Toward an Ecological Conversion: 
Ecospiritual Literacy for Developing Roman Catholic 
Ecological Education

by

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Abstract

The root of the current ecological crisis is a spiritual one and demands a genuine ecological conversion. In response to this call, the dissertation attempts to develop a model of Roman Catholic ecological education which seeks an integral development of thoughts, feelings, and actions. For this purpose, the study proposes ecospiritual literacy as a conceptual foundation of Roman Catholic ecological education and develops its basic principles which collectively inspire ecological conversion.

Based on an evolutionary cosmology which is concerned with both the physical and spiritual dimensions of the larger reality, the concept of ecospiritual literacy encourages learners to understand how they are deeply embedded within the larger world, to sense the divine sacredness which all of creation reveals, and to participate in their role for enhancing the sacred community of creation. With its emphasis on seeing the whole aspect of the larger reality, ecospiritual literacy enables Roman Catholic ecological education to highlight Earth as an active subject (i.e., as our primary teacher) that reveals ecological and spiritual messages. Metaphors of ecospiritual literacy, the Book of Creation and the Grammar of Creation, allow Roman Catholic ecological education to appreciate the depth of ecological and spiritual meanings revealed by and in the unfolding Earth community.
Ecospiritual literacy helps Roman Catholic ecological education to change its educational paradigm from informative teaching to transformative learning. Drawing from the anthropological, spiritual, and ethical dimensions of ecospiritual literacy, transformative learning focuses on three approaches: how to renew ecological identity in relation to the rest of creation; how to deepen spiritual sensitivity to the divine presence in creation; and how to engage in ethical commitments for the well-being of the Earth community. By reflecting on each approach through the lens of the Grammar of Creation (i.e., differentiation, subjectivity, and communion), this dissertation establishes a set of transformative learning principles for Roman Catholic ecological education. Suggesting these principles as guideposts toward ecological conversion, Roman Catholic ecological education helps us to be integrated into the creative processes of the larger reality so that we can turn ourselves from a human-centered world to the sacred Earth community.
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INTRODUCTION

1. Background of the Study

The Ecological Crisis as a Spiritual Crisis

Earth is in crisis; “she ‘groans in travail’ (Rom 8:22).” Her creatures are faced with a worldwide state of emergency.\(^1\) While climate change is the ecological issue that attracts most of the political and public concern, there are also many ecological problems: pollution of the air, water, and land; drought; the spread of deserts; the extinction of species and the loss of biodiversity; and the depletion of natural resources.\(^2\) These interlinked issues have local and global implications. They will burden generations to come, and are signs of a planetary crisis. The planetary ecological crisis brings more suffering to people who are already poor and vulnerable. Under the burden of ecological devastation, millions of vulnerable people are being threatened with a loss of basic human needs such as food security, health, and shelter.\(^3\) These circumstances cause “sister earth, along with all the abandoned of our world, to cry out, pleading that we take another course.”\(^4\)

We know this; we see these ‘inconvenient truths’ in newspaper columns and on television documentaries. We also have information on how to solve these problems; at the very least we know that we need to reduce our carbon emissions and to alter our consumption-intensive lifestyles. However, we lack a heartfelt commitment to bring about this change due to our deep-seated reluctance to respond to the current ecological crisis and to change our actions. This unwillingness to change reveals that the present ecological devastation is a matter of the heart, rather than a lack of information. In other words, the root of the ecological crisis is an inner and

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\(^1\) Pope Francis, *Laudato Si’*, Encyclical Letter (Vatican City, VA: Libreria Editrice Vaticana, 24 May 2015), #2, accessed 26 April 2017, http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html. Throughout this dissertation, the word ‘Earth’ will be capitalized and the definite article will not be used for the term. This usage reflects the importance and subjectivity of Earth.


\(^4\) Francis, *Laudato Si’*, #53.
spiritual crisis, and only secondarily an economic, social, and political one. Al Gore, a leading politician and environmental activist, affirms this when he writes that, “the more deeply I search for the roots of the global environmental crisis, the more I am convinced that it is an outer manifestation of an inner crisis that is, for lack of a better word, spiritual.”

Seeing the ecological crisis as a spiritual crisis implies that what is happening to our planet is a symptom of our broken relationship with the rest of creation and God. Although the cause of ecological deterioration lies partly with the failure of public environmental policy and management, the unsustainable situation of our planet is ultimately due to a profound rupture in our relationship with creation and the Creator. As Jim Profit writes, at the root of the ecological crisis is “a disorder in the three-fold relationship … between (sic) God, humans and the rest of Creation.” In fact, the current peril reveals how we have alienated ourselves from the Earth community and how we have become estranged from the Divine within creation. As a result of losing an intimate relationship with the planet and its mystery, we have created an inner wasteland, which in turn has resulted in such things as the tar sand projects of Alberta and the deforestation of the Amazon. In his encyclical *Laudato Si’,* Pope Francis, in quoting Pope Benedict XVI, metaphorically describes this ecological crisis as a spiritual crisis: “The external deserts in the world are growing, because the internal deserts have become so vast.”

The Importance of Ecological Conversion

With the growing awareness that the root of our ecological crisis is essentially spiritual, several Christian theologians are calling for a transformation of both mind and heart. They understand

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that our ecological plight cannot be overcome through simple government regulations or technological fixes. This is not to say that working to improve our environmental policies and to develop renewable energies are unimportant tasks; even though these efforts are required, they will not suffice unless we ourselves have a profound desire for change that transforms our relationship with the rest of creation and with God. As Paul Brockelman claims, “[u]nless and until we change our basic attitudes toward nature (and the relationship of God to nature) and our conceptions of what constitutes progress and the good life, it may be that further environmental devastation will be inevitable.” It follows that if the current ecological crisis is to be mitigated, an ecological conversion must be willed.

Church leaders often emphasize the need for ecological conversion. For instance, Pope John Paul II, who introduced the term into Catholic Social Teaching, asserts that the true solution to ecological challenges is “an inner change of heart,” and he encourages us to support ecological conversion beyond economic and technological proposals. Patriarch Bartholomew challenges us to acknowledge our “environmental sin” which harms the rest of creation. He stresses the need for repentance, that is, for a “change of mind” that seeks a new way of thinking about our relationship to the world and our relationship to God. Pope Francis states that ecological conversion is not optional or secondary but intrinsic to the Christian experience; all Christians, at

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12 Bartholomew, On Earth as in Heaven, 98-99, 171.
both individual and communal levels, are called to a profound change of heart, and to reconciliation with creation.\textsuperscript{13} Francis believes that this ecological conversion can inspire us to “greater creativity and enthusiasm in resolving the world’s problems and in offering ourselves to God.”\textsuperscript{14}

The purpose of ecological conversion, according to theologians and church leaders, is to inspire a healthy relationship with God and with all of creation. Quick solutions and/or superficial fixes are inadequate to the challenge. This is not a turning away from an unsustainable culture, but a returning to the whole Earth community, to recover our connection with its myriad inhabitants and its ultimate Source. Such a turn requires a profound change in the way we think, feel, and act toward the Earth community. We will not be moved to change unless we have a new way of thinking, feeling, and acting in relation to Earth, which is seen as being permeated with the divine presence and in which we are rooted.\textsuperscript{15} For a genuine ecological conversion, we ought to allow ourselves to be converted to the Earth community in more integrated ways; a conversion to Earth is not a secondary choice, but “a moral imperative” toward a new vision of a sustainable future.\textsuperscript{16}

\textbf{The Need for Ecological Education}

Responding to the significance of this ecological conversion prompts us to ask: “What then should we do?” (Luke 3:10) How might Christianity instill a profound desire for change? How can our Church aid in a conversion toward Earth? And how can “the harmony between the Creator, humanity, and creation as a whole” be recovered?\textsuperscript{17}

One important way to affect an ecological conversion is through education. Douglas C. Bowman argues that Christian education can alter our ways of thinking and acting to allow for a sustainable future.\textsuperscript{18} In fact, today, the emphasis on ecological education is often found in

\begin{itemize}
\item \textsuperscript{13} Francis, \textit{Laudato Si’}, #217-219.
\item \textsuperscript{14} Ibid., #220.
\item \textsuperscript{15} See Johnson, \textit{Ask the Beasts}, 258-259; Edwards, \textit{Partaking of God}, 174-179.
\item \textsuperscript{16} Johnson, \textit{Ask the Beasts}, 259. See also Delio, Warner, and Wood, \textit{Care for Creation}, 176-177, 182.
\item \textsuperscript{17} Francis, \textit{Laudato Si’}, #66.
\item \textsuperscript{18} Douglas C. Bowman, \textit{Beyond the Modern Mind: The Spiritual and Ethical Challenge of the Environmental Crisis} (New York, NY: The Pilgrim Press, 1990), 86-87. Max Oelschlaeger agrees that Christian
Christian contexts. For instance, John Paul II stresses that “[a]n education in ecological responsibility is urgent,” and that it ought to involve “a genuine conversion in ways of thought and behaviour.” Moreover, Local Bishops’ Conferences state that schools and parishes need to promote an education that raises ecological awareness. Individual theologians are also attempting to develop a Christian education with an ecological focus.

In the last chapter of *Laudato Si’*, Pope Francis points to the need for an ecological education which allows for the creation of a covenant between humanity and the rest of creation. In his view, the ultimate goal of ecological education is “to bring about deep change” in our mindsets and behaviour. Francis is committed to a holistic approach toward an ecological education, capable of re-establishing, through a profound conversion, the harmony among human beings, the rest of creation, and God. According to Francis, ecological education ought to promote a new understanding of the human, to develop an ecologically sensitive spirituality, and to lead us to real changes in our lifestyle with practical applications for protecting creation. The Pope does not limit the place of ecological education to a school environment but recommends a variety of settings such as family, catechesis, and houses of religious formation; that is, “[a]ll Christian communities have an important role to play in ecological education.”

**Problems with Christian Environmental Education**


22 Francis, *Laudato Si’*, #215.

23 Ibid., #210.

24 Ibid., #211, #215, #221.

25 Ibid., #213, #214 (internal quotation).
Despite the common recognition of its importance, an ecological education committed to conversion has not fully blossomed in Christianity. In fact, current trends in Christian environmental education are somewhat problematic.

First, there is an insufficient number of academic studies that can be used to promote and guide Christian ecological education. Educational resources in Christian communities mostly remain at a pastoral level and focus on providing practical guides for environmental protection.26 Although ecotheology as an area of study has been established for decades, ecotheological authors have not significantly engaged with ecological education. A number of recent studies have shown an interest in ecological education as a response to Laudato Si’, but they are limited to summaries of the contents of the encyclical and fail to provide deep theological insight.27

Second, current Christian environmental education is often based upon superficial curricula that lack a strong conceptual basis. While public ecological education develops its disciplines and principles based on central concepts, such as ecological literacy, Christian approaches lack a conceptual foundation as well as unifying principles that are theologically grounded.28 This absence hinders the development of a more systematic approach that maintains a consistent and principled direction for contemporary ecological education.

Third, a spiritually integrated ecological education is rarely exemplified in churches.29 While there is a common perception in seeing the ecological crisis as a spiritual issue, current Christian

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29 In fact, the emphasis on spirituality for developing ecological education has been growing for the last several years. For example, a renowned civil document, The Earth Charter, underlines “the importance of moral and spiritual education for sustainable living.” Earth Charter Commission, “The Earth Charter,” (20 March 2000), #14d, accessed 8 May 2017, http://www.earthcharterinaction.org/content/pages/Read-the-Charter.html.
approaches to ecological concerns tend to be limited to practical methods without deep spiritual reflection. They emphasize environmental knowledge, skill, and duty, but they fail to provide a strong Christian motif that evokes a deep longing for transformation.30 Although the integrated approach of the ecological and the spiritual could be their unique contribution, few Christian approaches to environmental education fulfill this role.

Finally, some Christian educational resources are still anthropocentric; they have been crafted by and for an older environmental paradigm. They describe the environment as if it were something apart from human beings and examine nature as if it were an object in serious need of human management for safekeeping.31 This tendency results in a mere problem-solving approach to the current ecological crisis. This approach does not address the need for a profound ecological conversion, nor does it facilitate a better understanding of humanity’s deep embeddedness within the Earth. Following this trend, it is difficult to see a recovery in the broken relationship between humans and other-than-humans, and the purpose of environmental education will continue to be limited to the task of promoting human survival.

2. Purpose and Scope of the Study

The importance of a sound ecological education, and the problematic nature of current Christian environmental programs, point to the following questions: How does Christianity, especially the Roman Catholic Church, lay a basis for ecological education that can contribute to an ecological conversion? What concept(s) and principle(s) might advance a functioning model of Roman Catholic ecological education (RCEE)?32 How does RCEE overcome the limitations of the present Christian educational approach and promote a healthy relationship with God and the rest of creation?


32 The abbreviation “RCEE” will be used, hereafter, to indicate ‘Roman Catholic Ecological Education.’ This study is focused on the development of a Catholic ecological education, although its basic insights are open to other Christian denominations. In this dissertation, all future references to “Catholic” are synonymous with “Roman Catholic.”
In response to these questions, this dissertation aims to establish a foundational concept of ecological education in the Catholic Church, and to develop basic principles of RCEE based on that conceptual foundation. For this purpose, the dissertation proposes a new concept—“ecospiritual literacy”—developed in a modern cosmological context. By framing the notion of ecospiritual literacy within the dynamics of cosmogenesis, I show how RCEE can help students to integrate within the physical and spiritual dimensions of the unfolding world. I argue that RCEE can inspire enchantment with the Earth community in learners, while pursuing their ecological and spiritual development in relation to the Divine-Earth-human relationship.

In establishing a foundational basis for RCEE and its basic principles, this dissertation focuses on an integrated approach for genuine transformation. It is less concerned with environmental knowledge or an ethical duty to creation. This study affirms holistic learning for ecological conversion, not merely informative teaching. Such a holistic model will invite students to see both the physical and the spiritual aspects of the evolving world and help them to transform their thoughts, feelings, and actions in an integrated way. This dissertation argues, holistically, that the authentic conversion pursued by RCEE is not simply a turning away from ecological sin, but a turning toward the sacred Earth community, in which ecological identity, spiritual sensitivity, and ethical commitment are integrally developed.

This study is concerned with ecological education on a more theoretical level, and does not extend to practical topics involving educational curricula. The scope of the present study will be circumscribed to developing a new conceptual basis, with accompanying principles for RCEE. I am, in effect, providing a blueprint for a renewed ecological education in the Roman Catholic Church. In this sense, theology and education are bridged. On this substantial foundation, new educational curricula will emerge, and the limitations of the current approach to Christian environmental education will be overcome.

3. Methodology

The present study answers questions such as: why a concept of ecospiritual literacy is needed, how its conceptual meaning is to be framed, how its vision is to be articulated, and how principles of RCEE based on the conceptual basis are to be formed. For this project, a method of
‘systematic development’ is adopted, moving from: i) critical reflection, to ii) cosmological synthesis, to iii) metaphorical application, to iv) transformative construction.33

i) This dissertation begins with ‘critical reflection’ on the current concepts of ecological education, such as stewardship and ecological literacy/Earth literacy. My critical examination does not aim to deconstruct the present concepts themselves, but to reconfigure their limitations and extend their contributions in the hope of developing a new RCEE model. In particular, following the concepts of ecological literacy and Earth literacy, I will emphasize the importance of a context-based approach (rather than a content-focused approach) for ecological education. However, since ecological literacy and Earth literacy underestimate the spiritual aspects of our world, I will examine Thomas Berry’s educational vision of Earth as our primary teacher, as well as Edmund O’Sullivan’s transformative learning theory, to compensate for the absence of this spiritual dimension. Berry and O’Sullivan not only recognize the importance of ecological/Earth literacy but also integrate the ecological and spiritual dimensions of our reality in their descriptions of the epic of evolution.34 In light of such critical reflection, I will explain why RCEE should adopt an evolutionary cosmology.

ii) In adopting an evolutionary cosmology as the context for RCEE, the method articulated in the writings of Pierre Teilhard de Chardin and Thomas Berry will be applied. This method mythologizes the scientific creation story from a Christian perspective. According to Teilhard and Berry, the epic of evolution has had both physical and spiritual dimensions from the beginning, and these dimensions have continually been expressed through the entire evolutionary process.35 The work of these authors results in an articulation of both a functional cosmology and


a functional spirituality. This cosmological perspective provides a new way for understanding what the world is, who we are in the world, and how we are to live within the world. Based on this vision, and by synthesizing various anthropological, spiritual, and ethical aspects that the cosmological context reveals, a notion of ecospiritual literacy will be established. For this ‘cosmological synthesis,’ I will adopt David Orr’s three components of ecological literacy – the cognitive, the affective, and the behavioural – and employ them as a basic framework for ecospiritual literacy.

iii) To further articulate the notion of ecospiritual literacy, I will develop new metaphors which will help to deepen its conceptual insights. For this task, Sallie McFague’s metaphorical method will be employed. McFague defines a metaphor as “a word used in an unfamiliar context to give us a new insight.” Her work remythologizes Christian faith through appropriate metaphors based upon a common creation story. McFague’s metaphorical vision reminds us of the importance of imagistic language for communicating with an unfamiliar subject or an abstract notion. In adopting McFague’s approach, I make use of the phrases “the Book of Creation” and “the Grammar of Creation” as metaphors for articulating the concept of ecospiritual literacy. While the former sees the larger cosmological context as a revelatory text pointing to the integral relationship among God, Earth, and the human, the latter is attentive to the creative, dynamic order of cosmogenesis and its ecological and spiritual dimensions. These metaphors offer ways of imagining ecospiritual literacy and of highlighting its main focus.

iv) My final approach, which will be used for establishing the main principles of RCEE, is one of ‘transformative construction.’ This approach emerges from my use of O’Sullivan’s transformative vision of education. O’Sullivan argues that if education is to be made relevant for this century, it should involve “a deep, structural shift in the basic premises of thought, feeling,

Berry’s thought, this universal unfolding manifests itself through the threefold process of differentiation, subjectivity, and communion, in the so-called “Cosmogenetic Principle.” I will return to discuss this principle in a later chapter and will develop it as the basic “Grammar of Creation.”


38 While the metaphor of “the Book of Creation” has been frequently used in the long history of the Catholic Tradition, the metaphor of “the Grammar of Creation” has been employed, more recently, by both Pope Benedict XVI and Pope Francis. The history and usage of these two metaphors will be examined in Chapter Three.
and actions,” so that people can alter their way of being in the world.\textsuperscript{39} He underscores the need for an integral humanity grounded on the foundational processes of the universe (i.e., differentiation, subjectivity, and communion).\textsuperscript{40} With his insights for transformative education in mind, I develop my own method of ‘transformative construction.’ This approach will situate three components of ecospiritual literacy – the cognitive, the affective, and the behavioural – in the context of the three basic grammars of creation (i.e., differentiation, subjectivity, and communion). In doing so, the approach will construct transformative principles that are integrated with the anthropological, spiritual, and ethical dimensions that the epic of evolution reveals. Through the process of transformative construction, I outline three categories of RCEE principles: i) renewing ecological identity in relation to the rest of creation; ii) deepening spiritual sensitivity to the divine presence in creation; and iii) engaging in ethical commitments for the well-being of the Earth community.

My method of systematic development, which unfolds in a four-fold process, includes some common threads. Firstly, the four-fold structure of my method reflects my development of ecospiritual literacy. The approaches of i) critical reflection, ii) cosmological synthesis, iii) metaphorical application, and iv) transformative construction are not unrelated, but are joined in a seamless process in order to develop the main theme of this dissertation – the concept of ecospiritual literacy. By way of the four approaches, I proceed with the structured development of ecospiritual literacy; that is, from a need for ecospiritual literacy, to its formation, its articulation, and its application for an RCEE model leading to ecological conversion.

Secondly, the positions taken by the various authors that comprise the four main approaches are grounded in an evolutionary cosmology. The new cosmological story, which is “both scientifically true and religiously revelatory and meaningful,” provides an explanation for humanity’s place in the evolutionary universe and an opportunity to think of the divine presence within the unfolding process of the world.\textsuperscript{41} By using the epic of evolution as a platform on

\textsuperscript{39} O’Sullivan, “The Project and Vision of Transformative Education,” 11.

\textsuperscript{40} O’Sullivan, \textit{Transformative Learning}, 222-234, 258. O’Sullivan’s transformative educational vision ultimately rests on Berry’s new cosmology.

