and principles of creatio continua and concursus divinus are once again considered. Pannenberg concludes that “the unity of contingency and continuity in the creative activity of God as well as in its products is rooted, according to a theological interpretation of the world, in God’s faithfulness.” Pannenberg, “The Doctrine of Creation,” 4-5, 8-9, 11. Cf., Russell, “Contingency in Physics and Cosmology,” 25; T. F. Torrance, “Divine and Contingent Order,” in The Sciences and Theology in the Twentieth Century, ed. Arthur R. Peacocke.
Unlike Chinese society of two millennia ago which recognized the Divine within the cosmological order and ordered itself such that a person functioned within the parameters of the seasons—i.e., ate the correct foods, wore the correct colours and such for the particular season—Western society of that time began to perceive the Divine separate from the cosmological order. Human society no longer mirrored cosmic order, and the nonhuman world became an “it” rather than a “thou.” The created world was no longer perceived as a place of sacred residence. Berry observes that Western Christian society “perceived the divine not so much in the cosmological order as in the divine and historical order, and in political events.”

As a corrective to this, Berry proposes that we not only come to recognize the universe as the primary mode of divine presence and the primary revelation of God, but that we enter into communion with that numinous mystery through the Earth community. In so doing, the communication not only becomes reciprocal—Divine to creation and created to Divine—but humanity can become reacquainted with the sacred dimension of the natural order. There would be a greater desire to order human activity within cosmic activity since the latter is seen as a reflection of the Divine. Berry observes that

There is no other reflective consciousness present in the total process except what is present within the human and what is present in the divine creator. So when we go with the flow of the cosmic process, when we are obedient to what we hear coming to us through the earth, ultimately we are being obedient to God who is mediating the will of God and our human call through all of the earth’s processes.

(London: Oriel Press, 1981), 84-85. However, Torrance adds another dimension to discussions of contingency. He notes that this also provides a degree of independence to the universe. “Contingence...on the one hand...means that the universe depends entirely upon the beneficent free will and act of the Creator for its being and form, and is not a necessary emanation of the divine, but, on the other hand, it also means that the universe is given an independent reality of its own completely differentiated from the self-sufficient eternal reality of God. Thus in virtue of its contingency the universe has an orientation at once toward God and away from him.” See, Torrance, “Divine and Contingent Order,” 86.


119 Berry and Clarke, Befriending the Earth, 59; cf., Berry, The Dream of the Earth, xv.
Furthermore, as inherently inseparable from the Earth community which is made sacred by divine presence, humans can additionally “become sacred by participating in this larger sacred community.” When we act in ways which are in harmony with the dynamics of the Earth’s ecosystems, when we respond to the interior depth and mystery which informs our being, then we “resonate with that numinous mystery that pervades all the world.”

However, Berry cautions us not to become so intent upon recognizing divine presence within creation that we overlook “the sacred dimension of the earth itself, which is not exactly the divine immanence.” That is, the nonhuman world is sacred not only by virtue of being created by God—an external sacralization—but because it exhibits an internal sacralization as well. Berry notes that in moving to God through nature, we can “go too quickly from the merely physical order of things to the divine presence in things... [failing to] develop a sense of the reality and nobility of the natural world in itself.” The natural world is not merely an object, nor simply a medium for God’s revelation. Rather, it is “the maternal source whence we emerge into being as earthlings,” the numinous context within which we find our meaning and destiny and derive our sense of spirituality. “Indeed it is the larger sacred community to which we belong.” The universe, Berry declares, “in its

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120 Berry and Clarke, *Befriending the Earth*, 43.
121 Berry, *The Dream of the Earth*, 106.
125 Berry, *The Dream of the Earth*, 113.
127 Berry, “Wonderworld,” 417; cf., Berry, "The Cosmology of Religions," 2; Berry, "The Meadow Across the Creek," 14, 70.
every phase is numinous in its depths, is revelatory in its functioning, and in its human expression finds its fulfillment in celebratory self-awareness.\textsuperscript{128}

To weave this understanding of divine presence within cosmogenesis with a sense of the sacredness of creation, Berry connects functional spirituality with functional cosmology. Berry asserts that we need a functional spirituality to go with the functional cosmology emerging from the new science, that we need to rediscover the natural world as sacred and as a primary revelation of the Divine, to experience creation as a psychic-spiritual as well as a material-physical reality, to adopt a primary loyalty to the Earth community, and to commit to the progress of the full Earth community in its integrity. These constitute the new spirituality that is needed for living in the ecological age, that is, for humanity to move into an Ecozoic era.\textsuperscript{129} This is “a spirituality that emerges out of a reality deeper than ourselves, even deeper than life, a spirituality that is as deep as the earth process itself, a spirituality born out of the solar system and even out of the heavens beyond the solar system.”\textsuperscript{130} Such a spirituality experiences itself as supported by both the spiritual and the physical dynamics of the cosmic-earth processes, and brings the human, the non-human and the Divine into a communion which permits us to discover ourselves in the

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\textsuperscript{128} Berry, The Dream of the Earth, 87. When Berry employs the word “numinous” in this particular context, I believe that he is drawing upon the “indwelling force” or “evoking awe” meanings of the word, rather than the sense of “the presence of something divine.” (See the definition of “numinous” which follows.) That is, because there has been a psychic-spiritual dimension to cosmogenesis from its inception, there is a spiritual reality to the natural world, an “indwelling force” that “guides.” See, Berry, “The Spirituality of the Earth,” 153, 158. Undoubtedly, the universe is to be considered sacred because of divine presence resident within it, but at the same time, the subjectivity, creativity, spirituality and nobility of the universe cause us to pause before its own intrinsically sacred character; we can stand in awe before creation. For this reason alone, the universe is to be valued and can be considered a source of religious insight and inspiration, a numinous reality. See, Berry, “The Earth,” 37-38; Berry, “Wonderworld,” 417; Berry and Clarke, Befriending the Earth, 16, 41, 43; Berry, The Dream of the Earth, 45-46. Consider the definition of: “Numinous adj. 1. Of, pertaining to, or of the nature of a numen. 2. Evoking awe or reverence, as the presence of something holy or divine. 3. Irrational; mysterious; inscrutable. —the numinous The part of religious experience that is characterized by feelings of fascination and awe. Numen n. 1. In ancient Roman religion, a local divinity or presiding spirit. 2. An indwelling force or quality that animates or guides: the numen of his career.” See, Walter S. Avis and et al, eds. Funk & Wagnalls Canadian College Dictionary, Revised and Updated Edition ed. (Toronto: Fitzhenry & Whiteside, Ltd., 1989), 928.
\textsuperscript{129} Berry, The Dream of the Earth, 81-82.
\textsuperscript{130} Berry, “The Spirituality of the Earth,” 155.
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universe just as the universe discovers itself in us. "So the spiritual personality should feel constantly in communion with those numinous cosmic forces out of which we were born."\textsuperscript{131}

**The New Cosmology and Christ**

As humanity comes to a fuller understanding of creation and of its own emergence in and through the processes of cosmogenesis, Berry argues that it also comes to a new understanding of God. Just as the Christian encounter with Greek cosmology enriched early Christian theological reflection and enabled Christianity to articulate a better understanding of itself, the Divine, and the role of the human within creation, so too can our nascent exposure to the new cosmology enhance our comprehension of self, the Divine and our faith.\textsuperscript{132} As we integrate our post-Teilhardian awareness of the psychic-spiritual dimension of cosmic evolution into our scientific, secular model of cosmogenesis, and as we become increasingly attuned to the numinous reality within creation, then we can articulate our understanding of Christ in a new way.

Berry recalls the words of John’s Gospel:

\begin{quote}
1 In the beginning was the Word and the Word was with God and the Word was God. \\
2 He was in the beginning with God. 3 All things came into being through him, and without him not one thing came into being. ... 4 and the Word became flesh and lived among us.... (John 1:1-3, 14)
\end{quote}

Berry notes that Christ, as the principle of intelligibility, is called the Word, the *Logos*. Furthermore, the world originates in, through and by Christ “as the creative context of all existence.”\textsuperscript{133} Therefore, since there has been a Christ dimension to developmental time from time’s very inception, the story of Christ is the story of the universe, not merely the

\textsuperscript{131} Ibid.


\textsuperscript{133} Berry and Clarke, *Befriending the Earth*, 73.
story of a certain individual who lived at a particular historical time two thousand years ago. Christ was not simply added to cosmic history at some point billions of years into its evolution.\textsuperscript{134}

Rather, the Christ reality as this numinous reality is there from the beginning. In other words, all things emerge into being within this numinous context. ... Only after the experience of the Incarnation and of the gospels could we have the name [of Christ] functioning in this way. It is our way of identifying something that has been there from the beginning. ... Within the biblical perspective, anything that was created was created in that context.\textsuperscript{135}

Since Christ is a continuous part of irreversible, developmental creation history, Berry maintains that the redemptive dimension of Christ, while not to be undervalued, is not the whole story; the creative dimension of Christ must also be considered. When we become more aware of this latter aspect, we recognize that “there is a Christ dimension integral to the numinous dimension of the universe” throughout the course of cosmic history, present in every newly differentiated form of cosmogenesis.\textsuperscript{136} Accordingly, Christ is revealed to us in the universe; the natural world becomes the context within which we can experience divine manifestation, our first revelation of the Divine, our primary scripture.\textsuperscript{137}

Berry describes this creative, universal dimension of Christ as “the macrophase mode of the Christ reality.”\textsuperscript{138} He contends that both St. Paul and the writer of the fourth Gospel speak of the “Christ dimension” of the universe—i.e., the macrophase mode of the Christ reality or the cosmic Christ—who is a universal aspect of the humanly incarnated Christ.\textsuperscript{139}

\textsuperscript{134} While Berry tends to focus on either the Christological aspect of creation, or to be more generic (e.g., “divine presence”), some writers develop a pneumatological doctrine of creation. For a discussion of how various theological perspectives have considered the role of the “Father, Son and Spirit” in creation, see Martien E. Brinkman, “A Creation Theology for Canberra?,” \textit{The Ecumenical Review} 42, no. 2 (1990): 150-156.


\textsuperscript{137} Berry and Clarke, \textit{Befriending the Earth}, 73-76.

\textsuperscript{138} Ibid., 77.

\textsuperscript{139} Berry is referring in particular to the Prologue of the Gospel of John (already quoted above) and to Paul’s letter to the Colossians 1:15-17, viz.: “He is the image of the invisible God, the firstborn of
This cosmic, macrophasic Christ can be identified as Christ the Evolver, as the one who provides the sacred dimension to our understanding of the secular cosmic story as told by modern science.  

Berry believes that humanity is moving toward cosmic consciousness and a more integral unification with the Divine. Thus, as humanity continues in the cosmogenic evolution toward ever increasing complexification and unification, it will move beyond individual human self-reflective consciousness toward cosmic consciousness. It is moving toward a fuller union with the cosmic Christ or Cosmic Person. Berry also asserts that this new collectivity is not limited to the human. Instead, the Cosmic Person will become “in a special way the realization of the fullness of the earth, the goal of historical development” at the end of the cosmic process. This heroic journey toward this point of convergence in the Cosmic Person is not a spiritual journey of humanity alone, but the journey and story of the Earth through its multiple transformations. The Cosmic Person of Christ has been present throughout the entire evolutionary emergence of the universe, present “in those elementary forms that are constantly striving toward their more complete fulfillment in the transforming experience toward which the cosmic process is moving.” It is this entire collective of cosmic evolution which has been emerging and transforming toward an ultimate goal in all creation; for in him all things in heaven and on earth were created, things visible and invisible, whether thrones or dominations or rulers or powers—all things have been created through him and for him. He himself is before all things, and in him all things hold together.” (RSV)
Christ, not just humanity. Therefore, increasing unification with the cosmic Christ will involve all elements of the cosmos, not just the human dimension.  

At the same time, the incarnation of Christ—the presence of the Divine in Christ’s appearance in the Earth—as a specific event throughout cosmic history (as opposed to Christ the Evolver as a continuous, dynamic presence in cosmic history) is, in Berry’s estimation, “the greatest revolution in the human order, the moment of the total recreation of man….” This is an event of such magnitude that Christianity itself did not and has not yet grasped its full revolutionizing import. Had it done so, Berry argues, it would not have spent so much energy emphasizing the need for humanity to be redeemed from this world. It would have celebrated the entry of Christ into creation history and the immanence of the Divine in the world, an immanence resident in a Divine-human-nature communion. Indeed, Christianity would have espoused a more positive attitude toward the planet. For “if God has desired to become a member of the earth community man [sic] himself should be willing to accept his status as a member of the same community.” If Christianity was to adopt such a positive perspective, and if it were to bring an appreciation of the Incarnation into its daily life, then the solutions to the planetary problems which beset humanity might be found in the context of a world pregnant with the presence of Christ.

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144 Berry’s perspective seems to parallel that of theosis in Eastern Christianity. Petro Bilaniuk notes that “Theosis or divinization…can be described as the omnipotent and sanctifying, divine and Triadic activity which, because of the inborn and natural capacity of the creature for transfiguration, induces a process of assimilation to God the Father of the whole human person, of mankind and of the visible and invisible universe in its totality, through the mediation of the incarnate Logos, Christ the Pantocrator, and in the Holy Spirit.” See Petro B. T. Bilaniuk, Studies in Eastern Christianity, 3 vols., vol. 1 (Munich: Ukrainian Free University, 1977), 46. In a later text, Bilaniuk is careful to note that theosis or divinization is not equivalent to deification. See, Petro B. T. Bilaniuk, Studies in Eastern Christianity, 3 vols., vol. 3 (Munich: Ukrainian Free University, 1983), 55. 

145 Berry, “The Christian Process,” 8; Berry and Clarke, Befriending the Earth, 66. 

146 Berry, “The Third Mediation,” 5. 

147 Berry, “The Christian Process,” 19. McFague explores the macrophase aspect of the divine in creation through the model of the universe as the “body of God.” Since Christians have traditionally spoken of the incarnation with reference to body—that the Son of God took human flesh so that the historical Christ was both fully human and fully God—McFague also speaks of divine immanence in body language. She states: “To think of the entire evolutionary process…as the ‘body’ of God, the visible ‘sacrament’ as it were of the invisible God is a model of profound immanence and overwhelming transcendence. God is immanent
Earlier in this chapter, we examined the various “transcendencies” which Berry feels have contributed to the ecological crisis. The predominance of a transcendent deity made the reality of the Incarnation a difficult concept for the early Christians to grasp, let alone, accept, he argues. Later, Christians grappled with the fundamental question of why God would even want to appear in human form. Berry tends to favour Duns Scotus’ answer to this problem over solutions which require reparation for a primordial offence. He recalls that this explanation suggests that the primordial purpose of there being anything at all is divine goodness, and the basic principle of goodness is that it tends to diffuse itself... Originally, though, there were no others and so God created out of superabundant goodness, out of the urgency of divine being to give of itself. This... self-giving of the divine would not be complete without a personal, divine presence within creation.148

Consequently, the Incarnation resulted from and manifests God’s superabundant goodness, a goodness which had already ordained creation as good and sacred.

The New Cosmology and Religion

Just as the new cosmology does not negate but rather enhances our Newtonian world view, Berry posits that a deeper understanding of the spiritual dimension of the universe which emerges through the new cosmology now contributes to our traditional religious insights. Traditional religions have experienced Earth time as an ever-renewing sequence of seasonal transformations, while some have also perceived a historical developmental dimension to human time. Beyond Process Theology, Berry states, there

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has been little awareness of the irreversible, developmental character of cosmogenesis. Religion can now move beyond an anthropological and/or theological focus to include a cosmological focus which perceives the religious aspect of the universe itself from its inception. In this model, the human joins the religious dimension of the cosmos rather than the Earth joining in the religious expression of the human. As we become increasingly aware of the integrated intimacy of the differentiated components of the universe, we hear the cosmos calling us back to itself. The new cosmology, which provides a new context for our religious consciousness, consequently takes on a certain religious character. The universe will be seen as a single sacred community with the “scriptural text” provided by the structure and function of the universe itself. In addition to our traditional religious celebrations, Berry proposes that we might engage in new rituals celebrating those moments of irreversible cosmological transformation that took place in the formation of the galaxies and in the supernova implosions which finally enabled the planet Earth and all those expressions of life and consciousness to come into being. ... We will recognize cosmological and biological as well as historical and religious moments of Grace.

Recalling that our Christian beliefs about God’s revelation are significantly dependent upon our understanding of reality and how it functions, Berry asserts that as we acquire a new understanding of the universe, and as God continues to speak to us through this universe, we develop a need to articulate our revelations concerning God in a new way. Therefore,

149 Berry, "The Cosmology of Religions," 2-5, 10; Berry, The Dream of the Earth, 125.
150 Berry, "Ecological Geography," 17-18. Berry recalls that the word “religion” literally means a “binding back.” Thus, since the new cosmology prompts us to perceive the integrated unity of the cosmos, it attunes us to a sense of being called back or bound back into that relationship.
151 Berry, "The Meadow Across the Creek," 80.
152 Ibid.
153 Berry, "Economics," 25. Beatrice Bruteau shares Berry’s view that revelation continues. She notes that “revelation is what the whole history of the world is. If the time of revelation were past, God wouldn’t be creative and the universe would be dead.” See, Beatrice Bruteau, “Eucharistic Ecology and Ecological Spirituality,” Cross Currents 40, no. 3 (1990): 512.
If God is speaking to us through the universe, and if we are now seeing that the universe functions differently from what earlier Christians thought, then we must have a different way of articulating our Christian belief. We have in our new understanding of the universe, new ways of understanding the divine manifestation in the natural world. We have a new type of revelation.\(^{154}\)

We are undergoing a new type of exodus, an exodus from the terminal phase of the Cenozoic to an emerging Ecozoic, and an exodus of the entire planet, not just the human component. During this exodus, we are coming to a new revelation about God, divine presence in creation, and our role within cosmogenesis because of our new understanding of universe dynamics.\(^{155}\)

Berry believes that if we are to address the ecological challenges before us, any effective response will require a religious context. And while “the existing religious traditions are too distant from our new sense of the universe to be adequate to the task that is before us, [nevertheless] we cannot do without [them].”\(^{156}\) Nor can we do without the creation stories and cosmologies of the indigenous peoples or the classical civilizations since it is the collective of the diverse revelations of the Divine which best approximates God’s self-expression.\(^{157}\)

2. **We are part of a creative, irreversible, non-repeatable process. It is a one-time event.**

Although we have already discussed many aspects of cosmogenesis, this concept is so central to Berry’s work that it requires further nuance, especially as it relates to the Ecozoic era. Berry frequently emphasizes that cosmogenesis is a continually emergent and meaningful process of increasing complexity and diversity brought about by a

\(^{154}\) Berry and Clarke, *Befriending the Earth*, 54.

\(^{155}\) Ibid., 54-55; Berry, *The Dream of the Earth*, 81-82.

\(^{156}\) Berry, *The Dream of the Earth*, 87. Berry notes that: “That traditional Western spiritualities have not enabled their followers to mitigate or even to understand or protest the terrifying assault of American society on the natural world is evidence of a certain incompetence….” See, ibid., 113; cf., 178; Berry, “Wonderworld,” 421.

\(^{157}\) Berry, “The Meadow Across the Creek,” 77-78, 155; Berry and Swimme, *The Universe Story*, 238; Berry, “The Ecozoic Era,” 19; Berry, “The Earth,” 31-34.
sequence of irreversible transformations. He does so because we tend to hold an image of creation which suggests that the elements of the universe have always been and will always be essentially as they are, with the exception of human history which has had various characters moving on and off the planetary stage to advance its story.\textsuperscript{158} “The difficulty with this cosmology is that it presents the world simply as an ordered complex of beings that are ontologically related as an image of the divine. It does not present the world as a continuing process of emergence.”\textsuperscript{159} The failure to see the universe as cosmogenesis rather than cosmos and to understand the human as part of those cosmogenic processes “are perhaps the most profound causes for the disturbed condition of the planet in this late twentieth century,” in Berry’s opinion.\textsuperscript{160}

The movements of a musical composition provide a useful metaphor for Berry to illustrate microphase and macrophase participation in cosmogenesis.

We need to see the sequence of earthly transformations as so many movements in a musical composition…. [I]n music the earlier notes are gone when the later notes are played but the musical phrase, indeed the entire symphony, needs to be heard simultaneously. We do not fully understand the opening notes until the later notes are heard. Each new theme alters the meaning of the earlier themes and the entire composition. The opening theme resonates throughout all the later parts of the piece.\textsuperscript{161}

Consequently, when hydrogen entered the universe story for the first time some fifteen billion years ago, it did not enter as an isolated element in a fixed universe; it entered and shifted the music of the universe into a new but related presentation; it changed the score of history. To know hydrogen, we need to know both its individual self and the way it behaves in concert with other elements, and we need to know how it contributes to the emergence of the cosmos.\textsuperscript{162} The same need for individual and collective knowing is

\textsuperscript{158} Berry and Swimme, \textit{The Universe Story}, 223-227. For a similar assessment, see, Clifford, “Postmodern Scientific Cosmology,” 77.
\textsuperscript{159} Berry, \textit{The Dream of the Earth}, 129.
\textsuperscript{160} Berry and Swimme, \textit{The Universe Story}, 224.
\textsuperscript{162} Berry and Swimme, \textit{The Universe Story}, 32-39.
true for the human; we need to know our microphase or particular mode of being, as well as our macrophase or more universal mode of being. We need to envision our individual mode of being within the space-time curvature of the universe. This interwoven duality reminds Berry that “nothing can be itself without everything else. Everything exists in multiple dimensions.... [Hence] we have our individual self, our biological self, our Earth self, and our universe self.”163

In Berry’s assessment, our preoccupation with our microphase dynamics has permitted us to remain ignorant of the macrophase, ecological ramifications of our actions. We derive comfort from the supposed success of recycling and conservation measures—microphase activities—because we have not sufficiently grasped the magnitude of the ecological problem—i.e., its macrophase breadth. Thus, our autism toward the rest of creation reinforces our limited understanding of the wider dynamics of the ecological crisis.164 Berry suggests that it would be useful to recognize the universe as

the larger self of each person since the entire sequence of events that has transpired since the beginning of the universe has been required to establish each of us in the precise structure of our own being and in the larger community context in which we function.165

Such a perspective might improve our awareness of our macrophase impact.

Berry also reminds us that that which has evolved is an unfolding of that which was present as potential at the first flaring forth of the universe. Nothing in the universe simply pops into reality from nowhere.166 Everything in the universe is contextualized within the universe story. For this reason Berry states that in the phenomenal world, the universe is the only text without a context. The universe is a self-referent, self-

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163 Berry, “The Gaia Theory,” 16-17; Berry and Clarke, Befriending the Earth, 22.
164 Berry and Swimme, The Universe Story, 27-29; Berry and Clarke, Befriending the Earth, 44; Berry, "The Eoczoic Era," 4-5; Berry, "The Meadow Across the Creek," 97, 99, 152.
166 Berry, “The Gaia Theory,” 12; Berry and Clarke, Befriending the Earth, 132.
organizing, self-creation within the divine context. Consequently, "the universe carries in itself the norm of authenticity of every spiritual as well as every physical activity within the universe. These are two dimensions of the single reality." In every aspect of our being, for Berry, we are a subsystem of the universe system, and more particularly, the Earth system.

Cosmogenesis must also be experienced as an ever-emerging creative turbulence which is nevertheless ordered. It is a creative balance between an expansive dynamic held together by gravitational attraction. "Thus the curvature of the universe is sufficiently closed to maintain a coherence of its various components and sufficiently open to allow for a continued creativity." The Ecozoic age strives to have human activity aligned within this creative functioning. "When the curvature of the universe, the curvature of the Earth, and the curvature of the human are once more in their proper relation, then Earth will have arrived at the celebratory experience that is the fulfillment of earthly existence." Cosmogenesis is not peace and tranquility; it is not equilibrium, observes Berry. Cosmogenesis involves tension, the most tension that the system can creatively employ (and perhaps, enjoy). Nor is cosmogenesis characterized by balance, but rather, creative balance or turbulence. Most of the elements of the periodic table were created through the explosion of supernovas, while our atmosphere and water owe much of their existence to volcanic activity. Cosmogenesis is shaped by this interplay between sufficient expansion coupled with sufficient attraction, allowing turbulence to occur within order.

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167 Berry and Clarke, Befriending the Earth, 25; Berry, "The Gaia Theory," 7.
168 Berry, "The Meadow Across the Creek," 14.
169 Ibid., 74.
170 Berry and Swimme, The Universe Story, 260.
171 Ibid., 261.
172 Berry, The Dream of the Earth, 190, 216-217, 219; Berry, "Ecological Geography," 232; Berry, "The Meadow Across the Creek," 6, 17-19, 21.
In the Eozoic era, humanity will recognize limitation and challenge as the “gravitation” which holds the creative turbulence together, as the ordering which permits creativity to emerge and flourish. According to Berry, challenge and limitation are “as necessary for us as is the weight of the atmosphere that surrounds us.” Like the gravitation that binds us to the earth, [they] should be experienced as liberating and energizing, rather than confining. Strangely enough, it is our efforts to establish a thoroughly sanitized world [without challenge or limitation] that have led to our toxic world.¹⁷³

Challenge and limitation are disciplines which evoke creativity.

Ecozoic thinking will also recognize that cosmogenesis is an irreversible process. It took fifteen billion years to make this moment; if anything were different in that which preceded, then this particular moment would not exist. That which has happened cannot be changed; it is a one-time endowment. Consequently, a species which becomes extinct is extinct forever simply because the process is irreversible.¹⁷⁴

3. Spirituality is not limited to the human.

Berry contends that the universe has had a psychic-spiritual dimension from its beginning, just as it has been a physical-material reality. He supports this position through various arguments.¹⁷⁵ Firstly, he recalls that through the study of paleontology and the work of Jean-Baptiste Lamarck (1744–1829), humanity came to the shocking revelation that it, too, was part of the transformational sequence of planetary emergence. Humans came into existence within the processes of planetary evolution. Initially, this startling inclusion was limited to the physical structure of the human.¹⁷⁶ Subsequently, however, our growing scientific understanding of cosmogenesis suggested, as Berry often

¹⁷³ Berry, "The Meadow Across the Creek," 120-121.
¹⁷⁴ Berry and Clarke, Befriending the Earth, 96-97; Berry, "The Eozoic Era," 12.
¹⁷⁵ Of course, Berry is not alone in making such an assertion. Cf., Haught, Science and Religion, 121-122; Roszak, The Voice of the Earth, 133-134.
argues, that the universe "has a psychic-spiritual as well as a physical-material dimension from the beginning..." That is, psychic and spiritual qualities do not make their first appearance in cosmogenesis with the emergence of the human any more than would calcium and mitochondria. Human consciousness does not just suddenly appear as a totally unheralded and unrelated event in cosmic history any more than an opposable thumb or bipedal motion instantaneously arrive with human evolution; all had precursors. Such a trans-material perspective of the universe further emphasizes that the human story is inseparable from the story of the universe. This story illuminates our understanding of self, underscoring that the universe has shaped our physical bodies, our minds and our spirits from our beginning. It might be possible to conclude that Berry simply means that psychic-spiritual awareness was merely potential within cosmogenesis, coming to its first actualization in the human, just as the self-reflective consciousness of the human was perhaps latent within the Big Bang. Such a proposal would seemingly be supported by Berry’s statement that "the human psychic structure and our spirituality have been taking shape over all these billion of years, beginning with the primordial atomic particles which held within themselves the destinies of all that has followed, even the spiritual shaping of the human." However, this would be an incomplete and misleading reading of Berry. He states elsewhere that he does not equate human and non-human psyche, spirituality or consciousness, asserting that the former evolves from the latter, and is less-evolved in its non-human phases. For instance, while accepting that

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177 Berry, "The Meadow Across the Creek," 73, cf., 86, 87, 105-106, 154, 222; Berry and Swimme, The Universe Story, 247; Berry and Clarke, Befriending the Earth, 24; Berry, The Dream of the Earth, 66, 81, 117, 131-132, 194; Berry, "The New Story," 193; Berry, "Wonderworld," 417.

178 Berry, "The Meadow Across the Creek," 73, 123.

179 Berry, The Dream of the Earth, 117. Consider, also, Berry's statement: "The original moment of the universe in its primordial energies was the implicate form of the present as the present is the explicate form of this 'origin moment.' This primordial emergence was the beginning of the Earth story as well as the beginning of the personal story of each individual being in the universe." See, Berry, "The Gaia Theory," 12.
only humanity and the Divine are capable of self-reflexive consciousness, Berry considers that

Consciousness is certainly not limited to humans. Every living being has its own mode of consciousness. We must be aware, however, that consciousness is an analogous concept. It is qualitatively different in its various modes of expression. Consciousness can be considered as the capacity for intimate presence of things to each other through knowledge and sensitive identity. But obviously the consciousness of a plant and the consciousness of an animal are qualitatively different. ... For the purposes of the fish human modes of consciousness would be more a defect than an advantage, so with the differences of consciousness between the bird and the tiger.\footnote{Berry, "The Ecozoic Era," 6.}

For Berry, the universe has had a psychic-spiritual dimension from its inception, and that dimension has qualitatively evolved through cosmogenesis, just as the physical-material aspect has evolved through fifteen billion years of the story.

Secondly, Berry maintains that just as humanity derived physical nourishment from its surroundings, so too did it derive psychic-spiritual nourishment—in the form of inspiration, wonder, stimulation and the experience of a numinous reality pregnant in all of creation.\footnote{Berry, The Meadow Across the Creek, 105-106.} Berry states that for the human, its psychic as well as its physical nourishment and support came from the surrounding natural environment. ... [W]hen we speak of the natural world we are not speaking simply of the physical world, but of the psychic-physical structure of the universe itself, a mode of being found in every articulated entity.\footnote{Berry, "The Meadow Across the Creek," 105-106.}

But the suggestion that the human psyche is fed by the natural world does not really support the notion that the natural world has a psychic dimension, anymore than saying that because beta carotene nourishes my eyes, carrots which are naturally rich in the nutrient beta carotene must also have vision of some form. How, then, can Berry contend that non-human creation has a psychic-spiritual dimension?
Berry’s third argument suggests an answer. Berry contends that we are able to distinguish between various beings because we can recognize the unique identity of these modes of presence. We do not confuse a maple tree with a mallard duck or with ourselves. We are able to recognize the other as “other.” Each being is internally organized and sufficiently maintained in its unique patterning such that it not only exists as that being but can communicate its presence to the rest of creation. Berry associates this internal ordering and unique articulation with the psychic-spiritual dimension of the being organizing and maintaining its physical-material dimension as a recognizable entity. Thus,

Every being has a unique voice and its spiritual mode is integral with the physical mode of its being. This capacity for spiritual presence in things is what makes possible our own perception of other beings and our communion with them.  

Berry’s use of “spiritual”—that which internally orders and maintains so that a unique identity can exist; that which permits transcendence beyond the individual being so that a connection can be made with an “other”—is not dissimilar from the definition of spirituality which was derived in the first chapter of this thesis. (See Appendix A for the working definition of spirituality.)

Clearly, just as Berry distinguishes between human consciousness and non-human consciousness, he would want to distinguish between human and non-human spirituality. There is, again, a qualitative difference. Human spirituality is more evolved and therefore more complex than non-human spirituality. Furthermore, human spirituality is nuanced, informed, formed, reformed and motivated by our uniquely human ability to be self-reflexively conscious; we can choose to radically alter the way we organize our lives and the values that we hold, even if we cannot comparably reorganize the internal structure and function of our physical-material bodies.

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183 Berry, “Art in the Ecozoic Era,” 47.
Finally, Berry proposes that the scientific telling of cosmogenesis must be understood and proclaimed as both a physical and a spiritual process. We “need to establish a deeper understanding of the spiritual dynamics of the cosmic-earth process within which the redemption process functions.”184 We need to recover an awareness of the numinous dimension of the emergent universe, whether in terms of the Divine Logos, or in terms of the animating spirits known to the indigenous peoples.185 Once we can experience cosmogenesis as both a psychic-spiritual and a physical-material process, and once we perceive ourselves as integral with that emerging adventure, then we “immediately perceive how adverse to our own well-being psychically and spiritually as well as economically is any degradation of the planet.”186 Such an understanding typifies the Ecozoic era.

4. The laws which define the reality, values and direction of the universe—differentiation, subjectivity and communion—also apply to us.

According to Thomas Berry, all creativity anywhere and at anytime throughout the history of the universe has been ordered according to the principles of differentiation, subjectivity and communion. The universe evolves and transforms as the diversity and complexity of its various modes of being increase (differentiation) at the same time as the interior psychic unity and integrated function of these individual entities deepen (subjectivity) without diminishing the inseparable, interrelated community of the whole (communion).187

185 Berry and Clarke, Befriending the Earth, 19; Berry, The Dream of the Earth, 11, 113, 120; Berry, “Wonderworld,” 416; Berry, "The Meadow Across the Creek," 73, 77, 98.
186 Berry, The Dream of the Earth, 81.
Differentiation

The more the universe is investigated, the more it becomes apparent that there has always been a preference for increasing differentiation. Novelty is favoured over repetition. As Berry observes, “in the universe, to be is to be different. To be is to be a unique manifestation of existence.” The evolutionary, differentiating, complexifying powers of cosmogenesis bring into existence trillions of novel experimental beings to see which will be breakthroughs that survive. Cosmogenesis is always experimenting with new pathways, developing new articulations which are unrepeatable and irreplaceable. Accordingly, Berry concludes that “differentiation is the primordial expression of the universe.” There is an urgency of self-transcendence which produces variety in all things.

Subjectivity

Subjectivity results, Berry posits, when the unifying principle of an organism, as an expression of the self-organizing spontaneity of that organism, manifests the unique identity of that being to the rest of the cosmos. The elements and the interior

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188 Berry and Swimme, The Universe Story, 74. Cf., “This very principle of the evolution of the universe shows itself in the emergence of novel solutions in a dynamic system; however, the latter cannot be known ex ante.” See, Faber, Manstetten, and Proops, Toward an Open Future, 82. Haught also remarks that for the universe “to be receptive to novelty,” to be open to new order and new life emerging in cosmogenesis, “rigid orderliness has to give way. It is a habit of nature, as it seeks wider and more intricate patterning, to veer entropically toward the ‘edge of chaos.’” See, Haught, Science and Religion, 154; cf., Michael E. Zimmerman, “Quantum Theory, Intrinsic Value, and Panentheism,” Environmental Ethics 10, no. 1 (1988): 28.

189 Berry and Swimme, The Universe Story, 90-91; Berry, The Dream of the Earth, 106.

190 Berry, The Dream of the Earth, 45.

191 Ibid., 134; Berry, “The New Story,” 193, 196. When Berry speaks of differentiation, he will just as comfortably speak of diversity, complexity, variation, disparity, heterogeneity and articulation as terms which express the same notion. See, Berry and Swimme, The Universe Story, 71.

attractions of a self-organizing being coalesce in such a way that the self-articulation of the being manifests, and the unique identity or presence of that being can be recognized. The power, the dynamic centre of activity that spontaneously brings the constituent parts of any being into a coherent internal communication suggests a spiritual, integrative dimension.¹⁹³ Spirituality is the energetic bond which creates a unitive integration of the elements and interior attractions of any unique being. Concurrently, spirituality also draws the entity into a unitive relationship with that which is typically considered to be apart from itself. Subjectivity allows any being to be recognized as an individual and to be accorded a different identity by the other. Everything in the universe, according to Berry, has this inner capacity for self-manifestation.¹⁹⁴ Consequently and not unexpectedly, Berry does not limit spirituality to humanity.

In and through the earth spiritual energy is present. This spiritual energy emerges in the total complex of earth functions. Each form of life is integrated with every other life form. Even beyond the earth, by force of gravitation, every particle of the physical world attracts and is attracted to every other particle. This attraction holds the differentiated universe together and enables it to be a universe of individual realities. The universe is...a vast multiplicity of individual realities with both qualitative and quantitative differences all in spiritual-physical communion with each other.¹⁹⁵

If the articulation of individual reality reveals an interior depth and mystery, Berry contends that this does not isolate the individual from cosmogenesis.¹⁹⁶ Individual

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¹⁹³ Consider as an example, the two gases: hydrogen and helium. Hydrogen is a highly explosive gas which can be used as a powerful rocket fuel or for welding. Helium is a remarkably inert, noncombustible gas noted for its buoyancy. It results from the fusion of two hydrogen atoms. The atoms of helium, although primarily derived from hydrogen, have coalesced through the dynamic energetic attractions of its constituent parts to manifest a new element—helium—which is quite different from its source—hydrogen. The atoms are unified in a new way giving rise to a new being. The organization of two hydrogen elements into a single helium element is self-directed and spontaneous, yet reflects a certain interior predictability and coherence since such a union will invariably result in a recognizable helium element. See, The Concise Columbia Encyclopedia on CD-ROM. (Columbia University Press, 1991); Robert A. Wallace, Jack L. King, and Gerald P. Sanders, Biology: The Science of Life (Santa Monica, California: Goodyear Publishing Co., Inc., 1981), 25-29.

¹⁹⁴ Berry and Swimme, The Universe Story, 32, 75, 219; Berry, "Art in the Ecozoic Era," 47. The psychic-spiritual dimension of modes of being will be discussed in greater detail with the next principle.


¹⁹⁶ Berry, The Dream of the Earth, 106.
realization or subjectivity will be a unique and creative response to all the interior promptings and the exterior attractions that any particular being will encounter. The articulation of its interiority becomes the immediate responsibility of every being, its responsibility and contribution to cosmogenesis. Such articulation is a manifestation of the numinous mystery become present. Berry argues that "to deprive any being of this sacred quality is to disrupt the larger order of the universe." Indeed, he continues, actions or attitudes which deprive the physical world of its subjectivity will soon be applied to humanity as well since the universe is not present to us in pieces any more than a person stands before us with only some part of her or his being present. Thus, actions or attitudes which treat the non-human world as mere object or resource will, Berry cautions, also regard at least some humans in a similar way.

Communion

At the same time that the universe is evolving both spatially and temporally through a sequence of transformations, through increasing differentiation and complexification, and at the same time that particular and isolable subjects become manifest, a continuity perdures which keeps the universe integral and interwoven. While the universe evolves into distinct beings which are different from each other, it maintains community on both the macrophase and microphase levels of existence. In short, "the universe advances into community—into a differentiated web of relationships among sentient centers of creativity." Berry reminds us that this sense of communion is intrinsic to the universe because "the universe is a single if multiform energy event; everything comes forth out of the intrinsic creativity of the universe." Just as

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197 Ibid., 134.
195 Ibid., 135; Berry, "The New Story," 196.
199 Berry and Swimme, The Universe Story, 77; cf., Berry, The Dream of the Earth, 91, 120, 135; Berry, "The New Story," 197.
200 Berry and Swimme, The Universe Story, 76; cf., Berry, The Dream of the Earth, 45-46.
cosmogenesis seems driven to increasing differentiation and complexification, so too does it seem committed to further organization into complex and persistent patterns of community. Consequently, Berry observes, nothing that is, is unrelated. "Nothing is itself without everything else." Each mode of being is sustained in its existence by everything else. We come to know each mode of being through its relationship with everything else. We would not know the full identity of carbon, nitrogen, hydrogen or oxygen, for instance, until we could recognize their role in the fecundity of cellular life or even in our own consciousness. The communion which results from this grander vision "is what makes the universe what it is, not a collection of disparate objects but an intimate presence of all things to each other...."

Berry asserts that humanity is part of this intimate presence to each other, of the inseparable unity of the planet and the universe, for several reasons. Firstly, everything in the universe shares "a common origin in the primordial Flaring Forth of the energies from which the universe in all its aspects is derived." This common heritage applies not only to matter but also to energetic activity. As Berry poetically observes,

All the energy that would ever exist in the entire course of time erupted as a single quantum—a singular gift—existence. If in the future, stars would blaze and lizards would blink in their light, these actions would be powered by the same numinous energy that flared forth at the dawn of time.

Secondly, every part of the universe is part of the same continually unfolding story. No part is either separate in its origin or its evolution. In this respect, Berry notes that the "Flaring Forth" fifteen billion years ago marks the beginning of our own personal stories.

Thirdly, each part of the universe contributes to the unfolding of the entire

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202 Berry, The Dream of the Earth, 91-92, 106.
203 Berry and Swimme, The Universe Story, 219.
204 Ibid., 5.
205 Ibid., 17.
story. It is this integral relationship which prompts Berry to define the planet as an inseparable unity. Because the Earth is an inseparable unity and because we are integrally part of that unity, Berry asserts that the human community cannot survive unless the rest of the Earth community survives. Our survival must be within the ever-renewing processes of the natural world. Similarly, the Earth cannot be saved in fragments any more than any living organism can be saved in fragments; the integral unity of the organism requires that all parts of the organism be healthy for the organism as a whole to be healthy.\textsuperscript{207} In the same fashion, for progress to be sustainable, it “must be progress for the entire earth community, involving every component of the earth community.”\textsuperscript{208} Since the Earth is not the same globally, but is instead a differentiated unity, sustainability must be considered in terms of the integrity and inter-relations of the planet’s many bioregional contexts, both in microphase and macrophase dimensions.\textsuperscript{209} Berry argues that when we disrupt the sustainability of an ecosystem, the planet through its integrated functioning, not only incurs a debt, but we, as integral members of the planetary community also incur a debt. By contributing to the death of the living processes of the planet—i.e., by destroying their sustainability—we contribute dramatically to our own deaths since the Earth is \textit{the} living process of which (or in which) we are a dependent part.\textsuperscript{210}

Because he considers the Earth to be \textit{the} living process, Berry contends that we must respect the integrity of the bioregion in which we live. To respect that integrity

\textsuperscript{207} Berry and Clarke, \textit{Befriending the Earth}, 96, 113. While Berry finds the Gaia hypothesis of Lovelock useful, he does not consider the planet to be a living organism, per se. He recognizes that the Earth functions in ways similar to those found in organisms, but feels that we can describe the Earth as organism only in an analogous way. However, “the unity of Earth’s functioning and the unity of functioning of any other living being...justifies the use of the term \textit{organic} to describe the inner coherence and integral functioning of the planet Earth.” See, Berry and Swimme, \textit{The Universe Story}, 243; cf., Berry, “The Gaia Theory,” 14.

\textsuperscript{208} Berry, \textit{The Dream of the Earth}, 65; cf., Berry, “Wonderworld,” 417.

\textsuperscript{209} Berry, “A New Era: Healing the Injuries We have inflicted on Our Planet,” \textit{Health Progress} 73, no. 2 (1992b): 11-12.

\textsuperscript{210} Berry, \textit{The Dream of the Earth}, 71-72.
requires that we accept that the integral functional order of each regional life community "is not an extrinsic imposition, but an interior bonding of the community that enables each of its members to participate in the governance and to achieve that fullness of life expression that is proper to each."211 If any bioregion is to be sustainable, it must be constantly renewing itself through the integrated and creatively balanced interplay among the members of its community. Humanity must not presume that it can impose its designs on a bioregion in a manner which is inimical to the sustainability of the bioregional dynamics, and still expect the bioregion to be life supporting in the same way.212 Only by comprehending and experiencing the intercommunion between humanity and the rest of the bioregion, and concurrently recognizing the impact of human decisions upon planetary evolution will we acquire the mind-set and spirituality which can lead us into the emerging ecological period of Earth development.213 Only when we become aware of the numinous mystery which has guided every stage of cosmogenesis, which forms and informs our nature, will our human affairs become meaningful "in so far as they enhance this emerging world of subjective intercommunion within the total range of reality."214 Then we will realize that because creation has had a psychic-spiritual dimension from its inception, not just a physical-material aspect, our spirituality is as Earth-derived as is our physical being. At the moment of that revelation, we will have intercommunion with all the living and non-living components of the Earth community and with the Divine.215 Our journey will be revealed as a journey "of primordial matter... toward an ever more complete spiritual-physical intercommunion of

211 Ibid., 167. Berry defines a bioregion as "an identifiable geographical area of interacting life systems that is relatively self-sustaining in the ever-renewing processes of nature. ...Each of the component life systems must integrate its own functioning within this community to survive in any effective manner." See, ibid., 166.
212 Ibid., 166-169, 219; Berry, "The Ecozoic Era," 12; Berry, "Wonderworld," 490.
213 Berry, The Dream of the Earth, 17, 217-219; Berry, "The Spirituality of the Earth," 158.
the parts with each other, with the whole, and with that numinous presence that has been manifested throughout this entire cosmic-earth-human process.\textsuperscript{216}

A functional and mutually enhancing existence within the Earth’s ecosystems is a creative process, a “groping toward an ever more complete expression of the numinous mystery that is being revealed in this process.”\textsuperscript{217} Similarly, any solution to the ecological crisis must facilitate the expression of the numinous mystery of the planet. As such it will be an Earth solution rather than a human solution, although the former necessarily includes the latter.\textsuperscript{218}

5. The universe is a communion of subjects, not a collection of objects, and we are members of that community.

To move into the Ecozoic era, Berry maintains that it is absolutely essential for humanity to regard the universe as a communion of subjects and not merely as a collection of objects. Such a perspective firstly requires that we accept that every being in the universe, and in particular each member of the Earth community, functions in response to its particular interior spontaneity, and not simply because of extrinsic manipulation. Thus, an oak tree emerges from an acorn through its own initiative and not through the wizardry of a woodsman who might have planted the seed (although the acorn is clearly also reliant on some external factors such as proper temperature and moisture). Secondly, these inner spontaneities not only guide and activate, they also permit each mode of being to relate to others in a local and cosmic interconnectivity. They allow each being to be recognized or engaged by other parts of the community while they concurrently prompt the being to declare its identity.\textsuperscript{219} Thirdly, we must overcome our autism to the natural world if we are to have any chance of properly

\begin{itemize}
\item \textsuperscript{216} Ibid., 158.
\item \textsuperscript{217} Berry, \textit{The Dream of the Earth}, 220-221; cf., Berry, “The Ecozoic Era,” 3.
\item \textsuperscript{218} Berry, “Creative Energy,” 186.
\end{itemize}
grasping these concepts.\footnote{Berry, "The Meadow Across the Creek," 171.} We must re-acquire an ability to encounter the “outer world” as a “thou” rather than as a mere “it” by once again recognizing a pervasive numinous power penetrating all levels of creation.\footnote{Ibid., 64-65, 101.} Berry concludes that

Such capacity for self-directedness and for intimate relations with each other constitutes the basis for considering the universe as a communion of subjects, rather than as a collection of objects.\footnote{Berry, “A New Era,” 62.} Within this supreme reality everything has its own role, its own nobility, its own rights to exist, to have its own proper habitat, and fulfill its proper role in the universe’s functioning. Only when these rights are recognized in a comprehensive manner can human beings expect to bring into being a mutually enhancing human presence on the earth.\footnote{Berry and Clarke, Befriending the Earth, 102.}

To become attentive to our membership within this community of subjects, Berry sees a need to move away from hierarchical anthropocentrism. However, he hastens to add that he is not proposing egalitarianism in the sense of all things being equal. While he advocates “an equality of opportunity for things to be what they are,” he cautions that the unique individuality which provides the diversity of creation must not be minimized.\footnote{Ibid. Leonardo Boff prefers to exclude hierarchy altogether. He argues that since all of creation is an expression of God’s joy and “every creature” serves as God’s messenger, then “everyone is worthy and is to be accepted and listened to as such. In this vision, which places such an emphasis on creation, there is no form of hierarchy and no exclusive representative of any kind. Everyone derives the same love of God.” When Boff says “everyone,” he seems to mean “every creature.” See, Boff, Ecology and Liberation, 46.} Berry proposes that

rather than diminish hierarchy, we [should] universalize it. Everything is at the top of the hierarchy in its own way. When it comes to swimming, the fish are at the top. When it comes to flying, the birds are at the top. … When it comes to reflective thinking, humans are the best. But just because we humans are the best in one area does not mean that we are the best absolutely. The thing that is best absolutely is the community of the planet, the community of species.\footnote{Ibid.}

When we position ourselves as “best absolutely” among the Earth community, we fail to recognize the fuller identity of the rest of creation, minimize intimate contact with other members of the Earth community, and tend to engage the world as a collection of
objects. Berry questions if such a position ultimately brings any gain or any satisfaction.  

If we accept that differentiation, subjectivity and communion are the basic laws which identify reality and the direction of cosmogenesis; and if we accept that the universe is a community of subjects, not a collection of objects; then Berry maintains that specific values emerge from this understanding. To survive into the Ecozoic age, we must realize that the wanton destruction of any species both irretrievably destroys a subjective identity which once contributed to the cosmogenic differentiation of the universe, and at the same time diminishes all members of this unified community. We must move from a "human-centered norm of reality and value to a nature-centered norm.... [W]e must fit our thinking and our actions within the larger process." We must move from simple democracy to biocracy wherein we consider the needs of the bioregion via environmental impact studies; we must add biocide (the destruction of the life systems of the planet) and geocide (the devastation of the living and non-living aspects of the planet) to the evils of suicide, homicide and genocide.

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225 Berry and Swimme, The Universe Story, 249; Berry, The Dream of the Earth, 46. Roszak adds an important distinction when discussing hierarchy. He states that "in spelling out the importance of hierarchy in systems theory, we must be careful to distinguish organic and ecological from political and social structures." Roszak argues that natural hierarchies hold together symbiotically, not through brute force, and enhance rather than frustrate potentiality while they favour diversity over unity. Political and social hierarchies tend not to, and consequently, we are necessarily more wary and critical of these. Roszak examines human and natural hierarchies, and diagnoses the former as pathological. Roszak, The Voice of the Earth, 199-200.