\textsuperscript{41} Paul Brockelman, \textit{Cosmology and Creation: The Spiritual Significance of Contemporary Cosmology} (New York, NY: Oxford University Press, 1999), 42.
which to build a new conceptual foundation for RCEE, I attempt to construct an RCEE model in a functional cosmology and spirituality.

Finally, the cosmological and educational arguments of Berry and O’Sullivan play a prominent role in my methodology. For Berry and O’Sullivan, a significant task of education today is not to limit people in the context of an industrial society but to sensitize humans to what the universe/Earth, as a primary teacher, is trying to teach them about themselves and their world, both on a material and on a spiritual level. Following their vision, I develop the concept of ecospiritual literacy that inspires students to enhance their intimate relationship with Earth and thereby helps them to find the interrelatedness of all creation, the sacredness of all aspects of life, and humanity’s role within the Earth community.

4. Description of Terms

a. Literacy

According to The Oxford English Dictionary, the term ‘literacy’ is ordinarily defined in two ways: (1) the “quality, condition, or state of being literate; the ability to read and write,” and (2) the “ability to ‘read’ a specified subject or medium; competence or knowledge in a particular area.” While the meaning of literacy is traditionally understood as the ability to read and write, its usage has been extended, in a much broader sense, to include “the ability to understand, make informed decisions, and act with respect to complex topics and issues facing society today.” In contemporary parlance, the term ‘literacy’ can be applied to many different fields: for example, arts literacy, science literacy, media literacy, and ecological literacy. As these various fields

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imply, the current understanding of literacy is not a static set of skills but “a moving target reflective of changing societies and a changing world.”

The notion of literacy is used, not only in the discussion of contemporary issues, but also in communicating visions of the Christian faith in a modern context. For instance, Brian O. McDermott discusses “theological literacy” as seeking to transform a religious person’s consciousness on the way to maturity and as moving beyond the accumulation of religious knowledge to the touching of one’s heart. He argues that theological literacy today ought to go beyond texts and doctrines to embrace “a schooling of the person’s imagination, a development of his or her sense of and feel for the beauty and goodness of God as revealed in the world and all creation.” Ursula King highlights the importance of “spiritual literacy,” defined as “the competence to understand and interpret religious thought, to be able to interpret the sacred scriptures and traditions of a faith, to offer spiritual advice with discernment, authority, and wisdom.” For King, spiritual literacy is neither the attainment of professional skills nor emotional and ethical literacy. Rather, spiritual literacy implies a much deeper dimension of insight and wisdom growing from the head and the heart; it helps us to nurture deep-felt compassion and love for all life.

While a contemporary notion of literacy can be associated with varying contexts, its broader meanings commonly highlight a relationship with a particular field. In other words, today’s literacy is not simply viewed as a state attained through technical skills, but is understood as a competence that allows us to engage in a specific area to develop its knowledge and potential. From this perspective, the nature of literacy leans more toward a continuum of learning that enables us to achieve our goals, and less toward a continuum of teaching. Literacy is not a one-

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47 Ibid., 331.


time acquisition of professional training and skills; we become literate through life-long learning.\textsuperscript{50} Therefore, literacy can be understood as “an active and broad-based learning process, rather than as a product of a more limited and focused educational intervention.”\textsuperscript{51}

b. Environmental Education vs. Ecological Education

Although ‘environmental’ and ‘ecological’ are often used interchangeably, these two terms involve different viewpoints. The word ‘environmental’ focuses our attention on a world outside us; that is, “something that just happens to surround us.”\textsuperscript{52} Pointing to a concern with surroundings, this term tends to separate human beings from Earth and to evoke an economic language of development. The term ‘ecological’ stems from the word ‘ecology,’ or the study of the Earth’s household (\textit{oikos}). It is a relational term that highlights the interconnectedness between Earth and humans.\textsuperscript{53} Gillian Judson distinguishes between these two terms as follows: “Whereas ‘environmental’ may turn our attention outward to an external surrounding and in this way imply separation, ‘ecological’ draws our attention inward to the relationships between all organisms and their contexts.”\textsuperscript{54} In this dissertation, the term ‘ecological’ will feature more prominently than the term ‘environmental,’ since the latter word has anthropocentric connotations, suggesting a moral concern for the \textit{human} environment, rather than for the context of \textit{all} life.\textsuperscript{55}

In considering the difference between the terms ‘environmental’ and ‘ecological,’ my study will also distinguish between ‘environmental education’ and ‘ecological education.’ Environmental education is traditionally described as education about the environment; that is, “the transmission

\textsuperscript{50} See UNESCO Education Sector, \textit{The Plurality of Literacy and Its Implications for Policies and Programs}, 13; Cardwell, “Literacy,” 117.

\textsuperscript{51} The EFA Global Monitoring Report Team, \textit{Education for All}, 151.

\textsuperscript{52} Kureethadam, \textit{Creation in Crisis}, 49.


\textsuperscript{54} Judson, \textit{A New Approach to Ecological Education}, 10-11. In this sense, Ursula King distinguishes the environmental movement from the ecological movement. While the former tends to focus on “an adjustment of the Earth community to the needs of human beings,” the latter can be seen as “an adjustment of human beings to the needs of the Earth community.” King, “Earthing Spiritual Literacy,” 249.

\textsuperscript{55} When the word ‘environmental’ is used in this study, its purpose is to indicate a human-centered understanding of this world.
of knowledge that may explicate aspects of the environment or provide conceptual capacity to do this.”

The underlying purpose of environmental education is to increase knowledge and awareness and to enhance a sense of individual responsibility for the quality of the environment. It follows that environmental education prioritizes information regarding environmental problems and is often concerned with teaching skills leading to actions that ensure environmental protection. Extending the concerns of environmental education, ecological education furthers the focus on how human beings are interconnected with the Earth community. This interest in stressing the symbiotic relationship between humanity and the rest of the Earth community differentiates ecological education from environmental education; while environmental education tends to see nature as other, ecological education views humanity as part of the natural world. Through its relational and contextual foci, ecological education emphasizes not only “the inescapable embeddedness of human beings in natural settings” but also “the responsibilities that arise from this relationship.”

The current Christian approach can be categorized as ‘environmental’ rather than ‘ecological’ education. As mentioned earlier, Christian education toward sustainability tends to favour an anthropocentric view that lacks an integral understanding of the relationship between humanity and the rest of creation. Many Christian educational resources have retained the term ‘environmental education’ despite a shift in terminology from ‘environmental education’ to ‘ecological education’ in public education circles. However, a change has been recently seen in the teaching of the Catholic Church. In Chapter 6 of *Laudato Si’*, entitled “Ecological Education and Spirituality,” Pope Francis calls for a rethinking of environmental education in order to broaden its goals, and introduces the term ‘ecological education’ into the lexicon of the Catholic Church.

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59 Smith and Williams, “Ecological Education,” 162.
Church. By using the term ‘ecological education,’ Francis suggests that the Catholic Church ought to reshape its educational approach to address today’s ecological crisis. Following this example, my study proposes that ‘ecological education’ is a proper term for providing a new educational direction in the Catholic community.

5. Thesis Statement

A primary aim of Roman Catholic Ecological Education should be the integral development of thoughts, feelings, and actions to support an understanding of Earth as a primary teacher. From this foundation, Catholics will be able to renew their ecological identity in relation to the rest of creation, deepen their spiritual sensitivity to the divine presence in creation, and engage in ethical commitments for the well-being of the Earth community. To achieve these goals, ecological education in the Roman Catholic Church requires not only Earth literacy, but also ecospiritual literacy. When Roman Catholic ecological education adopts principles rooted in ecospiritual literacy, it will be better positioned to guide, sustain, and promote ecological conversion.

6. Procedure

This dissertation proceeds as follows. The introduction presents the background, purpose, and scope of the study, asserts the operative methodology, defines important terms used throughout, and articulates the basic thesis of the dissertation.

Chapter One, based on my methodological focus on ‘critical reflection,’ examines the notion of Christian stewardship and questions whether it is an appropriate model for RCEE. It then explores the more promising concepts of ecological literacy and Earth literacy, and finds that while both concepts are relevant to the field of ecological education, they cannot adequately develop a comprehensive model of RCEE. The works of Thomas Berry and Edmond O’Sullivan are recruited to facilitate a more integrated approach to RCEE. I explore their cosmological

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60 Francis, *Laudato Si’*, #209-215. The term ‘ecological education’ first appears, in a papal encyclical, in Francis’ *Laudato Si’*.

61 While I focus on ‘ecological education,’ the term ‘environmental education’ will occasionally appear in this study. When my dissertation uses the words ‘environmental education,’ it intends to describe a human-centered educational concept.
perspectives and contributions to education, and in doing so, highlight the importance of an evolutionary cosmology for developing a more integrated model for RCEE. Chapter One concludes with a Summation in which I will recall the key arguments and findings from the chapter, and link that chapter with the next. Each of the chapters concludes with its own Summation section.

Chapter Two focuses on the formation of a new concept vital for RCEE by way of a methodological focus on ‘cosmological synthesis.’ For this purpose, the chapter first explores the main features of an evolutionary cosmology. In particular, I emphasize both the physical and spiritual dimensions of the epic of evolution via an examination of the functional cosmology and spirituality of Teilhard de Chardin and Thomas Berry. From this particular cosmological context, I propose a new concept – i.e., ‘ecospiritual literacy.’ The second function of Chapter Two will be to define this new concept and construct its theoretical framework. To do this, I synthesize the anthropological, spiritual, and ethical aspects of an evolutionary cosmology using the three foundations of ‘ecological literacy’ (i.e., the cognitive, the affective, and the behavioural).

Chapter Three deepens the concept of ecospiritual literacy. This task emerges from my methodological approach of ‘metaphorical application.’ I survey Sallie McFague’s metaphorical theology and stress the importance of metaphorical awareness for theological development. I further suggest the “Book of Creation” and the “Grammar of Creation” as metaphors of ecospiritual literacy. In my discussion of these metaphors, I reinforce the context-based approach of ecospiritual literacy and explore both conceptual and practical insights for its development. Finally, I adopt Berry’s Cosmogenetic Principle, and propose differentiation, subjectivity, and communion as the three basic grammars of creation, examining how each principle reveals the ecological and the spiritual aspects of the world.

Chapter Four develops a new model of RCEE in light of ecospiritual literacy and establishes relevant principles based on a methodology of ‘transformative construction.’ For this task, I first examine how ecospiritual literacy leads to the reimagining of the educational paradigm of RCEE. In exploring a new educational approach to RCEE, O’Sullivan’s transformative learning theory is revisited and a methodology of transformative construction is proposed. Adopting this methodological foundation, concrete principles of RCEE that can guide us toward ecological conversion are explored. These principles employ the same foundational categories of
ecospiritual literacy, namely, the anthropological, the spiritual, and the ethical. Each principle will be developed in light of ‘the grammars of creation’ (i.e., in light of differentiation, subjectivity, and communion). I then suggest ‘place-based learning’ as a way to advance such RCEE principles.

The Conclusion summarizes the main arguments of the previous chapters and describes the implications of my findings. It also recommends how future studies can continue the development of ecospiritual literacy and RCEE, especially in the fields of pastoral care and ministry.
CHAPTER 1  

The aim of this chapter is to critically explore the current concepts of ecological education and to suggest the necessity for a new approach. The first concept chosen for this critical reflection is environmental stewardship, which is widely referenced in various Christian communities, including that of the Roman Catholics. It would be no exaggeration to say that the notion of stewardship has become a central theme in Christian environmental approaches. Christopher Southgate writes, “[t]hat human beings are called to be stewards of creation tends to be the default position within ordinary Christian groups.” While considering its popular usage and influence, it will be necessary to investigate whether Christian environmental stewardship can be an adequate approach for developing an ecological education of the Catholic Church. After analysing the concept of Christian environmental stewardship, this chapter will examine ecological literacy and Earth literacy, which are important concepts in contemporary ecological educational pedagogy. Ecological literacy and Earth Literacy are worth examining for two reasons: first, these concepts have a more integral understanding of human relationships with the rest of creation and are not based on human-centered views; second, the concepts can inspire deeper levels of change in human beings rather than just more superficial, temporal solutions for our current ecological crisis. However, since ecological literacy and Earth literacy, like Christian environmental stewardship, have limitations for advancing an RCEE model, this chapter will seek dialogue partners in order to learn new insights from them. The authors chosen for this task are Thomas Berry and Edmund O’Sullivan. By exploring their educational thoughts, this chapter will reveal the importance of an evolutionary cosmology for developing a more adequate concept of an RCEE model.

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A. Examining Christian Environmental Stewardship

This section includes two subparts: the notion of stewardship in Christianity and the strengths and weaknesses of the stewardship approach. The first part will explore how the stewardship concept is defined, and how it has been developed and used historically in Christian communities. This part will also review the stewardship theology that is presented by Douglas John Hall, and subsequently examine several examples of how the stewardship concept is used in Christian environmental education. Then, in the second part of this section, I will investigate the strengths and the weaknesses of the stewardship model and finally evaluate if Christian environmental stewardship is an adequate concept for establishing an RCEE model.

A1. The Notion of Stewardship in Christianity

a. Definition and History

The term ‘stewardship’ literally means “management of property by a servant on behalf of the owner,” and in Christian communities it is generally used as “a metaphor for fidelity to God’s call.” The basic point of stewardship is that the world ultimately belongs to God and human beings do not really own anything; the special position of humans as stewards is to manage the well-being of the whole household, just as their master wants. In recent times, the notion of stewardship has been increasingly used as a Christian response to the ecological crisis. When the stewardship metaphor is used in relation to ecological issues, it refers to human responsibility “for rightly using and conserving natural resources as gifts from God, or for caring for creation on behalf of its Creator.” Such a view of human responsibility for creation highlights humanity’s administrative role in the created world. By situating Earth-keeping responsibility

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63 Although the main purpose of examining the stewardship concept is to check its suitability for an ecological education of the Roman Catholic Church, this section will not limit its research to merely Catholic resources. Since the notion of stewardship enjoys wide and common usage in Christian communities, I will engage with a variety of Christian resources so that the examination of stewardship can proceed to a deeper and richer level.


administratively rather than ontologically, the concept of stewardship limits human power over the rest of creation while allowing for human distinctiveness.\textsuperscript{67}

The notion of environmental stewardship is often assumed to have biblical foundations and thus to hold normative force.\textsuperscript{68} For instance, several Christian educators and theologians understand that the notion of stewardship originates with the creation story of Genesis: especially, with the injunctions to “have dominion” (Gen. 1:26) and to “cultivate and care” for the Garden of Eden (Gen. 2:15).\textsuperscript{69} In reinterpreting the role of the human in relation to the biblical mandates, the authors emphasize that God calls human beings to be caretakers for the whole of creation. Some Christian thinkers find biblical support for stewardship in Jesus’s parables, where the actual word ‘steward’ appears.\textsuperscript{70} They insist that the parables of “the faithful and prudent steward” (Luke 12:42) and “the dishonest steward” (Luke 16:1-13) reveal an implicit message of environmental stewardship; human beings as God’s agents have obligations to bring about God’s good, and creation care is a faithful response to God’s call. With the emphasis on the divine will and its obligatory mandate for humanity, the authors eventually stress that environmental stewardship is derived from a divine command and is a part of the fundamental practices of faith.\textsuperscript{71}

Historically, the concept of stewardship can be traced as far back as the early modern period in Europe.\textsuperscript{72} In the sixteenth century, John Calvin claimed that each person should be regarded as a


\textsuperscript{72} For the historical root of environmental stewardship, several authors mention two Christian pioneers: John Calvin and Matthew Hale. See Lawrence Osborn, \textit{Guardians of Creation: Nature in Theology and the
steward of God, who must take care of the Earth’s resources and use them frugally. Matthew Hale, in the seventeenth century, directly applied the term stewardship to the management of Earth on God’s behalf and emphasized the human responsibility for animals and plants. However, the wider usage of the term stewardship began to appear in the 1950s and 1960s. At this time, stewardship had to do with the Churches’ campaigns for more resources and was often used to describe the responsible management of money, time, and talents. The idea of stewardship connoting the wise use of human and financial resources was more widely accepted within Churches during the 1960s and the 1970s, the period when awareness of environmental problems sharply increased. In this social circumstance, Christian stewardship came to be associated with environmental concerns and its application was extended “from money, talents and human resources, to refer to (so-called) natural resources.”

In the 1970s, environmental stewardship emerged as a distinct Christian discourse, as evidenced by Ecology and Human Liberation by Thomas Sieger Derr. In this 1973 study, Derr attempted to develop a theology of responsible stewardship. He insisted that stewardship is not limited to money, but extends to all of creation. In particular, by describing God as the real owner of the created world, Derr cautioned against irresponsible human use of “God’s property” and stressed

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75 Palmer, “Stewardship,” 71; Osborn, Guardians of Creation, 141. See also Richard Boeckler, “Stewardship,” in The Encyclopedia of Christianity, Vol. 5, eds. Erwin Fahlbusch et al. (Grand Rapids, MI: William B. Eerdmans Publishing Company, 2008), 201. In fact, the idea of stewardship is still used for supporting the Church’s financial needs. For example, the United States Conference of Catholic Bishops explicitly notes the relationship between practices of stewardship and the Church’s finances. As it states, “[s]ound business practice is a fundamental of good stewardship, and stewardship as it relates to church finances must include the most stringent ethical, legal, and fiscal standards.” United States Conference of Catholic Bishops, Stewardship: A Disciple’s Response (Washington, DC: United States Conference of Catholic Bishops, 2002), 32.
the proper management of the Earth’s resources. John Passmore’s book, *Man’s Responsibility for Nature* (1974), also called attention to the formation of Christian environmental stewardship. In contrasting despotic and stewardly attitudes, Passmore argued that the stewardship tradition of understanding humanity as God’s deputy for the care of the world could be adequately applied to address ecological problems.

Since the 1980s, Christian communities have attempted to express their commitment to ecological concerns by using the notion of environmental stewardship. This tendency is consistently found in the statements of the Roman Catholic Church. In 1985, Pope John Paul II affirmed that “the stewardship over nature” is “entrusted by God to man” and is “a serious responsibility” for the good of all humanity. In 1991, the United States Conference of Catholic Bishops stated that human beings as faithful stewards must live responsibly for the well-being of God’s creatures and be resourceful in finding ways to help Earth to flourish. In 2004, the International Theological Commission described stewardship as resulting from humans being created in the image of God. In light of the doctrine of *imago Dei*, the document argued that human beings are called “to exercise stewardship in a physical universe” and that the role of a steward is a way to participate in the divine plan as well as a privilege unique to humanity.

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stewardship approach is also confirmed in a recent statement by Pope Francis: “[n]ature, in a word, is at our disposition and we are called to exercise a responsible stewardship over it.”

As the historical examples reveal, Christianity, by placing an emphasis on stewardship, signals a shift in the understanding of how humanity relates to Earth. Just as stewards are not the owners of the household they serve, human beings are not the proprietors of Earth but caretakers of creation on behalf of God. The special task assigned to humanity, as a function of its likeness to God, is “to exercise authority as God’s representative in creation.” In this understanding of human relation to Earth, Christianity highlights that caring for creation is a God-given duty and humanity’s oversight of creation is answerable to a prior divine plan.

b. Stewardship Theologian: Douglas John Hall

The concept of responsible stewardship of creation is also supported and deepened by the so-called ‘stewardship theologians.’ Among them, Douglas John Hall provides one of the most comprehensive studies of stewardship. According to Hall, human beings need “a new way of imagining themselves” in order to respond to the ecological crisis, and stewardship is “one of the most provocative as well as historically accessible concepts” for the task. For reimagining humankind in light of stewardship, Hall re-examines the scriptural and historical background of the concept of imago Dei and develops an interpretation of imago Dei in terms of a relational


In the focus on relation, Hall extends the notion to include humanity’s relationship to the rest of creation. For Hall, *imago Dei* is something that emerges as a consequence of right relationship not only with God and with one’s human neighbour but also with all other beings on Earth. From this perspective, the human person is not intended to transcend Earth, but to embody an inseparable imaging of Earth. When the human person coexists in a responsible relationship with all of creation, it is then that humanity lives authentically as *imago Dei*. By examining the relational concept of the *imago Dei*, Hall asserts that human beings have a special calling for the created world. In other words, humanity as *imago Dei* is “assigned” a particular role in relation to the rest of creation. For Hall, the vocation of humankind within creation means “exercising the dominion of stewardship.”

In recognizing creation as the context of human vocation, Hall seeks to reinterpret dominion in terms of stewardship. In Hall’s view, the role of humanity within creation is “dominion,” and stewardship is a way of practising the role of dominion. Hall does not understand this special role as human beings having a free license for their indulgences. Against the abusive sense of domination, Hall contends that dominion in the Bible is not unfettered power over the rest of creation but “selfless stewardship.” In other words, the vocational role of humanity in the world is service rather than mastery; it fundamentally means “sacrificial love [or] agape.” Hall argues that the exercising of dominion is ultimately accountable to God and that stewardship must be a representation of God’s dominion. “Divine dominion and human stewardship,” writes Hall, “are

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88 Douglas John Hall, *Imaging God: Dominion as Stewardship* (Eugene, OR: Wipf and Stock Publishers, 2004), 67-112. Hall recognizes that the concept of *imago Dei* is often blamed as one of the causes of the distorted human presence on Earth. Hall admits that Christianity has traditionally understood human beings in the hierarchic structuring of creation and used the notion of *imago Dei* in order to emphasize human distinctiveness from other creatures. However, rather than using these problems to discard the notion of *imago Dei*, Hall contends that it ought to remain central to the Christian faith and it needs to be further explored to form the basis for a more adequate theology of creation. Ibid., 19-20.

89 Ibid., 168.

90 Ibid., 179.

91 Ibid., 108, 181.

92 Ibid., 60.


94 Ibid., 349, 350.

95 Ibid., 350.
part and parcel of the same providential process.” Through dominion as stewardship, humanity mirrors the sovereignty of the divine love and participates in God’s preservative work of creation.

Hall’s anthropological understanding of stewardship is found in three paradigms that describe the relationship of human beings to the rest of creation: humanity above nature, humanity in nature, and humanity with nature. For Hall, neither ‘humanity above nature’ nor ‘humanity in nature’ is a proper paradigm to describe the human-nature relationship. Hall argues that the idea of ‘humans above nature’ is a hierarchical dichotomy between humanity and all other creatures and can cause abusive exploitation and manipulation of the natural world. He also insists that the perspective of ‘humans in nature’ is a “romantic reaction” to the humans above nature paradigm, and that the idea of simply putting humanity “back into” nature is both a naïve and impractical answer in response to the great problems of Earth. In Hall’s view, the adequate paradigm is ‘humans with nature.’ This perspective, as Hall argues, is “neither superior to the rest of creation (above) nor simply identical with it (in),” and therefore has the capability of expressing both the connectedness and the distinctiveness of humans alongside the rest of creation. Based on this paradigm, Hall proposes stewardship as the key concept to encompass both sides of the human relation to the rest of creation. For Hall, stewardship describes not only human solidarity with other creatures but also a special responsibility for them.

By redefining the human relationship with other-than-humans in a “dialogical tension between involvement and detachment,” Hall understands the stewardship status as both servant and

96 Hall, Imaging God, 53.
97 Ibid., 198-200.
99 Ibid., 191-200. Hall admits that Christianity has had this attitude, but he does not believe that it originated from a Christian tradition. For Hall, the root of ‘humans above nature’ is related to the rise of modernism and the dominant industrial culture. Ibid. See also Hall, Imaging God, 53-57.
100 Hall, The Steward, 202; idem, Imaging God, 56-59.
101 Hall, The Steward, 206; idem, Imaging God, 178-180. In Hall’s words, this perspective has “a paradoxical sense of identification and differentiation.” Ibid., 178.
102 Hall, The Steward, 213. Even though Hall understands human relatedness with the rest of creation, he fails to describe how much humans are part of nature. Hall does not seem to completely understand how human beings are deeply embedded in the Earth community. He is more concerned with highlighting the human vocation and its particular role in relation to the rest of creation.
manager; that is, the steward is a servant and a manager at the same time.\textsuperscript{103} While stewards are understood to be humble servants, they also have privileged roles in relation to their uniqueness. Hall, however, does not understand the stewardship status in terms of mere functional image. For Hall, stewardship is not simply limited to something people do but ultimately aims to change their \textit{being}.\textsuperscript{104} In this regard, he writes that “stewardship must be understood first as descriptive of the being – the very life – of God’s people. Deeds of stewardship arise out of the being of the steward.”\textsuperscript{105} In Hall’s view, genuine change in the planetary crisis requires a reconceiving of a way of being human and the being of stewards is a fundamental answer.

c. Stewardship and Christian Environmental Education

The attention to stewardship is continued in Christian environmental education. Several Christian authors understand stewardship as an appropriate educational concept for advancing environmental consciousness. According to Kenneth L. Petersen, stewardship is one of the most powerful themes for environmental education. Petersen argues that stewardship indicates the right relationship of humanity with the non-human world and describes the weight of human responsibility for the world. In this regard, he writes that “[a]ll of human interaction with the creation can be evaluated in light of our stewardly privilege and obligation.”\textsuperscript{106} Gregory E. Hitzhusen also stresses that the stewardship theme promotes a moral imperative in regard to God’s creation. In expecting practical outcomes from this stewardship, Hitzhusen suggests that faith communities can begin the process of environmental education by introducing and discussing Christian stewardship.\textsuperscript{107} Wanseo Gu contends that the stewardship concept helps Christians not only to enhance responsible attitudes for creation care but also to have a theocentric perspective on creation. Gu claims, therefore, that stewardship ought to be one of the main directions for developing environmental education in Korean churches.\textsuperscript{108}

\textsuperscript{103} Hall, \textit{Imaging God}, 151, 153.
\textsuperscript{104} Hall, \textit{The Steward}, 232-243.
\textsuperscript{105} Ibid., 242.
In addition, there are several Christian educational curricula that attempt to apply the stewardship concept within their environmental education programs. For example, the last session of *To Serve Christ in All Creation* seeks to increase awareness of environmental stewardship by inviting participants to reflect on how they, as both individual members and as a faith community, act to become better stewards of all creation. It also promotes environmental stewardship through participation in community, public policy, and business decision-making.\(^{109}\) GreenFaith’s interfaith adult education curriculum provides three sessions, one of which is the practice of stewardship. The stewardship session of the curriculum focuses particularly on the environmental impact of consumption habits and on reducing consumption levels as a way of practising stewardship.\(^{110}\) *Tending to Eden: Environmental Stewardship for God’s People* offers a small group study guide which attempts to establish environmental stewardship as an ethic of care for creation. This guided curriculum aims to rediscover the meaning of stewardship and highlights the good steward’s attitude which involves the exercise of dominion and humility. In doing so, the program attempts to lead Christians in a discussion about human relationship and responsibility toward the natural world.\(^{111}\)

A number of educational resources in the Roman Catholic Church also use the notion of stewardship in relation to environmental education. *Faithful Stewards of God’s Creation: a Catholic Resource for Environmental Justice and Climate Change* explains stewardship as a moral responsibility to care for both the person and the rest of creation, especially for the poor and vulnerable who are most affected by ecological destruction. The resource also stresses the sacrificial role of stewards for the provision of basic human and environmental needs. In other words, human beings as stewards ought to restrain and moderate their use of material things so

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\(^{109}\) Lynn Fulkerson, Barbara Putnam, and Grace Burson, *To Serve Christ in All Creation* (Concord, NH: Church Missions Publishing Company, 2003), Session Four 1-7. *To Serve Christ in All Creation* provides an environmental study guide and discussion course which are based on the pastoral letter of the Episcopal Bishops of New England.


that their responsibility for God’s creation is not overtaken by material desire.\textsuperscript{112} Catholics Going Green observes that becoming responsible stewards of creation is a response to God’s call and that the steward’s role begins with careful attention to God and the created world. The textbook also emphasizes that stewards do not have “independent authority” but “borrowed authority”; humans must not neglect their duty to the One to whom true authority belongs.\textsuperscript{113} Some Catholic educational resources use Church teachings on the environment and highlight a Catholic commitment to stewardship. In stressing the Church’s call for environmental stewardship, they suggest that Catholic education ought to empower learners to commit themselves as loving and wise stewards of God’s creation.\textsuperscript{114}

As the above examples reveal, stewardship is a popular concept that Christian environmental education repeatedly uses to describe human identity and its role in the created world. In describing humans as God’s stewards, Christian environmental education asks what it means to be a good steward of creation and how to respond to God’s call. In doing so, Christian environmental education stresses Earth-keeping responsibility and helps learners to develop attitudes and skills in caring for creation. In this sense, it can be said that fostering stewardship is a major goal of current environmental education for Christians. However, is the stewardship approach sufficiently powerful to change the minds and hearts of Christians, especially of Catholics? Is environmental stewardship comprehensive enough to establish a model of ecological education in the Roman Catholic Church? Before ‘stewardship’ is construed as a positive educational concept, it must be seriously questioned whether the theological content of the stewardship model is adequate for developing a renewed Catholic ecological education. This raises the necessity of making a critical evaluation of the stewardship model, which will be dealt with in the next section.


\textsuperscript{113} Grazer, Catholics Going Green, 58-59, 75.

A2. Strengths and Weaknesses of the Stewardship Approach

a. Strengths

The concept of Christian environmental stewardship has a few positive attributes that can help to change human attitudes and behaviours when addressing today’s planetary crisis.115

First, the notion of stewardship shows a somewhat humble approach in the understanding of how humanity relates to the Earth community. While the stewardship concept does not deny a special status for humans in the created world, it makes clear that there are certain limitations on human actions. In the view of stewardship, human beings, as God’s agents, do not have supreme authority or absolute rights over the rest of creation because everything remains God’s own and humans must act as humble servants.116 By highlighting the image of servanthood rather than unrestricted ownership over the rest of creation, environmental stewardship can challenge excessive human pride and escape the approach of unfettered domination that has characterized earlier theological understandings of the relationship of humanity to the Earth community.117

Second, the stewardship approach advances the ethical imperative that humans have an obligation to protect and care for the rest of creation. By describing creation care as a faithful response to the divine command, the stewardship concept makes environmental concerns part of a personal relationship with God and enhances the sense of duty human beings have toward God. In this view, the stewardship of creation becomes an “obligatory service to the Creator, who entrusts to humans measured responsibilities for creation.”118 With the emphasis on caring for creation as obedience to God, the stewardship approach can draw the Christian’s attention to current ecological problems as ethical issues, and the imperative to use Earth’s resources and its inhabitants more responsibly.119

115 In order to describe the strengths of environmental stewardship, I will use several theologians’ opinions in this section. Although the theologians admit that there are strong points to stewardship, they also recognize the weaknesses of stewardship and do not uncritically advocate a Christian stewardship model.

116 McDougall, The Cosmos as the Primary Sacrament, 54-55; Tanner, “Creation, Environmental Crisis, and Ecological Justice,” 111.

117 David G. Hallman, Spiritual Values for Earth Community (Geneva, CH: WCC Publications, 2007), 50-51; idem, A Place in Creation, 76.

118 Jenkins, Ecologies of Grace, 77. See also Peterson, “In and of the World: Christian Theological Anthropology and Environmental Ethics,” 252.

Third, the concept of stewardship stresses the dignity and value of human persons as representatives of God in creation. In relation to the notion of *imago Dei*, stewardship asserts that every human, regardless of social status, is chosen by God and has crucial functions in the fulfilment of God’s will; that is, all humans are invited to practise leadership and discipleship in the created world. The stress on human dignity and value in the stewardship framework can be an empowering incentive to those who are oppressed by the dominant political and economic powers, and it can also encourage them to participate in Earth-keeping tasks.

Finally, the language of stewardship is widely used inside and outside of Christianity. The simplicity and familiarity of the term stewardship has the potential to appeal to religious people outside the environmental movement, and the common concept can promote interdenominational dialogue for addressing today’s ecological crisis. Furthermore, the familiar terminology makes it accessible to a much wider public beyond religious boundaries. In searching for solutions to ecological problems, it is possible that the stewardship approach will facilitate dialogues with nonreligious people and will also aid public discourse with secular environmental organizations.

**b. Weaknesses**

While the concept of stewardship has some benefits, ecotheologians have raised serious questions about whether the notion is theologically adequate for describing the role and activity of humanity within the Earth community. A discussion of these concerns follows.

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121 Rasmussen, *Earth Community Earth Ethics*, 233. Ernst M. Conradie does not agree with Rasmussen’s opinion and contends that the stewardship concept is meaningless for the poor who are landless and marginalised. In Conradie’s view, the stewardship approach is primarily aimed at people having social and economic power, and the powerless are not the primary interlocutors of a stewardship discourse. Ernst M. Conradie, *An Ecological Christian Anthropology: At Home on Earth?* (Aldershot, UK: Ashgate, 2005), 213.


123 Hall, *The Steward*, 236; Butkus and Kolmes, *Environmental Science and Theology in Dialogue*, 137. However, the popularity of stewardship terminology can cause a problematic issue. In pointing out a problem which is derived from a wide usage in the general culture, Santmire argues that ExxonMobil uses the language of stewardship in its advertisement campaigns and tries to show how the corporation is wisely using and protecting natural resources. H. Paul Santmire, “Partnership with Nature According to the Scriptures: Beyond the Theology of Stewardship,” *Christian Scholar’s Review* 32, no. 4 (Summer 2003): 383.
First, while supporters of Christian environmental stewardship often introduce biblical sources as its origin, it is questionable whether environmental stewardship is actually a Bible-based model.\textsuperscript{124} As several theologians point out, environmental stewardship terminology does not appear in the Bible itself.\textsuperscript{125} Although the actual term ‘steward’ is found in the New Testament, it is neither directly used in association with nature nor related to human responsibility for the rest of creation. The idea that humans are appointed as ‘stewards of creation’ is not directly instructed by the Bible but is the result of understanding some biblical texts within an ecological worldview.\textsuperscript{126} In other words, stewardship of creation is “an ex post facto effort” for addressing environmental concerns rather than “a primal command” from scripture.\textsuperscript{127} As David G. Horrell writes, environmental stewardship is “a product of interpretation, not something somehow ‘contained’ within the Bible, waiting to be discovered.”\textsuperscript{128} Thus, claiming a biblical pedigree for environmental stewardship is to oversimplify an ecological interpretation of some biblical texts; stewardship is only one of the ways in which the Bible can be interpreted.\textsuperscript{129}

The next problem is that environmental stewardship ignores God’s own continuing involvement with the created world. In the concept of stewardship, God is viewed as an absent landlord who has put humanity in charge of the rest of creation.\textsuperscript{130} Anne Primavesi criticizes the concept of

\textsuperscript{124} The real origin of Christian environmental stewardship is associated with the historical context of the 1960s and 1970s. As has already been mentioned, the formation of Christian environmental stewardship originally emerged from an extension of the financial stewardship campaigns of some of the churches. Because of this historical background, the concept of environmental stewardship still retains economic imagery. See Norman Wirzba, The Paradise of God: Renewing Religion in an Ecological Age (New York, NY: Oxford University Press, 2003), 130.


\textsuperscript{128} David G. Horrell, “Introduction,” in Ecological Hermeneutics, 6. Italics in original.

\textsuperscript{129} Bauckham contends that the idea of stewardship is not comprehensive enough to depict the varied relationship between humanity and the rest of creation reflected in the biblical tradition. Bauckham, “Stewardship and Relationship,” 100-105.

\textsuperscript{130} Santmire, “Partnership with Nature According to the Scriptures,” 383-384; Sean McDonagh, Passion for the Earth (Maryknoll, NY: Orbis Books, 1993), 130; Palmer, “Stewardship,” 74; Christopher Hrynkow and Dennis
stewardship by indicating that “God is the prototypical absentee landlord who never visits the land but is only interested in banking the returns from it, i.e. human souls.” In other words, the stewardship model describes God as being purely transcendent rather than immanent as well. In this view, God’s action and presence in creation are greatly mediated through human hands, and humanity has the controlling role in relation to other creatures. On the other hand, the rest of creation is shown merely as a background or stage for the drama of the divine-human relationship and is not seen as having its own value and history with God; that is, the relationship between God and the rest of nature is not reflected. By neglecting to show nonhuman creation’s own significance for God, the stewardship approach fails to appreciate the sacramentality of creation and tends to disconnect environmental practices from ecologically sensitive spirituality.

There is a third criticism associated with how Christian environmental stewardship sets human beings apart from the rest of life on Earth. Anna L. Peterson argues that in this dualistic framework, human beings are encouraged to see themselves as qualitatively different from creation, and thus responsible for the rest of the natural world. Within this sense of humanity’s separation from the rest of creation, the stewardship approach forgets to take into account how deeply human beings belong to the Earth community and how they are profoundly interdependent on the whole of creation. In the stewardship model, there is not enough space to develop an intimate and interrelated relationship between humanity and the rest of Earth. Humans are simply seen as custodians who have a duty to safeguard the natural world where

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they do not ultimately belong. Those who are good stewards, as Primavesi points out, merely need to “seek to optimize profits for themselves or their boss.” Befriending Earth is not their job. If human responsibility for creation is merely understood as a response to God’s command, but not rooted in an intrinsic connection between humanity and the rest of nature, it would be difficult to expect to bring about a strong desire for creation care.

Another problematic area with the stewardship approach is its hierarchical understanding of the human relationship to the rest of creation. Even though the notion of stewardship asserts that Earth is God’s and humanity is only a caretaker of creation on God’s behalf, this concept still leaves the rest of the natural world at the lowest level in the hierarchy of worth. John Hart contends that in the hierarchy of the stewardship model humans are not only closer to God but also have a higher status or worth than other creatures. This means that human stewards are the only part of creation that serves as a bridge between God and nature – i.e., the rest of creation does not mediate God’s self-communication to humans. Constructed in this vertical top-down relationship, environmental stewardship does not reflect on the horizontal dimension of the human relationship to other creatures. The stewardship concept ignores the fact that human beings are also creatures who share the same home with other-than-humans and are members of the Earth community sustained by reciprocal relationships. As Bauckham points out, “[s]tewardship puts us in authority over, but not in community alongside and with other creatures.”

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137 Primavesi, From Apocalypse to Genesis, 107.
139 The dualistic view of environmental stewardship is also related to a hierarchical understanding of creation in stewardship. As Elizabeth A. Johnson points out, Christian stewardship of the environment keeps “the structure of hierarchical dualism.” Elizabeth A. Johnson, Women, Earth, and Creator Spirit (Mahwah, NJ: Paulist Press, 1993), 30.
141 John Hart, Sacramental Commons: Christian Ecological Ethics (Lanham, MD: Rowan & Littlefield Publishers, 2006), 120. Denis Edwards argues that the stewardship model runs the risk of inflating humanity’s role as if it were a necessary intermediary between God and the rest of creation. This can mute the understanding that other-than-human entities have their own autonomous integrity and their own role in the created world. Denis Edwards, Ecology at the Heart of Faith (Maryknoll, NY: Orbis Books, 2008), 25.
143 Ibid., 11.
Finally, the idea of stewardship still evokes a human-dominant management model despite an emphasis on service or responsible-caretaking. The heavy managerial overtone of stewardship reinforces humanity’s purely instrumental understanding of Earth. Within the stewardship view, Earth is merely an object given into human hands for safekeeping and good management so that it meets human needs. This vision of Earth upholds a purely instrumental valuation of creation rather than one of intrinsic value. Furthermore, it is not certain whether such a managerial role for humans is either necessary or even possible. Ned Hettinger raises the question of whether Earth’s ecosystems actually need human management. Today’s scientific research reveals that humans are latecomers to Earth’s family, and that Earth has flourished for billions of years without human assistance. In this sense, Hettinger maintains that large-scale human management of creation can undermine the integrity of the natural world and thus, “nature doesn’t need a steward.” Human beings need to manage themselves, if they want to be good stewards of creation. In addition, it is questionable whether humanity has the ability to manage the entire planet. Michael S. Northcott contends that human beings still do not completely understand vast and intricate Earth systems and cannot possibly manage everything despite technological progress. Current ecological problems reveal significant limitations as far as human control of the biosphere is concerned. The idea that stewards know how to manage the created world implies a deep-seated hubris in the human mind.

In summary, while the stewardship approach as “the first wave of theological responses to the global environmental crisis” has efficacious dimensions as well as popularity, the model displays many problematic characteristics. As this section has noted, Christian environmental

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144 This problem is pointed out by not only ecotheologians. Hall, who has promoted the notion of stewardship, also recognizes that the stewardship approach can be more inclined to a managerial mode and can be used as “a sanctioned version of the technocrat.” Hall, *The Steward*, 234.