226 Berry, The Dream of the Earth, 46.

227 Ibid., 161.

6. "The human is that being in whom the universe activates, reflects upon and celebrates itself in conscious self-awareness."²²⁹

As studies in paleontology and geology revealed that the Earth was not an eternal, fixed reality but was rather in a state of continuing transformation, the unity of the universe became more apparent. The human was recognized as both a mode of being of the universe and a distinctive being in the universe. Just as the chloroblasts were the first cells capable of capturing the sun's rays into a photosynthesizing, energy-producing process, the human was the first and only being to bring self-reflective consciousness into the universe story (other than the Divine from whom all comes). Indeed, as a being in the universe, humans were the first modes of existence to understand that the story of the universe even existed (at least according to our present understanding of the universe). As beings of the universe, the role of the human became that being in whom the universe in its evolutionary dimension became conscious of and celebrated itself.²³⁰ We activated a dimension of the universe; we manifested a potential of cosmogenesis which has been nascent since the primordial flaring forth; we actualized a spontaneity called forth by the numinous mystery from which the universe emerged.²³¹ This is our unique contribution to cosmogenesis, to "articulate a special mode of being, a capacity for thought and speech, aesthetic appreciation, emotional sensitivities and moral judgment, all uniquely human."²³²

Berry adds what can, at first read, be a rather startling conclusion since he suggests an integration of the human in the cosmos which is often not considered.

²³⁰ Berry, The Dream of the Earth, 16, 125-128; Thomas Berry, "Our Future on Earth: Where Do We Go From Here?" in Thomas Berry and the New Cosmology, ed. Anne Lonergan and Caroline Richards (Mystic, Connecticut: Twenty-Third Publications, 1990e), 104-105; Berry and Swimme, The Universe Story, 1, 21. Cf., Clifford's comment that, "The human person, in continuity with all the matter and energy that comprises the universe since the Big Bang, is the evolving cosmic process now conscious of itself." See, Clifford, "Postmodern Scientific Cosmology," 64.
²³¹ Berry, "The Dream of the Earth," 200; Berry and Clarke, Befriending the Earth, 59.
²³² Berry, "The Meadow Across the Creek," 105.
By definition we are that reality in which the whole earth comes to a special mode of reflexive consciousness. We are ourselves a mystical quality of the earth, a unifying principle, an integration of the various polarities of the material and the spiritual, the physical and the psychic, the natural and the artistic, the intuitive and the scientific. We are the unity in which all these inhere and achieve a special mode of functioning. In this way the human acts as a pervading logos. If the human is microcosm, the cosmos is macroanthropos.\(^{233}\)

Berry contends that our unique contribution to the cosmos is not confined to providing conscious self-awareness. We also provide a certain unitive ordering, a certain logos, by integrating seemingly diametric aspects of creation into a functional whole. For this reason, if we are a microcosm wherein these diverse elements are interwoven, then in the same way, the cosmos becomes a manifestation of what is brought into creative unity in us. It is important to note that Berry has not described humans as having domination over the rest of creation, as being stewards of creation, or as being co-creators with God of creation. He simply describes humanity as that being which contributes self-reflexive consciousness to cosmogenesis.

7. Our genetic coding arises from and bonds us to the universe, making us part of a macrophase universe and a microphase bioregion.

When Berry describes the universe as a “genetically related community of beings” he does so in two ways.\(^{234}\) Firstly, living beings are genetically related in the sense that each of their genetic patternings follow the same biochemical principles even if, for example, the actual genetic maps of Irish moss and James Joyce are uniquely different. Secondly, living beings are genetically related in the sense that their genetics have emerged from a shared planetary ecosystem which situates them within and schools them for survival within this same habitat. To illustrate this connection, Berry envisions an unborn grizzly bear sleeping in her mother’s womb. He observes that “in the very shape of her claws is the musculature, anatomy, and leap of the Chinook. The face of the

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\(^{233}\) Ibid., 206.

\(^{234}\) Berry, “Twelve Principles,” 176.
bear, the size of her arm, the structure of her eyes, the thickness of her fur—these are dimensions of her temperate forest community.\(^{235}\)

Berry also associates genetic coding with the psychic-spiritual dimension of the universe. He notes that for humans, "our genetic coding provides the basic psychic and physical structure of our being."\(^ {236}\) Our genetic coding "continues on in both its physical and psychic guidance in every cell of our bodies throughout the entire course of our existence," guiding our spontaneous responses to life's engagements, instilling how we will grow, flourish, heal, speak, think, create and procreate.\(^ {237}\) Resulting from evolutionary processes of at least two billion years, our genetic coding is formed by, emerges from and is in dialogue with the Earth’s systems.\(^ {238}\) This coding specifically guides us for living in the Earth, nowhere else. It bonds us to the rest of the Earth’s systems and attempts to keep us coherently integrated into the planet’s evolutionary processes in ways which are mutually enhancing.\(^ {239}\)

The spontaneousies within us which allow us to express our genetic coding are the same spontaneities which enable a bird to build a nest, capture its food and follow its migratory path. These spontaneities, according to Berry, come from that mysterious source from which the universe itself came into being.\(^ {240}\) In this way, our genetic coding serves as a means of communication between the Divine and ourselves, both in terms of source and context. That is, God as source communicates to us through the spontaneities, through the instincts and nonrational intuitive processes within our own beings.\(^ {241}\) Additionally, because our genetic coding enables us to experience our

\(^{235}\) Berry and Swimme, *The Universe Story*, 77-78.

\(^{236}\) Berry, *The Dream of the Earth*, 194.

\(^{237}\) Berry, "The Dream of the Earth," 200.

\(^{238}\) As Berry succinctly observes, "the eye that searches the Milky Way galaxy is itself an eye shaped by the Milky Way." See, Berry and Swimme, *The Universe Story*, 45.

\(^{239}\) Berry, *The Dream of the Earth*, 196, 199, 208; Berry, "The Dream of the Earth," 200-201, 209.

\(^{240}\) Berry, *The Dream of the Earth*, 196-197; Berry, "The Dream of the Earth," 201.

\(^{241}\) Berry, *The Dream of the Earth*, 211; Berry, "The Dream of the Earth," 211-212.
emotions, to speak, think and create, it "establishes the context of our relation with the
Divine."\textsuperscript{242} How we engage that relationship will be partially influenced by the creative and
free expression of our own cultural heritage and unique individuality.\textsuperscript{243}

For any life to survive, it must be attentive to this primordial communication as it
is realized within its own existence. Should the young grizzly bear described in an earlier
example rely solely upon its own experience rather than the voice of its genetic coding
and the voice of the surrounding climate and ecosystem, it would surely die. Survival
requires that the bear both follow its instincts arising from within and be attentive to
external communications, occurring for instance, when the bear responds to climate
changes, prompting it to seek shelter for hibernation. This need to follow instincts in the
context of environmental communications is even more obvious for the offspring of
spiders or sea turtles which have no contact with a parent.

Without a sensitivity to primordial communication within the universe, the
universe's story comes to an end. ... Such communication takes place beneath the
level of language, even that of genetic language. It functions at the primordial
reality of primal contact. The source of the guidance is both within and without—
the universe as a single yet multiform mode of being. For animals and plants, the
universe is a chorus of voices. Only by heeding these can they find any chance of
fulfillment in life.\textsuperscript{244}

Our genetic coding not only determines our unique response to the rest of creation, it
guides that response to be coherent with the responses from other modes of being in the
universe, so that the collective is an integrated unity. This is a conversation of biblical
proportions.\textsuperscript{245}

\textsuperscript{242} Berry, "The Dream of the Earth," 201; cf., 204; Berry, \textit{The Dream of the Earth}, 196.
\textsuperscript{243} Berry, \textit{The Dream of the Earth}, 200.
\textsuperscript{244} Berry and Swimme, \textit{The Universe Story}, 42. Berry acknowledges that he is using the word
"voice" in a metaphorical sense but prefers this approach since it emphasizes the active role of both the being
(e.g., the grizzly bear) and that which is acting upon it (e.g., the rest of the ecosystem). Once the latter has
acted upon the former, the former responds according to its unique form, but not without some ongoing
interrelatedness (conversation?). These are not merely two billiard balls which have had a brief collision, and
then continue on their way independent of each other. See, ibid., 43.
\textsuperscript{245} Cf., ibid., 93.
8. We are genetically coded for a trans-genetic cultural coding. By being attentive to our genetic coding, we can respond to the ecological crisis and modify our cultural community.

While most life forms from grasses to grasshoppers function in accord with their particular internal self-organizing dynamics which guide their development from primordial cell division to their fully mature complex being with minimal teaching or socialization, humans rely upon considerable enculturation for not only teaching survival skills to new born and adolescents, but to bring the young to a fuller dimension of what it means to be human. Therefore, Berry notes,

Whereas the nonhuman life forms receive their guidance almost completely through their genetic coding, the human is genetically coded toward further transgenetic cultural codings, which in their specific forms are invented by human communities themselves in the various modes of expression.246

Unlike most life forms, humans require both genetic coding and cultural coding to survive, flourish and evolve. We combine instinct and reasoned choice both to establish our niche within the local bioregion and to determine our interactions with other species.247

Our genetic coding brings into creation a being which is capable of creating a second level to its own being—a trans-genetic cultural coding. That is, we are genetically coded to invent another level of ourselves.248 While we are genetically coded to speak, our cultural coding will determine how we speak; while we are genetically coded to think, our cultural development will influence what and how we think, and how we will apply those thoughts.249 Berry contends that our cultural coding responds to the spontaneities called forth by our genetic coding and shapes them according to the norms and values we have been taught or have chosen to embrace.250 Our capacity for free

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246 Ibid., 158-159.
247 Berry, “Ecological Geography,” 231.
248 Berry, The Dream of the Earth, 92-93, 100-102, 162-164, 200.
249 Berry and Swimme, The Universe Story, 159.
250 Berry, The Dream of the Earth, 195.
choice and new invention allows us the uniquely human opportunity to develop cultural patterns which exceed the constraints of our genetic coding and even reform prior cultural trends.251 Our challenge, Berry asserts, is to harmonize our cultural coding to our genetic coding—to that coding which is derived from and integrates us into cosmogenesis—in such a way that our culture strengthens our existence by promoting decisions which are mutually enhancing for ourselves and the rest of the Earth community.252

Meeting this challenge and becoming more attentive to our genetic coding is critical, in the estimation of Berry. Our cultural coding has been a major contributor to the ecological crisis through our anthropocentric belief that humanity can act without regard to ecosystem consequences, through a penchant for increased consumption without concern for waste production or resource depletion, through a hierarchical vision which considered humans to be the only subjects worthy of preservation, and through attempts to establish the human as self-referent and other beings as human-referent. Since our cultural coding seems to be a major source of our present crisis, Berry believes that

We must go back to the genetic imperative from which human cultures emerge originally and from which they can never be separated without losing their integrity and their survival capacity.... We must invent, or reinvent, a sustainable human culture by a descent into our pre-rational, our instinctive, resources.... What is needed is not transcendence but 'inscendence,' not the brain but the gene.253

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251 Berry, "Ecological Geography," 231.
252 Berry, The Dream of the Earth, 200; Berry, "The Dream of the Earth," 200. Not everyone is convinced that such a transformation of our culture is possible. For example, Lora Gross and Lindon Eaves argue that "we cannot know for certain, given the reality of the 'selfish gene,' that humans can evolve a spirituality that makes the transition from the prototypal (and culturally and ecologically destructive) image of the 'brotherhood of man' to the more universal and life-giving notion of the 'beinghood of all nature.'" See, Lindon Eaves and Lora Gross, "Exploring the Concept of Spirit as a Model for the God-World Relationship in the Age of Genetics," Zygon 27, no. 3 (1992): 282.
Human survival, Berry maintains, is only possible if our culture schools us to act in ways which are coherent with our genetic coding.\textsuperscript{254} Our culture must now denounce practices which it earlier favoured if those practices are contributing to a situation which threatens our health, or if—and this is essentially the same thing—those practices pit our cultural habits against our genetic coding or a harmonious integration into the Earth community. Berry admonishes that we must fill our niche within our ecosystem with greater precision. We must become self-limiting since, with our intellect and freedom of choice, we can at least temporarily circumvent the biological factors which would normally constrain us.\textsuperscript{255} Our obligation is to continue the integrity of the creation processes which have advanced cosmogenesis to this juncture, modifying our culture so that we go into the future with the rest of the natural order as a single integral community rather than as a human community which exploits the resources of a seemingly separate, objectified, profane planet.\textsuperscript{256} The human and nonhuman aspects of creation share a common future, a single community, a single sacred origin. Berry maintains that we must act as if we truly accepted this reality.

A return to a mystique of the Earth is, I would say, a primary requirement if we are ever going to establish a viable rapport between humans and the Earth. Only in this context will we overcome the arrogance that sets us apart from all other


\textsuperscript{255} “The dynamism of the creative forces bringing a species into being must submit to the limiting forces that enable a basic pattern of order to impose itself.” See, Berry, “Ecological Geography,” 232.

\textsuperscript{256} Berry and Swimme, \textit{The Universe Story}, 250-251; Berry, \textit{The Dream of the Earth}, 29-30; Berry and Clarke, \textit{Befriending the Earth}, 43-46.
components of the planet and establishes a mood of conquest rather than admiration. ... We need to move from a spirituality of alienation from the natural world to a spirituality of intimacy with the natural world, from a spirituality of the divine as revealed in verbal revelation to a spirituality of the divine as revealed in the visible world about us. 257

One way that we rise to this challenge, Berry speculates, is by re-inventing ourselves within cultural modes which are “guided by visionary experiences that come to us in some transrational process from the inner shaping tendencies that we carry within us, often in revelatory dream experience.” 258 Berry states that we can access these “inner shaping tendencies” through the transrational, revelatory visions that arise in those special psychic moments we call “dreams.” Not only dreams which occur during physical sleep, but those which are intuitive, nonrational creative awakenings to the numinous power ever present in the phenomenal world. “We need only become sensitized to these spontaneities... with critical appreciation.” 259 Such creative, cosmic-centred and cosmic-fired visioning Berry attributes to the shamanic personality and to those others who can be critically attentive to the voices of the Earth. 260

258 Berry, The Dream of the Earth, 201. Theodore Roszak agrees with Berry that the transformation of our culture will require that we listen to the dreams of the Earth. He contends that “the great change our runaway industrial civilization must make if we are to keep the planet healthy will not come about by the force of reason alone or the influence of fact. Rather, they will come by way of psychological transformation. What the Earth requires will have to make itself felt within us as if it were our own most private desire.” Roszak, The Voice of the Earth, 47.
259 Berry, The Dream of the Earth, 211. Kelly Bulkley also recognizes the role of dreams in personal transformation and bringing about a human consciousness which envisions humans as integrally part of ecosystem dynamics. Bulkley argues that dreams can provide an immediate, invigorating and transformational experience of the non-dualistic, integrative consciousness required for such an evolution of human consciousness. Our dreams challenge the ordinary, waking, dualistic and atomistic patterns and presuppositions of our lives which tend to distort reality. He contends that “our dreams direct us beyond the limits of our ordinary categories of life to reveal that we are indeed part of a web of being that expands in many different directions—into the unconscious, into the natural world, and perhaps even into the collective psychic experiences of humankind and the realm of trans-human powers.” Bulkley concludes that “quantum physics and religious panentheism and... dreams: all of these share the key characteristic of pointing us toward...the reality in which we find we are all members of a web of being that extends to the whole of the Cosmos...joined by a common recognition of the reality and the powers of communitas.” See, Kelly Bulkley, “The Quest for Transformational Experience: Dreams and Environmental Ethics,” Environmental Ethics 13, no. 2 (1991): 160-161.
260 Berry, The Dream of the Earth, 16, 211; Berry, “An Ecologically Sensitive Spirituality,” 5; Berry, “The Dream of the Earth,” 212, 215; Berry and Swimme, The Universe Story, 199, 249; Berry and
Because of our present cultural pathology and the need to become more attuned to the intuitive aspects of our genetic coding, Berry concludes that “prior archetypal forms that guided the course of human affairs are no longer sufficient.” But as we become more attuned to our genetic coding, as we become less autistic toward the Earth community, we are developing new archetypes which prompt us to “renew our human participation in the grand liturgy of the universe.” The spontaneities called forth by our genetic coding remain “our best guide” for acquiring the new vision which will direct us into the Ecozoic era.

9. We are part of an emerging Ecozoic era which regards the Earth as a sacred integrated community.

Berry’s penchant for dividing human history into periods can be traced to the influence that the philosopher of history, Giambattista Vico, had upon the former’s study of history. Vico, who was the subject of Berry’s doctoral thesis, considered human history to be a developmental process which could be partitioned into the age of the gods, the age of heroes, and the age of humans. He considered each age to be characterized by a distinctive type of consciousness. Berry follows this pattern while dividing an evolving human story into five periods—Paleolithic, Neolithic, classical-traditional, scientific-technological, and emerging ecological—each of which is characterized by its particular consciousness. In the context of this thesis, the only period which presently requires further discussion is the emerging ecological period, also identified by Berry as the Ecozoic era. This emerging era of human history is also considered by Berry to be

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Berry, *The Dream of the Earth*, 215.

Berry and Clarke, *Befriending the Earth*, 112.


the fourth biological era of the planet, following the Paleozoic, the Mesozoic, and the Cenozoic.\footnote{Berry and Swimme, \textit{The Universe Story}, 242-243.} Thus, Berry brings the biological eras of the planet and the eras of human history into a common classification with the Ecozoic era.

**The Ecozoic Era**

As was discussed earlier, we are experiencing a new revelation about the universe and ourselves as we move from an understanding of cosmos to cosmogenesis. We are increasingly perceiving the universe as a single, multiform, celebratory event moving through an irreversible sequence of transformations. This new awareness heralds the beginning of the Ecozoic era in which humanity will recognize itself as an integral part of these transformations, both spatially and temporally.\footnote{Berry, "Art in the Ecozoic Era," 48.} In the Ecozoic era, "humans will be present to the Earth in a mutually enhancing manner" so that the development, technologies, choices or consumption patterns of the former will not place an unsustainable burden on the latter.\footnote{Berry, "The Meadow Across the Creek," 13, cf., 72, 173, 220; Berry and Swimme, \textit{The Universe Story}, 3, 250-251; Berry 42, 99; Berry, \textit{The Dream of the Earth}, 30, 54, 65.} (For a list of the principles which typify the Ecozoic era, see Appendix D.) The new cosmology provides a meaningful context for our efforts to fashion a viable mode of being for the human species which is mutually sustaining and integral with Earth's other species, so that collectively, we can promote the grandeur, fertility, and renewal of the planet.\footnote{Berry, "The Meadow Across the Creek," 227.} By understanding and experiencing ourselves as part of the Earth's evolving creation, we can move past our autism and enter into the larger community of living beings. We can acquire a more ecological vision which will nurture an awareness of the ways that our microphasic activities affect the greater macrophase of the planet.\footnote{Ibid., 171; Berry, \textit{The Dream of the Earth}, 42, 63.} Berry proclaims that "the ecological vision that we are proposing is the only context that is consistent with the evolutionary processes that

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\begin{itemize}
\itemBerry and Swimme, \textit{The Universe Story}, 242-243.
\itemBerry, "Art in the Ecozoic Era," 48.
\itemBerry, "The Meadow Across the Creek," 13, cf., 72, 173, 220; Berry and Swimme, \textit{The Universe Story}, 3, 250-251; Berry 42, 99; Berry, \textit{The Dream of the Earth}, 30, 54, 65.
\itemBerry, "The Meadow Across the Creek," 227.
\itemIbid., 171; Berry, \textit{The Dream of the Earth}, 42, 63.
\end{itemize}
brought the earth and all its living beings into that state of florescence that existed prior to the industrial age.\textsuperscript{270} It is the only vision that challenges the human to exist with the rest of the Earth community in a mutually enhancing manner.

\textbf{We must learn from the Earth.}

The orientation which underlies this principle once again reveals Berry’s integration of what are commonly recognized as Western and Eastern philosophies. In the modern era of the West, we have tended to believe that the parts comprise the whole, and that to understand any whole, we must first isolate and study the parts. Berry notes that “in the West, the parts are the reality and the whole is adventitious. In the East, the parts come into being within the whole. They are articulated within the whole, and the whole is prior to the part. The part is derivative, and the whole is primary.”\textsuperscript{271} Since Westerners tend to regard the part as primary and the whole as derivative, a context is established for assuming that the human is primary and thus separate from the natural world. The human is seen primarily as an individual, rather than as a functional unity within a larger community; as primarily self-referent rather than universe-referent.\textsuperscript{272}

When Berry speaks of our larger community as the Earth community, he describes that community as self-emergent, self-propagating, self-nourishing, self-educating, self-governing, self-healing, and self-fulfilling because the emergence and continuance of the Earth in all its functions has had a particular autonomy \textit{within} the larger whole of the universe and the numinous mystery which originates, guides and enables these processes.\textsuperscript{273} Human hands were not required for the Earth in all its splendour to come into being. Similarly, it was the creative interaction of the atmosphere, the hydrosphere and the lithosphere which evoked the first living cells on

\textsuperscript{270} Berry, \textit{The Dream of the Earth}, 30.
\textsuperscript{271} Berry and Clarke, \textit{Befriending the Earth}, 117.
\textsuperscript{272} Berry, “An Ecologically Sensitive Spirituality,” 7.
\textsuperscript{273} Berry, \textit{The Dream of the Earth}, 107.
the planet, and it was the biosphere which then joined this earlier collective to fashion further terrestrial unfolding. However, while the biological prosperity of the Cenozoic period evolved independent of any human influence, our present impact on the emergence, propagation, nourishment, governance, health and direction of planetary processes has now become so profound and dissonant that Berry concurrently recognizes that “while the human cannot make a blade of grass, there is liable not to be a blade of grass unless it is accepted, protected, and fostered by the human.” Human choices are now significantly determining the future of the planet. Now, “the future shaping of the community depends on the entire earth in the unity of its organic functioning, on its geological and biological as well as its human members.”

Berry readily admits that humanity does not control nature—the ill-conceived goal of the modern era notwithstanding. Nevertheless, “we do have the capacity for understanding and responding to the story that the universe tells of itself” at the same time as our ability to interfere with the healthy functioning of the Earth’s ecosystems threatens the viability of those systems. Thus, unless we consciously choose to accept, protect and foster the other parts of the Earth community, and unless we choose to act in ways which are mutually enhancing for all aspects of that community, then the life systems of the planet will be facing the next great extinction. In this regard, humanity is directing the next stage of the Earth’s development.

At this juncture of the terminal stages of the Cenozoic era, Berry argues that humanity must humbly recall that it is derivative from Earth systems and that it continues

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274 Berry and Swimme, The Universe Story, 93.
275 Ibid., 247; cf., Berry and Clarke, Befriending the Earth, 42; Berry, "The Ecozoic Era," 1-2, 20.
276 Berry, The Dream of the Earth, 23.
277 Berry and Swimme, The Universe Story, 251.
278 Berry and Clarke, Befriending the Earth, 98-99; Berry, “Art in the Ecozoic Era,” 46; Berry, “A New Era,” 63.
to be sustained by and within those systems. If humans are derivative and dependent, then human technologies, governance, education, health, and economics must be compatible with the technologies, governance, education, health, and economics of the natural world. Human activity must be consonant with the Earth’s systems. For our society to be functional, it must be contextualized within a functional story of the Earth’s continuing genesis. We must become more biocentric and less anthropocentric, without forgetting our unique contribution within continuing cosmogenesis. Remaining on our present course will surely lead to our demise and the diminishment of the planet. While humans cannot do without the Earth, the Earth can do without humans, although it would assuredly be diminished. So, we can choose to move into the Ecozoic period and flourish, or we can continue on our current course at the terminal phase of the Cenozoic era in a time frame which Berry identifies as Technozoic—i.e., time “when we would depend even more extensively on the scientific skills we use to impose our mechanistic processes on the earth’s biosystems.”

The reformed thinking which Berry proposes would theoretically lead to less human pressure on the planet, while challenging humans to live more creatively within the constraints placed upon its species, rather than developing technologies to overcome its natural limitations. Even though the ill-advised application of our sciences and technologies have arguably brought us to this ecological crisis, Berry steadfastly asserts that they are critical for our survival and for our entry into the Ecozoic era.

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280 Berry, "The Meadow Across the Creek," 108, 125, 161-162; Berry, "A New Era," 63; Berry and Clarke, Befriending the Earth, 42; Berry, "The Ecozoic Era," 13; Berry, The Dream of the Earth, 35, 121-123; Berry, "The New Story," 198-199.
282 Berry and Clarke, Befriending the Earth, 106.
283 Berry, The Dream of the Earth, 69.
10. The creativity of the universe and of our lives involves times of violence, heroism and grace.

Exuberant creativity often emerges from profound destruction—from the destruction of one can emerge another as newly transformed. The universe is both violent and creative, destructive and cooperative. Berry presents the example of the explosion of the supernovas which permitted more complex elements to be forged in the enormous heat of their destruction. Or the case of the female spider who eats the male after their mating ritual; “is this a destruction on the part of the female or cooperation on the part of the male?”

At every level and at every time, the universe story has creatively engaged violence and destruction. There has always been an expansive wildness and an ordering discipline. But these are seldom equally balanced for it is at situations furthest from equilibrium that creativity flourishes most and new dynamics emerge.

Berry proposes that “resistance, energy [and] dreams…are the sources of all violence.” Concerning resistance, he notes that all things resist efforts to reduce their presence, whether it be two rocks resisting attempts to compress them into a single rock—a macroscopic version of the Pauli exclusion principle—or a sea lion defending his turf and harem against other males. Secondly, the existence of any structured thing requires the expenditure of energy both for its formation and for its perdurability. The Second Law of Thermodynamics reminds us that any system starved of new energy will inevitably decay through increased entropy. Finally, all things tend to move toward the

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284 Berry and Swimme, The Universe Story, 51.
287 Berry and Swimme, The Universe Story, 53.
288 The Pauli Exclusion Principle states that “the existence of stationary states in which two or more electrons would have the same set of quantum numbers is forbidden.” That is, according to the Pauli exclusion principle, no two particles can occupy the same quantum state; they cannot have the same position and the same velocity. See, Armstrong and King, Mechanics, Waves, and Thermal Physics, 390. Cf., Hawking, A Brief History of Time, 67-69; Berry and Swimme, The Universe Story, 52.
fulfillment of their inner nature, whether this be in response to their quantum tendencies, their autopoiesis or "the epigenetic pathways folded into a particular ontogeny."\textsuperscript{289} Resistance manifests as a determination to preserve past accomplishments while energy, the cost of creativity, ordains which state of being among the present options will flourish. Concurrently, the inclination toward new ways of being, seeking to fulfill internal drives, hints at the realization of today's dreams tomorrow. Consequently, every being in the universe craves sufficient free energy for survival and development while innately resisting extinction. Resistance, energy and dreams are therefore essential elements in the universe's emergence, forever engaged in a creative tension to support continuance and incite invention. The universe continually calls forth new, creative responses which must nevertheless be integral with the macrophase dynamics and constraints of the region if they are to survive. Thus, Berry reflects, existence invariably engages both violence and creativity. The "violence associated with the hawk starving to death or the vole being consumed are intrinsically tied to the creativity of each."\textsuperscript{290}

However, Berry argues, the emergence of humanity has brought a new and disruptive interplay to the interaction of resistance, energy and dreams. We avoid or destroy every possible resistance or threat to our security; we deny the intrinsic cost of our actions; and we magnify or even satisfy our desires or dreams without regard to limitations. Berry's concern is not so much that we seek to survive, since every being values and acts with vigor to preserve its own survival. But we have the ability, means and desire to pursue not simply our survival but also our complete comfort, and we do so in ways which affect not only ourselves but also the macrocosmic community of the Earth. We blithely incur ecological debts with the denial of the addict. Rather than seeing constraints, limitations and even some suffering as sources for new beginnings, for

\textsuperscript{289} Berry and Swimme, \textit{The Universe Story}, 53.
\textsuperscript{290} Ibid., 56.
new ways that the numinous mystery might emerge, we seek to preclude surprise, and trust nothing but our own invention. Berry reminds us that the universe has always had a sacrificial dimension and has always transformed in ways then unimaginable.\textsuperscript{291}

Sacrifice—the idea that every gain involves a cost—and surprise—the idea that the universe responds to moments of creative tension with unforeseeable solutions—are intrinsic to the dynamics of cosmogenesis. Therefore Berry cautions that

a society that takes the elimination of all hardship and all suffering as the essential aim of its major social institutions will create a flat existence for its humans and a deleterious world for its nonhuman surroundings. ... The pursuit of pain for its own sake is as pathological as a life dedicated to avoiding pain of any sort. The mystery of existence at times asks terrible things of us; suffering beyond understanding. The hope in such bitterness is the creative resolution somehow intrinsic to the suffering.\textsuperscript{292}

Berry reminds us that if the joy of living came without cost, or if the inevitability of death were not a condition of life, then the whole of our existence might tilt toward the trivial. Yet the universe itself, by its very structure and functioning, does not bring forth such mediocre existence. Rather, it is our society, at the terminal phase of the Cenozoic era, which seeks to invent such a sterile, dissociated existence.\textsuperscript{293} It is our society which responds to cosmogenic violence with destruction, rather than engaging such violence as a tension which prompts new creativity.\textsuperscript{294}

\textsuperscript{291} Berry and Clarke, \textit{Befriending the Earth}, 80, 132-135.
\textsuperscript{292} Berry and Swimme, \textit{The Universe Story}, 59-60.
\textsuperscript{293} Ibid., 248.
\textsuperscript{294} Lonergan and Dunn, eds. \textit{Gaia's Elegant Gnome}, chapter 6, pp. 2-3. Consider, also, the reference to prokaryotes and eukaryotes in Appendix B. It is important to distinguish violence from other than human sources or cosmogenetic violence (e.g., erupting volcanoes or ice storms), and violence from human sources (e.g., "ethnic cleansing" or sexual assault). The former is a normal event in cosmogenesis leading to a gradual and perhaps surprising unfolding of the universe. The latter is a human-created, pathological aberration which is not consonant with the spontaneities which bring about the flourishing of the human and the rest of the Earth community. The latter is not a faithful response to the invitation of the numinous mystery which enables and guides cosmogenesis.
As a corrective to our current trend toward numbing mediocrity, Berry proposes the example of the North American native. Through their rejection of the notion that life can be so micro-managed as to exclude conflict or pain, Berry asserts that they realize that life tests the deepest qualities within the human personality, qualities that emerge in heroic combat not merely with others, but also with oneself and with the powers of the universe. The sacred function of enemies was to assist one another to the heroic life by challenge, even by the challenge of death.295

Accordingly, one does not so much hope for peace as for creative tension since it is the latter which arouses heroic achievement and “forces the best that is in us to emerge into its proper expression.”296 When we purchase peace and comfort at the expense of creativity and growth, we strive for mediocrity—a trait which has never characterized cosogenesis.

Cosmic Transformations are Moments of Grace

Berry proclaims that all moments of great transition in the universe story are sacrificial moments. He observes that “there is a sacrificial dimension to the universe. It is a given that things must die in one form to fulfill their mission in another form.”297 Accordingly, our transition from a Cenozoic period will be not be achieved without considerable sacrifice as well. Berry is not simply speaking of the common sacrifice that is part of every existence—the way the salmon is sacrificed to the grizzly so that the ecosystem can continue its normal dynamics, or the way we will be sacrificed to the bacteria which will inevitably consume our corpse.298 In addition to this level of sacrifice, Berry identifies another level at which the human will need to choose to act in ways contrary to our present cultural conditioning. “There is the sacrifice of so many of

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295 Berry, *The Dream of the Earth*, 190.
296 Ibid.
298 Berry and Clarke, *Befriending the Earth*, 132-134.
those things that we think are owed to us. The problem is that we feel the blessings we have are things we have a right to, that it is an unjust world if we do not have a superabundance.299

To overcome the resistance which will undoubtedly accompany such sacrificial choice, Berry suggests that we need to recognize the attraction, joy and creativity involved in transformation. He describes cosmic transformations as moments of grace. In an ecozoic perspective, "the sequence of transformation moments of the universe would be understood as cosmological moments of grace to be celebrated religiously with special rituals. But above all, these moments would appear as revelatory of the ultimate mystery of the universe itself."300 Moments of grace are unique opportunities when cosmogenesis moves through a transition phase, often attended by considerable violence, in response to a challenge. Berry asserts that humanity is undoubtedly facing such a profound transition moment—an ecological challenge which threatens its very existence—and is presently coming to a critical awareness of the devastation of the industrial, technological age. Humanity is beginning to understand

the need for a mutually-enhancing mode of human presence on the Earth, ... our human identity with all the other modes of existence that constitute with us the single universe community...[and] that what happens to the outer world happens to the inner world.301

He proposes that a new vision is taking the place of the dream of a technological paradise. This dream is yielding a new myth and driving transformed action.302 While

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299 Ibid., 134.
300 Berry, "An Ecologically Sensitive Spirituality," 6; cf., Berry, "The Cosmology of Religions," 3, 7. Similarly, Harold Wood contends that by celebrating and revering celestial events and even "biogeochemical cycles," humanity will both gain a deeper appreciation of the ecological reality of our biosphere and a greater respect for its integrity and maintenance. From this, he believes, we can experience a covenant with the Earth and acknowledge a sacredness of the biosphere, and presumably live in greater harmony with the planet. See, Harold W. Wood Jr., "Modern Pantheism as an Approach to Environmental Ethics," *Environmental Ethics* 7, no. 2 (1985): 160.
301 Berry, "The Meadow Across the Creek," 236.
302 "For the dream drives the action. In the larger cultural context the dream becomes the myth which both guides and drives the action." See, Berry, "The Meadow Across the Creek," 237.
Berry cautions us that such moments of transition or grace are transient, he nevertheless maintains that many dangerous moments of crisis have been successfully navigated throughout the universe’s story. This suggests to Berry that “the universe is for us rather than against us.”\footnote{Berry, “The Meadow Across the Creek,” 238; cf., Berry, \textit{The Dream of the Earth}, 222.} He reminds us that we are an exodus people being transformed, being guided to a new way of being.\footnote{Berry, “The Ecozoic Era,” 22-23.}

**CONCERNING BERRY’S PERSPECTIVE**

Sallie McFague states that she agrees with Berry’s impression that “most contemporary people do not have a story of the cosmos that on a daily basis helps them to understand how they and other created beings fit into the scheme of things.” She concludes that creation spirituality and people such as Berry provide us with an appreciation of the mystique of the Earth, of its awesome mystery and divine presence, of its sacred character and of the numinous quality of everyday reality. She surmises that “anyone who reads Berry and is not moved to a deeper level of connection with and appreciation of our glorious planet must have a rather closed, dry soul.”\footnote{McFague, \textit{The Body of God}, 70-71. McFague believes that these aspects of creation spirituality, as told by Berry, are both its greatest contribution and the source of its “greatest weakness.”} She also agrees with Berry that humanity must move beyond democracy to biocracy, reinventing what it means to be human while living within a home common to all planetary entities.\footnote{McFague, “Cosmology and Christianity,” 36.}

However, there is one aspect of Berry’s proposals with which she takes particular exception. She asserts that what Berry and other creation spirituality writers lack is a sense of the awful oppression that is part and parcel of the awesome mystery and splendor. The universe…has been a story of struggle, loss, and often early death. To see the universe and especially our planet ‘as the primary mode of the divine presence,’ as Berry does, is to claim implicitly an optimistic arrow in the evolutionary story, a position that Berry’s mentor, Teilhard de Chardin, embraced but few if any scientists are willing to allow. Creation spirituality suggests an ungrounded optimism, based in part on its reading of evolutionary history but also on an illumination model of how
human beings change: to know the good is to do the good. If we learn about the common creation story and where we fit into the scheme of things, we will change.  

There are sound reasons to agree with McFague’s assessment—at least, in part. I agree that Berry spends considerably more time writing and speaking about the numinous quality of creation than about “awful oppression.” But it is important to note both why this is so, and to acknowledge that Berry does not omit this aspect altogether. Firstly, as McFague herself notes, part of Berry’s task is to bring humanity to a fuller sense of itself, to bring it back to an awareness of its membership within the Earth community, to bring it to an awareness of the splendour of the universe. Berry seeks to balance a prior preoccupation with the “fall” of creation and a certain revulsion which humanity has held for the rest of the created order. Accordingly, he reawakens us to that which is intrinsically alluring about creation, and that prescription, admittedly, doesn’t favour the “awful oppression.” Secondly, Berry does deal with the hardship and trauma of cosmogenesis, as the tenth principle above notes. But he does so within the larger vision of cosmogenesis. That is, for Berry, the universe is to be regarded as “both benign and terrible, but consistently creative in the larger patterns of her actions.” Since this is a universe with purpose, a universe which is going somewhere, even that which threatens and frightens us is part of that teleology and contributes to the journey. That is, loss, suffering and strife are not without purpose toward a greater and emerging good. This contextualization, while not removing loss, threat or danger, does make them meaningful, and can unfortunately, seem to understate their cost.

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308 Consider, also, the following admonition: “Nature—with its frequent droughts, its devastating floods, its hurricane winds, its termites ready to destroy our dwellings, its plague-bearing animals, its malarial infections—assaults and challenges us, and we need all our skills and effective technologies to defend ourselves against such forces that are ever ready to destroy us.” See, Berry, The Dream of the Earth, 67; cf., 42, 96, 208-209. Also, Berry and Clarke, Befriending the Earth, 132-135.

309 Berry, The Dream of the Earth, 67.

310 In one sense, McFague’s echoes the theodicy argument; in this case, if the universe is so filled with the divine presence, if the universe is enabled and guided by the divine as Berry suggests, then why is
In the same vein, Gordon Kaufman observes that that which “is destructive of, or threatens to destroy, human existence or well-being,” that which “can make human fulfillment impossible,” that which can “cause great suffering and [is] enormously destructive of life,” we have tended to pronounce as evil.311 But for Kaufman, much of what we label evil is the result of either the natural manifestation of the complex patterns and movements of cosmic history within which we are formed and sustained, or the bungling and malevolence of humanity. The former is intrinsic to cosmic evolution, and to characterize it as evil reveals a certain anthropocentrism which belies the larger story and ignores the benefits which arise from facing adversity.312 The latter concerns moral evil and our sinfulness which might be summarized as our alienation from God and “our failing to live and act in harmony with the basic ecological and historical trajectories which have created human existence, and which alone are capable of continuing to sustain and enhance it.”313 For Berry, the former is not evil while the latter is. He describes “the loss of relationship, with its consequent alienation, [as] a kind of supreme evil in the universe,” arguing that that which degrades or separates us from a mutually enhancing relationship with the rest of creation and the divine—e.g., anthropocentrism—is evil.314 Thus, Berry will not only denounce the evils of suicide, homicide and genocide, he will also insist that we recognize the evils of biocide and geocide.315

311 Kaufman, In Face of Mystery, 360.
312 Ibid., 335-336, 360-362.
313 Ibid., 336. Kaufman dislikes the classification “moral evil” since “the theocentric concept of sin [which he formulates] cannot be properly understood as a form of either natural or moral evil.” However, he accepts its use as a “convenient point of departure.” Ibid., 362; cf., 335-336.
314 Berry and Swimme, The Universe Story, 78, cf., 250. Also, Berry, “The Meadow Across the Creek,” 74; Berry, “The Cosmology of Religions,” 145.
315 Berry, “The Cosmology of Religions,” 38. Luc Ferry has denounced such a wide definition as that which would be held by a “zealot of nature.” He also argues with considerable passion that the “rootedness” which ecology and the new cosmology seek for humanity— a recognition of our rootedness in
Does this more cosmic-centric perspective produce “an optimistic arrow” as McFague claims? Probably. It certainly does not foster a cosmic pessimism, as was discussed earlier. But I would describe it as a critical optimism or guarded hopefulness since it is tempered by a recognition of the failures of our present culture (recall the six trancendecies), the enormity of the task before us (re-inventing the human, our technologies, economics and social structures), and the dire consequences if we fail to convert to Ecozoic principles (probable termination of the human). Yet, as McFague observes, Berry writes with a certain lyrical quality which undoubtedly conveys some of this optimistic flavour. Berry tends to provide a historical narrative rather than a metaphysical synthesis. He often employs rhetorical and poetic language to exhort his readers, recognizing that people need to be motivated by intelligence and passion, and are merely overwhelmed to inertia by the doom-filled data of the latest environmental assessment. Conversion through guilt or terror is usually short-lived, at best.\footnote{Roszak maintains that “the habitual reliance [of ecologists] on gloom, apocalyptic panic, and the psychology of shame takes a heavy toll in public confidence. …[T]oo often the reports [of ecological destruction] are grounded in a new environmental puritanism that almost delights in castigating our sins of self-indulgence…as if guilt were the only way to instill virtue.” He argues that because of the connection between consumerism and the sense of personal fulfillment, shaming the public for their over-consumptive ways will produce few positive results. The virtues of courage, self-sacrifice, loyalty, and daring need to be cultivated within people and contextualized within our universe story so that wasteful extravagance becomes morally offensive. See, Roszak, \textit{The Voice of the Earth}, 35-36, 39, 253.} Because of his literary style, Berry has sometimes been accused of being unduly optimistic and superficial. I believe that this critique can at times be an unfortunate confusion of style with content.\footnote{Anne Marie Dalton has examined Berry’s use of “provocative and evocative” language, and has defended his use of a rhetorical style. See, Dalton, “Thomas Berry: Context and Contribution,” 26-27, as}
And finally, Berry himself is critical of Teilhard’s optimism, especially the latter’s uncritical confidence in scientific and technological progress.\(^{318}\) And while Berry believes that the intelligence working within cosmogenesis might be awakening us to our ecological dilemma so that our demise might be avoided, he is not as certain as Teilhard that humanity will successfully navigate into the next stage of cosmic history.\(^{319}\) Nevertheless, he will not dwell so long on the present and future tribulations that his readers become paralysed. The “story” must inspire if humanity is to have the psychic energy necessary for the magnitude of the task before it.\(^{320}\)

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\(^{318}\) Berry and Clarke, *Befriending the Earth*, 25.

\(^{319}\) “In this disintegrating phase of our industrial society, we now see ourselves not as the splendor of creation, but as the most pernicious mode of earthly being. We are the termination, not the fulfillment of the earth process. …We are the affliction of the world, its demonic presence. We are the violation of earth’s most sacred aspects. The anthropocentrism from which this violation proceeds is…enshrined both in our humanistic learning and in our religious and spiritual teachings.” Berry, *The Dream of the Earth*, 209; cf., 205-208.

\(^{320}\) Ibid., 222-223.
CHAPTER FOUR

HUMAN HEALTH WITHIN THE NEW COSMOLOGY

4 The Lord created medicines out of the earth, and the sensible will not despise them.

... 7 By them the physician heals and takes away pain; 8 the pharmacist makes a mixture from them.

God’s works will never be finished; and from him health spreads over all the earth.

Sirach 38: 4, 7-8

In *The Dream of the Earth*, Berry proposes that in

the emerging ecological age, the age of the growing intercommunion among all the living and nonliving systems of the planet, ... medicine in this context would envisage the earth as primary healer. It would also envisage integration with earth’s functioning as the primary basis for health for the human being.¹

These two proposals—that the Earth is our primary healer and that its functioning serves as the primary basis for our health—inform the central themes for this chapter. This chapter will begin with an overview of Berry’s position, including how this would manifest in a functional spirituality and a medical system derived from ecology. Then it will re-examine the earlier conclusions concerning spirituality, the spiritual dimension of health, health and healthcare in light of Berry’s position and the context provided by the new cosmology. Finally, two examples will be offered to illustrate the product of this re-examination with one of these examples recalling earlier discussions on Traditional Chinese Medicine in the section on cosmology and health in the second chapter.

¹ Berry, *The Dream of the Earth*, 104.
UNDERSTANDING THE EARTH AS PRIMARY HEALER

Human Health is derivative from Planetary Health

In the first chapter, it was stated that ecosystem health was a prerequisite for human health; it is simply not possible to have healthy humans on a sick planet. So when Berry states that “we cannot have well humans on a sick planet, not even with all our medical science,” there seem to be nothing particularly arresting about his statement. Yet this position seems to run counter to our usual approach to health and illness since we knowingly persist in industrial practices which threaten the well-being of ourselves and the rest of the planet, and continue to assume that good medical care is the prime determinant of our personal health. Berry is arguing that “the well-being of the planet is a condition for the well-being of any of the component members of the planetary community” because the Earth, as an interrelated fellowship, “cannot survive in fragments.” Berry reminds us that we have emerged from the cosmogenic processes of the Earth; we have been formed and are sustained by these same processes; we cannot survive without them, while the Earth can surely survive without us. Therefore,

the Earth is primary and the human derivative. ... The first concern in every field of human endeavor must be the integration with the Earth community. If this community is diminished in its well-being, then every particular being within the Earth community is so diminished. Yet we try to be healthy on a sick planet, through medical technologies. ... Absurd.

Because we are derivative, because we are dependent on Earth processes for our existence, Berry cautions against practices which compromise the health of the planet,

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2 Berry and Swimme, The Universe Story, 257.
especially since “Earth sickness is a difficult thing to cure.” The health of the whole must be the primary concern for the health of the component members to be realized. For these reasons, Berry seeks our integration with the rest of the Earth community in ways which are mutually enhancing for each, and concludes that the Earth is our primary healer.

In Western medicine, we have tended to adopt the opposite perspective. In the first chapter, reference was made to the classic debate between Louis Pasteur and Claude Bernard as to whether the “germ” caused disease or if disease resulted from a compromised milieu intérieur being overwhelmed. Pasteur’s victory in that debate set the direction of Western medicine as it sought to isolate the single offending cause of each disease so that it might be eradicated. If a person came down with a “head-cold,” then an antibiotic was prescribed to kill the invading bacteria; if a person suffered from hypothyroidism, then a form of synthetic thyroxin was administered to augment the body’s diminished production of thyroid hormone. The therapy sought to isolate the single cause and eliminate it so that the person’s health would be restored. The health of the constituent parts was seen as primary for the health of the whole person to be realized. Of course, Claude Bernard argued the inverse, and in this respect, his position parallels that of Berry’s.

So while it seems obvious to declare that it is not possible to have healthy humans on a sick planet, it is not entirely surprising that we nevertheless knowingly persist in destroying the health of various planetary ecosystems since the dominant model for human healthcare in the West has taught us that it is possible to move from the particular to the general, to advance health by addressing local situations without regard to the whole. Furthermore, when confronted with a seemingly incurable disease, we have

5 Berry, "The Meadow Across the Creek," 199.
6 Refer to footnote 83 on page 47.
tended to believe that it was "only a matter of time" and enough research funding before a cure would be found. Our belief in the myth of progress and the myth of science has nurtured our optimism for overcoming each and every threat to our health, and any limitations which the environment might place upon us. 

We need to see Ourselves as Part of the Ecosystem

To address the contradictions between our dependence on ecosystem health, yet our devastation of the planet, between the necessity of collective health, yet our focus on isolated illness, Berry prescribes a "deep cultural therapy." Such a therapy must address our "commitment to a discontinuity between the non-human and the human" and overcome our autistic isolation from the planet. It must not only help us to envision ourselves as formed and sustained by ecosystem dynamics, but also to experience ourselves as integral to these creative forces. It will awaken us to the psychic energies that beckon from within the numinous dynamics of the cosmos and come to a certain level of consciousness in our dreams and intuitive inspirations. And as we seek to reinvent ourselves and our culture through this "deep cultural therapy," we will come to realize that

...we are not left simply to our own rational contrivances. We are supported by the ultimate powers of the universe as they make themselves present to us through the spontaneities within our own beings. We need only become sensitized to these spontaneities... with critical appreciation.

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8 Berry and Clarke, *Befriending the Earth*, 100; Berry, "A New Era," 62.
9 Berry, "An Ecologically Sensitive Spirituality," 7; Berry, *The Dream of the Earth*, 42.
10 During our dreaming, "we awaken to the ultimate shaping forces that illumine our understanding and guide our actions. These shaping forces abide deep in the human psyche in forms integral with our genetic endowment, forms that carry within them the impress of the universe from its beginning through every stage of galactic development, the shaping of the earth, the emergence of life and finally attain their expression in the psychic structure of the human; a stupendous process, surely." See, Berry, "The Dream of the Earth," 211-212; cf., Berry, "The Meadow Across the Creek," 230-231.
11 Berry, *The Dream of the Earth*, 211. Cf., "...the Spirit is the powerful but...often unnamed healer who mediates differences with an eye toward mutuality and reciprocity....[T]he Spirit exists dynamically but deferentially within creation as the power of unity and cooperation between all natural processes. Outside the immanent Trinity, the Spirit works to promote intimacy and heal divisions among God's creatures." See, Wallace, "Recovering the Spirit in Nature," 17.
This therapy will require a myth which can displace the myths of progress and industrialization, reawaken us to our place and time in cosmogenesis, and invigorate us with the tremendous psychic and spiritual energy necessary to fuel the transformation demanded; it will require a felt-sense or experienced mystique of the land.  

Berry recalls that in the Paleolithic era, a mystique for the land existed. Humans lived in a world where “physical and psychic forms of energy were related. We found the meaning of existence as we responded to the energies about us. These we perceived ultimately as spirit forces. … A feeling of identity with the earth was at its height.”

Throughout the Neolithic and into the classical periods of human history, cosmic rituals energized the human community as absolute mysteries were enacted, ultimate meaning discerned and primary needs fulfilled. In such societies, the Divine, the human and the rest of creation each “communicated energy to and evoked energy from the others.”

Health resulted from living harmoniously within these ever-present energies, or could be restored through appeal to their influence. A spirituality for the Ecozoic age must recapture these perspectives and an awareness of these energies with a postcritical naiveté, Berry suggests. In such a context, we would feel a constant communion with the numinous cosmic forces from which we are born and in which we are sustained—forces which have both a physical and a spiritual dynamic. Therefore,

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12 Berry, The Dream of the Earth, 32-33; Berry, “Creative Energy,” 183-185. Ian Barbour notes that when Christians speak of renewal or personal transformation, they often speak of the transition from brokenness and estrangement to wholeness and reconciliation resulting in greater self-acceptance and liberation. However, unlike Berry’s perspective, Barbour contends that “nature is seldom central in such experiences of personal transformation.” For Berry, the natural order becomes the locus for such transformation partly because the Divine resides in that place. The perspective recounted by Barbour is perhaps influenced by the predominant view that the Divine is transcendent. See, Barbour, “Experiencing and interpreting Nature,” 461.