146 Ned Hettinger, “Ecospirituality: First Thoughts,” *Dialogue & Alliance* 9, no. 2 (Fall/Winter 1995): 88-89. In agreeing with this view, Ruether also writes: “Clearly anthropocentric claims to have been given ‘dominion’ over the Earth, and over all its plants and animals, appears absurd in the light of the 4,599,600,000 years in which Earth got along without humans at all.” Rosemary Radford Ruether, *Gaia & God: An Ecofeminist Theology of Earth Healing* (New York, NY: HarperCollins, 1992), 45.


stewardship is thinly supported by the Bible and still contains financial overtones which render the natural world as a resource subject to human interests. Furthermore, the stewardship model is limited to a focus on only the God-human relationship and fails to overcome the dualistic, hierarchical, and managerial view of creation. The flaws of stewardship suggest that Christian environmental stewardship remains profoundly anthropocentric. The stewardship concept encourages environmental responsibility without fundamentally challenging a human-centered understanding of creation. Perhaps the practical approach of stewardship may bring about some changes, at least in terms of recycling or energy saving, but can it engender radical transformation at the deepest level of our being? It is difficult to see how stewardship “as masking a continuing homocentrism” can ever bring about heart-felt ecological conversion. As Ruth Page states, “[t]here remains the danger that notions of stewardship on their own will not effect this conversion, changing only the mode of action without addressing the change of heart.”

In short, Christian environmental stewardship is inadequate as a foundational concept for establishing a model of Roman Catholic ecological education. If the Catholic Church wants to develop an ecological education toward the transformation of human hearts, it will be necessary to move beyond the idea of stewardship and to find an alternative concept upon which to develop an RCEE model. The following two sections will concentrate on searching for alternative approaches.

B. Searching for Alternative Concepts

A more adequate concept to ground an RCEE model requires new language and new ideas. To this end, this section will explore ecological literacy and Earth Literacy, both of which are used in the field of current ecological education. The first part of this section will examine the

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149 See Robert E. Shore-Goss, *God is Green: An Eco-Spirituality of Incarnate Compassion* (Eugene, OR: Cascade Books, 2016), 103-107. In fact, the stewardship model tends to emphasize the ethical urging of a human-centered worldview without requiring a deeper reflection on whether this anthropocentric approach is sufficient. In relation to this problem, Palmer comments that “the idea of stewardship can act as a comfortable concept blinkering us to the deeper philosophical and theological problems raised by the environmental crisis.” Palmer, “Stewardship,” 84.


definition, framework, and characteristics of ecological literacy and evaluate its contributions and limitations. The second part of this section will treat the basic understanding of Earth literacy and review its contributions and limitations. Through these explorations, this section will point to important insights that can help overcome the problems of Christian environmental stewardship, and will reveal the necessity of redressing the conceptual limitations of ecological literacy and Earth literacy in order to develop a more adequate RCEE model.

**B1. Ecological Literacy**

**a. Definition, Framework, and Characteristics**

The term ‘ecological literacy’ was first introduced by David W. Orr in his 1989 essay of the same title. In this essay, Orr argues that teaching to read, count, and compute is not enough to address today’s planetary crisis and that contemporary education needs to pay more attention to ecological literacy.¹⁵² In 1992, Orr further developed the concept of ecological literacy in his seminal work *Ecological Literacy: Education and the Transition to a Postmodern World*. Since then, ecological literacy has been a central theme in contemporary ecological education.¹⁵³ According to Orr, ecological literacy means a “quality of mind that seeks out connections” and is based on “knowing, caring, and practical competence.”¹⁵⁴ For Orr, ecological literacy is the larger purpose of Earth-centered learning and encompasses “a broad understanding of how people and societies relate to one another and to natural systems, and how they might do so sustainably.”¹⁵⁵ As Orr notes, someone who is ecologically literate has “the knowledge necessary to comprehend interrelatedness and an attitude of care,” and this must be accompanied by “the practical competence required to act on the basis of knowledge and feeling.”¹⁵⁶ In this respect,

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¹⁵² David W. Orr, “Ecological Literacy,” *Conservation Biology* 3, no. 4 (December 1989): 334. As an environmental educator, professor, and prolific writer, David Orr has been one of the leading voices of ecological education. Orr has been foremost in defining and promoting the concept of ecological literacy. His work is studied and utilized around the world. For more information on his work and life, see Debra B. Mitchell and Michael P. Mueller, “A Philosophical Analysis of David Orr’s Theory of Ecological Literacy: Biophilia, Ecojustice and Moral Education in School Learning Communities,” *Cultural Studies of Science Education* 6, no. 1 (March 2011): 197-198.


¹⁵⁴ Ibid., 92.


¹⁵⁶ Ibid. In affirming Orr’s idea, Steven Bouma-Prediger writes: “Not only must we know; we must care. And not only must we care, but we must have the wherewithal to act responsibly, informed by such knowledge and
the essence of ecological literacy is the formation of the mind and heart to seek ecological connections and act upon intellectual and affective abilities.

From Orr’s perspective, the concept of ecological literacy involves three dimensions: i) the cognitive, ii) the affective, and iii) the behavioural. For the cognitive dimension, Orr stresses the importance of basic ecological knowledge and awareness; that is, learners need to understand how Earth as a biological system works and how human actions impact on ecosystems.\(^{157}\) The affective dimension of ecological literacy highlights an emotional connection to the natural world that deepens concern for the well-being of the Earth community. For Orr, ecological literacy cannot be achieved with merely the intellect; it needs a sense of kinship with the natural world, the wondrous feeling of being part of the wholeness of creation.\(^ {158}\) In this sense, it can be said that ecological literacy not only requires knowledge about the inextricable interconnectedness of the Earth community, but also “is driven by the sense of wonder, the sheer delight in being alive in a beautiful, mysterious, bountiful world.”\(^ {159}\) Finally, ecological literacy involves a behavioural dimension that makes the leap from “I know” and “I care” to “I’ll do something.”\(^ {160}\) For Orr, ecological literacy remains unfulfilled without an active involvement that contributes to healthy ecosystems and communities. To become ecologically literate, one must engage with deep commitment to a sustainable way of living and develop the practical wherewithal to address ecological problems.\(^ {161}\)

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\(^{157}\) Orr, *Ecological Literacy*, 92-93. To be more concrete, Orr notes that ecological literacy requires a basic comprehension of natural history, ecology, and thermodynamics. Ecological literacy also involves knowing examples of ecological crisis such as species extinction, deforestation, and climate change. Ibid., 93.


\(^{159}\) Orr, *Ecological Literacy*, 86. In relation to the affective dimension of ecological literacy, Orr often stresses the necessity of growing an affinity with the living world – what E. O. Wilson calls biophilia. In Orr’s words, “[w]e are likely to save only what we have first come to love. Without that affection, we are unlikely to care about the destruction of forests, the decline of biological diversity, or the destabilization of climate.” For Orr, the ultimate goal of ecological education is to draw out an affinity for life. David W. Orr, *The Nature of Design: Ecology, Culture, and Human Intention* (New York, NY: Oxford University Press, 2002), 217-218. See also Orr, *Ecological Literacy*, 86-87; idem, *Earth in Mind*, xiv, 213.

\(^{160}\) Orr, *Ecological Literacy*, 147. In relation to the behavioural dimension, Orr similarly notes that ecological literacy proposes “to change the way people live, not just how they talk.” Ibid., 91.

ecological literacy as a balance of knowledge, affect, and behaviour. It is within these three dimensions that he establishes an integrated framework for ecological literacy.\textsuperscript{162}

This synthesis of cognitive, affective, and behavioural dimensions places ecological literacy apart from other kinds of literacy and numeracy (which are linear “indoor skills”) that are being developed in our school systems today.\textsuperscript{163} Orr argues that while the literate know how to read and the numerate know how to calculate, the ecologically literate have the ability to ask “What then?” for the well-being of the entire Earth community.\textsuperscript{164} By highlighting a learner’s ability to ask such a question, Orr implies that ecological literacy, in contrast to the narrow specialization that characterizes so much of education today, seeks to see things as part of a whole relationship, and to fundamentally change perception, attitude, and action toward the world.\textsuperscript{165} In this sense, ecological literacy is, in Orr’s own words, “slow knowledge” rather than “fast knowledge”; that is, what ecological literacy aims for is not mastery of a subject matter or solving problems by a quick fix, but “a deeper transformation” for ecological sustainability by the head, heart, and hands.\textsuperscript{166} As Orr writes, “[r]eal ecological literacy is radicalizing in that it forces us to reckon with the roots of our ailments, not just with their symptoms.”\textsuperscript{168}


\textsuperscript{163} Orr, Ecological Literacy, 86. Although Orr points out the limitations of current literacy and numeracy, he does not deny their importance. Rather, he is concerned that the overemphasis on literacy and numeracy in today’s educational system contributes to an illiteracy of the basic principles of ecology. In Orr’s view, today’s ecological crisis is the consequence of the failure to develop ecological literacy. Ibid.

\textsuperscript{164} Ibid., 85.

\textsuperscript{165} See Orr, “Environmental Education and Ecological Literacy,” 51.

\textsuperscript{166} David Orr, “Slow Knowledge,” Conservation Biology 10, no. 3 (June 1996): 699-701. For Orr, fast knowledge is about discrete information used for individual profit. In contrast, slow knowledge is integral knowledge shaped to fit a larger ecological context. While fast knowledge brings about human mastery and progress at the expense of long-term sustainability, slow knowledge aims at resilience, harmony, and preservation of the Earth community. Ibid.

\textsuperscript{167} Orr, “Foreword,” x-xi.

\textsuperscript{168} Orr, Ecological Literacy, 88. For Orr, one of the roots of the problems is education. He calls for a fundamental reconstruction of the entire educational system. See Orr, Earth in Mind, 7-15.
While the concept of ecological literacy was first established by Orr, other authors have written on the topic, as well. Among them, Fritjof Capra’s contribution is perhaps most notable. Capra, a physicist and educator, claims that ecological literacy is essential for the survival of humankind in the future and ought to be central to education at all levels. With an emphasis on ecological literacy, Capra stresses that the basic principles of ecology such as interdependence, recycling, and diversity must be learned. He further argues that understanding these principles requires “a new way of seeing the world and of thinking – in terms of relationships, connectedness, and context.” While Capra tends to focus on the intellectual understanding of ecology and its accompanying perceptual shift, he does not neglect the importance of emotional bonds with nature. Following Orr’s idea, Capra notes that ecological literacy requires a sense of wonder, and an affinity for the natural world helps to generate a strong motivation for ecological practices. In summary, the main point of ecological literacy, for Capra, is to foster in learners “an understanding of nature’s principles, a deep respect for living nature, and long-lasting relationships with the natural world” so that they can acquire the knowledge and passion to create sustainable communities and live accordingly.


170 Besides various writings for promoting ecological literacy, Capra co-founded The Center for Ecoliteracy in 1995, aiming to advance ecological education based on ecological literacy at the primary and secondary school levels. For the works of The Center for Ecoliteracy, see http://www.ecoliteracy.org/ (accessed 5 March 2015).


172 Fritjof Capra, “Speaking Nature’s Language,” in *Ecological Literacy: Educating Our Children for a Sustainable World*, 20. Italics in original. Capra describes the basic principles of ecology as the “language of nature.” For Capra, nature is “both our model and our mentor,” and therefore an ability to understand the principles or language of nature (i.e., ecological literacy) is a significant first step for building ecologically sustainable communities. Ibid., 22-29.


174 Ibid., 18.
Orr and Capra’s descriptions of ecological literacy show an evolution from environmental literacy, which is the predecessor to ecological literacy. Environmental literacy tends to focus on developing an understanding of ecosystems, an awareness of environmental problems, skills to solve environmental problems, and the capability to prevent new problems. For Orr and Capra, ecological literacy not only encompasses the issues of environmental literacy, but also extends beyond them to highlight the larger picture of ecological relationships. What ecological literacy seeks is not simply to increase utilitarian environmental knowledge but to deepen an ecological awareness that is an understanding of the interrelated relationships of the Earth community. By doing so, ecological literacy helps learners to think from and within an ecological worldview rather than simply knowing about the environment.

b. Contributions and Limitations

Ecological literacy significantly alters our understanding of humanity’s relationship with the natural world. In this approach, learners are invited to situate themselves in the larger context (i.e., the whole ecosystem) and to read the interrelated relationships of the biotic community. In doing so, learners are encouraged to develop a better understanding of ecology, to cultivate a deeper affinity for the living world, and to act more appropriately in promoting ecological sustainability. Unlike Christian environmental stewardship, ecological literacy does not advocate an anthropocentric view of human dominion and management of nature; instead, it seeks to integrate human beings and the rest of creation by fostering mutually enhancing interactions between them. Through this approach, ecological literacy helps to create a new emphasis on “an organic understanding of the world and participatory action within and with the environment.”

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175 The term environmental literacy was coined by Charles E. Roth in 1968. Since then, its use continues to evolve in environmental education. Environmental literacy requires us to have the ability to understand, protect, and/or restore ecosystems. Although Orr’s concept of ecological literacy is widely recognized, discussions of environmental literacy still occur in environmental education. For a more detailed description and history of environmental literacy, see these resources: Charles E. Roth, Environmental Literacy: Its Roots, Evolution, and Direction in the 1990s (Columbus, OH: ERIC Clearinghouse for Science Mathematics and Environmental Education, 1992), 7-26; McBride et al., “Environmental Literacy, Ecological Literacy, Ecoliteracy,” 2-11; Amy Cutter-Mackenzie and Richard Smith, “Ecological Literacy: The ‘Missing Paradigm’ in Environmental Education (Part One),” Environmental Education Research 9, no. 4 (November 2003): 501-502.


177 In this sense, an ecologically literate person would not think about the environment as something purely outside of the human person, but would think of it as a multitude of integrated life systems that includes humans.

Despite these strengths, ecological literacy is not without its limitations. To begin with, ecological literacy, unlike its original conception, can be misinterpreted as information-focused pedagogy. C. A. Bowers is concerned that ecological literacy, like so much of environmental literature, might be understood as an opportunity to provide yet more “information” on environmental issues. In fact, in some educational practices, ecological literacy is often narrowly focused on providing data to bring about a change in human behaviour. Alan Peacock’s work on developing curriculum for ecological literacy exemplifies this problem. Although Peacock contributes to demystifying how ecosystems are organized and provides practical information for the educational field, he overlooks how to deal with the affective dimension of ecological literacy. A similar problem is found in Jessica Fraser’s work. According to Fraser, ecological literacy is concerned with behavioural change as a result of increased knowledge of ecology and the ecological crisis. Despite her deep understanding of ecological literacy, Fraser tends to limit ecological literacy to its cognitive dimension for ecological praxis.

Furthermore, ecological literacy, while attending to the material interconnectivity of creation, fails to explicitly incorporate spirituality into its understanding of literacy. This does not mean, of course, that there is no potential to develop a spiritual approach for ecological literacy. In fact, Orr himself mentions the importance of spirituality for the forging of a sustainable future, and his emphasis on affinity for life implies a somewhat spiritual nuance. However, Orr has not seriously reflected on spiritual themes in his conceptual elucidation of ecological literacy, and, for other authors, spirituality is still not a central characteristic of their understanding of

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180 Peacock, Eco-literacy, 23-104.


182 David W. Orr, “Four Challenges of Sustainability,” Conservation Biology 16, no. 6 (December 2002): 1459. This limitation is also found in Capra’s work. Although Capra describes the spiritual dimension of life, he fails to advance his spiritual view in his work on ecological literacy. See Capra, The Hidden Connections, 66-69.
ecological literacy. Since ecological literacy is a public educational concept, it may be difficult to expect the development of a spiritual view that includes assertions about God to be the business of public education. This limitation may be better resolved through religious study or theological discussion.

**B2. Earth Literacy**

Earth literacy is a practical concept that supports ecological education based on a new cosmological context. Today, there are numerous Earth literacy centers that aim to promote healthy relationships with the natural environment through active learning for a sustainable life. In particular, Catholic nuns have been active in developing ecological programs at their Earth literacy centers. Additionally, several Christian authors such as Mary Evelyn Tucker, Sallie McFague, and James Conlon have written about Earth literacy. The following section will examine the concept of Earth literacy in light of their work.

The basic focus of Earth literacy is similar to the basic focus of ecological literacy, namely, the interrelatedness of all things. In order to highlight ecological interconnectedness, Tucker,  

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183 I have examined a variety of ecological literacy resources for this problem. These are mentioned at footnote 169. It was difficult, however, to find a resource which integrates spirituality with the concept of ecological literacy.

184 Since Earth literacy has emerged as a movement in educational fields, its purpose has gone beyond giving only academic criteria. Also, it has still not been widely studied at academic levels. However, Earth literacy has a growing audience and is certainly on the ascent in the field of ecological education. See Barbara C. Krug, “Raising Cosmic Consciousness and Consciences,” (DMin Thesis, Drew University, 2000), 4, 91.

185 The following is a partial list of Earth literacy Centers in North America: the Franciscan Earth Literacy Center (http://felctiffin.org); La Vista Ecological Learning Center (http://www.lavistaclc.org); the Living Language Institute Foundation (http://earthliteracies.org); the Narrow Ridge Earth Literacy Center (http://earthliteracycenter.org); and the Earth Ethics Institute at Miami Dade Community College (http://www.earthethicsinstitute.org/GSELSHome.asp). Each of these websites was accessed on 16 March 2015.


187 Because of this common ground, the term ‘Earth literacy’ is sometimes used interchangeably with ecological literacy. However, this dissertation distinguishes Earth literacy from ecological literacy in so far as Earth literacy’s approach is based on an evolutionary cosmological story whereas ecological literacy’s approach is not. In fact, people who use the term Earth literacy tend to develop their educational pedagogy in the context of the new cosmology which Thomas Berry promotes. See McGregor Smith, Now That You Know: A Journey Toward Earth
McFague, and Conlon suggest that the cosmological story of the emerging universe is the most appropriate context for developing the concept of Earth literacy. In their view, Earth literacy refers to an ability to read Earth – i.e., an ability to understand how Earth has emerged in the evolutionary process of the universe and how it functions as a whole community. In describing Earth as an evolving community, the authors emphasize that Earth literacy requires learners to realize where they come from and where they belong – that is, from Earth and in the Earth community. The goal of Earth literacy is to seek holistic ways of seeing Earth and humanity in the cosmic evolutionary story and to awaken human beings’ deep connection to their larger context.

Tucker, McFague, and Conlon suggest several ideas to enhance a sense of Earth literacy. According to Tucker, Earth literacy needs to be developed by way of interdisciplinary approaches. For instance, Earth literacy requires the fostering of a scientific understanding of the natural world, an imaginative appreciation of nature, and a creative synthesis of science, social sciences, and humanities. In Tucker’s view, these interdisciplinary approaches help students to learn new ways of thinking and imagining human-Earth relations. McFague notes that developing Earth literacy requires at least basic knowledge of organisms. For McFague, understanding how Earth works is a starting point to seeing humanity’s interrelatedness and interdependence with other life-forms. By appreciating the basic laws of ecology, learners can also discover where they fit in the Earth system and how to live in harmony with nature. While McFague tends to stress cognitive knowledge for enhancing Earth literacy, Conlon highlights the

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190 Tucker, “Education and Ecology,” 96, 98. In Tucker’s view, Earth literacy is not achieved by simply one method and requires not only intellectual approaches but also an imaginative one. For instance, Tucker argues that to visualize the dynamics of the cosmic evolutionary process requires imaginative work as well as scientific comprehension. In order to help develop an imaginative appreciation of the cosmological context, Tucker suggests some activities such as imaginative stories, meditations, poems, paintings, and dances. Ibid., 98.

191 McFague, *A New Climate for Theology*, 54-56. In applying the house metaphor to Earth, McFague argues that human beings, as residents of the house, ought to know information about how the house works and to follow the house rules. For McFague, understanding and following the house rules are a way of practicing Earth literacy. The basic house rules McFague suggests are: “take only your share; clean up after yourself; keep the house in good repair for others.” Ibid., 56.
human capacity to listen attentively to the voices of the Earth community. Conlon suggests that Earth literacy requires the ability to communicate with Earth. Understanding “the basic languages spoken by Earth” is a necessary prerequisite in attaining such communication.\(^{192}\)

Although the authors’ claims differ, they commonly highlight an integrated understanding of the human relationship to Earth as a whole. In their view, a profound understanding of the intimate relationship between humans and Earth is the basis of Earth literacy.\(^{193}\) Furthermore, Tucker and Conlon agree that human intimacy with Earth contributes to a change in human values and behaviours toward care of Earth. In other words, human beings, through intimacy with the Earth community, have an increased capacity to act.\(^{194}\) Developing Earth literacy, then, is a necessary step to instilling care for Earth.

In summary, Tucker, McFague, and Conlon’s understanding of Earth literacy is based upon two common, foundational pillars: Earth awareness and Earth care. The authors maintain that human beings ought to understand the interrelated relationships of Earth and act in ways that enhance the well-being of Earth. In highlighting these two foundations of Earth literacy, the authors encourage learners to move from an anthropocentric view of human dominion over nature to a “cosmocentric” or “anthropocosmic” perspective – i.e., one that stresses reciprocity and respect between humans and the rest of creation.\(^{195}\) This shift can bring about a deeper transformation of ecological attitudes and behaviours. In addition, by contextualizing Earth literacy in the cosmic evolutionary story, the authors demonstrate not only how deeply human beings are integrated within the dynamic evolutionary context, but also how important their role is in the ongoing process. Through Earth literacy, learners can see themselves as “a planetary species” that affects the future direction of evolution, and realize that the Earth community can be enhanced or be diminished, depending on their role.\(^{196}\)

Despite their contributions, Tucker, McFague, and Conlon’s conceptions of Earth literacy are insufficient for establishing a foundation for RCEE. For instance, Tucker and McFague do not

\(^{192}\) Conlon, *Lyrics for Re-Creation*, 23, 34.


integrate the spiritual dimension of Earth with their understanding of Earth literacy. The authors also fail to highlight, in sufficient detail, the divine immanence in creation and the sacredness of nature, aspects significant for the development of a Catholic ecological education. This absence in the authors’ works may give the impression that the ecological and the spiritual are differing and isolated entities.\footnote{197}{This does not mean that Tucker and McFague completely fail to understand spirituality in relation to Earth. In fact, Tucker, in other writings, shows her integrated understanding of the biological and spiritual dimensions of Earth. McFague also describes God’s presence in creation and the sacred dimension of nature. However, in their articles on Earth literacy, a full synthesis of the spiritual and material is lacking. See Mary Evelyn Tucker, “The Ecological Spirituality of Pierre Teilhard de Chardin,” \textit{Spiritus} 7 (2007): 11-13; Sallie McFague, \textit{Super, Natural Christians: How We Should Love Nature} (Minneapolis, MN: Fortress Press, 1997), 172-174.} Compared to Tucker and McFague, Conlon’s understanding of Earth literacy has spiritual and theological implications. In reflecting on the revelatory aspect of Earth, Conlon holds that since the Divine communicates with humanity through the material world, human beings enhance their awareness of the Divine when they enhance their awareness of Earth.\footnote{198}{Conlon, \textit{Lyrics for Re-Creation}, 14, 23.} In relation to this, Conlon adds that one aspect of Earth literacy is “communication with the divine.”\footnote{199}{Ibid., 23.} He does not fully develop this idea in connection with Earth literacy, however, and the task of furthering his insight is left to others. How do we advance a more balanced educational concept that integrates the spiritual and material dimensions of Earth? To address this concern, we turn now to two dialogue partners.

C. Seeking Dialogue Partners for Developing a New Concept of Roman Catholic Ecological Education

This section will cite the works of Thomas Berry and Edmund O’Sullivan as dialogue partners and will explore their educational visions in order to improve the weaknesses of ecological literacy and Earth literacy while adopting their strengths. The first part of this section will examine Berry’s insight into education, and the second part will deal with O’Sullivan’s transformative learning theory. In doing so, this section will suggest that functional ecological education requires a more balanced literacy approach that holds both the ecological and the spiritual dimensions of the epic of evolution in hand.
C1. Thomas Berry’s Educational Vision

Berry argues that contemporary education exacerbates the ecological crisis. He states that the goal of education today is “to enable persons to be ‘productive’ within the context of the industrial society.” Education in this context focuses on training people for specialized technical roles to fulfill some function within the current system. In other words, the emphasis of modern education is to maintain and enhance the current industrial complex rather than to improve the well-being of the Earth community. In Berry’s view, this distorted vision of our educational system is unable to deal with the ecological crisis and actually promotes ecological illiteracy. While students educated in this dysfunctional system are better able to control and exploit Earth, they have little understanding or sense of the meaningfulness of the planetary community. They also have not developed the capacity to contemplate and imagine the mystical presence of the Divine in the natural world.

In order to cope with these problems, Berry claims that today’s education ought to be transformed so that it can provide “an integrating context for the total life functioning,” rather than limiting it to the human-oriented, industrial context. In other words, education at the human level must be reintegrated into the more comprehensive and fundamental perspective which the new scientific cosmology reveals. For Berry, cosmology is “the ultimate referent for all human understanding,” and therefore an adequate sense of education must be achieved within the cosmological context. In relation to this, Berry notes that the new cosmology must be included in “the entire sequence of education from kindergarten to professional school,” and all educational processes ought to be grounded in this unifying context.

200 Berry, The Great Work, 64.

201 Thomas Berry, The Christian Future and the Fate of Earth, eds. Mary Evelyn Tucker and John Grim (Maryknoll, NY: Orbis Books, 2009), 75; idem, The Dream of the Earth, 94. In relation to this problem, Berry points out that a university education contributes to the training of students in supporting the current industrial system and in extending human dominion over the natural world. Berry, The Great Work, 74-75.

202 Berry, The Dream of the Earth, 90, 94.

203 Ibid., 96.


205 Ibid. As an example of an educational program within the cosmological context, Berry introduces the cosmic education that Maria Montessori promoted. Agreeing with Montessori’s educational vision, Berry notes that early childhood education really begins when children are able to identify and experience their own centre as the centre of the universe. Berry, The Great Work, 16; idem, Evening Thoughts, 119-120. According to Montessori, children need to know the story of the universe, grow through this intimacy, and find their right position in the universe. She believes that cosmic education can help children understand who they are and how to live according to
Berry outlines the new cosmological context by way of a story – ‘the universe story.’ Berry’s story presents the origin of the universe and the ongoing process of cosmic events by charting the history of planet Earth and the emergence of its living forms, including humankind. In Berry’s view, the story of the universe is not a purely bio-historical narrative that focuses solely on physical evolution. It is also “a numinous revelatory story” that reveals the psychic and spiritual dimensions of the universe. In this sense, the universe story is a “single comprehensive narrative,” one that integrates the scientific and the religious. Berry asserts that an integrated story can evoke “not only the vision but also the energies needed for bringing ourselves and the entire planet into a new order of survival.” He insists that education, at every level, should be based upon a deep understanding of the universe story and a recognition of the role humanity plays in this story. According to Berry, “[t]he sublime mission of modern education is to reveal the true importance of this story for the total range of human and earthly affairs.” For Berry, then, the story of the evolutionary universe is the fundamental basis for “an ecologically sound system of education.”

By advocating the bio-spiritual story of the universe as a proper context for the educational process, Berry insists that human education should rely upon this sacred cosmic story for content and direction. In Berry’s view, “human education is part of the larger evolutionary process,” and the entire educational process ought not to be separated from the immense story of the universe. In this light, Berry writes that “universe education, earth education, and human

the wisdom of the universe. With the emphasis on cosmic education, Montessori writes that “[s]ince it has been seen to be necessary to give so much to the child, let us give him a vision of the whole universe. The universe is an imposing reality, and an answer to all questions.” Maria Montessori, To Educate the Human Potential (Madras, IN: Kalakshetra Publications, 1973), 8 (internal quotation), 10, 28-34.

206 Berry, The Great Work, 71; idem, The Dream of the Earth, 99.
207 Berry, The Christian Future and the Fate of Earth, 25.
208 Berry, The Great Work, 71.
209 Berry, The Dream of the Earth, 98; idem, The Great Work, 81.
210 Berry, The Dream of the Earth, 98. In this respect, Berry suggests that the university needs to develop a new curriculum which is based on the universe story and to offer a set of core courses following this curriculum. According to Berry’s suggestions, a first course would present the sequences of the evolutionary phases; a second course would cover the various phases of human cultural development; a third course would deal with the period of the great classical cultures; a fourth course would work on the scientific-technological phase of human development; a fifth course would deal with the emerging ecological age; and a sixth course would be on the origin and identification of values. See Berry, The Dream of the Earth, 99-107.
211 Berry, The Great Work, 66.
212 Berry, The Dream of the Earth, 92.
education are stages of development in a single unbroken process.”213 By universe education or Earth education, Berry does not mean education about the universe or Earth. Berry understands the universe and Earth as self-educating communities of living and non-living beings.214 In other words, the universe and Earth are subjects that educate all beings rather than simply being objects of human educational study.

Based on the recognition of Earth as a self-educating community, Berry further claims that Earth is “our primary educator.”215 With this idea, Berry implies that Earth teaches human beings how to live sustainably. Earth as our primary teacher, Berry writes, “has performed unnumbered billions of experiments in designing the existing life systems.”216 Through self-educational processes, the Earth community learned which systems function and which do not. In keeping with Berry’s idea, experiences of Earth form a model for human beings. For instance, if humans learn from the natural world how a system, with minimal entropy, leads to minimal unusable waste, they would develop better ways to deal with waste treatment.217 Berry’s assumption that the primary teacher is the whole Earth community is not limited to pragmatic functioning on a physical and biological level. From Berry’s perspective, Earth is also a primary religious educator, one that models for human beings how to develop spiritually. As the medium of divine manifestation, Earth becomes a locus of revelatory experience and awakens an “[a]wareness of an all-pervading mysterious energy” present in natural phenomena.218 For Berry, the revelatory communication of Earth helps humanity understand the mystical relationship of God and creation. Such understanding is needed to counter the destructive forces of an “industrial mystique.”219

213 Ibid., 89.
214 Ibid.
215 Ibid., 90. Berry further designates the Earth community as “the primary educational establishment, or the primary college, with a record of extraordinary success over some billions of years.” Ibid., 89-90.
216 Ibid., 167.
217 Berry, The Great Work, 65.
218 Berry, The Dream of the Earth, 24.
219 Ibid., 33. Berry believes that evocation of mystique in the natural world offers powerful energy needed for its preservation. For instance, Berry notes that if human beings were evoked by a mystique of water rather than merely its utilitarian aspect, they would have a stronger motivation for its preservation. Ibid.
C2. Edmund O’Sullivan’s Transformative Learning

O’Sullivan recognizes that humankind is in the midst of a major transitional period in both human and Earth history. In his view, this time is fraught with not only cataclysmic dangers but also creative opportunities, and human beings have a significant responsibility for their future direction – i.e., for the transition from the terminal Cenozoic to the emergence of the Ecozoic era. O’Sullivan claims that this historical shift is a challenge for all education, and that current educational curriculum ought to be restructured accordingly. In particular, he emphasizes that the fundamental educational task facing us today is a shift from “the vision of education for the global marketplace” to “a more integral transformative vision.” In other words, the educational venture into the Ecozoic era must be “transformative learning” which aims at making a profound change in our worldview, rather than continuing with the conventional educational model that serves the current dysfunctional industrial system. For O’Sullivan, transformative learning is a remedy for the pathos of an industrial consumer society and a way for reinventing humans in an emerging era.

According to O’Sullivan, transformative learning “involves experiencing a deep, structural shift in the basic premises of thought, feeling, and actions. It is a shift of consciousness that dramatically and permanently alters our ways of being in the world.” To deepen this transformative vision, O’Sullivan highlights the necessity of a comprehensive cosmology, which he labels the “Big Picture.” Since transformative learning aims at a fundamental and massive change, its educational vision must also be accomplished within a broader cosmological context.

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220 Edmund O’Sullivan, “Finding Our Way in the Great Work,” Journal of Transformative Education 6, no. 1 (January 2008): 27; idem, Transformative Learning, 1-2, 16. The word “Ecozoic” was coined by Thomas Berry. This new period is the fourth biological era to succeed the Paleozoic (600-220 million years ago), the Mesozoic (220-65 million years ago), and the Cenozoic (65 million years ago until the present). Berry argues that today’s ecological crisis is a signal of the end of the present geological period (the Cenozoic) and that humanity has a responsibility for the emerging Ecozoic period which nourishes the integral life community. Thomas Berry, “The Emerging Ecozoic Period,” in Thomas Berry, Dreamer of the Earth: The Spiritual Ecology of the Father of Environmentalism, eds. Ervin Laszlo and Allan Combs (Rochester, VT: Inner Traditions, 2011), 9; Brian Swimme and Thomas Berry, The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era – A Celebration of the Unfolding of the Cosmos (San Francisco, CA: HarperCollins Publishers, 1992), 242-243.


222 O’Sullivan, Transformative Learning, 2-3, 7.


224 O’Sullivan, Transformative Learning, 2, 4, 45. According to O’Sullivan, modern education does not have an adequate larger context. This problem contributes to a fractionated worldview and a disenchantment with the natural world and human relations to it. Ibid., 93-94, 101.
This broadened context is articulated through the story of the universe. Following Berry’s approach, O’Sullivan states that “[t]he plenitude of this universe story is the basis for all educational endeavours and is the proper context for the entire educational process.” By adopting the cosmological story as an educational context for transformative learning, O’Sullivan aims to develop “a transformative ecozoic vision” that recovers a cosmological sense and puts concerns for the planet at the forefront.

O’Sullivan’s transformative learning helps to develop a planetary consciousness with a sense of the wholeness and the interconnectedness of all things. Drawing on a cosmological narrative, O’Sullivan states that the universe is a single unfolding reality from which everything comes into being, that human beings are a species embedded in the larger reality, and that their future is inseparable from the future of the larger life community. O’Sullivan argues that the development of a planetary consciousness brings about a radical shift in the perception of human identity, from an “encapsulated minimal self” or an “individualistic self” to “a broader ecological self.” Education for planetary consciousness fosters a sense of a wider personal identity and a sense of belonging in the Earth community. In this regard, transformative learning that develops a planetary consciousness contributes to the rekindling of an intimate relationship between humans and the natural world, a relationship that opposes the exploitation of the current industrial system and the transnational market economy.

In O’Sullivan’s view, transformative learning based on the cosmological context seeks not only to enhance ecological awareness but also to cultivate and nourish the spiritual life. O’Sullivan argues that modern education suffers from its eclipse of spirituality, and that education without a
spiritual approach will not be able to generate the deeper transformation needed.\footnote{O’Sullivan, “The Project and Vision of Transformative Education,” 10; idem, Transformative Learning, 39, 259.} “[A]ny in-depth treatment of transformative education,” he writes, “must address the topic of spirituality.”\footnote{O’Sullivan does not understand spirituality in terms of a religious perspective. Although he recognizes an overlapping area between spirituality and religion, he argues that spirituality is not exhausted by religion. His appreciation for spirituality is significantly influenced by indigenous spiritual traditions. Spirituality, in his definition, “refers to the deeper resources of the human spirit and involves the non-physical, immaterial dimensions of our being.” O’Sullivan, Transformative Learning, 259-260, 265. While O’Sullivan’s understanding of spirituality is different from the Catholic faith, his educational emphasis on spirituality provides an important insight for developing a Catholic ecological education that involves spiritual concerns.} O’Sullivan highlights the sense of the sacred as an important aspect of transformative learning. The universe has not only held a physical but also a spiritual dimension from the beginning, and awareness of the spiritual dimension of the larger reality helps us to see Earth as a sacred community.\footnote{O’Sullivan, “The Project and Vision of Transformative Education,” 10; idem, Transformative Learning, 231. See also O’Sullivan, “Emancipatory Hope,” 70-71.} O’Sullivan believes that deep transformation requires a spirituality that awakens us to an encounter with the sacred and helps us to appreciate the meaning of “what it is to be a member of the sacred community.”\footnote{O’Sullivan, Transformative Learning, 39.} In this sense, transformative learning is “a spiritual venture” that seeks to recover our spiritual connection with the sacred Earth community.\footnote{O’Sullivan, “Emancipatory Hope,” 70; idem, Transformative Learning, 263.}

**D. Summation**

As this chapter has shown, the notion of Christian environmental stewardship carries too many limitations to be employed as a fundamental concept for developing RCEE. Even though the stewardship approach introduces “a grammatical improvement” over that of the domination model and encourages care for creation, it still remains “a relational vacuum [emphasis added]” in terms of the connections between human beings and the rest of creation.\footnote{Horan, “A Franciscan Theological Grammar of Creation,” 6, 7.} In the stewardship model, the relational dimension is limited to a master-servant relationship between God and humans, and the rest of creation is simply a backdrop for the God-human drama. These disconnected and static relational deficiencies imply that the stewardship concept has an
inaccurate picture of “a pre-evolutionary understanding of nature” and remains in the old cosmological paradigm with its anthropocentric view.\textsuperscript{238}

In searching for alternative models of stewardship, this chapter has explored the possibilities of ecological literacy and Earth literacy for contemporary ecological education. These concepts, by inviting learners to \textit{read} the larger context in which they live, respect the basic law of ecology, namely that “everything is related to everything else.”\textsuperscript{239} Their emphasis on an ecological relationship is helpful for overcoming the human-centered position of Christian environmental stewardship, and allows for a greater engagement with the whole life community. Ecological literacy and Earth literacy do not adequately address the spiritual dimension of the Earth community, however. There remains ‘\textit{a spiritual vacuum}’ that disconnects the ecological and the spiritual. While this may not be a problem for public ecological education, an approach that lacks the spiritual dimension of the created world is not comprehensive enough to provide a new direction for Roman Catholic ecological education.\textsuperscript{240}

Finally, in aiming to find a stronger foundation for an RCEE model, this chapter has assessed Berry’s educational vision and O’Sullivan’s transformative learning. Berry and O’Sullivan argue that all educational processes ought to be reformed so that human beings can be cosmologically reintegrated, that is, resituated into a larger physical and spiritual context. Their intention is to enhance human-Earth relationships and to transform human attitudes and behaviours in ecologically and spiritually sustainable ways. This integral vision of evolutionary cosmology can serve to create a new approach for RCEE that helps Catholics to seek both Earth literacy and spiritual literacy in a balanced way. By aiding Catholics to integrate their ecological awareness and their spiritual development within the larger life community, RCEE will be better positioned to inspire ecological conversion.


\textsuperscript{239} McFague, \textit{A New Climate for Theology}, 50.

\textsuperscript{240} Even though current public ecological education understates the importance of spirituality, I would argue that it ought not to. The absence of the spiritual in our relationship with the rest of creation ignores a fundamental dimension of the human. For this reason, O’Sullivan suggests that public education should be concerned with spiritual development, which need not be framed in religious language. See O’Sullivan, \textit{Transformative Learning}, 259-281.
CHAPTER 2
An Evolutionary Cosmology and Ecospiritual Literacy

The previous chapter suggested that RCEE ought to be based on a cosmological context and it must promote a more balanced literacy aiming at both our ecological and spiritual development within the larger reality. In order to advance this idea, this chapter will first outline a general understanding of an evolutionary cosmology and will describe some of the main characteristics of the evolving universe that are available from scientific insight. This scientific review of evolutionary cosmology, which highlights the physical process of cosmogenesis, will provide one of the building blocks for a new concept of RCEE. However, since the cosmological context that is explained by science alone does not reveal a deeper meaning of the universe, this chapter will subsequently investigate the cosmological insights of Pierre Teilhard de Chardin and Thomas Berry who explore the spiritual as well as the physical aspects of the universe. By looking through these authors’ integrated cosmological lenses, this chapter will also examine a larger understanding of God in the context of the evolving universe. Finally, based on scientific and theological readings of this cosmological context, this chapter will synthesize some of the implications of adopting an evolutionary cosmology and will establish a more integrated concept of RCEE – the concept of ecospiritual literacy. By doing so, this chapter will propose ecospiritual literacy as a foundational concept for developing Roman Catholic ecological education.

A. Overview of an Evolutionary Cosmology

This section will present a broad overview of an evolutionary cosmology in two subparts. The first part will briefly sketch the evolving processes of the universe and will describe new understandings of the universe suggested by the contemporary science of evolution. By doing so, it will argue that cosmic evolution is the fundamental story of, and context for, all that exists. Since the primary feature of an evolutionary cosmology is cosmogenesis, the second part of this section will examine the main characteristics of cosmogenesis in a way that reflects the story of the universe. In the account of an evolutionary cosmology, I will not primarily discuss highly detailed scientific data or controversial theories. The version of evolutionary cosmology dealt
with in this section will be the one that is widely accepted by modern scientists, although authors may differ on specific details.