13 Berry, “The Meadow Across the Creek,” 200.


15 Berry, “The Meadow Across the Creek,” 223-224; Berry and Swimme, The Universe Story, 4; Berry and Clarke, Befriending the Earth, 4.

16 Berry, “An Ecologically Sensitive Spirituality,” 5-6; Berry, “The Spirituality of the Earth,” 155-156. Consider Berry’s statement that “the earth acts in all that acts upon the earth. The earth is acting in us whenever we act. In and through the earth spiritual energy is present. This spiritual energy emerges in the
Subjective communion with the earth, identification with the cosmic-earth-human process, provides the context in which we now make our spiritual journey. ... It is the journey of primordial matter... toward an ever more complete spiritual-physical intercommunion of the parts with each other, with the whole, and with that numinous presence that has been manifested throughout this entire cosmic-earth-human process.  

For Berry, the promotion of health would be essentially intertwined with this spiritual journey.

Medical Care in the Ecozoic Era

More specifically, in Berry’s vision for the Ecozoic era, the profession of medicine must consider itself to be part of the profession of ecology since human health is intimately dependent upon ecosystem health.  

Furthermore, the profession of Medicine must now consider its role, not only within the context of human society, but in the context of the earth process. A healing of the earth is now a pre-requisite for the healing of the human. Adjustment of the human to the conditions and restraints of the natural world constitutes the primary medical prescription of human well-being. Nothing else will suffice. The medical profession needs to establish a way of sustaining the species as well as the individual if the human is to be viable as a species within the community of species.

The primary role of the physician, according to this perspective, is to guide humanity into ways of being which recognize and enhance its interrelatedness with the rest of the Earth community. Such a physician would reverse the current trend toward increasingly

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18 According to Berry, we must “understand that the human is a subsystem of the Earth system. ...[A]ll human activities and professions are derivative. Human health is intimately dependent on the health of the Earth. Ecology is not a part of medicine. Medicine is a part of Ecology. We cannot have well humans on a sick planet.” See, Berry, "The Meadow Across the Creek." 101; cf., 199-200.
19 Ibid., 120.
20 Berry, The Dream of the Earth, 104; Berry, “A New Era,” 60.
technological health interventions, preferring skills which engage "those subjective and evocative processes whereby living creatures achieve integral well-being." \(^{21}\)

Accordingly, medical and biological technologies or resources which function in accord with Earth's technologies and the natural recuperative powers of the patient would be preferred. \(^{22}\)

Berry's proposal that the Earth is our primary healer is summarized in Table 4 on the following page.

*Preliminary Reflections on Berry's Prescription*

While Berry has developed a general critique of our Western industrial society and has formulated a functional cosmology and a functional spirituality to inform an alternative model, he has not drawn detailed blueprints for the infrastructure of the Ecozoic society or for its professions. He has reminded us that the Earth is our primary healer, law giver, educator, economist, scripture and mode of divine presence. \(^{23}\) Yet, with perhaps the exception of education, his task has been to provide an over-arching philosophical base for envisioning how society and its professions might evolve if we are to move into the Ecozoic era. \(^{24}\) Others are seemingly invited to continue his work and to suggest the specific components of this Ecozoic dream. The focus for the next section of this thesis will be to contribute part of a possible model for healthcare and for understanding the spiritual dimension of health given the principles of the new cosmology and the Ecozoic era.

\(^{21}\) Berry, "A New Era," 62.

\(^{22}\) Ibid., 63; Berry and Clarke, *Befriending the Earth*, 256-257. Consider, also, Berry's contention that "the spontaneities of nature are lost. The true role of human science and technology is to integrate the human more effectively within the dynamics of the earth process, not to effect some artificial substitute for this process." Quoted from Berry, "The Meadow Across the Creek," 160.

\(^{23}\) Berry and Swimme, *The Universe Story*, 255; Berry, *The Dream of the Earth*, 120.

But before that task is undertaken, there remain a few aspects of Berry’s vision which require comment. Berry’s contention that “Medicine is a part of Ecology” seems

**Understanding the Earth as Our Primary Healer**

Cosmogenesis must be understood to have a psychic-spiritual as well as a physical-material dimension from its inception.

Human health is derivative from ecosystem health.

The health of the planet is primary, the health of humans is derivative.

We have emerged from and are sustained by the Earth’s functioning.

Integration with the rest of the Earth community in ways which are mutually enhancing for each is primary and absolutely necessary.

A mystique of the land is required wherein we perceive, respond to and correspond with the energies about us.

New cosmic rituals which celebrate the transformational moments of grace of irreversible cosmogenesis can reawaken us to our membership in the Earth community and the spiritual quality intrinsic to the Earth.

Medical technologies must be patterned upon and complement Earth technologies.

Table 4

to be reminiscent of another often quoted Berry statement: “I suggest we might give up the bible for awhile, put it on the shelf for perhaps twenty years.”**25** Both statements are provocative; they grab our attention, and at least at first hearing, might seem rather outrageous. And in both cases, the statement must be understood in both its literal sense

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**25** Berry and Clarke, *Befriending the Earth*, 75.
and within a broader context. In the case of the bible, Berry is not suggesting that it be shelved for lack of worth; he quotes its texts and metaphors frequently enough to dispel that view. Indeed, he speculates that an absence from this source might result in “a more adequate approach to it” as we return to it with refreshed and unfettered minds.  

However, in Berry’s view, a preoccupation with the written scripture has retarded our reading of the primary “scripture”—creation. As a corrective, and to help us overcome our autism to the latter, he recommends that we put the former aside for a while.

Similarly, with medicine and ecology, Berry is probably not suggesting that medical schools must become part of a faculty of ecology in a literal sense. Yet, without a more ecological perspective, healthcare is simply ignoring both a significant factor in human health and a philosophical perspective necessary for human survival. And when he alleges that “if medicine is practiced without due attention to the health of the planet and of the entire human community and the coming generations, then medical practice itself could bring about a debilitation both of the planet and the human species,” he is not indicting medical practice alone for the ecological crisis.  

Berry is informing his readers that “the basic difficulty” with our present institutions, professions, and activities “is that we have not looked beyond the more immediate dimensions of our industrial-technological-commercial activities.” Seemingly innocent and isolated acts can ultimately contribute to ecological disaster. In considering medicine and looking beyond its more immediate dimensions, Berry would undoubtedly ask how the practice of medicine has contributed to our autism to the Earth, how its technologies, attitudes and mythology have separated us from the planet’s ecosystems. To the extent that it has

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26 Ibid.
27 Berry, "The Meadow Across the Creek," 199-200.
28 Ibid., 199.
29 Berry cites the example of the inventor of the first internal combustion engine. Given that it was a small device that used just a little petroleum and offered the prospect of almost immediate benefit, the inventor probably gave little thought to any harm that might eventually derive from its use. Ibid.
done these things or has reinforced them, then it has brought “about a debilitation both of
the planet and the humans species.” At the same time, when medical practice helps to
awaken us to our larger place in the Earth, when it helps its patients to look “beyond the
more immediate dimensions” of our existence, then the profession is sustaining “the
species as well as the individual.”

But this admonition is not limited to the medical profession alone. Each of the
professions is exhorted by Berry to do likewise, within the context of its particular
discipline, since all professions can contribute to either the health or the debilitation of
the planet. Of course, part of the challenge for all professions will be to accomplish this
reformation while we remain dependent on our present technological, economic and
industrial systems. And part of the challenge will be to bring urban dwellers—who will
not drink tap water unless they filter it first, who are cautioned by air-quality advisories
and U.V. indexes, and whose most common experience of “wildlife” is rush-hour
commuting—into a more intimate relationship with the planet. Where or how can urban
dwellers have an experience of the numinous dimension of the created world in today’s
concrete cities? As Berry observes, the challenges presented by human illness have
changed as our industrial complex has expanded.

In prior centuries, human illness was experienced within the well-being of the
natural world with its abundance of air and water and foods grown in fertile soil.
Even city dwellers with their deteriorated natural surroundings could depend on
the purifying processes of the natural elements. The polluting materials
themselves were subject to natural decomposition and reabsorption into the ever-
renewing cycles of the life process. But now this is no longer true. The purifying
processes have been overwhelmed by the volume, the composition, and the
universal extent of the toxic or non-biodegradable materials. Beyond all this, the
bio-rhythms of the natural world are suppressed by the imposition of mechanistic
patterns on natural processes.30

30 Berry, “The Meadow Across the Creek,” 119-120.
Faced with this challenge and these obstacles, how might healthcare develop a more ecological perspective? Even if one acquires an awareness that human health is derivative from planetary health, how is this knowledge at all beneficial to the asthmatic wheezing in the heavy smog of an urban centre? The remainder of this chapter will suggest a possible answer.

**CONSEQUENCES OF ADOPTING BERRY’S COSMOLOGY**

i. *Changes in the way we understand spirituality*

That there has been a psychic-spiritual dimension to creation from its beginning is a central tenet of Berry’s cosmology. If this view is rejected by his reader, then much of Berry’s vision for a reformation of human culture and an entrance into an Ecozoic era fails to materialize. His notions of subjectivity, of the Earth as a community of subjects, of an ecological ethic, and of the interconnectivity of the universe significantly depend upon this understanding of the spiritual dimension of the universe.

While Chapter One suggested a definition for spirituality (see Appendix A), Chapter Three discussed how and why Berry argues that the universe has had a psychic-spiritual dimension from its beginning. It is possible to weave these two discussions together to explore how our earlier understanding of spirituality might shift through the influence of the new cosmology. Each sentence of the earlier definition will provide the initial referent for this exploration, and will provide the heading for each of the next three sections. Implicit in this exercise is the belief that spirituality or a spiritual dimension are not uniquely human. Just as Berry has argued that consciousness is not limited to the human, neither are spirituality or a spiritual dimension, no more than digestion or covalent bonds. However, just as Berry recognizes that human consciousness is significantly different from the consciousness of a hawk or a worm, and just as human digestion differs from that of a paramecium, so too do human and non-human spirituality
differ (as was discussed in the previous chapter). There might be fundamental similarities, yet there remain significant qualitative differences.

“Spirituality is a fundamental dimension of our personhood, animating the way we think, act and live, and creating a unitive integration of the various dimensions of our unique being.”

In the context of the new cosmology, subjectivity results when the elements and the interior attractions of a self-organizing being coalesce or integrate in such a way that the unique identity of that being manifests or can be recognized. The ordering and the constituent elements of that being are fundamental to its identity, to its intelligibility. If either the elements or the ordering which results from its interior attractions change, then so too does its identity, and consequently, the way that that being can be part of cosmogenesis. Spirituality is the bond which creates a unitive integration of the various elements and attractions of any being into a coherent internal communication.

Accordingly, spirituality and the subjectivity which results are not limited to human personhood; they are also true of a hydrogen atom, for instance, one of the earliest creations of cosmogenesis.

A revised understanding might state that spirituality is a fundamental dimension of any being, creating a unitive integration of its various elements and self-organizing attractors, and significantly influencing the way that it will act within cosmogenesis. However, I hasten to add three provisos. Firstly, it is important to note that while the spiritual integrity of any being significantly determines its identity—hence a hawk is recognized as a hawk and is expected to act like a hawk—it does not determine the complete role of that being in cosmogenesis. Chance and choice still influence outcomes. Secondly, in the language of the new cosmology, spirituality is sometimes

31 I am using the word “being” in the sense of “that which has reality in time, space, or idea; anything that exists actually or potentially.” I am not restricting the use of that word to “a living thing.” For a more complete definition, see: Avis and et al, eds. Funk & Wagnalls Canadian College Dictionary, 129.
described as an energetic bond or animation. While it is possible to speak of spirituality animating living beings, that verb might be stretched beyond recognition if it were to be applied to inanimate forms. Consequently I have replaced the word "animating" in the earlier definition with the word "influencing." Finally, I have also avoided the adjective "energetic" even though I accept it as an accurate account. I am concerned that such a description might reduce the complexity of human spirituality to the level of a biochemical interaction patterned on the arguments of scientific materialism. As was discussed in the first chapter, I reject this sterile characterization of human psychic-spiritual abilities.

“Our spirituality informs the way we engage life beyond ourself, drawing us into a unitive relationship with that which is typically considered to be apart from ourselves—others, the world and the Divine.”

At any point in cosmogenesis, individual realization will be a unique and creative response to all the interior promptings and the exterior attractions that any particular being will have experienced and encountered. Its inner or self-organizing spontaneities will not only determine how that being will manifest, they will also guide how it might relate to the rest of creation. They will allow the entity to be recognized or engaged by other parts of the community. For example, the very identity of a hydrogen atom will establish the bond that it can form with other atoms, the atoms which will be attracted to it, and the new entity which might result; an oxygen molecule would be involved in a different set of relationships. Similarly, the very identity of a vole will allow it to assert its unique existence and to be viewed as a delicious snack by a hawk. In each case, the respective spirituality of the entity informs the way that it might engage the adventure of cosmogenesis, allowing each to be drawn into a unitive relationship with that which is

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other than itself. For the human, this unitive relationship will acquire a new dimension as increasing complexification expands our self-reflective consciousness to include ecological or cosmic consciousness (which will be discussed in greater detail later in this chapter).

Because each moment and each aspect of cosmogenesis is enabled and guided by the numinous mystery, and because divine Wisdom has been part of creation from its inception, every being in creation also has had or continues to have some relationship with the Divine, not just with other phenomenal entities. As Denis Edwards summarizes, "Divine Wisdom is, by definition, God's presence and self-expression. God communicates God's self through divine Wisdom; Wisdom is present in all of creation...." Consequently, this gift of God's self-communication to creation speaks to a relationship between God and all aspects of cosmogenesis. All of creation manifests as community, not only because it emerges from a common source; not only because each being in the universe is attracted to and attracts, is affected by and affects every other being in the universe; but because the self-communication and goodness of God extend to all of creation, holding them in a common although differentiated affection. Accordingly, all aspects of creation are also in relationship with each other and with the Divine. This understanding of divine immanence resonates with Berry's view that the cosmic Christ has continuously been a part of irreversible, developmental creation history, not just human historical time, and that it is this divine presence which enables and guides creation.
“The purpose and meaning we find in life and the ends which we seek are coloured by the spirituality we hold, by the commitments, principles or ultimate values which we have come to accept through personal reflection and the instruction of society and church.”

According to the new cosmology, every player in the universe story contributes to cosmogenesis in a meaningful way. Each element shifts the irreversible evolutionary processes in accord with its particular identity and contribution. The less complex forms—molecules and non-biological structures—simply follow the patterns of engagement or physical laws of the universe; all things being equal, atoms will bond in relatively predictable ways and rocks will abide as only rocks can. However, this does not preclude these forms from becoming engaged in cosmogenesis in unexpected ways (as the entombed residents of Pompeii might attest). Nevertheless, the spirituality which informs the internal integrity of each of these permits them to realize the purpose to which they are called. That is, the same numinous impulse which initiated the primal flaring forth is the same mysterious spontaneity which ever guides creation, on both a microphasic and macrophasic level, toward meaningful fulfillment.

Some of the more complex players in the creation story—cells, organisms, plants and animals, for example—respond to biological laws and genetic coding which permit not only the replication and repair of organisms, but the preservation and transfer of instinctual knowledge. Since this genetic coding is formed in and acts according to cosmogenic processes—processes which remain guided and enabled by divine presence—these players act in accordance with the spirituality which animates them. These, too, contribute to the purposeful evolution of creation.

writes of “God’s preservation of and cooperation with” creatures, that God enables the creature to go beyond its present state through “active self-transcendence.” Evolutionary change is empowered or enabled by God’s presence. See Karl Rahner, Foundations of Christian Faith, trans. William V. Dych (New York: Crossroad, 1990), 185. Wolfhart Pannenberg also asserts the contingency of creation upon the conserving and enabling power of the divine. See, Pannenberg, “The Doctrine of Creation,” 8-9.
Despite these significant and meaningful contributions, it is nevertheless only humans who can weigh principles and values and introspectively evaluate the instruction of others in order to make choices and formulate commitments since it is only humans who have self-reflective consciousness. For while the spiritual dimension which has been a part of cosmogenesis from its beginning has shaped that story just as the physical-material dimension has manifested its form, and while that story has always been part of a meaningful adventure instituted by the Creator, the ability to know that there has been a spiritual dimension and that this is a meaningful story is unique to the human alone among all the beings that evolution has yielded. Therefore, despite the meaningful contribution of the non-human elements to cosmogenesis, it is only the human who can formulate, communicate, weigh and choose values and commitments. The human has the most complex spiritual dynamic, the most autonomous psychic-spiritual differentiation, and consequently, is the most able to devastate the planet when it chooses a spirituality which does not resonate with the invitation of cosmogenesis.

With these comparisons in mind, it is possible to re-define spirituality as a fundamental dimension of any being, creating a unitive integration of its various elements and self-organizing attractors, and significantly influencing the way it will act within cosmogenesis. Spirituality informs the way that each being might engage the adventure of cosmogenesis, allowing each to be drawn into a unitive relationship with that which is other than itself, and permitting each to respond to its inner spontaneities and to the divine presence which ever enables and guides creative evolution toward fulfillment. And while each part of creation contributes to cosmogenesis in a meaningful way, it is only the human which can purposefully formulate, examine, reform and employ its spirituality to discern and weigh values in order to choose commitments and deliberately aspire to goals.
ii. Changes in the way we understand the spiritual dimension of health

The influence of culture and cosmological vision upon one's understanding of health has already been discussed in the first chapter. Not surprisingly, then, if one adopts the new cosmology as a new “worldview,” then one’s understanding of health and the spiritual dimension of health will shift accordingly.

The new cosmology recalls that the process of cosmogenesis is not characterized by peace and tranquillity; it is not about equilibrium or a story which unfolds evenly and gradually. It is an adventure marked by times of great violence and destruction, and unimaginable creativity and invention. It involves, at times, the most tension that the universe can creatively engage. Cosmogenesis occurs within the interplay between the pressures of constant expansion and constant contraction; between explosion and gravity; between creativity and destruction, differentiation and extinction, challenge and limitation. Every act of cosmogenesis happens within this ordered chaos of creative turbulence, including our illnesses.

A retrospective consideration of cosmogenesis teaches us that challenge and limitation spur the evolution of new forms of differentiation and complexity; without them, there is no need for transformation, and increasing differentiation and complexification. All forms of existence also tend to resist anything which will reduce or threaten their existence. They will struggle to ensure their own survival and will seek sufficient energy to do so, just as they will seek sufficient energy to fulfill the drives of their inner nature. Consequently, as Berry has reminded us in the previous chapter, resistance, energy expenditure, and aspirations characterize the continuously evolving interplay of cosmogenesis; as part of that story, we are part of that interplay each moment.

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36 Consider the emergence of eukaryotes described in “The Big Bang Story” in Appendix B.
of our lives. Yet all of these activities must be consistent with the macrophase dynamics and constraints of the region if they are to endure and flourish.

It is possible, therefore, for us to consider human illness through the lens of challenge and limitation, or the lens of resistance, energy and dreams; and it is also possible that at least some of our illnesses present as threshold moments when challenge and limitation confront and transformation beckons. We have had a tendency to avoid every threat to our feeling of well-being, to deny the intrinsic cost of our actions (e.g., iatrogenic diseases), and to satisfy our desires without regard to limitations (e.g., the "diseases of civilization"). And while the pursuit of pain for its own sake is undoubtedly pathological, so too is the avoidance of any pain or suffering at all. Reflection on cosmogenesis reminds us that when illness obliges constraint or imposes limitation, a "voice" is speaking which we can either silence with treatments which address the symptom while not the cause, or we can seek to discern what is being conveyed. Perhaps we are being reminded to live simply within the natural constraints of our niche within the bioregion—to eat, sleep or drink in amounts and types appropriate to our needs rather than our wants; to be active in ways which promote our health rather than tax our limits or those of our environs; or to recreate ourselves with time for play, prayer and reflection. An illness can communicate the need for us to return to living within the limitations of our being and our bioregion, in harmony with the life forces which have made and sustain us.

Or perhaps an illness is summoning us to a new beginning rather than a mere return—to a new way of understanding ourselves within our family, our society or the Earth community. For illness can present, on our microphase level, a time of tension which parallels those threshold moments in cosmogenesis when systems which have reached their limits of complexity and expansion invariably transform into a new way of
being. Illness can be the threshold time which calls forth personal transformation. It can sufficiently disrupt the routines of our lives—which tend to be fashioned to preclude surprise—so that the intrinsic creativity of the cosmos, the numinous mystery, the “God of surprises” might emerge and we might come to trust that which is other than our own invention. For it is in the isolation often felt when we are ill that we are better able to attend to an invitation to conversion or to a revelation concerning our living.

Consequently, human cultures have traditionally engaged in re-birth ceremonies through which a person could enter into a new way of being in the society (e.g., being initiated into adulthood through “re-birth” into society in a new role) or become re-aligned or re-integrated into the cosmic ordering. Hence,

Spiritual rebirth ceremonies healed the personal alienation experience and brought humans to an integrated, even a divine mode of being. The consistency with which the various traditions insist that we must undergo a spiritual rebirth before we can be considered complete in our human reality, is an indication that we require a transformation that goes to the very foundations of our being. This symbolic death and rebirth can be seen as a basic requirement for self-identification, for participation in the social order, for entry into the mysteries of cosmic-divine reality. Here the entire ritual process is ordered toward our authentication in the human modality of our being.

This does not mean that our illness results from God’s intention or that every illness is necessarily pregnant with deep spiritual significance. A twisted ankle might

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37 In clinical practice, it is not uncommon to meet people who mark a major shift in their life with survival of a life-threatening illness. For a discussion of spiritual growth arising from illness or suffering, consider, M. Scott Peck, The Road Less Travelled (New York: Simon and Schuster, 1978), 15-21, 263-268. For a discussion of how our Christianity can inform our conversion during times of physical illness or spiritual crisis, see, Carolyn Gratton, The Art of Spiritual Guidance (New York: Crossroad, 1992), 122-140.

38 Gerard W. Hughes argues that “God is the God of surprises who, in the darkness and the tears of things, breaks down our false images and securities. This in-breaking can feel to us like disintegration, but it is the disintegration of the ear of wheat: if it does not die to bring new life, it shrivels away on its own.” See, Gerard W. Hughes, God of Surprises (Toronto: Anglican Book Centre, 1989), ix.

39 Although the new cosmology reminds us that illness can be a time of personal conversion or transformation, this is certainly not a new concept. Basil of Caesarea, for instance, wrote to his monks about the benefits which can be derived from one’s illness, including the opportunity to discern the presence of the Creator working in one’s life. See, Basil, “Longer Rule LV,” 226. The same text can be found in PG 399A-B.

40 Eliade, The Sacred and the Profane, 144.

41 Berry, “The Cosmology of Religions,” 58.
happen simply because we are clumsy, or we might "come down with a cold" after nursing a child who had the same affliction. However, at least some of our illnesses present the opportunity and need for personal transformation so that we might redirect our living into ways which are mutually enhancing for us, for those about us and for the rest of the ecosystem; that is, in ways which resonate with the divine mystery which enables and guides cosmogenesis. Therefore, illness can call us back to living in accordance with the mutually enhancing dynamics of our ecosystem or it can call us to a new way of being as part of the cosmogenetic invitation toward increasing complexification and evolution.

Cosmogenesis is a story punctuated by many sacrificial moments—whether the exploding of first generation stars or the consolidation of cells to form an organelle. Sacrifice is intrinsic to the unfolding of the universe story, and as players in that adventure, we will necessarily experience sacrifice. Avoiding all sacrifice not only disguises who we are—Earthlings in the universe—but also tends to trivialize the challenges of living, and invariably contributes to ecological damage. 

But when illness is life threatening, protracted or singularly intense, and is attended by considerable pain or suffering, then the foregoing reflections might offer little comfort or inspiration. At these times, it is important to add to what was written earlier, in Chapter One, concerning suffering. There are times when our comprehension is mystified and our endurance so overwhelmed that looking beyond our personal horizon to a new contextualization—i.e., the new cosmology—might offer limited comfort or insight. In such times, we can recall that divine Wisdom has been present in every moment of universe history, including our own; that each triumph in that long adventure was preceded by apparent destruction and seemingly inexplicable violence; and that the

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42 Recall Berry’s position, discussed in the previous chapter, and: Berry and Swimme, The Universe Story, 59-60, 248; Berry and Clarke, Befriending the Earth, 132-134.
transformation of crises in ways unimaginable led to the grandeur of the universe. We can hope that within this suffering lies a creative resolution that speaks to purpose and meaning, to a story and a life going somewhere. This suffering can become another sacrificial moment of grace; not like those more easily understood—like the suffering or sacrifice endured by a parent for a child—but like those which are sufficiently concealed by mystery or confusion to remain disquieting and incomprehensible. A God of surprises is beckoning, and sometimes, we can only wait. Recognizing a spiritual dimension to health in a world described by cosmogenesis does not necessarily guarantee comfort, but it at least affirms that we are not alone in our suffering, since this is a universe experienced as sacred and filled with God’s presence.\textsuperscript{43}

For the same reasons, death is never a defeat or the termination of our being. It is transitional to new birth. Our death, in a world formed and sustained by the numinous dynamics of cosmogenesis, contributes to a universe which is moving toward greater complexification and fulfillment. Stated another way, we recall that it has taken fifteen billion years to make us, that we are the product of fifteen billion years of irreversible cosmogenesis which included the death of untold billions and billions. Furthermore, the dreams and aspirations of past generations have been carried forward into our being—not only into our culture, but into our genetic coding. Consequently, our dreams and our actions not only set the stage for future generations, they are carried forward into those generations. The new story reminds us that we are “intergenerational,” that death is not a cessation of Earthly presence and an escape into other-worldliness.\textsuperscript{44} The prospect of our death can prompt us to ponder the imprint that we will leave on cosmic history and the

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\textsuperscript{43} Sallie McFague holds a similar position. She notes that, “The cosmic Christ as the shape of God’s body also tells us that God suffers with us in our suffering, that divine love is not only with us in our active work against the destruction of our planet but also in our passive suffering when we and the health of our planet are defeated. . . . The cross in the Christic paradigm does not, in our model, promise victory over the pestilences, but it does assure us that God is with the victims in their suffering.” See, McFague, \textit{The Body of God}, 190.

\textsuperscript{44} Haught, \textit{The Promise of Nature}, 128-132.
contribution that we will make to future generations, for these are indelibly associated
with the way we have lived out our life.45

iii. Changes in the way we understand health and healthcare

In Chapter One, it was concluded that people are healthy when they have the
ability to adapt to their ever-changing biological and social environments in creative, life-
enhancing ways. Health was summarized as the ability to adapt creatively. It was also
noted that one of the most significant determinants of our health was the degree to which
we were able to express personal autonomy or make meaningful decisions in our life.
Although the connection between these two conclusions was not made earlier, I would
suggest that they are quite similar. Personal autonomy and decision making are certainly
expressions of personal adaptability. They relate to our ability to respond to our
environment and not merely react with it. Furthermore, as we become increasingly
aware of living in a universe characterized by evolution and transformation rather than
ever-repeating cycles, the ability to adapt and to respond takes on even greater
significance. Therefore, situations which compromise our ability to adapt and to respond
threaten our health (e.g., unemployment or underemployment, restricted access to

45 John Haught takes this understanding a step further. He argues that the new cosmology helps us
to recognize ourselves as a “deeply relational ‘process’ of becoming” with a profound “capacity for
continually intensifying the depth and breadth of relationship to other persons, nature and God.” God is the
exemplar of this interrelatedness, being ever present to all of cosmic history, both spatially and temporally.
Part of our calling, in our imitation of the ways of God, is to grow in the complexity of our relationships.
But this understanding of relationship includes all of the interrelated actions which have accumulated over
the past fifteen billion years to produce this moment. Accordingly, nothing in cosmogenesis is so trivial that
it vanishes entirely; it becomes imprinted into the cosmos indefinitely, if only in the unfolding of the future.
It will always be true that that particular moment or being of cosmic history happened. For Haught, “God
would be the name of that reality which everlasting prevents [such] truths from lapsing. It is in God’s
experience that the cosmic process attains its objective immortality.” Haught speculates that “death would
be a personal movement toward deeper participation in God’s own reception of the world,” into a deeper
relationship with the One who is the supreme exemplification of relatedness throughout all of creation and
creation history, and consequently into a deeper relationship with the world rather than separation from it.
Preparation for death requires that one augments one’s right relationship with the breadth of creation during
one’s life, not detaching oneself from the world through spiritual asceticism. Haught concludes that the
“resurrection of the body”—the body through which we were connected with the cosmos—is the
compassionate reception by God of our story, since “our bodies are the repositories of a sequence of
perished events that add up to a story of interconnectedness with our world.” See, ibid., 131-141.
education, an increasing differential between the rich and poor in society, globalization which weakens personal or national autonomy, and diminished job security).

**Innate Intelligence**

A healthy response to the stressors which we daily experience—including the everyday micro-injuries which assail us, or a continually changing environment—involves the innate intelligence of the body’s self-regulatory mechanisms selecting sufficiently adaptive responses without compromising individual integrity. Innate intelligence also accomplishes such mundane tasks as regulating our breathing, digesting our food, and repairing and replicating our tissues. In Chapter One, this innate intelligence was described as an internal, intrinsic wisdom of the body which acted as the healer within, manifesting the natural healing power of the body (the *vis medicatrix naturae*). Our innate intelligence derives from our genetic coding which emerged through the processes and experiments of cosmogenesis. As was discussed in Chapter Three, our genetic coding not only guides our spontaneous responses to life’s adventures, affecting how we will grow, flourish, heal, speak, think, create and procreate, but it also bonds us to the Earth’s ecosystems in ways which are mutually enhancing. Berry has associated these spontaneities and our genetic coding with the numinous mystery whence the universe emerges and which continues to guide cosmogenesis. But to understand how the new cosmology enhances our understanding of innate intelligence, some additional concepts need to be introduced.

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46 Innate intelligence and genetic coding are not identical. An example illustrates how they are different. Suppose that both I and a salamander have a toe amputated during an injury. The bleeding at the site of our wounds will gradually cease because the innate intelligence of our respective bodies preserves our existence by healing wounds. However, the salamander will grow a new toe while I will be satisfied with a healthy stump. The genetic coding of the salamander is sufficiently evolved to manufacture new limbs while mine is not. The innate intelligence of the salamander causes the toe to grow, but only because its genetic coding has prescribed how this can occur. The innate intelligence is the genetic coding in action.

According to the new cosmology, innate intelligence is neither confined to humans nor even to life-forms. Some authors have associated the belief that the universe seems to have a destiny—sometimes aligned with the Anthropic principle discussed earlier—with propositions that an evolutionary consciousness or innate intelligence seems to be working in cosmogenesis. That is, evolutionary processes seem to be driven by a type of energy or intelligence which might be described by Henri Bergson’s *élan vital*, Teilhard de Chardin’s psychic or radial energy, or Ilya Prigogine’s self-organizing forces.48

One expression of this non-human form of innate intelligence is the self-regulating organization and adaptive creativity described within James Lovelock’s Gaia hypothesis. Because Lovelock noted that the Earth’s atmosphere was comprised of highly reactive gases which were inexplicably coexisting without reacting, and that the temperature and salinity of the planet were improbably maintained within a range which would support the emergence and flourishing of life, he postulated that there might be a super-regulatory intelligence coordinating all the other regulatory mechanisms. He called this intelligence, Gaia.49 Lovelock argued that the self-organizing properties of the biosphere contributed significantly to planetary homeostasis and the conditions necessary for the evolution of the planet (rather than the conventional view that life adapted to lithospheric and atmospheric conditions but had no role in their evolution).50 As one of

49 Devereux, Steele, and Kubrin, *EarthMind*, 147.
50 Lovelock notes that, “The entire range of living matter on Earth, from whales to viruses, and from oaks to algae, could be regarded as constituting a single living entity, capable of manipulating the Earth’s atmosphere to suit its overall needs and endowed with faculties and powers far beyond those of its constituent parts. …[Furthermore,] the physical and chemical condition of the surface of the Earth, of the atmosphere, and of the oceans has been and is actively made fit and comfortable by the presence of life itself. This is in contrast to the conventional wisdom which held that life adapted to the planetary conditions as it and they evolved their separate ways.” See, James E. Lovelock, *Gaia: A New Look at Life on Earth* (New York: Oxford University Press, 1979), 9, 12. Cf., Roszak, *The Voice of the Earth*, 152-155.
Lovelock’s supporters observe, “the organic world is now...recognized for its essential, almost intelligent role in the planetary homeostasis.”

The innate intelligence of the psychic-spiritual dimension of cosmogenesis came to a level of self-reflective consciousness in the human so that the universe could celebrate itself in conscious self-awareness, to reflect upon its history and dream about its future. Humanity is the way that the innate intelligence of the universe came to reflect upon itself. Through that reflection, we came to recognize a numinous mystery, an innate intelligence present in the world about us. More primal or elder cultures were conscious of our embeddedness “in a place and a history, in the rhythms of climate, in the contours of a landscape” and the power of the environs about us. Earth and its life forms and systems were “consistently experienced as not only alive but also sentient, a great Being with whom we [could] communicate and exchange energy.”

Because a person was considered to be formed by and within an organic relationship with the planet, a transactional bond, an ongoing dialogue and a balanced existence with the biosphere and its inhabitants had to be maintained. To break faith with that relationship would not only have been an irrational act, it would have violated the sacredness of such an intimate, life-generating and life-sustaining bond.

Ironically, this perspective is not unlike the view promoted by the new cosmology. This “elder-culture” view of the physical world and its animation more closely approximates our present understanding of matter and reality than did the nineteenth and early-to-mid twentieth century views of Western science and medicine.

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52 Wallace, “Recovering the Spirit in Nature,” 17-21; Devereux, Steele, and Kubrin, EarthMind, 136-139; 131-132, 137.
53 Roszak, The Voice of the Earth, 76.
Indeed, even the Hippocratic treatise on *Airs, Waters, and Places*, which Western medicine often erroneously claims to be the foundation for modern medicine, insisted that human health required a balanced state of equilibrium between the physical body and mind, and between these and the external environment. These were considered to be mutually dependent in a reciprocal and vital relationship; human health was judged to be inseparable from, dependent upon, and nourished by the environs—a position which parallels that of the new cosmology.

Health practitioners who recognize this more holistic integration of factors contributing to human health also recall that the human body is inherently directed toward its own homeostasis, toward its own repair, growth and maintenance. These practitioners recognize that the body’s innate intelligence—and not their actions *per se*—is ultimately responsible for the healing of the body’s ills. It is this innate intelligence which orders each person’s body into its unique existence. Henry Lindlahr, using language which is now somewhat dated, describes this innate intelligence in terms of a vital force which animates the body.

This [vital] force, which permeates, heats and animates the entire created universe, is the expression of the divine will, the ‘logos,’ the ‘word’ of the great creative intelligence. ...It is this supreme power and intelligence, acting in and through every atom, molecule, and cell in the human body, which is the true healer, the ‘vis medicatrix naturae’ which always endeavors to repair, to heal, and to restore the perfect type. All that the physician can do is to remove obstructions and to establish normal conditions within and around the patient, so that ‘the healer within’ can do his [sic] work to the best advantage.

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Therefore it is the innate intelligence of the universe working through the cosmogenic process which both brings us into existence and which continues to nurture and heal us. We experience that intelligence not only within our own bodies, but within the body of the planet. Holistic health practitioners seek to assist that innate intelligence so that healing can proceed. But in assisting the work of the body's innate intelligence, the practitioner is also helping to bring to fuller revelation the expression of the divine Logos, the divine immanence acting through the innate intelligence of the cosmos to guide and enable creation. For "God's works will never be finished; and from him health spreads over the earth." (Sirach 38:8)

The ecological unconscious and ecological consciousness

To understand more fully the way in which our innate intelligence is associated with our genetic coding and our instincts requires the introduction of the notions of an ecological unconscious and an ecological consciousness.

Our id has traditionally been defined as "the unconscious part of the psyche, independent of a sense of reality, logic, and morality, but actuated by fundamental impulses toward fulfilling instinctual needs." Roszak broadens this definition by recalling that our id, as the instinctual core of our being developed through evolutionary history, conserves our ecological intelligence. That is, it provides us with the spontaneous responses which enhance our survival within the dynamics of the Earth's ecosystems by prompting us to live in ways which keep us out of danger or enhance our success. Roszak speculates that we have an ecological id, an ecological unconscious, which prods us to resist activities which threaten our harmonious living within these dynamics. It promotes a way of being which resists our separation from the Earth.

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60 Cf., "It is God and not we who creates and makes whole. We, at the most are helpers...." See, McFague, "An Earthly Theological Agenda," 96.
61 Avis and et al, eds. Funk & Wagnalls Canadian College Dictionary, 664.
community. Accordingly, when we act in ways which contradict these ecological instincts, Roszak believes that we experience a certain unease or neurosis. He suggests that the life-creating and life-enhancing potentiality of the planet communicates to us through our ecological id. Just as a “wisdom of the body” has known how to maintain and restore bodily health, the “wisdom of the id” continues to recognize and promote our mental and social health.  

Our ecological id will beckon us to return to living in more harmonious ways with Earth’s ecosystems. This is reminiscent of Berry’s view that in the midst of the ecological crisis,

God gives us the capacity to deal with these things. …God is functioning through ourselves. God is telling us what to do. The natural world is telling us what to do. God speaks to us through the natural world. …[T]here is this ultimate, numinous dimension of the universe that is offering guidance.

For this reason, Berry prescribes a return to living in accord with our genetic coding which was formed by the evolutionary processes of the Earth and which provides the instincts for our Earthly survival. By being attentive once more to our genetic coding, to our pre-rational and instinctive promptings, we can reform our cultural coding and return to living more compatibly with ecosystem dynamics.

The claim that the natural world has a “voice” is also central to some elder or aboriginal cultures. Both the land and animals are recognized as sentient beings with whom it is possible for people to communicate. “As a conscious, sensate, personified entity, suffused with spiritual powers, whose blessings are given only to humans who are reverent,” the land and animals coach humans on living rightly, guiding them into adulthood through initiation rituals, providing food and shelter, and admonishing those

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63 Berry and Clarke, Befriending the Earth, 52.
64 Berry, The Dream of the Earth, 207-208.
who transgress. And just as the new cosmology teaches us that humans are the universe come to self-reflective consciousness, and that we are the psychic-spiritual dimension of the universe in its most complex manifestation, the Aborigines of Australia are socialized to understand that they are the land, as embodied forms of land spirits. They are also socialized to learn that they are part of a story that is connected with a particular locale and that to remove themselves from that locale might well be fatal. ...Rather than living on the land and moving through it, the Aborigines perceive themselves to be an integral part of the land, to be rooted deeply in it, to be defined by it, and to be re-creating it in their daily lives.

This perspective echoes the bias articulated by the new cosmology and developed throughout these past few chapters; it pronounces a vision for healthy living.

In such a vision, our ecological unconscious helps us to move beyond intrapersonal and interpersonal relationships into ecological relationships. To our self-reflective consciousness we add a cosmic or ecological consciousness which takes the entire planet as its primary focus. That is, rather than a dualistic understanding which presupposes a reality based upon the self and the other, the subject and the object, or the observer and the observed, a new perspective is recognized which will transcend these distinctions. Accordingly, the interrelatedness of all levels of being will become so profound and so apparent that dualistic separations will increasingly be judged as too

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67 Kinsley, *Ecology and Religion*, 33. The Anangu who live in the remote north-west corner of South Australia, in the region of Pitjantjatjara, consider health to be a journey which involves *tjukurpa*. This *tjukurpa* is “the religious interpretations of the profound bonding of people to one another; to their country; and to the species of animals and plants inhabiting it. It is continually renewed by its expression in song, dance, verbal narratives of creation stories, and symbolic depiction; and re-enacted continually in ceremonial journeys.” The country to which people belong—the country does not belong to the people—is described as *ngura*, and can be used if one accepts the obligation of caring for it (*kanyintjaku*) and celebrating it ceremonially (*inma*). All in the country are connected through an extended kinship called *walytjatjuta* which includes appropriate social roles and authority, and the pathways for communication with one another. For further details, see, Healthy Aboriginal Life Team, *Anangu Way* (Alice Springs, Australia: Nganampa Health Council, 1991), viii-4.


artificial. Rather than the human self being the primary and sole referent for our consciousness, the planetary self or the ecological self will also require attention. 70

"What Allan Watts called the 'skin-encapsulated ego' and Gregory Bateson referred to as 'the epistemological error of Occidental civilization'" will be replaced by an ecological ego which will extend our sense of being beyond our immediate physical body. 71 This ecological self will concurrently be aware of both our individual uniqueness and identity, as well as our co-extensive being with the rest of the planet. Cosmic or ecological consciousness reinforces an awareness that we are open, self-organizing systems inexorably engaged with our bioregion. Accordingly, compromising the health of our bioregion invariably means a compromise of our own health. If only for selfish reasons—let alone respect for the community of subjects with whom we live—it is prudent for humans to live in ways which permit the rest of the ecosystem to flourish. As Berry has argued, "the human community and the natural world will go into the future as a single sacred community or we will both experience disaster on the way." 72

Two Practical Applications

Two clinical examples will be presented in order to demonstrate the practical application of this sense of the innate intelligence of our bodies and the cosmos, of our ecological id and our ecological consciousness which emerge from the new cosmology.


71 Joanna Macy, "The Greening of the Self," in Dharma Gaia, ed. Allan H. Badiner (Berkeley: Parallax Press, 1990), 53; cf., Fabel, "Environmental Ethics," 312. Michael Zimmerman quite rightly reminds us that "ego consciousness, which is necessarily dualistic, is a major achievement in human evolution." However, he also observes that ego consciousness is characterized by its tendency to differentiate and dissociate itself from the body, from nature and from woman. And regrettably, while rationality and ego consciousness emerged together in the history of the human, the latter initially defined but now, confines the former. Subsequently, any further emergence into cosmic or interrelated consciousness tends to be perceived as irrational. See, Michael E. Zimmerman, "Quantum Theory, Intrinsic Value, and Panentheism," Environmental Ethics 10, no. 1 (1988): 13, 15.

72 Berry, "The Meadow Across the Creek," 76; cf., Berry and Clarke, Befriending the Earth, 43.
Example 1: *Taraxacum officinale*

When I was in practice as a chiropractor-naturopath, a patient would occasionally present with a certain pattern of indigestion which indicated that they were experiencing less than optimal function of their liver and gall bladder. In the course of the treatment, I would often prescribe a botanical remedy called *Taraxacum officinale*. Within a few weeks, the patient would return and would often have derived considerable relief of their presenting complaint. While they were still enthused about the benefit that they had experienced from ingesting a tincture of this plant, I would ask them if they knew the common identity of *Taraxacum*. Of course, this was an unfair and very leading question, but after they had expressed their unknowing, I would announce that *Taraxacum* was more commonly known as dandelion—the same dandelion which we tend to regard as the scourge of our lawns.

This became a moment of conversion for most patients. They could no longer look at a dandelion with the contempt usually accorded a noxious weed. The benefit which they had derived from taking this plant became the first step in forging a new relationship with the rest of the natural world. The “cure” had not come from a drug with an unpronounceable name, manufactured in a distant laboratory and obtained in a pharmacy where a prescription had be deciphered. The remedy was derived from their bioregion, from a plant well-known to them. This experience also provided an opportunity for the practitioner to explain how botanical remedies are “food for the body,” working with the innate intelligence of the body, working with the natural healing powers of that patient’s body (and consequently, rarely causing any side-effects).

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73 The liver and gall bladder contribute digestive enzymes which we need to break down the various fats we ingest into glycerol and glycogen, or fatty acids and energy.

74 In the case of *Taraxacum*, it is also often used as a diuretic. Yet unlike most pharmaceutical diuretics which cause the potentially dangerous side-effect of increased urination of potassium (and hence, depletion of potassium from the body), *Taraxacum* does not deplete the body of potassium. In fact, dandelion is a rich source of this mineral. (Clinically significant loss of potassium can produce muscle weaknesses, postural hypotension, cardiac arrhythmias, and even respiratory failure.) See, David Hoffman,
Indeed, botanical remedies mirror the technology favoured for the Ecozoic era: they are a technology or therapy which are compatible with the technology of the ecosystem, use bioregional resources, and provide human benefit without harming ecosystem health.

For some patients, there is also the opportunity to recognize divine providence at work, to regard these natural remedies as "gift," as a type of "communion" contributing to their health. Such an approach was used by St. Basil of Caesarea when he wrote concerning botanical medicines:

For the herbs which are appropriate to each disease did not grow out of the ground automatically, but, to be sure, were produced by the will of the Creator with the object of benefiting us. So the natural forces which reside in roots, flowers, leaves, fruits, or juices, or whatever is found in metals or in the sea to have properties beneficial to the body, fall into line with the things to eat and drink which we find.  

For some patients, the experience of taking a botanical remedy like *Taraxacum* (especially when it is reinforced by similar treatments on future occasions) can open the patient to both the spiritual dimension of health and the spiritual dimension of creation, particularly if that experience is framed within the encounter of divine immanence and providence. It can help the patient to become welcoming of Earth-centred therapies which are minimally invasive, compatible with the ecosystem, bioregionally derived, respectful of the innate intelligence of the body, attentive to the patient being formed and sustained by the cosmogenic properties of the Earth, and which enhance a spiritual awareness of health. Botanical remedies, crafted by the same cosmogenetic processes...

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75 Basil, "Longer Rule L.V," 225. The same text can be found in PG 398A. Basil further notes that "in the case of medicine, it is wrong to slander God's gift because of the evil use made of it [by some]." See, ibid., 226 or PG 399B.

which formed the human and to which we are genetically adapted, root us into the Earth from which we are formed and in which we are sustained. Such Earth-centred remedies accentuate our relationship with the rest of the Earth community and the Divine, helping us to overcome our autistic exclusion of either. They can come to be recognized as a mode of divine presence, helping us to reacquire an appreciation of the mystique of creation. Accordingly, one would hope that such an awareness might temper one’s use of weed killers or other herbicides—used to produce a green carpet-lawn—and decry the diminishment of divine revelation perpetrated by such gardening practices. The use of Earth-centred remedies can demonstrate, at the very least, that the diminishment of any part of the planet can deny us a resource which might improve or protect our health. More appropriately, Earth-centred remedies can teach us to recognize the subjectivity of the non-human participants in the universe story, and perhaps, to imagine that we belong to a community of such subjects. Becoming aware of this purposeful centre within ourself and the rest of reality can subsequently enhance our health.77

Thomas Berry has recognized a primordial need for the human to be in close contact with the magnificence of the planet. He speculates that prior to the great explosion of plant life which heralded the Cenozoic era,

Humans probably could not have come into existence until we had such a beautiful, wondrous planet. This was needed for the humans because to bear the burden of human intelligence and consciousness at the human level required a

healing environment. Because humans make mistakes—they feel bad about it—they have to have the encouragement and the wonder and the beauty and the ecstasy that we get from the beauty of the world about us.78

Without the retreat provided by the natural world, humanity would not be able to refresh its psychic energies which are taxed by the complexity of our self-reflective consciousness. While we retreat to natural settings for reflection and rejuvenation, we do not seek such relief in the core of our cities; few would seek a freeway or street intersection for repose. An Earth-centred approach to healthcare cannot only access this primordial source of psychic-spiritual energy (as could happen with the prescription of Taraxacum), it can reawaken patients to a self-directed engagement of the same.

Berry also believes that further psychic energy (which will be necessary to accomplish a withdrawal from our present addictive and ecologically destructive practices) can be gleaned from celebrating the great moments of transformation which have characterized cosmic history.79 Encountering the power of botanical remedies can recall that moment of cosmic transformation, that special moment of grace, when photosynthesis first transpired on the Earth—when the power of the sun’s rays, zipping past at 300,000 kilometres per second was captured by chloroplasts for the first time. It is that same power which ultimately gives Taraxacum its therapeutic potency. The celebration of renewed health can coincide with the celebration of a moment of cosmic grace. In a small yet significant way, such celebration re-associates our living with the liturgy of the universe.80

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78 Transcribed from: Thomas Berry, *The Collected Thoughts of Thomas Berry* (Mill Valley, California: Center for the Story of the Universe, 1998), Tape 1, side A.
79 Berry, "The Cosmology of Religions," 7; Berry, "The Meadow Across the Creek," 80. Such moments of cosmic transformation or moments of grace might include the great flaring forth from the primal singularity, the sacrificial explosion of the first generation of stars, the formation of our galaxy from the explosion of Tiamet, the birth of the first primitive life form on Earth, photosynthesis, the first twisting of the DNA molecule, or the first meiotic cell division.
Example 2: Traditional Chinese Medicine

In Chapter Two, the relationship between cosmology and health was discussed using Traditional Chinese Medicine as an example. It was explained how TCM considers the person to be a microcosm of the universe, how the same matter and energy which form, pervade, and animate the universe play parallel roles in the human. The intimate interrelatedness of person and cosmos was explained by a cosmology which not only identifies how the world was formed and how we are to live rightly within it, but how cosmological energies could be engaged to regulate health.

The TCM approach to healthcare provides several advantages and fits well with the new cosmology. Firstly, in TCM, the person is inseparable from the cosmos and cosmogenic processes. This intimacy derives from the cosmological vision of the Chinese. Thomas Berry recalls that Chang Tsai, an eleventh-century administrative official in China, had this inscription on the west wall of his office:

Heaven is my father and earth is my mother and even such a small creature as I finds an intimate place in its midst. That which extends throughout the universe, I regard as my body and that which directs the universe, I regard as my nature. All people are my brothers and sisters and all things are my companions.