A1. The Story of the Universe: The Cosmological Context

Contemporary scientific consensus indicates that the universe is ancient, expanding, and evolving. According to the most common scientific view, the entire universe erupted from a primal singularity in which all space, time, matter, and energy were concentrated together. This primeval explosion from a single point which was unimaginably small, hot, and dense is commonly called the “Big Bang,” and is estimated to have occurred approximately 13.8 billion years ago.241 Nobel Prize-winning physicist Steven Weinberg describes this primordial event as “an explosion which occurred simultaneously everywhere, filling all space from the beginning, with every particle of matter rushing apart from every other particle.”243 Since this initial explosion, the universe has expanded with its temperature proportionately decreasing and has continued to evolve with new forms of creativity over time.244 Like “a growing organism,” the universe has formed new structures within itself as it develops: neutrons and protons, atoms, galaxies, stars, planets, and biological life.245 The eminent biologist Rupert Sheldrake briefly summarizes this evolutionary process of the universe:

As the newborn universe expanded and cooled, the primal unified field gave rise to the fundamental fields of gravitation, the quantum fields of material particles, and the electromagnetic field. With further expansion and cooling, galaxies and stars came into being under the influence of gravitation, and within the stars the evolution of the chemical elements continued. Later still, when matter ejected from exploding stars aggregated gravitationally into planets, a great variety of molecular and crystalline forms


242 The estimate of the beginning of the universe has increased from 13.7 billion years ago to 13.82 years ago. Mark Peplow, “Planck snaps infant Universe,” Nature 495 (March 28, 2013): 417-418.


244 Saraceno, Beyond the Stars, 5; Frank, The Constant Fire, 152-156. See also John Polkinghorne, One World: The Interaction of Science and Theology (London, UK: SPCK, 1986), 56.

arose, and liquids, such as water, appeared for the first time. Then life emerged, at least on earth, and biological evolution began. The creative processes of evolution continue to this day and are expressed in our own collective and personal lives.\textsuperscript{246}

By describing the cosmic evolving process, modern scientific cosmology reveals that the universe is not simply a static place as classical Newtonian physics presumed, but a “dynamic developing reality” passing through a time-development sequence.\textsuperscript{247} From this new cosmological view, the universe had a beginning and transformed itself over time via “a historical plot” that consists of billions of cosmic events.\textsuperscript{248} This historicity of the universe further implies that the whole of the universe, not merely human history, has a narrative character; that is, the universe itself is “an unfolding story” with a beginning, middle, and some unimaginable future.\textsuperscript{249} Mathematical cosmologist Brian Swimme claims that at its most basic level, the universe is not so much matter or energy but story.\textsuperscript{250} The universe is endowed with a narrative structure that enables new things to happen across the aeons of evolutionary unfolding, and the evolving universe, as the active subject of the story rather than a mere backdrop to the human story, discloses its ongoing journey over 13.8 billion years.\textsuperscript{251}

In discerning the inherent narrative character of the universe, Berry systematically constructs the story of the universe, reuniting science and history.\textsuperscript{252} Berry’s version of the cosmological

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  \item \textsuperscript{248} Brockelman, \textit{Cosmology and Creation}, 44, 160. See also John F. Haught, “Ecology and Eschatology,” in \textit{And God Saw That It Was Good}, 57. According to Haught, the recognition that the universe is historical constitutes one of the most significant discoveries of contemporary science. Ibid.
  \item \textsuperscript{252} Although Berry’s universe story relies on contemporary scientific modes of understanding, it is not merely a scientific account. It also involves a mythic aspect. For Berry, the universe story is incomplete without its
narrative is particularly well presented in *The Universe Story*, a collaborative effort with Swimme. In this work, Berry narrates the universe story through a fourfold evolutionary process: 1) the galactic phase, which begins with the “primordial flaring forth” and progresses toward the formation of elemental particles, galaxies, and stars; 2) the Earth phase, which focuses on the emergence of the solar system and the developments of the Earth’s molecular and geological formations; 3) life phase, which traces the pre-life forms and the arising of plants and animals in all their varieties; 4) the human phase, which describes the emergence of human life with self-reflective consciousness and continues through the cultural developments of the human order. 253

Throughout this grand narrative of the evolutionary process, Berry highlights the extraordinary unbroken sequence of cosmic events in a time-developmental process. For Berry, the universe is “a coherent whole, a seamless multileveled creative event,” and everything that is now present has emerged through the unbroken series of transformations. 254 The universe story describes this “account of a long sequence of transformations.” 255

The story of the universe is also advanced by other scholars. For instance, David Christian and Cynthia Stokes Brown refer to the cosmic story as “Big History” and present us with a scientific history from the Big Bang to the current state of humanity. 256 Swimme’s and Mary Evelyn Tucker’s *Journey of the Universe* develops an epic story of cosmic, Earth, and human transformation by weaving scientific discoveries with humanistic insights. 257 While each "

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253 Swimme and Berry, *The Universe Story*, 17-238. See also Berry, *The Dream of the Earth*, 91, 99; idem, *The Great Work*, 163-164. Berry’s tendency to divide history into eras or stages was influenced by the Enlightenment philosopher and historian, Giambattista Vico (1688-1744). Vico described distinct ages through which human history developed: the age of the gods, the age of heroes, and the age of men. Influenced by Vico, Berry found the large-scale dimensions of history and developed a comprehensive perspective in periodization, which eventually led him to make the transition into evolutionary history. See Anne Marie Dalton, *A Theology for the Earth: The Contributions of Thomas Berry and Bernard Lonergan* (Ottawa, ON: University of Ottawa Press, 1999), 10-21; Mary Evelyn Tucker, “Thomas Berry and the New Story: An Introduction to the Work of Thomas Berry,” in *The Intellectual Journey of Thomas Berry: Imagining the Earth Community*, ed. Heather Eaton (Lanham, MD: Lexington Books, 2014), 2-4.

254 Swimme and Berry, *The Universe Story*, 18.


approach to the cosmological narrative has a somewhat different emphasis, their versions of the
universe story have something in common in terms of encompassing “the broadest view of the
biggest picture.”258 Their way of portraying the Big Picture of evolution as zooming from the
macro-story of galactic expansion to the micro-story of humanity demonstrates that the universe
is our largest context and that human history as a whole is only comprehensible within the story
of the universe.259 In other words, the universe is “a story in which we are immersed, to which
we belong, and out of which we arose,” and thus the evolutionary epic is our story, individually
and collectively.260 On this topic, Loyal Rue states: “[t]his epic of evolution is the biggest of all
pictures, the narrative context for all our thinking about who we are, where we have come from,
and how we should live. It is the ultimate account of how things are, and is therefore the essential
foundation for discourse about which things matter.”261

As an all-inclusive-narrative, the epic of evolution further implies that the universe as a whole is
the context for every other text.262 This does not mean that the universe story supplants other
existing stories that have guided humanity over the millennia. O’Sullivan asserts that the story of
the universe is not the master narrative of any one culture that can replace other stories, but is the
grand story of the universe itself which provides the fundamental context for all and invites old
stories to evolve in a new way.263 Alternatively stated, the grand narrative of cosmic evolution
provides “a more comprehensive context in which all these earlier stories discover in themselves
a new validity and a more expansive role.”264 From this point of view, the religious story does
not have to be read apart from the cosmological story. In fact, the story of religion itself is an
episode which is situated within the epic of evolution, and participates in the journey of the

258 Chaisson, Epic of Evolution, xv, 434.
259 Christian, Maps of Time, 12, 351; Brown, Big History, 53-55; Swimme and Berry, The Universe Story,
237.
260 Swimme and Tucker, Journey of the Universe, 2. See also Philip Hefner, “The Evolutionary Epic,”
Zygon 44, no. 1 (March 2009): 3; Catherine Vincie, Worship and the New Cosmology: Liturgical and Theological
261 Loyal Rue, Everybody’s Story: Wising up to the Epic of Evolution (Albany, NY: State University of
Mary Evelyn Tucker (New York, NY: Columbia University, 2009), 94; idem, Evening Thoughts, 23.
263 O’Sullivan, Transformative Learning, 30, 102.
264 Swimme and Berry, The Universe Story, 238.
In Haught’s words, “[i]nstead of being a whole new book with no connection to previous chapters of the cosmic narrative, our religious searching can be interpreted as an extension of the cosmic adventure itself.” Therefore, when the religious story is understood within the larger framework of the evolutionary epic, its deeper meaning can be retrieved and new religious experiences can be discovered.

A2. Cosmogenesis: The Universe as Process of Becoming

As the story of the universe reveals, the primary focus of evolutionary cosmology is the continuously unfolding process of the universe; that is, the universe is in no way a static entity but an ongoing process that is still incomplete. Within this overarching theme, evolutionary cosmology marks a radical departure from the universe as a cosmos and presents instead an awareness of the universe as a cosmogenesis. While the former worldview of cosmos regards the universe as a fixed order, the new paradigm of cosmogenesis considers the universe as “a living entity in the process of becoming.” From the perspective of evolutionary cosmology, the universe is no longer perceived as a being created once-and-for-all time, but rather the universe is revealed as being “in a process of coming to be.” What was seen as a completed, unchanging, seasonally renewable, and permanent universe is now seen as being emergent,

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novel, irreversible, and creative. This section will describe these newly found characteristics of cosmogenesis.

A crucial feature of cosmogenesis is the fact that the whole universe is emerging in a time-developmental sequence from within. Philip Clayton succinctly describes the emerging process of the universe as follows: “Once there was no universe and then, after the Big Bang, there was an exploding world of stars and galaxies. Once the earth was unpopulated and later it was teeming with primitive life forms. Once there were apes living in trees and then there were Mozart, Einstein and Gandhi.” From the Big Bang to Gandhi, the emergent phenomenon in each case gathers up what comes before and then shapes it into a new level. In other words, each evolutionary step is not added on externally to the stages that preceded it, but emerges from within as a result of the universe’s interactions at every level. This is not to say that cosmogenesis is simply an unfolding of new forms from old materials; rather, new forms in the emergent universe result from “a synthesis of the old and new in ways that are often unpredictable.” In this sense, each process of cosmogenesis is indivisible from the others and participates in helping the whole universe to emerge. Ervin Laszlo summarizes this idea of emergence:

At the very least, one kind of evolution prepares the ground for the next. Out of the conditions created by evolution in the physical realm emerge the conditions that permit biological evolution to take off. And out of the conditions created by biological evolution come the conditions that allow human beings – and many other species – to evolve certain social forms of organization.

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274 Johnson, Ask the Beasts, 174-175.


276 Boff, Cry of the Earth, Cry of the Poor, 28.

In short, the emerging universe is continuous from its original moment to its current state. Each new level includes all preceding levels, and there is a string of relationships throughout the entire process.  

Cosmogenesis, in its emerging process, is characterized by the appearance of the radically new. The novelty of cosmogenesis does not simply mean the modification or recombination of existing forms, but indicates something that is qualitatively new in appearance. While new emerging forms are continuous with previous ones, later forms have different properties and functions from earlier ones. In this regard, the novelties of cosmogenesis are not reducible to what came before. This character of irreducible novelty, according to Ilia Delio, pertains “not only to the properties of the new emerging entity but to the entity itself as new.” For instance, whereas galaxies emerged from an original cloud of hydrogen and helium, the properties of galaxies are not implicit in their preceding stage; that is, galaxies themselves are a totally different substance from their components. The emergence of unprecedented new forms means that although ‘the old is within the new,’ each new stage of cosmogenesis cannot be fully understood from the characteristics of its earlier stage; each new stage is “more than the sum of [its] parts.” As each successive stage embraces and transcends its previous stage in a completely new way, cosmogenesis develops new properties and acts with novel powers; as a result, new stages of the universe arise over long periods of time.

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278 See Brockelman, *Cosmology and Creation*, 61-62; Laszlo, *Evolution*, 22-28. Sheldrake also emphasizes the emerging continuity of cosmogenesis in this way: “New species arise within ecosystems; new ecosystems within Gaia; Gaia within the solar system; the solar system within the galaxy; the galaxy within the growing cosmos.” Sheldrake, *The Rebirth of Nature*, 139.


285 Wessels, *Jesus in the New Universe Story*, 55; Johnson, *Ask the Beasts*, 175. Delio argues that although cosmic evolution is marked by novelty, such novelty need not be altogether ‘positive.’ The emerging process of the universe includes not only dimensions of positive growth but also aspects of devolution and mutation. According to
Another characteristic of cosmogenesis is the irreversibility of the evolutionary process. Cosmogenesis is a one-way process that moves forward in time; there is no turning back in its temporal unfolding over billions of years.\textsuperscript{286} In its irreversible journey, the universe has a finite past. The past can neither return nor be changed.\textsuperscript{287} In Paul Davies’ words, “[t]he universe as a whole is engaged in \textit{unidirectional change}.”\textsuperscript{288} As ice that melts in hot water cannot reverse itself into its original state, so too with cosmic events.\textsuperscript{289} This character of irrevocable change highlights the fact that no event in cosmogenesis is precisely repeatable. In a sequence of irreversible evolutionary events, writes Wolfhart Pannenberg, “no occurrence is repeated strictly in the same way in which it has taken place earlier.”\textsuperscript{290} Cosmogenesis is an “unrepeatable series of events” which moves from simplicity to greater and greater complexity.\textsuperscript{291} Instead of repeating itself in a cyclical pattern, every step of cosmogenesis develops gradually in an irreversible direction. Cosmogenesis as a whole is a highly unique process; it is the vast, irreversible sequence of singular events, of which human beings are a part.\textsuperscript{292} As Ted Peters concludes, “[t]he actual stream of unique events through time, where no single happening repeats a previous one, is the concrete reality in which we live.”\textsuperscript{293}

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\textsuperscript{287} Ted Peters, “Cosmos as Creation,” in \textit{Cosmos as Creation}, 65.

\textsuperscript{288} Davies, \textit{The Cosmic Blueprint}, 14. Italics in original.

\textsuperscript{289} Ibid., 15. This character of irrevocable change is linked with the thermodynamic tendency to increase entropy (measurement of disorder). According to Davies, the second law of thermodynamics specifies that in an isolated system, entropy cannot decrease. After a system is initiated, entropy rises to a maximum; there is an irreversible change from order to disorder. This law associates the direction of increasing entropy with the direction of evolutionary time. Since each step of evolution generates increasing amounts of entropy, original order dissipates over time and cannot be restored in an exacting way. Ibid., 14-20. See also Wolfhart Pannenberg, \textit{Toward a Theology of Nature: Essays on Science and Faith}, ed. Ted Peters (Louisville, KY: Westminster/John Knox Press, 1993), 87-88, 93; Ian G. Barbour, \textit{Religion and Science: Historical and Contemporary Issues} (San Francisco, CA: HarperSanFrancisco, 1997), 181-182.

\textsuperscript{290} Pannenberg, \textit{Toward a Theology of Nature}, 106-107.


\textsuperscript{292} Pannenberg, \textit{Toward a Theology of Nature}, 36, 87; Vincie, \textit{Worship and the New Cosmology}, 8. See also Davies, \textit{The Cosmic Blueprint}, 94.

\textsuperscript{293} Peters, “Cosmos as Creation,” 100.
Finally, cosmogenesis is characterized by the creativity built into it. From the view of evolutionary cosmology, each step of cosmogenesis does not occur through an external agent that directly acts on the cosmic system, but is driven by its “inbuilt creativity.” The creativity of cosmogenesis has been inherent in the universe from the beginning and has continued to manifest itself through the generation of new entities over time. As Karl Popper and John Eccles note, “the universe has never ceased to be creative, or ‘inventive.’” The innate and ongoing creativity of cosmogenesis is open-ended. According to Davies, the universe is predisposed to a certain “freedom of choice” rather than being predestined in a “detailed blueprint.” In other words, the emergent universe is not limited to a pre-determined plan but enjoys freedom to self-organize. Since the creativity of the universe drives the emergence of all beings through its own intrinsic self-organizing dynamic, cosmogenesis is intrinsically unpredictable and unfolds with new unforeseen events. The next step in cosmogenesis opens the world to new potentialities and opportunities for further evolutionary development.

In short, this section has examined an evolutionary cosmology that is focused on the physical functioning of the universe. The physical dimension of cosmogenesis, based on insights from modern science, helps us to understand the universe as a single reality of an emergent, novel,

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294 Clifford, “Postmodern Scientific Cosmology and the Christian God of Creation,” 82. See also Karl R. Popper and John C. Eccles, The Self and its Brain (New York, NY: Springer International, 1977), 15, 61; Davies, The Cosmic Blueprint, 129. According to Arthur Peacocke, the momentum of cosmic creativity is related to the interplay of chance and law: “[i]t is chance and law together that produce a universe in which new forms emerge, a universe that has creativity built into it.” Arthur R. Peacocke, “Theology and Science Today,” in Cosmos as Creation, 39. Peacocke further emphasizes the importance of their mutual interplay by arguing that if the universe were lawlike, it would be a repetitive and uncreative order; if the universe were governed by chance alone, it would not have any forms or organizations that persist. In his view, “chance operating within a lawlike framework is the basis of the inherent creativity of the natural order.” Arthur R. Peacocke, Paths from Science towards God: The End of All Our Exploring (Oxford, UK: Oneworld, 2001), 76. See also John Polkinghorne, Science and Theology: An Introduction (London, UK: SPCK, 1998), 39-40; idem, One World, 50-55.


296 Popper and Eccles, The Self and its Brain, 14.

297 Davies, The Cosmic Blueprint, 200, 202. Davies points out that predisposition must not be confused with predeterminism which holds that everything in detail was laid down from the beginning. In his view, the universe is predisposed toward creativity and opens the possibility for endless novelty in an unknown future. While Davies opposes the idea of a predetermined blueprint, he supposes that a direction or inclination is somehow present in the universe. Ibid., 201-202.


299 Davies, The Cosmic Blueprint, 200-203; Johnson, Ask the Beasts, 115-117.

300 Peacocke, “Theology and Science Today,” 37; Davies, The Cosmic Blueprint, 129.
irreversible, and creative process, and to rethink the place of humanity in this cosmological context.\textsuperscript{301} Genuine evolutionary cosmology is not limited to a scientific explanation for physical reality, however. If the epic of evolution is the all-inclusive context, it also ought to be involved with the spiritual or religious dimensions of this world.\textsuperscript{302} Delio claims that “[w]hile scientists continue to understand how evolution works for physical systems, it is important to understand how evolution works for religious systems as well, since physical and spiritual reality are intertwined.”\textsuperscript{303} How does evolutionary cosmology explain the invisible aspect of the world and what does it say about God? Can we understand our Christian faith in the story of the universe? The following section will deal with this issue.

**B. The Universe in Both its Spiritual and Physical Dimensions**

In developing a more comprehensive approach to evolutionary cosmology, I now turn to the integrated cosmological visions of two distinguished thinkers. I will first review how Pierre Teilhard de Chardin understands cosmogenesis and how he delineates both the inner and the outer dimensions of the universe. Teilhard’s understanding of God in the spiritual and physical process of cosmogenesis, and his emphasis on the sacramentality of the material world, will also be examined. I will then explore Thomas Berry’s cosmological vision, one that relates cosmogenesis with psychic-spiritual and physical-material aspects. Berry’s understanding of the divine presence and action in the context of the evolutionary epic will be analysed, as well. Teilhard’s and Berry’s scientific description of the material dimension of cosmogenesis will be briefly reviewed here. More attention will be devoted to how Teilhard and Berry integrate the spiritual and physical dimensions of the universe and how they expand the understanding of the Divine in the grandeur of the evolving universe.

\textsuperscript{301} The notion of ‘Earth Literacy’ is applicable here.

\textsuperscript{302} O’Hara points out the problematic nature of a one-dimensional understanding of evolutionary cosmology: “Indeed, even those who accept this new evolutionary story of creation seldom understand it as an emergence of both spirit and matter from its inception, but rather, the story is most often told as the evolution of the physical-material, but not the psychic-spiritual.” Dennis Patrick O’Hara, “Thomas Berry’s Understanding of the Psychic-Spiritual Dimension of Creation: Some Sources,” in *The Intellectual Journey of Thomas Berry*, 83.

\textsuperscript{303} Delio, *The Unbearable Wholeness of Being*, xvii.
B1. Pierre Teilhard de Chardin

a. Cosmogenesis toward Complexity-Consciousness and the Omega Point

Teilhard is one of the first scholars who fully recognized the universe as cosmogenesis by way of the four phases of the evolutionary process: galactic, Earth, life, and human evolution.\textsuperscript{304} In his magnum opus *The Human Phenomenon* (written between 1938 and 1940 and first published as *Le Phénomène Humain* in 1955), Teilhard describes the sequence of cosmic evolution and claims that the universe as a whole is an unfolding process of continual becoming, rather than a fixed body of matter in time and space.\textsuperscript{305} In shifting the idea of the universe from cosmos to cosmogenesis, Teilhard asserts that “the world appears to be a mass in process of transformation” and that “matter is in a state of genesis.”\textsuperscript{306} This constantly emerging process of the universe, in his view, has a certain direction and trajectory. Teilhard does not see the evolutionary process as a series of random events of simple chance; rather he understands it as “the phenomenon of a directed additivity,” which continually grows more complicated.\textsuperscript{307} By tracing the evolutionary movement from elementary matter to human beings, Teilhard argues that the universe grows in complexity as it evolves.\textsuperscript{308} He believes that cosmogenesis progresses along its course “from the most simple to the most complex” – i.e., in the direction of increasing “organized complexity.”\textsuperscript{309}

This increase in complexity, according to Teilhard, is accompanied by a corresponding ascent of consciousness. From his perspective, matter is not separated from consciousness; rather,

\textsuperscript{304} Thomas Berry, “Teilhard in the Ecological Age,” in *Teilhard in the 21st Century*, 59; Haught, *Deeper than Darwin*, 162.