It is not surprising that with such a profound sense of unity with the universe that the Chinese would describe the human as the *hsin* of Heaven and Earth. Berry recalls that the word *hsin* is written as a pictograph of the human heart and can be translated as the “understanding heart of heaven and earth,” “the heart of the universe,” “the consciousness of the world,” or as “the psyche of the universe.” This perspective echoes the view emerging from the new cosmology that the human is the universe come

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83 Berry, “The Spirituality of the Earth,” 154-155; Berry and Clarke, *Befriending the Earth*, 21. The notion of the human as the “heart of the universe” has recently been the subject of a text by Ed Young in which he examines the place of the human heart in various emotions as historically depicted in Chinese pictographs, and how these emotions are related to living properly in the cosmos. See, Ed Young, *Voices of the Heart* (New York: Scholastic Press, 1997).
to self-reflective consciousness. Berry also notes that just as the Logos provided the ancient Greeks with a sense of cosmic ordering and of the principles governing the various dynamic interactions of the planet, so too did an understanding of Tao, ch’eng and jen for the Chinese.84 Humans, according to either culture, acted wisely when they lived in harmony with this ordering. For just as all things in creation are ordered according to Tao, so are all things held together by ch’eng (sincerity and integrity) and jen (love, goodness, human-heartedness, and affection).85 Just as the cosmic Christ holds “all things” together, and just as Western physics describes every particle of matter attracting and being attracted to every other particle of matter, so does Chinese cosmology find a spiritual attraction at work throughout the universe.86 Reflecting this profoundly interwoven cosmos, Traditional Chinese Medicine is constructed in such a way that the human is conceived as wholly integrated into cosmic dynamics.

Because the human resides within the deepest rhythms of the universe and because the cosmos is meant to be continually recreated within the person in accord with the Tao, Chinese society recognized a divine presence within the cosmological order.87

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84 Huston Smith draws a comparison between Bergson’s élan vital and the Tao, and in so doing, makes a connection between the Tao and the innate intelligence ordering creation. Smith states: “As nature’s agent, Tao bears a resemblance to Bergson’s élan vital; as her orderer, it parallels to some extent the lex aeterna of the Classical West, the eternal law of nature in accord with which the universe operates. Darwin’s colleague Roames could have been speaking of it when he referred to ‘the integrating principle of the whole—the Spirit, as it were, of the universe—instinct with contrivance, which flows with purpose.’” See, Huston Smith, The Religions of Man (New York: Harper and Row, 1958), 177.


86 Berry, “The Spirituality of the Earth,” 158. Cf., Edwards, Jesus the Wisdom of God, 78, referring to 1 Cor 8:6, Col 1:15, Eph 1:10, Heb 1:2-4, and John 1:3.

87 In the Lao Tzu, the classic text of Taoism, the Tao is acknowledged to be beyond description as evidenced by the passages: “The way that can be spoken of is not the constant way; the name that can be named is not the constant name” (Ⅰ, 1); and “The way is for ever [sic] nameless” (XXXII, 72). Nevertheless, it can be said that the Tao is responsible for the creation of the universe. This is stated in the following passage: “The way begets one; one begets two; two begets three; three begets the myriad creatures.” (XLII, 93) Furthermore, the Tao also supports the universe, as described by these passages: “Of old, these came to be in possession of the One: Heaven in virtue of the One is limpid; Earth in virtue of the One is settled; Gods in virtue of the One have their potencies; the valley in virtue of the One is full; the myriad creatures in virtue of the One are alive…. It is the One that makes these what they are. Without what makes it limpid heaven might split; without what makes it settled earth might sink; without what gives them their potencies gods might spend themselves; without what makes it full the valley might run dry; without what keeps them alive the myriad creatures might perish…. (XXXIX, 85-85a). See, Lao Tzu, Tao
The right living person sought to order one's life according to this presence. Therefore, since the seasons manifest within each person, one deliberately ordered one's life to be in harmony with the seasons, eating the foods and wearing the colours appropriate to each season.\textsuperscript{88} (For an example of how such items as food and colour change with the seasons and are related to the Five Elements which constitute all matter, refer to Appendix E.) Since humans are so profoundly integrated into and influenced by the cosmos, the health of the ecosystem and the health of the person are intimately intertwined. Health requires that \textit{Qi} energy flows freely through each of the Five Elements which constitute all things in a harmonious, cyclical and unrestricted manner whether one considers the health of humans, agricultural lands, seas, or forests. Thus, if the vitality of the local ecosystem is diminished, then human health will eventually suffer. Such an awareness would seemingly help us to develop an ecological ethic which favours the flourishing of the entire bioregion. And since TCM teaches that we inherit \textit{Xian Tian Qi} or Pre-heaven \textit{Qi} from our ancestors (i.e., a sort of "genetic constitution" or "genetic predisposition" toward health), personal and ecosystem health consequently acquire an intergenerational aspect which favours an ecological ethic, and such understanding can be taught when a patient is being treated with TCM.

Secondly, TCM also provides a good model for healthcare in the Ecozoic era because it reminds us of the naturally generative and destructive phases of creation via

\textit{te ching}, trans. D. C. Lau (London: Penguin, 1963), 15-17, 57, 91, 100, 103. The title, \textit{Tao te ching} refers to the two books of the text, the \textit{Tao ching} and the \textit{Te ching} which are ascribed to the author, Lao Tzu. However, the text is often simply referred to as the \textit{Lao Tzu}. For Berry's understanding of the \textit{Tao} as logos, and of the \textit{Tao} as source and support of creation, see, Berry, "The Dream of the Earth," 201-202.

\textsuperscript{88} It can be argued that Western societies also order themselves according to the season since we heat our homes in winter and cool them in summer, and we prefer hot foods in winter and cold foods in summer. Therefore, it might be argued, we are acting in synch with the seasons. But we are motivated by personal comfort and not by efforts to be in harmony with our region. In fact, we often make choices which contradict the seasons. For instance, we will eat summer fruits from other bioregions during our winters simply because we desire to do so. By comparison, TCM promotes dietary habits which complement the season. In the winter, yang foods might be preferred since they provide more energy to balance the cold, while in summer, yin foods are consumed. See, Michio Kushi, \textit{The Book of Macrobiotics} (Tokyo: Japan Publications, Inc., 1977), 58-64.
the Ku and Sheng cycles (as described in Chapter Two). This allows us to situate illness, suffering and loss within a meaningful context—as was discussed concerning the spiritual dimension of health—and regularly schools us to accept these as part of normal, healthy living. TCM champions the best adaptation, not absolute health, since illness might be the best adaptation to a particular situation. Thus, the quality of one’s living, not the quantity of one’s health takes priority.

Thirdly, by drawing on the Qi of the bioregion, by employing primarily local botanicals, and by favouring lifestyle practices which are in harmony with place and time, TCM models Ecozoic principles of bioregionalism and Earth-compatible technologies. TCM patterns itself on Earth technologies and dynamics, with minimal cost to the ecosystem. It is not only therapeutically effective, but is also usually very cost effective for both humans and the rest of the planet.

Finally, TCM provides a template for recognizing and experiencing the psychic-spiritual dimension of cosmogenesis, in addition to the physical material. It also provides a bridge between Western science and Eastern philosophy. To understand how this is possible, we recall that when Einstein stated that $E = mc^2$, he said that the total energy, $E$, of a particle—that is, “the sum of its rest energy and its kinetic energy”—was equivalent to the mass of that particle multiplied by the square of the speed of light. Stated more simply, he said that there exists an equivalence between mass and energy, and that mass can be converted to energy, just as energy can be converted to mass. Energy, although generally not directly perceptible to human observation is as real and substantial as anything in the material world. In fact, according to quantum and atomic physics, matter

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89 Of course, not all suffering or loss is “normal.” It can be abusive and result from exploitation, in which case, the healthy response is one of resistance or avoidance rather than acceptance.


itself is essentially a collection of energy fields.\footnote{Davies, *God and the New Physics*, 144-163.} All matter, including the physical reality of each human is composed of highly complex, infinitely orchestrated energy fields. ... \footnote{Gerber, *Vibrational Medicine*, 59-60 (Gerber’s emphasis).} The cellular matrix of the physical body can be seen as a complex energetic interference pattern interpenetrated by the organizing bioenergetic field of the...body. This understanding of matter as a specialized energy “field” is...the departure point from conventional “Newtonian” medical approaches to...the “Einsteinian” paradigm of healing.\footnote{Risse, “Medicine in the Age of Enlightenment,” 155. Pannenberg notes that whenever physical theorists attempted to reduce all forces to bodies or masses, they were distancing the understanding of the natural world from ideas about God who was not perceived to be material. Alternatively, he argues that energy field theories “have more constructive implications for theology.” He claims that this is so because “the decisive point in Faraday’s grand vision was to conceive of body and mass as secondary phenomena, a concentration of force at particular places and points of the field. The material particle appears as the point where the lines of force converge and form a cluster that persists for some time.” Accordingly, field theories emphasize the whole over the constituent parts, similar to God being the unifying ground of reality. “The field concept could [then] be used in theology to make the effective presence of God in every single phenomenon intelligible.” See, Pannenberg, “The Doctrine of Creation,” 12.} TCM, through its focus on $\dot{q}$ energy, has acknowledged the energetic quality of the human while Western healthcare has tended to focus upon the physical-material. Or employing the metaphor of $E = mc^2$, I would argue that Western medicine has been preoccupied with the right side of Einstein’s equation. Fashioned by the singular importance which Western science attributed to the reductionistic and empirical investigative methods which emerged from Enlightenment thinking, and founded upon the scientific method of Francis Bacon, modern medicine has valued that which was observable, dissectible, and reducible to its simplest state. It has esteemed that which was concrete and quantifiable rather than that which might be mental, spiritual, or energetic (and therefore, vague).\footnote{Risse, “Medicine in the Age of Enlightenment,” 155. Pannenberg notes that whenever physical theorists attempted to reduce all forces to bodies or masses, they were distancing the understanding of the natural world from ideas about God who was not perceived to be material. Alternatively, he argues that energy field theories “have more constructive implications for theology.” He claims that this is so because “the decisive point in Faraday’s grand vision was to conceive of body and mass as secondary phenomena, a concentration of force at particular places and points of the field. The material particle appears as the point where the lines of force converge and form a cluster that persists for some time.” Accordingly, field theories emphasize the whole over the constituent parts, similar to God being the unifying ground of reality. “The field concept could [then] be used in theology to make the effective presence of God in every single phenomenon intelligible.” See, Pannenberg, “The Doctrine of Creation,” 12.} For these reasons, modern medicine has primarily utilized techniques and therapies which have strongly relied upon the physical dimension of our world with scant attention being accorded to the psychological, spiritual or energetic dimensions, and has tended to isolate the patient from their environs. It has
virtually ignored those dimensions of our world which are metaphorically represented by the left side of Einstein’s equation. Because TCM incorporates both the energetic (e.g., *Qi* energy) and the material (e.g., botanical remedies), both the psychic-spiritual and the physical-material, it favours a more integrated and holistic understanding of health and our place in the cosmos.

However, there are three immediate concerns with TCM which need to be mentioned. Firstly, TCM (and the new cosmology) emphasize the interrelationship of every being with every other being in the universe, proposing that the universe can be regarded as one body. Adopting such a perspective might cause some patients to feel that their unique identity and needs are overshadowed within this enormous unity. To accommodate this concern, a balance between the needs and focus of the individual, and our unity with ecosystem dynamics and cosmological processes must be sought. Secondly, while most of the remedies used in Traditional Chinese Medicine are derived from plants whose existence is not threatened, some remedies are made from animals or animal parts, and/or certain plants, which are facing extinction, in part due to their value as remedies. The threat of extinction has done little to temper the zeal with which these remedies are sought; if anything, it has simply increased their market value, and therefore, intensified the interest in harvesting them. These practices strongly contravene the principles of the Ecozoic era. Finally, TCM and Chinese metaphysics recognizes the

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95 This attitude has remained true despite most other scientific disciplines evolving from a Newtonian focus to more Einsteinian theory, from a reductionistic focus to holistic, or from materialistic to at least partially energetic. The increasing success of the latter to explain the dynamics of our world has had little influence on mainstream medicine. Michael Heller notes that “Quantum field theory is … the most successful physical theory. … [I]t is also the most adequate theory explaining three of the four fundamental physical interactions, namely, electromagnetic, nuclear weak, and nuclear strong interactions (it does not refer to gravity).” Yet Western medicine prefers to utilize a more Newtonian focus. See, Michael Heller, “Teilhard’s Vision of the World and Modern Cosmology,” *Zygon* 30, no. 1 (1995): 15 and Gerber, *Vibrational Medicine*, 415-466.

96 Cf., Berry and Swinnum, *The Universe Story*, 203-204, 211.

97 Examples of endangered species being used in remedies would include: rhinoceros tusk, tiger bone, or wild ginseng.
human as part of the religious dimension of the Earth, and in this regard more closely approximates the metaphysics of the new cosmology than Western religions. Western religions usually see the Earth as part of the religious dimension of the human. However, TCM and Chinese metaphysics recognizes this spiritual and religious dimension of creation only within a spatial mode of consciousness since it has not yet envisioned the universe as a time-developmental unfolding. Thus, while TCM includes both psychic-spiritual and physical material aspects in its diagnosis and therapeutics—i.e., both the “E” and the “mc²” sides of the equation—the limits of the metaphor of E=mc² are reached because TCM does not employ an Einsteinian cosmology of cosmogenesis. TCM can be said to have the right instruments but is playing an out-dated piece of music (to recall an earlier metaphor used by Berry). Therefore, while TCM arguably provides the best current model of a healthcare system which reflects the principles of the new cosmology, it is certainly not a perfect fit.

If we desire a holistic form of healthcare which greets and treats the person as an integrated whole, which considers the environmental influences on a person’s health, and which envisions the person as part of a cosmological ecosystem, then a holistic cosmology would seemingly be a pre-requisite. It is for this reason that I do not believe that Western allopathic medicine can ever be a holistic form of healthcare since its cosmological foundation—reductionistic, atomistic, empirical science—is by its nature, non-holistic. For this same reason, I believe that Traditional Chinese Medicine provides an example of a healthcare approach which can be holistic because its cosmological basis is such.

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99 I emphasize the word “can” because I have almost never known TCM to be practised in a truly holistic fashion—i.e., when the psychological and social dynamics of the person are given due consideration. Both of my principal teachers of TCM were born and educated in China. They observed that when TCM is practised in China, the spiritual, social and psychological dimensions of the patient are seldom evaluated. Acupuncture points are needled and remedies are prescribed, but regrettably, little attention is given to the holistic care of the patient. This view is echoed in: Capra, The Turning Point, 317-318.
In view of this consideration of health and healthcare through the lens of the new cosmology, I would not alter the definition of human health recorded in Appendix A and derived in the first chapter. While it is hoped that this discussion has brought a deeper and broader appreciation of the notions captured within that definition, the words of the definition seem to capture adequately this new understanding.

At the beginning of this chapter, two proposals deriving from Berry’s cosmology were highlighted—that the Earth is our primary healer and that its functioning serves as the primary basis for our health. Throughout this chapter—in the discussion on Berry’s notion of health, in the revisiting of our understanding of spirituality and the spiritual dimension of health, and in the exploration of health and healthcare within a new cosmology perspective—these two proposals have provided the underlying theme. The discussion has considered how our spirituality and the spiritual dimension of our health are related to the psychic-spiritual dimension of cosmogenesis; how our health and ecosystem health are intimately interrelated; how the innate intelligence of our body is not only the foundation of our health, but is related to the innate intelligence of the cosmos; and how the Earth itself can provide healing through such means as botanical remedies and cosmic \( \text{Qi} \). Accordingly, this discussion has illustrated why the Earth can be described as our primary healer and how the Earth’s functioning serves as the primary basis for our health. It has suggested how an experience of the spiritual dimension of health through the lens of the new cosmology can bring us to a renewed awareness of the numinous mystery ever present and guiding cosmogenesis to its fulfillment. It has demonstrated how the use of botanical medicines and the approach of Traditional Chinese Medicine can serve to revive a mystique for the Earth that Berry feels must be recaptured if we are to enter the Ecozoic era; they can help us to overcome our autistic isolation from the rest of the Earth community. However, it is equally important to note
that while these models—botanical medicine and TCM—stretch our current dominant model of healthcare, they do not represent the Ecozoic form that Berry envisions. They are useful signposts, helpful *jalous de route* which guide the way, but they are not the destination. They could undoubtedly be part of an Ecozoic healthcare system which would employ a functional spirituality and functional cosmology based on the new cosmology, which would integrate the healthcare professions with the other professions into a cultural dynamic that recognizes the human as derivative, but individually, they do not represent that integrated model or functional cosmology.
CONCLUSION

If current trends continue, we will not. And this is qualitatively and epochally true. If religion does not speak to [this], it is an obsolete distraction.

Daniel Maguire, The Moral Core of Judaism and Christianity

Maguire’s assertion, quoted in a work by Larry Rasmussen, is rather dramatic. It grabs the reader’s attention, and readily prompts him or her to either agree or disagree with the assessment, either entirely or at least partially. Implicit within Maguire’s declaration is the requirement that current trends must change if we are to continue. Explicit is the claim that if we are not addressing the actions and attitudes which portend our demise, then we are foolishly wasting our time. This thesis has provided one critique of our “current trends” while proposing an alternative perspective which might address at least part of what threatens our survival. As such, I hope that the thesis has not been merely an “obsolete distraction.”

Once one seriously adopts the notion that the universe has had a psychic-spiritual dimension and not just a physical-material manifestation from its beginning, then one must be prepared for a substantial cosmological shift. In Western society, we have been schooled to think about history primarily in terms of human history; and even when we greatly broaden that horizon to ponder Earth or cosmic history, we tend to consider only the physical transformations which have characterized that story. Integrating a psychic-spiritual dynamic into the full breadth of that epic requires another grand revisioning. If this is done, we come to a new understanding of what it means to be human within a universe formed and forming through cosmogenesis; we define anew our place within

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this sublime spectacle, including how we are to relate to others, who that “other” might be, and what must be done in order to flourish and be healthy; that is, we take a first step on a path away from current trends.

This thesis arose primarily from a concern with three issues: i. that the present, dominant models for health and healthcare are neither addressing a holistic notion of health nor promoting health itself; ii. that the belief that humanity is separate from the rest of the ecosystem has contributed significantly to the ecological destruction of the planet; and iii. that implicit in the first two issues is a failure to recognize fully the spiritual dimension of creation. These are current trends which threaten a viable future. The new cosmology holds the promise of an alternative vision which might address each of these issues, especially when it emphasizes that the universe has had a psychic-spiritual dimension from its inception.

Thus, the first chapter explored a contemporary understanding of spirituality, health, the spiritual dimension of health, and human-ecosystem health in order to review current notions concerning these terms, including the many and various factors which comprise each. Due to the complexity and the interrelatedness of these terms, that exploration was necessarily detailed, often considering fine nuances. Nevertheless, working definitions were eventually derived and a scope for each term was determined. Such effort was necessary for two reasons. Firstly, it was important to know as clearly as possible our present state of affairs; i.e., from where were we beginning. Secondly, to assess the influence that a cosmological shift might have, it was necessary to understand the various elements which would be affected by the adoption of the new cosmology.

The role of cosmology and our new understanding of humanity’s place in cosmogenesis according to evolutionary theory and the “Big Bang” story were the subject of the second chapter. Considerable controversy attend these perspectives, and some of the more relevant disputes were discussed, including various forms of the Anthropic
principle and reformations of Darwin's theory. It was not intended that these discussions would demonstrate the superiority of one particular view over another (since such a resolution would not advance the purpose of the thesis); rather, part of the intention was to illustrate that a variety of sensible cosmologies compete for our attention, each offering valid speculation and calculation which might contribute to the thesis. Therefore, the cosmological view presented in this thesis was not the only one worthy of consideration. By way of illustration, Traditional Chinese Medicine was presented as an example of a relationship which can exist between cosmology and health—a relationship which is central to the thesis—yet TCM does not employ the new cosmology.

But what are the implications if one accepts the new cosmology and the proposition that the universe has always had a psychic-spiritual dimension as well as a physical-material manifestation? Thomas Berry has pondered this question. He subsequently provides a critique of our “current trends,” and suggests various principles for understanding where we are and the reforms which are necessary if we are to live in ways which will be mutually enhancing for both us and the rest of the created order. From the overview of Berry's cosmological perspective provided in the third chapter, it was possible to glean how the universe can be seen to have a psychic-spiritual dimension; how the human can overcome its autism to or separation from the rest of the created world; how one can adopt a spirituality which recognizes both divine presence within creation and the universe as sacred; and how the universe can be understood as a community of subjects rather than a collection of objects. With the remedy of Berry in hand, the terms which were defined in the first chapter were ready to be re-examined through the lens of Berry's cosmological perspective.

Thus, the fourth chapter indicated how our current understanding of spirituality, health, the spiritual dimension of health, and human-ecosystem health might be altered if these were re-articulated from within this perspective of the new cosmology. A revised
definition for spirituality broadened its scope to encompass more than humans; it recognized a spiritual dimension in all beings in creation. This was necessary in order to articulate an understanding of the spiritual dimension of human health which would incorporate the principles of the new cosmology. That articulation added new aspects to earlier discussions concerning suffering and death since human life was now contextualized not merely within the repeating cycles of human history, but within the irreversible, unrepeatable, developmental processes of cosmic history. The personal events of illness, suffering and death were now situated within a cosmic story pregnant with divine presence and going somewhere.

In order to consider how our notion of health and healthcare might shift within this new perspective, it was necessary to revisit the principle of innate intelligence and to introduce the concepts of ecological unconscious and ecological consciousness. These amplified our sense of intercommunion with the rest of the created world, emphasizing how we are formed and sustained by cosmogenic processes. They also suggested how communication can occur between us and the rest of the created order, and between us and the Divine. To explore how this might be possible and to illustrate the form that such Ecozoic spirituality and healthcare might take, two examples were presented and discussed. They provided a practical illustration of the spiritual dimension of human health if one adopts the cosmology of Thomas Berry, indirectly addressing the three issues which prompted the thesis in the first place.

As has been stated at various times during this thesis, this understanding of spirituality and health is but one perspective. It seeks to address certain critical issues confronting us, but other approaches could undoubtedly do so as well. I believe that this approach offers the benefits of being holistic; of adopting the best scientific understanding that we presently hold concerning the universe and our place within it; of being consistent with and drawing upon the Christian tradition; of not only being capable
of incorporating current notions of spirituality and health, but of being able to expand these in ways which might enhance our well-being and the well-being of the rest of the planet. Despite these benefits, there remain some concerns.

Firstly, using cosmogenesis as a context can result in a vista so large that the individual might get lost or becomes seemingly inconsequential in a fifteen billion year story involving $10^{40}$ stars. While the principles of communion and differentiation are important, they must not be allowed to overwhelm the principle of unique subjectivity.

Secondly, as our understanding of cosmogenesis grows, the “Big Bang” story will undoubtedly change accordingly. We must not tell the story in its present form with such certitude that these inevitable shifts threaten the credibility of the entire project. Nor may we be so confident with our present position that it becomes perceived as beyond revision. Cosmogenesis is about change, about increasing complexification and differentiation, moving toward greater fulfillment. We must assess these changes with critical awareness, yet remain open to the surprises which emerge from within the spontaneities of the adventure.

Thirdly, we cannot assume that adopting a cosmological perspective which re-integrates the human into cosmic dynamics and which recognizes a divine presence within cosmic processes will necessarily cause humanity to embrace more ecologically sound practices. While the example of Traditional Chinese Medicine demonstrates how a culture can perceive itself as integrally part of a divine milieu and theoretically experiencing a profound intimacy with the rest of creation, Chinese culture has nevertheless been as guilty of environmental pollution and destruction as any Western cultures. As Thomas Berry observes,

China is a foremost example of theoretic intimacy with the Earth by a people who seemed not to understand the harm they were doing in denuding the country of its forests to obtain larger areas for cultivation.²

² Berry and Swimme, The Universe Story, 198.
Three thousand years ago, the Yellow sea gained its name when deforestation practices caused so much soil erosion that the sea was coloured as far as fifty miles from shore. Like other cultures, the actions of the Chinese often conflicted (and continue to conflict) with their cosmological wisdom. In this respect, our actions are more important than our cosmological vision since it is the consequences of the former which will significantly determine our survival, either because of or in spite of the latter. This reminds us that theoretical speculation is insufficient; cosmological visions or the telling of the universe story are equally insufficient. The action which arises from the dream is more important. But if the dream is faulty, the action will invariably be so; if the dream is sound, the action might be, but it may not. This uncertainty is not surprising since cosmogenesis itself is about surprises, uncertainty and unexpected outcomes, and includes choices resulting from the free will of humans.

Nor should the new cosmology be unreservedly adopted as a new myth which can provide the direction and psychic energy needed to move into the Ecozoic age. The new cosmology has been formulated by the same scientific discipline which earlier contributed Newtonian mechanics and our mechanistic, reductionistic view of the cosmos—a view which has been implicated as a significant cause of our present ecological crisis. Just as Berry diagnoses paradigm addiction as an explanation for our obstinate pursuit of the myths of progress and the industrial age, it is necessary to rule out the possibility that turning to physics yet again for another new cosmology might reveal an addiction to the myth of science.

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4 This is also true of the Japanese and Korean cultures which share a similar cosmological perspective with the Chinese. For instance, Japanese lumber companies deforest the tropics and Japanese car manufacturers contribute to global warming. Korean agricultural and manufacturing practices have contributed similar ecological destruction. See, Rasmussen, *Earth Community. Earth Ethics*, 321.
Finally, some authors argue that a myth must gradually emerge from within the collective metaconscious of a people as that people perceive that their present myth no longer adequately explains the reality which they are experiencing. For instance, Jacques Ellul contends that a “myth is not the result of fabrication on the part of the intellectuals or the elite. It is always an expression of the most active force in a society, the force creative of the future...” He insists that a myth cannot be pushed onto a society; it must emerge from within that society, unbeknownst to the conscious processes of its members. In other words, authors like Ellul and Vanderburg maintain that a myth cannot be placed before a society in order to draw it forward. It must emerge from within the collective metaconscious in response to the dialectical discord between the internal aspirations and the external constraints, between the internal systematization of reality and the external chaos that reality presents. Further study could be done to explore the role of myth in the transformation of societies—whether it is consciously articulated to serve as guide and motivator in advance of the transformation, or whether it emerges during and as a consequence of the transformation itself. Or does the dynamic of cultural transformation employ myth in some other way? Is Berry proposing a new myth when he exhorts his readers with the new cosmology; or is he merely providing society with a vision on which it can reflect and be moved, and to which its collective metaconscious might respond with a new myth? Such questions speak to the core of Berry’s methodology and would be central to a deeper analysis of Berry’s cosmology.

The new cosmology also suggests areas of further theological analysis. For instance, some authors are exploring how our understanding of divine immanence within creation might be expanded or altered as we come to a new understanding of “creation” according to

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5 The experiences and stimuli which we encounter in our lives are internalized and arranged within the brain into interrelated patterns which are also enfolded with our genetic patterns. This system, built up from experience and the systematic interpretation of stimuli, can be called the metaconscious. See, Willem H. Vanderburg, The Growth of Minds and Cultures (Toronto: University of Toronto Press, 1985), 42-43; cf., 124, 234.

the new cosmology. Wolfhart Pannenberg contends that the universal field theory “could be used in theology to make the effective presence of God in every single phenomenon intelligible,” while Lawrence Fagg at the Catholic University of America argues that the electromagnetic interaction (EMI) might serve “as a physical correlate for the immanence of God” since “electromagnetic force provides [such] a simplifying and unifying influence” on almost every natural phenomena. Pannenberg also recalls the Patristic understanding of pneuma, including the “cosmological function of the Spirit in creation,” as he asserts that theologians should now “consider it obvious to relate the field concept of modern physics to the Christian doctrine of the dynamic presence of the divine Spirit in all of creation.” In other words, just as the new cosmology has prompted a new understanding of the cosmic Christ, so too does it engender new reflection on a Spirit which extends beyond intratrinitarian models to include a cosmogenic perspective. Mark I. Wallace has also undertaken such a task, developing an ecological pneumatology which describes the Spirit “not as a disembodied spiritual force, detached, even aloof from the living world, but rather as the very life of the world as we know it, ... as God’s invigorating presence within the society of all living beings.” For Wallace, the Spirit as life-giving breath (rūah) within the cosmos, acts as “a healing and subversive life-form” which “is enfleshed and embodied through natural organisms and processes.” Wind, water and fire are no longer conceived merely as symbols of the Spirit; rather, the Spirit is “enfleshed” in these. Equally intriguing about Wallace’s work is the potential for


8 Pannenberg, “The Doctrine of Creation,” 13. I am not sure that theologians would find this correlation so “obvious.”


10 Ibid., 260.
drawing parallels and comparisons with various positions taken by Berry, namely: a valuing of the rhetorical approach, an exploration of the role of violence, a promotion of a biocentric approach over a theocentric or an anthropocentric focus, and the development of an ecological ethic emerging from an understanding of divine immanence.

Just as Berry has provided a fresh examination of creation themes within the context of the new cosmology, our understanding of redemption and sin also require further study. Larry Rasmussen briefly touches on these subjects in his very fine text, Earth Community, Earth Ethics, but such important and central Christian themes require and deserve a careful and comprehensive study.11 Such a discussion might consider how sin and evil are defined in a developmental, irreversible universe which considers humans to be much smaller players than previously conceived;12 how sin and evil are understood within this seemingly optimistic universe story (recalling McFague's critique which merits further deliberation); how eschatology as "end time" is to be understood in a universe characterized by cosmogenesis and the Second Law of Thermodynamics; and finally, how salvation as "a bringing to health" or as "a making whole" might address the separation humanity has envisioned between itself and the rest of creation.13

Similarly, the new cosmology spurs a reconsideration of our models of Trinity. Berry has offered some preliminary reflections on this subject, noting that

the explanation of Trinity in our times, in light of the cosmological model, would be in terms of a principle of differentiation: the Father; the principle of interior articulation, the inner principle of things: the Son; and the Holy Spirit, the

11 Rasmussen, Earth Community, Earth Ethics, 274-276, 310-311.
12 Rasmussen recalls a model employed by Robert Overman and reported by John Cobb in Sustainability: Economics, Ecology, and Justice (Maryknoll, N.Y.: Orbis Books, 1992), 119-120. In that model, Overman proposes that the history of the universe could be recorded in a thirty volume set, with each volume consisting of five hundred pages (i.e., each page relates one million years of history). Human civilization would receive its first mention in the last two words of the last page of the last volume. See Rasmussen, Earth Community, Earth Ethics, 27.
bonding, the holding together of things, the spirit of love, the *spiritus*, the inner spirit of reality.\textsuperscript{14}

Again, such an important theological theme requires a considered and careful review.\textsuperscript{15}

These matters notwithstanding, Thomas Berry's expansive and thoughtful reflection on the new cosmology has provided an insightful critique of our current crisis and a useful context for exploring the spiritual dimension of human health. It suggests a milieu for healing the separation of the human from the rest of the created world, and for the reclamation of an understanding of spirituality grand enough to include more than just humanity.

\textsuperscript{14} Berry and Clarke, *Befriending the Earth*, 15-16.

\textsuperscript{15} Beatrice Bruteau also hints at such a review in her work, "Eucharistic Ecology and Ecological Spirituality," 502-504. See, also, Kaufman, *In Face of Mystery*, 296-297.
APPENDIX A

DEFINITION OF SPIRITUALITY

Spirituality is a fundamental dimension of our personhood, animating the way we think, act and live, and creating a unitive integration of the various dimensions of our unique being. Concurrently, our spirituality informs the way we engage life beyond ourselves, drawing us into a unitive relationship with that which is typically considered to be apart from ourselves—others, the world and the Divine. The purpose and meaning we find in life and the ends which we seek are coloured by the spirituality we hold, by the commitments, principles or ultimate values which we have come to accept through personal reflection and the instruction of society and church.

DEFINITION OF HEALTH

Health might be defined as an experience of well-being resulting from a dynamic balance that involves the holistic integration of our physical, psychological and spiritual dimensions as well as our interactions with our natural (cosmic) and social environments, so that we can adapt in a creative, joyful and life-enhancing fashion to the stressors which challenge us. Health exists when the innate intelligence of our being can function optimally and unrestricted, and when we can realize the aspirations we have chosen and strive to actualize our potential in harmony with each other, with the rest of creation and with God.

INCLUDING HUMAN HEALTH WITHIN ECOSYSTEM HEALTH

A definition of human health contextualized within ecosystem health is further enlarged by the following notions: i.) human health is dependent upon ecosystem health; if the latter is significantly compromised, then the former will suffer; ii.) since the biological traits of human health emerged over millions of years within the context of a slowly evolving environment, rapid change in ecosystem parameters can result in a person so ill-suited for her/his environs that disease occurs; iii.) since humans can attribute symbolic significance to specific elements of the ecosystem, these elements can become associated with emotional and spiritual importance.

DEFINITION OF COSMOLOGY

Cosmology is a critically derived narration which describes the origin and order of the universe as a whole. It tends to reflect the worldview of its author(s). If it is informed by theology or philosophy, it is more likely to consider the place and purpose of humanity within creation, and in the case of theological reflection, the significance and role of the Creator.
APPENDIX B

THE "BIG BANG" STORY

Fifteen billion years ago, there was nothing—no time, no space—only the Ultimate Mystery from which all that is comes. From within this Ultimate Mystery, a single primal singularity emerged of enormous temperature, density, and gravity, but of minuscule volume—about one billionth the size of a proton. The temperature of this primal singularity was over a thousand billion degrees Celsius—too hot for particles or atoms or even the constituents of atoms to exist. There was only pure, undifferentiated energy. With a power which would echo across the ages, the primal singularity exploded as an enormous fireball. Yet within only a minute of this explosion beginning, the fireball had cooled to a relatively frigid million degrees. And in the transformation of that fireball,

all the energy that would ever exist in the entire course of time erupted as a single quantum—a singular gift—existence. If in the future, stars would blaze and lizards would blink in their light, these actions would be powered by the same numinous energy that flared forth at the dawn of time.

After about 500,000 years, this spectacular fireball cooled enough for atoms of hydrogen to form. Accordingly, matter became uncoupled from energy, and the universe shifted from a state of energy alone to a dynamic of matter and energy. Gravity began to pull clouds of hydrogen together, giving birth to the first stars. For the next 300,000 years, the hydrogen atoms of these stars were drawn together by the force of gravity. With the gradual coupling of hydrogen atoms, great amounts of heat and energy were released as helium atoms were formed—so much heat and energy that these stars became so hot and unstable that they exploded as the first supernovas, seeding their newly formed atoms into the great void.

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1 Paul Davies, Superforce: The Search for a Grand Unified Theory of Nature (London: Unwin Paperbacks, 1985), 192; Russell, "Contingency in Physics and Cosmology," 27. Stephen Hawking does not believe that a "singularity" existed at the beginning of space-time. Instead, he suggests that "space and time together might form a finite, four-dimensional space without singularities or boundaries, like the surface of the earth but with more dimensions." See, Hawking, A Brief History of Time, 173.

2 Some researchers contend that that temperature was once about $10^{32}$ degrees Kelvin at $10^{43}$ seconds (or $0.00000000000000000000000000000001$ seconds) after the beginning of time, the earliest time for which scientists have been able to make speculations. See, Barbour, Religion In An Age of Science, 127. The Kelvin scale is an absolute scale of temperature based on the average kinetic energy per molecule of a perfect gas. In theory, at 0° Kelvin, there would be no kinetic energy and hence no motion in the molecules of a gas. $0° K = -273° C = -460° F$; the freezing point of water is $273° K = 0° C = 32° F$; the boiling point of water is $373° K = 100° C = 212° F$. The surface temperature of our sun is about $6 \times 10^3$ degrees K while its interior reaches temperatures of $15 \times 10^6$ degrees K.


4 Berry and Swimme, The Universe Story, 17.

5 As gravity pulls hydrogen atoms together to form helium, an outward energy is released which counters this inward pull of gravity, preventing stars like our own Sun from collapsing. However, if the energy released overwhelms the inward force of gravity, the star will explode. If the dynamic balance between these inward and outward forces marginally favours the latter, energy is gradually released to the surrounding space. On our Sun, the production of helium produces the radiant energy which fires life on our
As the particles of energetically charged galactic dust gathered again through the beckoning of gravity, second and third generations of stars were formed. Through their formation, enormous heat was again created which forged all the other elements, like carbon, neon and nitrogen. For the next 5 billion years, these new stars gradually clustered together into swirling, spiraling systems. Galaxies were formed by the billions. Giant galaxies emerged as they swallowed smaller galaxies. One of these new galaxies has come to be called the Milky Way galaxy. It stretches across 100,000 light years of space and contains over 100,000 million stars.

About 4.5 billion years ago, our solar system formed within the Milky Way galaxy from the stardust of a star which Berry and Swimme have named Tiamet. Tiamet exploded as a supernova within the Milky Way galaxy. The sacrifice of this star provided the energy and matter for our newly formed sun. Particles and gases circled about this new star in the relative coolness of space until stable molecules and eventually planets came into being—planets like Mars, Saturn and Jupiter. In this, our solar system, the third planet out from the Sun is called Earth.

As the Earth cooled, it formed a crust around its molten core. The vapor from its boiling interior rose upward, cooled, and formed clouds. It rained for eons, and eventually, a planetary womb—the sea—was formed. The rains carried a mixture of hydrogen, ammonia, methane and oxygen from the atmosphere into seas. These simple elements were pulled together in a numinous attraction of creative energy to witness to a new level of complexity. And so it was that, almost 4 billion years ago, the first primitive bacteria emerged. Within this new life form, some molecules learned how to recognize their partners so that they could couple in a mysterious dance to form DNA. Cells were born which could remember and replicate their own pattern because of this DNA, and henceforth genetic wisdom could be passed from one generation to the next. Reproduction and the ability to heal damaged cells had come into being.

Some of these first bacteria, known as prokaryotes, learned how to capture and consume the energy of the Sun through photosynthesis. Life on the planet thrived for 2
billion years, filling the atmosphere with more and more oxygen. But the early bacteria could not breathe oxygen, and as the atmosphere became more and more concentrated with this highly explosive and toxic gas, early life faced its termination. Just when the extinction of all life seemed imminent, a new life form called eukaryotes evolved which flourished through the consumption of oxygen. Through a solution which was mutually enhancing, through symbiosis, through one life form consuming the expired waste of another, a crisis was averted less than 2 billion years ago.

Not only did the eukaryotes save life on the planet, they introduced three new stages into the evolution of Earth. The eukaryotes invented meiotic sexual reproduction which permitted two genetically different beings to unite, and consequently, the planet’s diversity increased a hundredfold. The eukaryotes were also the first life form to eat another life form, introducing predator-prey relationships and the creativity which emerges during the search for survival. Finally, eukaryotes submerged their unique, individual identities in order to join together to form new multi-cellular animals.

As cells gathered together and committed themselves to one another, they found that in community their own survival and development was enhanced. And so the first primitive plants emerged. With the passage of time, biological communities emerged and the first ecosystems occurred. As creatures became more and more complex, some evolved who had backbones which would house a central nervous system. Yet all these life forms still lived in the waters.

Only 425 million years ago, plants, stranded on the land by ocean waves, adapted to the crushing force of gravity. They created the wood cell to build an internal architecture which would not only permit them to withstand the “weightfulness” of life out of the buoyancy of the sea, but would also allow them to construct the infrastructure needed to reach toward their solar food. In another 30 million years, they would be followed by insects and more complex beings. The first birds would appear 245 million years later. And with a splendour which ecstatically celebrated the wonder of creation, flowers flourished across the lands, changing the appearance of the earth where mammals and dinosaurs scampered 114 million years ago.

The earliest humans appeared about 2.6 million years ago, and domesticated fire about 2 million years later. And humans, “the ash of stellar alchemy [emerged] into consciousness,” continued to evolve. And new life forms continued to emerge. Seventy-two thousand years ago, polar bears came to be.

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13 Berry and Swimme, The Universe Story, 101-111.
14 Ibid., 116-117
15 Ibid., 273.
16 Sagan, Cosmos, 338.
APPENDIX C

A RESTATMENT OF THOMAS BERRY’S TWELVE PRINCIPLES FOR UNDERSTANDING THE UNIVERSE AND THE ROLE OF THE HUMAN IN THE UNIVERSE PROCESS¹

1. The universe is the primary revelation of the ultimate mystery whence all things emerge into being.
   1. The universe, the solar system, and the planet earth in themselves and in their evolutionary emergence constitute for the human community the primary revelation of that ultimate mystery whence all things emerge into being.

2. We are part of a creative, irreversible, non-repeatable process. It is a one-time event.
   10. The emergent process of the universe is irreversible and non-repeatable in the existing world order. The movement from non-life to life on the planet earth is a one-time event. So, too, the movement from life to the human form of consciousness. So, also, the transition from the earlier to the later forms of human culture.

3. Spirituality is not limited to the human.
   3. From its beginning the universe is a psychic-spiritual as well as a physical-material reality.

4. The laws which define the reality, values and direction of the universe—differentiation, subjectivity and communion—also apply to us.
   4. The three basic laws of the universe at all levels of reality are differentiation, subjectivity and communion. These laws identify the reality, the values of the universe and the directions in which the universe is proceeding.

12. The main task of the immediate future is to assist in activating the inter-communion of all the living and non-living components of the earth community in what can be considered the emerging ecological period of earth development. Functionally, the great art of achieving this historical goal is the art of intimacy and distance, the capacity of beings to be totally present to each other while further affirming and enhancing the differences and identities of each.

¹ Berry’s twelve principles for understanding the universe and the role of the human in the universe process have been restated to reflect the narrower focus of this thesis—i.e., the human as the subject of health in the Ecozoic era. The restated form appears in bold print and precedes the original statement in normal type. Since I have altered the order of Berry’s principles and conflated some to accommodate the needs of this thesis, the original numbering used by Berry is also included. For the original statement, see, Berry, “Twelve Principles,” 176-177.
5. The universe is a communion of subjects, not a collection of objects, and we are members of that community.
   2. The universe is a unity, an interacting and genetically related community of beings bound together in an inseparable relationship in space and time. The unity of the planet earth is especially clear; each being of the planet is profoundly implicated in the existence and functioning of every other being of the planet.

6. "The human is that being in whom the universe activates, reflects upon and celebrates itself in conscious self-awareness."
   6. The human is that being in whom the universe activates, reflects upon and celebrates itself in conscious self-awareness.

7. Our genetic coding arises from and bonds us to the universe, making us part of a macrophase universe and a microphase bioregion.
   8. The genetic coding process is the process through which the world of the living articulates itself in its being and its activities. The greater wonder is the creative interaction of the multiple codings among themselves.

8. We are genetically coded for a trans-genetic cultural coding. By being attentive to our genetic coding, we can respond to the ecological crisis and modify our cultural community.
   9. At the human level genetic coding mandates a further trans-genetic cultural coding by which specifically human qualities find expression. Cultural coding is carried on by educational processes.

9. We are part of an emerging Ecozoic era which regards the Earth as a sacred integrated community.
   11. The historical sequence of cultural periods can be identified as the tribal-shamanic period, the neolithic village period, the classical civilizational period, and scientific-technological period, and the emerging ecological period.

7. The earth, within the solar system, is a self-emergent, self-propagating, self-nourishing, self-educating, self-governing, self-healing, self-fulfilling community. All particular life-systems must integrate their functioning with this larger complex of mutually dependent earth systems.

10. The creativity of the universe and of our lives involves times of violence, heroism and grace.
    5. The universe has a violent as well as a harmonious aspect; but it is consistently creative in the larger arc of its development.
APPENDIX D

PRINCIPLES FOR AN ECOLOGICAL AGE WHICH CAN GUIDE US IN DEVELOPING TECHNOLOGIES THAT WOULD MUTUALLY ENHANCE BOTH THE HUMAN COMMUNITY AND THE EARTH PROCESS

1. Human technologies should function in an integral relation with earth technologies, in an evocative rather than a despotic manner;
2. The changes required to move from the industrial age are enormous, and will entail tremendous withdrawal symptoms as we renounce our addiction;
3. Sustainable progress must be progress for the entire earth community, involving every component of the earth community;
4. Our technologies must be integrated in such a way that they take care of their waste products;
5. We need a functional cosmology which will articulate the mystique needed for this integral earth-human relationship; we need to recapture our reverence for the cosmos;
6. Because nature can be violent as well as benign, our technologies must be defensive of our true needs;
7. Our technologies need to function within a bioregional context, within functional communities which will develop their own bioregional cultures.

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1 Berry, The Dream of the Earth, 65-68.
## APPENDIX E

### QUALITIES OF THE FIVE ELEMENTS

<table>
<thead>
<tr>
<th>Quality</th>
<th>Wood</th>
<th>Fire</th>
<th>Earth</th>
<th>Metal</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>green</td>
<td>red</td>
<td>yellow</td>
<td>white</td>
<td>blue</td>
</tr>
<tr>
<td>Season</td>
<td>spring</td>
<td>summer</td>
<td>late summer</td>
<td>autumn</td>
<td>winter</td>
</tr>
<tr>
<td>Organ</td>
<td>Liver</td>
<td>Gall Bladder</td>
<td>Sm. Intestine</td>
<td>Heart</td>
<td></td>
</tr>
<tr>
<td>Time of day</td>
<td>1 AM - 3 AM</td>
<td>1 PM - 3 PM</td>
<td>9 AM - 11 AM</td>
<td>5 AM - 7 AM</td>
<td>3 PM - 5 PM</td>
</tr>
<tr>
<td>Direction</td>
<td>east</td>
<td>south</td>
<td>centre</td>
<td>west</td>
<td>north</td>
</tr>
<tr>
<td>Flavour</td>
<td>sour</td>
<td>bitter</td>
<td>sweet</td>
<td>pungent</td>
<td>salty</td>
</tr>
<tr>
<td>Body orifice</td>
<td>eyes</td>
<td>ears</td>
<td>mouth</td>
<td>nose</td>
<td>genitals, urethra, anus</td>
</tr>
<tr>
<td>Sense organ</td>
<td>eyes</td>
<td>tongue</td>
<td>mouth</td>
<td>nose</td>
<td>ears</td>
</tr>
<tr>
<td>Fluid secretion</td>
<td>tears</td>
<td>perspiration</td>
<td>saliva</td>
<td>mucous</td>
<td>spittle</td>
</tr>
<tr>
<td>Emotion</td>
<td>anger</td>
<td>joy</td>
<td>sympathy</td>
<td>grief</td>
<td>fear</td>
</tr>
<tr>
<td>Voice</td>
<td>shouting</td>
<td>laughter</td>
<td>singing</td>
<td>weeping</td>
<td>groaning</td>
</tr>
<tr>
<td>Part of body governed</td>
<td>muscles &amp; sinews</td>
<td>blood vessels</td>
<td>mouth</td>
<td>body hair &amp; skin</td>
<td>bone marrow &amp; bones</td>
</tr>
<tr>
<td>External Presentation</td>
<td>nails, hands, feet</td>
<td>complexion</td>
<td>flesh</td>
<td>body hair &amp; skin</td>
<td>head hair</td>
</tr>
<tr>
<td>Power granted</td>
<td>capacity for control</td>
<td>capacity for sadness/grief</td>
<td>belching</td>
<td>capacity to cough</td>
<td>trembling</td>
</tr>
<tr>
<td>Smell</td>
<td>rancid</td>
<td>scorched</td>
<td>fragrant</td>
<td>rotten</td>
<td>putrid</td>
</tr>
<tr>
<td>Weather</td>
<td>wind</td>
<td>heat</td>
<td>dampness, humidity</td>
<td>dryness</td>
<td>cold</td>
</tr>
<tr>
<td>Storing of life aspect</td>
<td>spiritual faculties</td>
<td>spirit</td>
<td>ideas, opinions</td>
<td>inferior animal spirits</td>
<td>will power &amp; ambition</td>
</tr>
<tr>
<td>Grain</td>
<td>wheat</td>
<td>glutinous millet</td>
<td>millet</td>
<td>rice</td>
<td>beans, peas</td>
</tr>
<tr>
<td>Fruit</td>
<td>peach</td>
<td>plum</td>
<td>apricot</td>
<td>chestnut</td>
<td>dates</td>
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<tr>
<td>Meat</td>
<td>fowl</td>
<td>mutton, lamb</td>
<td>beef</td>
<td>horse</td>
<td>pig, fish</td>
</tr>
<tr>
<td>Vegetable</td>
<td>mallow</td>
<td>coarse greens</td>
<td>scallions</td>
<td>onions</td>
<td>leeks</td>
</tr>
<tr>
<td>Number</td>
<td>eight</td>
<td>seven</td>
<td>five</td>
<td>nine</td>
<td>six</td>
</tr>
<tr>
<td>Musical note</td>
<td>chio (lute)</td>
<td>chich (36 reed mouth organ)</td>
<td>kung (drum)</td>
<td>shang (talent &amp; ability)</td>
<td>yu (26 stringed lute)</td>
</tr>
</tbody>
</table>

Based on: Connelly, *Traditional Acupuncture.*
BIBLIOGRAPHY

WORKS BY THOMAS BERRY RELEVANT TO THIS THESIS


"A New Era: Healing the Injuries We have inflicted on Our Planet." Health Progress 73, no. 2 (1992b): 60-63.


"The Meadow Across the Creek." 1996. TMs [photocopy]. Thomas Berry, Greensboro, NC.

"The Cosmology of Religions." 1997a. TMs [photocopy]. Thomas Berry, Greensboro, NC.


OTHER WORKS


Buchanan, John. "Creation and Cosmos: The Symbolics of Proclamation and Participation." In *Cosmology and Theology*, ed. David Tracy and Nicholas Lash,


Hancock, Trevor. "Lalonde and Beyond: Looking back at 'A New Perspective on the Health of Canadians'". *Health Promotion* 1, no. 1 (1986): 93-100.


Schneiders, Sandra M. "Theology and Spirituality: Strangers, Rivals, or Partners?" *Horizons* 13, no. 2 (1986): 253 - 274.


Zhong, N. S. "New insights into risk factors of asthma." *Respirology* 1, no. 3 (Sept. 1996): 159-166.
Zimmerman, Michael E. “Quantum Theory, Intrinsic Value, and Panentheism.”