\textsuperscript{307} Ibid., 91. Italics in original. See also Ibid., 65-66, 95.

\textsuperscript{308} Ibid., 18.

\textsuperscript{309} Teilhard, *The Heart of Matter*, 33; idem, *The Human Phenomenon*, 217.
consciousness was latent within physical matter and gradually emerged from it. In other words, “matter manifests the property of arranging itself in more and more complex groupings and at the same time, in ever-deepening layers of consciousness.” In the evolutionary process, then, as matter becomes more complex in its organization, the more developed consciousness emerges. Teilhard calls this fundamental direction of cosmogenesis “the law of complexity-consciousness.” For him, the law of complexity-consciousness is “one precise orientation and a privileged axis of evolution.” In accordance with this complexity-consciousness, the evolutionary process of Earth proceeds through an unfolding series of spheres, from the sphere of matter (the geosphere), to the sphere of life (the biosphere), and eventually to the sphere of mind (the noosphere). In Teilhard’s view, this implies that evolution is ultimately a progression toward the “[r]ise of consciousness” and that the emergence of self-reflective consciousness (in humanity at least) is a culmination of the preceding evolutionary process. In this regard, Teilhard sees the human as “the arrow of evolution,” in whom the universe has

312 Teilhard, The Human Phenomenon, 26-27; idem, Writings in Time of War, 155.
313 Teilhard, The Heart of Matter, 143; idem, The Human Phenomenon, 28; idem, The Appearance of Man, 139.
314 Teilhard, The Human Phenomenon, 92. Italics in original.
315 Teilhard, The Heart of Matter, 29; idem, The Human Phenomenon, 123-124. Building on the analogy of the spheres of Earth, Teilhard coins the term “noosphere” which means “thinking layer” of the world. With this term, Teilhard visualizes the vast network of human consciousness enveloping Earth and highlights the ultimately psychic nature of cosmogenesis. As he states poetically, with the noosphere, Earth “makes a new skin” and “finds its soul.” Ibid., 95, 123, 124. For the account of noosphere, see Kathleen Duffy, Teilhard’s Mysticism: Seeing the Inner Face of Evolution (Maryknoll, NY: Orbis Books, 2014), 90-91.
316 Teilhard, The Human Phenomenon, 172, 174-175.
become self-conscious. In and through humanity, cosmogenesis “constantly continues to rise” and draws its direction “towards a spiritual realization of a higher order.”

Furthermore, Teilhard argues that cosmogenesis is ultimately moving toward a point of convergence in what he terms the “Omega Point.” For him, the Omega Point is the ultimate goal or supreme centre where cosmogenesis is completely fulfilled and unified. This Omega Point is not merely outside of the evolutionary process that transcends time and space, but is also a part of the evolution which operates right here and now in the unfolding of the universe. Teilhard identifies this Omega Point with Christ. In his view, just as Christ was present in the first subatomic particles as Alpha, Christ stands at the end of cosmogenesis as Omega. By recognizing Christ as the Omega Point, Teilhard argues that Christ is within evolution and is the goal of evolution; Christ-Omega is the “Prime Mover ahead” who allures all things to their completion in Him. Within this notion of the Omega Point, Teilhard notes that cosmogenesis

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317 Ibid., 7, 154. For Teilhard, the most complexified consciousness of humankind is the greatest fruition of cosmogenesis thus far. This does not mean, however, as some critics have pointed out, that his idea of cosmogenesis is reductively human-centered. The highlighting of human self-reflective consciousness allows Teilhard to value humanity as having an important role in the future direction of evolution; that is not to say that human beings are superior to other beings or that other species are inconsiderable. In fact, Teilhard emphasizes that we should understand human beings in relationship to the totality of being. He writes that “[h]uman individuality, too pronounced, masks the totality from our sight, so that as we consider the human our mind tends to fragment nature and to forget the depth of its connections and the boundless horizons it has: entirely the wrong kind of anthropocentrism.” Ibid., 6 (internal quotation), 156-158. See also François Euvé, “Humanity Reveals the World,” in From Teilhard to Omega: Co-Creating an Unfinished Universe, ed. Ilia Delio (Maryknoll, NY: Orbis Books, 2014), 67-68.


322 Beatrice Bruteau, Evolution toward Divinity: Teilhard de Chardin and the Hindu Traditions (Wheaton, IL: The Theosophical Publishing House, 1974), 24. See also Teilhard, The Human Phenomenon, 183; idem, Human Energy, 91. Teilhard finds the terms of Alpha and Omega in the Book of Revelation (Rev. 1:8) and uses them to refer to the universal Christ or to the beginning and the end of space-time.

323 Teilhard, The Human Phenomenon, 193. Italics in original. See also Teilhard, The Heart of Matter, 51; idem, Science and Christ, 165-167. Rejecting a universe without meaning or purpose, this view holds that the universe has a destiny or teleology. As Delio writes, “the world is not blindly hurtling itself into an aimless expansion but is moved by Christ to Christ that God may be all in all.” Ilia Delio, Christ in Evolution, 64.
is a process of eventually being transformed into Christ, a process of “Christogenesis.”

From this perspective, then, cosmoogenesis reveals itself “along the line of its main axis, first as Biogenesis and then Noogenesis, and finally culminates in the Christogenesis which every Christian venerates.” Cosmoogenesis, which begins with matter and develops into life, thought, and God, unfolds through these different stages as “one single process of synthesis.”

b. Seeing the Outer and Inner Face of Evolution

As we have seen, Teilhard attempts to see “the totality of the cosmic phenomenon” in terms of both within and without. For him, seeing “the external face of the world” is not enough; to see the whole phenomenon properly, one also must notice “the internal face of things.” Teilhard believes that “everywhere in the stuff of the universe there necessarily exists an internal conscious face lining the external ‘material’ face [which is] habitually the only one considered by science.” In relation to seeing the “bifacial” universe, Teilhard claims that cosmoogenesis is not merely physical in character but also involves a psychic dimension. Teilhard’s law of complexity-consciousness instructs us that some form of consciousness or interiority of the universe was present from the beginning and came to self-reflective consciousness in human beings. That is, the psychic aspect of the universe is not an evolutionary addendum but is an emergent property of cosmoogenesis itself. From this perspective, Teilhard contends that “[a] whole that unfolds” is not only physically complexifying but also has a “psychically convergent

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324 Teilhard, *Science and Christ*, 168-169; idem, *The Heart of Matter*, 90; idem, *Christianity and Evolution*, 181. To describe cosmoogenesis as the genesis of the total Christ, Teilhard coins the term “Christogenesis.” For him, Christogenesis is the final phase of evolution where the world is convergent and Christ is seen as the organic and physical centre of the universe. By saying that cosmoogenesis culminates in Christogenesis, Teilhard emphasizes that the universe as a whole is longing to become Christified. Teilhard, *The Heart of Matter*, 90; idem, *The Human Phenomenon*, 213-214.


326 Teilhard, *Christianity and Evolution*, 88.


In his view, the world evolves by the “double and combined movement of physical unfolding and psychic interiorisation (or centration).”

In seeing both the internal and external aspects of cosmogenesis, Teilhard recognizes that matter and spirit are intricately and mysteriously interrelated. In his words, “‘In natura rerum’ one is inseparable from the other; one is never without the other.” For Teilhard, matter and spirit are “two states or two aspects of one and the same cosmic stuff” rather than two separate things. In other words, the physical-material dimension and the psychic-spiritual dimension are not two opposed elements of the universe but are “only two directions along one and the same road.” Teilhard argues that the relationship between matter and spirit interacts on an ascending spiritual axis in the evolutionary process. Matter is not ultra-materialized but is instead metamorphosed into Psyche. Conversely, spirit is not the opposite pole of matter but rather is its very heart. In Teilhard’s words, “[m]atter is the matrix of Spirit. Spirit is the higher state of Matter.” Thus, there is neither spirit nor matter in the universe; rather, “[a]ll that exists is matter becoming spirit.” As this integral understanding of matter and spirit shows, Teilhard holds a positive and holistic view of matter and the physical world. He does not see matter as dead or inert. Rather, he perceives matter as being “prodigiously active” and as resonating “spiritual power.”

In relation to seeing the spiritual dimension of the material world, Teilhard adds that God is deeply woven into the whole phenomenon. As the universe has had a spiritual dimension as well as a physical dimension from the beginning, the Spirit of God has always been present within the emerging universe. The divine presence, in other words, “is as pervasive and perceptible as the

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332 Teilhard, The Human Phenomenon, 6, 28. Italics in original.
333 Teilhard, The Appearance of Man, 139.
334 Teilhard, Human Energy, 57.
335 Teilhard, The Heart of Matter, 26. See also Teilhard, The Future of Man, 93.
338 Ibid., 35. See also Teilhard, Writings in Time of War, 157.
339 Teilhard, Human Energy, 57. In relation to this idea, Teilhard also notes that the “stuff” of the unfolding world is “spirit-matter.” Ibid., 58.
341 Teilhard, Hymn of the Universe, 83-84; idem, Christianity and Evolution, 239-240.
atmosphere in which we are bathed.” While Teilhard does not understand God as being mingled with matter, he emphasizes that God, as the ultimate mover of cosmogenesis, interacts with the whole physical world from its inception to its end. In particular, Teilhard claims that God empowers the world’s becoming through the twofold process of a single Christic action: “immersion and emergence.” By immersing within the world, Christ sanctifies and unifies all things, and guides from within the cosmic becoming. By emerging from the world, Christ reveals Himself universally and continually creates and elevates the whole world toward its ideal culmination – i.e., the Omega Point. As these two phases of a single divine action imply, in Teilhard’s view, God is not simply above but also simultaneously within and ahead of the whole evolutionary process. From this vision, Teilhard proclaims: “God is at work within life. He helps it, raises it up, gives it the impulse that drives it along, the appetite that attracts it, the growth that transforms it. I can feel God, touch Him, ‘live’ Him in the deep biological current that runs through my soul and carries it with it.”

c. The Sacramentality of the Universe

Teilhard’s holistic way of seeing the universe underscores the sacramentality of matter. According to Teilhard, God penetrates the entire universe “as a ray of light does a crystal,” and the material world “glows, expands, [and] is impregnated with an essential savor of the Absolute.” In other words, the Divine radiates from the very depths of matter, and matter which is suffused with divine energy, reveals the dimensions of God. “The Diaphany of the

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342 Teilhard, The Divine Milieu, 8. In emphasizing the ubiquity of the divine presence, Teilhard writes that, “He [God] is at the tip of my pen, my spade, my brush, my needle – of my heart and of my thought.” Ibid., 28.
343 Teilhard, Writings in Time of War, 47; idem, Science and Christ, 182.
344 Teilhard, The Divine Milieu, 80.
345 Teilhard, The Human Phenomenon, 211; idem, The Divine Milieu, 80; idem, Christianity and Evolution, 75.
346 Teilhard, The Divine Milieu, 80, 83; idem, The Human Phenomenon, 211. See also Teilhard, The Heart of Matter, 87-90.
348 Teilhard, Writings in Time of War, 61.
349 Teilhard, The Divine Milieu, 9; idem, The Future of Man, 51.
Divine” is “at the heart of a glowing Universe.” For Teilhard, as Mary Grey writes, “it is the very stuff of matter itself that bears the spark of the Divine, a God who is somehow moving matter to a glorious fulfillment.” Teilhard’s sacramental sense of matter is evident in his *Hymn to Matter*: “Blessed be you, universal matter…. Without you…we should remain all our lives inert, stagnant, puerile, ignorant both of ourselves and of God.” It is in this same mystical hymn that Teilhard famously glorifies matter as the “divine milieu.” By seeing the material world as participating in the divine milieu, Teilhard helps us to overcome the frequently posited gap between the natural and supernatural spheres.

According to Teilhard, everything in the divine milieu is equally true, valuable, and sacred. This is because “in the humblest atom and the most brilliant star, in the lowest insect and the finest intelligence, there is the radiant smile and thrill of the same Absolute.” Teilhard’s idea would likely be viewed today as panentheism, which is the view that all creation exists within God. In Teilhard’s panentheistic vision, the dynamic universe and its expression in Earth’s life systems are primary sources of divine revelation. The unfolding physical world puts us in touch with the divine immanence. Thus, it follows that the Divine is no longer to be sought exclusively in a transcendent union with a heavenly God. As Teilhard teaches, we can discover and sense God in every creature. This thought of Teilhard is not to be confused with pantheism. Teilhard does not identify God with material creation nor does he identify the universe with God. Rather, in denying pantheism, Teilhard himself contends the following: “God cannot in any way be intermixed with or lost in the participated being which he sustains and animates and holds together, but he is at the birth, and the growth and the final term of all things.”

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353 Ibid., 76.


357 Teilhard, *Writings in Time of War*, 47.
Teilhard’s sense of the Divine within the world expands upon his Eucharistic vision. For Teilhard, God’s presence in the world is a Christic presence, and the dimension of Christ, by way of the incarnation, is at the heart of all matter. In other words, through the incarnation of Christ, “all matter is henceforth incarnate,” and therefore Christ is both the centre and the end of the whole of material creation. By situating Christ at the centre of physical reality, rather than limiting Him to the human realm, Teilhard contends that the Body of Christ extends to the entire world. The whole universe is conceived as the flesh of Christ, and all things, inescapably, exist in this flesh. With this, each microcosm of the universe holds within it the potential to express the incarnation of Christ in different degrees of intensity. As Teilhard writes, the world of matter is “the innumerable prolongations of incarnate Being” and “its fullest extension.”

In relating an extended meaning of the Eucharist, Teilhard emphasizes the sacramentality of the entire cosmos and the sacred character of Earth. By seeing the universe as a divine milieu in which Christ is the centre, Teilhard commits to the core Ignatian spiritual value of “finding God in all things.” For Teilhard, Earth is a sacramental planet and “the bosom of Mother Earth is in some way the bosom of God.” In this sense, love of the things of Earth is a pathway to communion with God, namely, “Communion with God through Earth.” Teilhard believes that the more we devote ourselves to the interests of Earth, the more we can belong to God. Within this conviction, Teilhard encourages: “[S]teep yourself in the sea of matter, bathe in its fiery

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358 Teilhard, The Heart of Matter, 44, 47, 49; idem, Hymn of the Universe, 143-144.
360 Teilhard, “The Mass of on the World,” 35; idem, Writings in Time of War, 58. See also Teilhard, Hymn of the Universe, 133.
362 Teilhard, “The Mass of on the World,” 37. An example of Teilhard’s enlarged Eucharistic vision is offered in The Mass on the World. Here, Teilhard celebrates his mass without bread, wine, or altar during a scientific expedition in the Ordos desert of China. In this mass, Teilhard sees the whole Earth as an altar and offers to God all the labours and sufferings of the world. For Teilhard, the matter of the Eucharistic sacrament is the world, and all creation participates in this Eucharist. See Ibid., 19-37.
363 For the relation between Teilhard’s thought and Ignatian spirituality, see Ronald Modras, Ignatian Humanism: A Dynamic Spirituality for the 21st Century (Chicago, IL: Loyola Press, 2004), 175-201.
364 Teilhard, Writings in Time of War, 62.
365 Ibid., 57. Echoing Teilhard, Thomas King writes that “[w]e do not go to God directly, we go to God through and with the earth.” Thomas M. King, “Teilhard and the Environment,” in Pierre Teilhard de Chardin on People and Planet, 185.
366 Teilhard, Writings in Time of War, 57, 61.
waters, for it is the source of your life and your youthfulness. ...[Y]ou must see it, touch it, live in its presence and drink the vital heat of existence in the very heart of reality.”

In conclusion, Teilhard examines cosmogenesis in terms of both scientific and religious perspectives: that is, “not by elimination or dualism, but synthesis.” In doing so, he invites us to see a picture of “the whole of the phenomenon” as an unfolding process of the physical-material and the psychic-spiritual. For him, the evolving wholeness unfolds from within and from without. The picture of cosmogenesis is incomplete if the spiritual dimension is excluded. In presenting the full picture of the emerging universe, Teilhard highlights “the complex interplay of three universal components: the Cosmic, the Human and the Christic.” His integrated vision of the whole phenomenon helps us to see ourselves in the larger cosmic context and God’s ongoing relationship with creation. His holistic insight, as Celia Deane-Drummond points out, has enduring relevance, “not only in relation to how humanity is related to the world, but also in terms of his cosmic vision of how to understand God’s engagement with the world.” By highlighting the divine presence as well as humanity’s place in “a single flow” of evolution, Teilhard develops a Christian vision of cosmogenesis, one that ventures beyond a mechanistic view of the world as nothing more than inanimate matter. Teilhard’s integrated cosmological vision is further developed by Thomas Berry to include contemporary concerns for the well-being of the planet.

**B2. Thomas Berry**

**a. Cosmogenesis as an Integrated Context**

In shifting the context from cosmos to cosmogenesis, Berry sees that the universe has evolved through its sequence of developments in which later forms were derived from earlier ones. In

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368 Teilhard, *The Human Phenomenon*, 203. Teilhard holds that both science and religion are animated by the same principle of life, and that each cannot be developed without the other. Ibid.

369 Ibid., 1. Italics in original.


Berry’s view, all things in the universe issue from a common origin and are the result of a process that has continued to unfold over time.\textsuperscript{374} That is, the whole of creation is the sum total of 13.8 billion years of seamless evolutionary development – “an irreversible sequence of transformations.”\textsuperscript{375} By understanding the universe as “an ongoing, developing reality,” Berry emphasizes the unbroken continuity of the epic of evolution from the primal flaring forth to the present.\textsuperscript{376} In his words, “the universe story, the Earth story, the life story, and the human story – all are a single story. Even though the story can be told in a diversity of ways, its continuity is indisputable.”\textsuperscript{377} All that exists is a part of this single comprehensive drama which is still unfolding, and bears a deep connection to the evolutionary process.

According to Berry, the epic of evolution as a single story is “much more than an account of matter.”\textsuperscript{378} While the scientific description of cosmogenesis focuses on the exterior aspects of the universe, Berry contends that the universe story needs to be completed by the more integral account that includes the interior dimension of the evolutionary process.\textsuperscript{379} Inspired by Teilhard, Berry construes the universe as “an intangible inner form as well as a tangible physical structure,” as evolving “from a lesser to a greater complexity in structure and from a lesser to a greater mode of consciousness.”\textsuperscript{380} This implies that if all things emerge from cosmogenesis and if there is a consciousness or spirit which is especially evident in humans, then the universe itself

\textsuperscript{374} Berry, The Great Work, 163-164; idem, The Dream of the Earth, 132; idem, The Sacred Universe, 94.

\textsuperscript{375} Swimme and Berry, The Universe Story, 223.

\textsuperscript{376} Ibid., 66.

\textsuperscript{377} Berry, The Christian Future and the Fate of Earth, 41.

\textsuperscript{378} Berry, The Great Work, 31.

\textsuperscript{379} Berry, The Dream of the Earth, 99, 120.

\textsuperscript{380} Thomas Berry, “Loneliness and Presence,” in A Communion of Subjects: Animals in Religion, Science, and Ethics, eds. Paul Waldau and Kimberley Patton (New York, NY: Columbia University Press, 2006), 8; idem, The Great Work, 190. Teilhard’s influence on Berry is clear: “I have learned from him three things of special manner. The universe has a psychic-spiritual as well as a physical-material dimension from the beginning; the universe story and the human story are two aspects of a single story; and there is need to move from an excessive concern for redemptive processes to a new concern for creation processes.” Thomas Berry, “Foreword,” in A Theology for the Earth, vi-vii. While Berry praises Teilhard as one of the most important thinkers since Saint Paul, he also questions Teilhard’s optimism over scientific-technological achievements and his neglect of the increasing desolation of Earth. Berry and Clarke, Befriending the Earth, 6; Thomas Berry, Teilhard in the Ecological Age (Chambersburg, PA: Anima Books, 1982), 7, 18-19. While building on Teilhard’s contributions and acknowledging his limitations, Berry moves further toward an intersection of evolutionary cosmology and ecology. In Berry, as Dalton points out, Teilhard’s vision is “integrated into a new synthesis and refocused in a new direction.” Dalton, A Theology for the Earth, 68.
can be considered as the primary bearer of the psychic and the spiritual. In other words, the psychic-spiritual did not suddenly appear in the universe; there is “no moment of transition from the material to the psychic or the spiritual.” Rather, the psychic or spiritual dimension has been an intrinsic part of the universe from its primordial moment, and later emerged in a particular way in human beings. As Berry asserts, “the evolutionary process of the universe has from the beginning a psychic-spiritual as well as a material-physical aspect.” In this sense, it can be said that the epic of evolution is a single story of an unfolding universe through a “material-psychic adventure.”

In relation to the psychic-spiritual dimension of the universe, Berry argues that consciousness or spiritual capacity is not merely limited to human personhood. In his view, every being has “its own mode of consciousness” and/or “its spiritual mode.” Berry does not mean that every being has an equal psychic-spiritual dimension. He acknowledges that each being has a qualitatively different manifestation of consciousness and the spiritual. Similarly, Berry makes a qualitative distinction between the interior aspects of human beings and of other-than-human. There is a difference in consciousness between human beings and birds, and between birds and insects. By claiming that every being has a unique interior dimension in its own mode, Berry highlights the subjectivity of all things. In cosmogenesis, “[e]very being has its own inner

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383 Ibid.

384 Swimme and Berry, *The Universe Story*, 49.


387 Berry, “The Ecozoic Era,” 194. In Berry’s view, the psychic-spiritual dimension of cosmogenesis has come to be fully expressed in human beings, and therefore human self-reflective consciousness or spirituality is a more evolved and complex mode. The account of the distinctiveness of the human will be examined in Chapter Four. See Berry, *The Christian Future and the Fate of Earth*, 23-24; idem, *The Dream of the Earth*, 131-132.

388 O’Hara notes that the psychic-spiritual dimension is “the unifying, attractive force that causes a distinctive identity to manifest.” O’Hara, “Thomas Berry’s Understanding of the Psychic-Spiritual Dimension of Creation,” 93.
form, its own spontaneity, its own voice, its ability to declare itself.” 389

For Berry, each being with its particular identity has its own role in the unfolding story of the universe and contributes to the cosmic journey in its own unique and meaningful way. 390

In Berry’s view, the psychic-spiritual dimension of the universe provides the basis for “subjective communion with the various components.” 391 In other words, the psychic and spiritual dimensions enable each being to relate to others intimately while maintaining its own distinct identity. 392 Berry argues that whereas individual entities cannot occupy the same space in their physical dimensions, mutual indwelling is available in the same psychic realm. 393 He also notes that “[n]ot only can two psychic forms be present to each other in the same psychic space, but an unlimited number of forms can be present.” 394 In this regard, the psychic-spiritual dimension functions like a matrix that links all life forms so that “the entire universe is composed of subjects to be communed with.” 395 For Berry, the capacity for mutual presence within subjectivity is a capacity of the psychic-spiritual dimension of cosmogenesis. This idea allows for a recognition of the universe as “a communion of subjects” rather than “a collection of objects.” 396

While Berry affirms the distinctiveness of the psychic-spiritual from the physical-material, he also acknowledges the unity of both. For him, the inner spiritual dimension is not separate from the physical aspect of things but is integral with the physical mode of its being. 397 In Berry’s words, “the spiritual and physical are two dimensions of the single reality that is the universe


390 O’Hara, “Thomas Berry’s Understanding of the Psychic-Spiritual Dimension of Creation,” 92-93.

391 Swimme and Berry, The Universe Story, 244.

392 Berry, Evening Thoughts, 40-41; idem, “Art in the Ecozoic Era,” 47.

393 Berry, “Loneliness and Presence,” 9. In Berry’s opinion, interior communion with each other takes place in the realm of the psychic and the spiritual. This implies that the inner dimension of the universe is not simply inert but “communicates a power, an enduring quality, and a majesty” that the exterior world cannot convey. Ibid.

394 Ibid.

395 Berry, The Great Work, 82.

396 Swimme and Berry, The Universe Story, 243. See also Berry, “The Ecozoic Era,” 196; idem, The Great Work, 82; idem, The Sacred Universe, 86; idem, Evening Thoughts, 17; Berry and Clarke, Befriending the Earth, 96.

397 Berry, “Loneliness and Presence,” 9; idem, Evening Thoughts, 55.
Both aspects of cosmogenesis evolve together over time and “come into being in an immense diversity of expression throughout the universe.” In this sense, cosmogenesis is seen as a single journey “toward an ever more complete spiritual-physical intercommunion of the parts with one another, with the whole.” Berry’s awareness of “the integral physical-psychic dimension of reality” further implies our inner world’s relationship with the outer world. In his view, our inner world reflects the outer world and is activated by the experience of the visible world in all its grandeur. From this perspective, “[w]hat happens to the outer world happens to the inner world. If the outer world is diminished in its grandeur then the emotional, imaginative, intellectual, and spiritual life of the human is diminished or extinguished.” Berry contends, then, that the integrity of the inner world is conditioned by the integrity of the outer world. Human fulfillment is achievable by way of “[an] integration of both the inner and the outer realms” if both realms in question are conducive to such fulfillment.

b. The Divine and Cosmogenesis

From Berry’s cosmological perspective, an epic of evolution imbued with psychic-spiritual and physical-material dimensions is ultimately related to numinous mystery – i.e., the Divine. Berry argues that cosmogenesis, with its twin dimensions, emerges from the numinous source of the Divine and reveals the pervasive divine presence throughout the entire cosmic-earth-human

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400 Berry, The Sacred Universe, 79. See also Thomas Berry, “The Spirituality of the Earth,” in Liberating Life, 158.

401 Berry, The Dream of the Earth, 133.

402 Berry, The Christian Future and the Fate of Earth, 74; idem, The Sacred Universe, 80; Berry and Clarke, Befriending the Earth, 9.

403 Berry, The Great Work, 200. See also Berry, The Christian Future and the Fate of Earth, 79; Swimme and Berry, The Universe Story, 242.


405 Berry avoids the word “God” in much of his writing. For him, the term has been overused and its meaning is unclear. In addition, he seeks to address his work to the broadest possible audience. Berry prefers to describe God in terms of “the Divine,” “the ultimate mystery of things,” “the all-pervasive, mysterious power,” and “the ineffable, pervasive presence in the world about us.” See Berry and Clarke, Befriending the Earth, 10-11. I make use of these terms, especially ‘the Divine,’ in discussion of Berry’s thought. I refer to ‘God,’ on occasion, to avoid repetition.
In this sense, it can be said that the epic of evolution is the story of the Divine unfolding, one that provides “a type of revelatory experience.” For Berry, the numinous presence manifesting itself through cosmogenesis is seen as “the sublime expression of the deepest mystery of the universe,” and thus the universe itself is understood “as the primary mode of divine presence.” In describing the universe as the primary ongoing revelation of the Divine, Berry further highlights that our sense of God is intimately related to the magnificence of the world surrounding us. In his words, “our exalted sense of the divine itself comes from the grandeur of the universe, especially from the earth, in all the splendid modes of its expression.” Our experience of the natural world, whether through looking up at the stars in the night or through listening to the song of the mockingbird, becomes a revelatory experience.

Two aspects of the Divine are revealed by Berry in his description of cosmogenesis. First, Berry regards the Divine as a transcendent being. The Divine is not confined to the universe, but understood as something entirely beyond, namely, “an awesome, stupendous presence that cannot be explained adequately in human words.” Berry understands that the transcendent Divine, as the Creator, “enables the universe to function.” The existence and activity of all things depend on the “numinous, trans-phenomenal, divine creative power.” Second, Berry

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407 Swimme and Berry, *The Universe Story*, 255.

408 Berry, *The Dream of the Earth*, 121, 120. See also Berry, *The Christian Future and the Fate of Earth*, 25, 31; idem, *Evening Thoughts*, 70. Berry reinforces this argument with the Epistle of Saint Paul (Rom 1:19-20): “Saint Paul tells us in the first chapter of his Epistle to the Romans that from the beginning of the world ‘we came to know the invisible nature’ of God through ‘the things that have been made.’” Berry, *The Christian Future and the Fate of Earth*, 31-32.

409 Berry, *The Dream of the Earth*, 80-81. See also Berry, *The Christian Future and the Fate of Earth*, 42. In emphasizing the relation between our sense of the Divine and the visible world, Berry gives an example: “If we lived on the moon … our sense of the divine would reflect the lunar landscape.” Berry and Clarke, *Befriending the Earth*, 9.

410 Berry, *The Christian Future and the Fate of Earth*, 49.

411 Berry and Clarke, *Befriending the Earth*, 11.

412 Ibid., 25.

413 Berry, *The Christian Future and the Fate of Earth*, 64. See also Berry, “‘The Cosmology of Religions,’” 100; idem, *The Sacred Universe*, 118. While acknowledging the transcendent presence of God, Berry also points to the problem of overemphasis, a problem deeply embedded in the Christian tradition. In his view, excessive emphasis on transcendence leads to the negation of the natural world as the place for the meeting of God and the human. The loss of sensitivity to God in nature objectifies Earth, paving the way for ecological destruction. Berry and Clarke, *Befriending the Earth*, 19, 114; Berry, *The Dream of the Earth*, 113.
understands the Divine as immanent within cosmogenesis. Although Berry acknowledges the difference between the Divine and the universe, he does not see their distinction in the sense of separation. In Berry’s view, God penetrates the entire history of cosmogenesis, and every part of the universe exists in “the ineffable pervasive presence.” In this sense, he insists that “[w]hen a person associates creation with the divine, it is an existential fact that there is no God without creation and there is no creation without God.” As an intimately immanent presence within creation, the Divine is ultimately united to “the guiding force of the universe” and works as “the mysterious impulse” of the evolutionary process.

Berry underscores the creative power of the universe in his descriptive account of the transcendent and immanent Divine in cosmogenesis. In Berry’s view, God does not run or control the universe as if it were a “puppet show.” Rather, the Divine creates the universe “with the capacity to create itself, for self-actualization.” By doing so, the Divine allows the universe to have its own spontaneities and self-organizing capacities so that all of creation is able to freely manifest itself within the divine context. As a result, cosmogenesis becomes “neither determined nor random, but creative.” Since the Divine creates the universe that creates itself, while at the same time guiding the continuing cosmic process, it can be said that cosmogenesis has “a dependent self-creativity that is further infolded in a divine presence.” For Berry, God respects the self-organizing cosmogenesis and acts through the “process of self-creativity whereby the universe and each being in the universe creates, sustains, and moves itself toward its proper destiny.”

414 Berry and Clarke, Befriending the Earth, 19.
415 Ibid., 11.
416 Ibid., 10.
417 Berry, The Dream of the Earth, 196.
418 Berry and Clarke, Befriending the Earth, 25. See also Thomas Berry, “Christianity’s Role in the Earth Project,” in Christianity and Ecology, 132; idem, The Christian Future and the Fate of Earth, 64.
419 Berry, “Christianity’s Role in the Earth Project,” 132. See also Berry, The Christian Future and the Fate of Earth, 64-65; idem, “Christianity in an Emergent Universe,” in Light Burdens, Heavy Blessings: Challenges of Church and Culture in the Post Vatican II Era, eds. Mary Heather MacKinnon, Moni McIntyre, and Mary Ellen Sheehan (Quincy, IL: Franciscan Press, 2000), 364.
420 Berry, The Great Work, 82.
421 Berry, The Dream of the Earth, 199. See also Berry, The Great Work, 31.
422 Berry, The Christian Future and the Fate of Earth, 38.
423 Berry, “Christianity in an Emergent Universe,” 364.
Berry’s ‘Cosmogenic Principle’ is worthy of mention here. According to Berry, the evolution of the universe is characterized by the laws of differentiation, subjectivity, and communion. Berry claims that these laws are the deepest and most basic tendencies of the universe. They govern the entire structure and functioning of the universe and provide the dynamics for cosmic evolution. Otherwise expressed, cosmogenesis “is ordered by differentiation,” “is structured by autopoesis [subjectivity],” and “is organized by communion.” Berry does not limit these laws of cosmogenesis to the outer aspects of the universe. He proposes that the Cosmogenetic Principle can assist in giving us a deeper appreciation and interpretation of the doctrine of the Trinity. The principle of differentiation speaks of the Father; the principle of subjectivity, the Son; and the principle of communion, the Holy Spirit. For Berry, the traditional models of the Trinity – the family model in the Bible, the psychological model used by St. Augustine, and the sociological model in modern times – do not have the requisite qualities for a new cosmological understanding. He contends that the Cosmogenetic Principle offers a more suitable model for our times.

In summary, Berry presents cosmogenesis in an unfolding story of the universe, which is “scientific in its data, mythic in its form.” Throughout the single narrative, he describes the universe as having a psychic-spiritual as well as a physical-material dimension: namely, “a biospiritual story as well as a galactic story and an Earth story.” The Divine is the origin of this evolutionary epic and enables it to continue its self-organizing process. Through this holistic understanding of cosmogenesis, Berry highlights the epic of evolution as the most comprehensive context for understanding the relationship among God, human beings, and other

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426 Swimme and Berry, *The Universe Story*, 73, 75, 77. In *The Universe Story*, Berry uses the term ‘autopoesis’ for subjectivity, but the term ‘subjectivity’ is used more frequently in other writings. In this dissertation, I side with the more popular term ‘subjectivity.’


428 Berry and Clarke, *Befriending the Earth*, 15; idem, *The Christian Future and the Fate of Earth*, 56. Since the Cosmogenetic Principle can play a key role for understanding the cosmological context in terms of an integrated way, I will revisit the principle of cosmogenesis in the next chapter and will explore it in detail.

429 Swimme and Berry, *The Universe Story*, 229.

430 Berry, *Evening Thoughts*, 57.
life forms. In this integrated context, the Divine, the human, and the rest of creation do not exist separately; they are always integral to each other within the dynamic of an unfolding universe.\textsuperscript{431} Berry’s integral vision of the cosmological context overcomes a dysfunctional cosmology as outlined in modern science and traditional religion.\textsuperscript{432} By mythologizing the scientific story of the universe from a religious perspective and by expanding the religious-spiritual context into the larger dynamics of the universe, Berry develops a more holistic cosmology and spirituality, one that extends a mere description of the physical world to an appreciation of the numinous dimension of the universe. Through this integrated and larger vision, Berry helps us to see the unbroken wholeness of the reality in which we live. He believes that when we realize the cosmic story, the Earth story, the human story, the religious story, and the Christian story “as a single comprehensive narrative,” we will be better able to respond to our current ecological crisis.\textsuperscript{433}

C. Formation of Ecospiritual Literacy

As the previous two sections have revealed, an evolutionary cosmology opens a radically new way of seeing the universe as an emergent, novel, irreversible, and creative process. Teilhard’s approach to the cosmological context, and Berry’s development thereof, further help us to see the spiritual as well as the physical dimensions of cosmogenesis and the divine presence within the universe story. Establishing a new concept for RCEE, based on this larger and integral vision of the world, is the next task of this dissertation. To this end, this section will first review how to approach a new conceptual formation for RCEE in light of the epic of evolution. Subsequently, this section will propose a new concept “ecospiritual literacy” by giving its definition and describing its basic framework. Through the formational process of this new concept, this section will present ecospiritual literacy as a solid basis for developing an RCEE model.\textsuperscript{434}

\textsuperscript{431} Berry, \textit{The Sacred Universe}, 146; Berry and Clarke, \textit{Befriending the Earth}, 10.

\textsuperscript{432} According to Berry, neither modern science nor traditional religion offer the needed cosmology for today. Modern science is inadequate in identifying spiritual or moral values, due to its focus on the realm of the physical to the exclusion of the spiritual. Traditional religion, including Christianity, fails to explain both the world as a continuing process of emergence, and the idea of Divine revelation in cosmogenesis. Berry, \textit{The New Story}, 1, 6-8; idem, \textit{The Dream of the Earth}, 129-130.

\textsuperscript{433} Berry, \textit{The Christian Future and the Fate of Earth}, 25.

\textsuperscript{434} This section is not meant to give a full account of ecospiritual literacy but primarily focuses on the establishment of a conceptual foundation. Based on a basic understanding of ecospiritual literacy, the next chapters will suggest more detailed themes and principles for developing an RCEE model.
C1. A Context-Based Approach and the Necessity of a New Level of Literacy

To develop a new concept of RCEE based on evolutionary cosmology, what is needed is a context-based approach that is beyond a content-focused or data driven educational model.\textsuperscript{435} By helping learners to situate themselves in the larger context of 13.8 billion years of cosmic evolution, the context-based approach encourages them to see, therein, the whole phenomenon of the world, rather than simply teaching about the environment as if it were something out there apart from them. In doing so, the context-based approach aims at aiding learners to expand their understanding of the world, to be sensitized to what the larger reality communicates, and to have a transformational experience of the whole of reality. This context-based approach to ecological education is distinct from traditional environmental education that tends to focus on accumulating knowledge about the environment or urging environmental protection.\textsuperscript{436} Although the traditional approach is a noble one, a new model of RCEE ought to be developed based on a more comprehensive approach so that learners pursue a holistic vision in the cosmological context, rather than a mere instrumental or fragmentary approach for dealing with environmental concerns.

One may consider ecological literacy and Earth literacy as examples of the context-based approach.\textsuperscript{437} In fact, both forms of literacy invite students to see a larger context, and help them to understand the ecological relationship of the Earth community and their responsibility for the world. Ecological literacy and Earth literacy improve upon a content-focused approach, (such as environmental literacy or stewardship), but are inadequate as a conceptual basis for a new model of RCEE. As previously mentioned, ecological literacy and Earth literacy linger in \textit{a spiritual vacuum} that disregards the interdependence of the ecological and the spiritual, even though they overcome \textit{a relational vacuum} in terms of the human-Earth relationship that is ignored in the Christian stewardship concept.\textsuperscript{438} In addition, a general account of ecological literacy and Earth literacy ignores the Christian faith and the notion of God. In this regard, a new concept of RCEE

\textsuperscript{435} My reflection of the context-based approach is based on the educational insights of Berry and O'Sullivan as outlined in Chapter One.

\textsuperscript{436} For problems in traditional environmental education, see Palmer, “Spiritual Ideas, Environmental Concerns and Educational Practice,” 160-165; Smith and Williams, “Ecological Education,” 162.

\textsuperscript{437} For a detailed account of ecological literacy and Earth literacy, see Chapter One.

\textsuperscript{438} In my view, this conceptual problem is partly related to the terminology itself. Both ‘ecological literacy’ and ‘Earth literacy’ are relatively ‘physical’ terms lacking in spiritual resonance.
requires “a much more expanded sense of literacy” that nurtures learners in being both ecologically and spiritually literate.439

A connection between ecological literacy and spiritual literacy is proposed by Ursula King. In aiming to foster an appropriate spirituality for the ecological age, King suggests the development of a new kind of spiritual literacy grounded in Earth literacy, namely, “earthing spiritual literacy.”440 King adopts the nomenclature “earthing” to link spiritual literacy to Earth literacy. She argues that “spirituality needs to be earthed – linked to the body, to the Earth, [and] to the cosmos.”441 In King’s view, humans are ecologically and spiritually connected to Earth. A rediscovery of the spiritual sense of Earth is much in need.442 King believes that when the spiritual development of human beings is rooted in the larger context of Earth, they can be inspired to engage in a deeply-felt compassion for all life and in responsible action for the whole Earth community.443 Though King does not further develop the concept of ‘earthing spiritual literacy’ and though it has limited relevance for spiritual education, her integrated approach highlights a connection between spiritual literacy and Earth literacy. By adapting King’s insight to a different term and a more systematic framework, a new level of literacy for RCEE can be gained.

C2. A New Proposal: Ecospiritual Literacy

a. Definition and Purpose

To establish a better foundation for a new RCEE model, this dissertation proposes the concept of “ecospiritual literacy.” As this new term indicates, the ecospiritual literacy concept intends to integrate ecological/Earth literacy and spiritual literacy so that learners can pursue a more

439 O’Sullivan, Transformative Learning, 20. O’Sullivan notes that an expanded sense of literacy can be labelled as either ‘ecological literacy’ or ‘Earth literacy.’ His call for a new level of literacy is not limited to ecological and/or Earth literacy, however. His emphasis on the importance of spirituality for transformative education implies that a new level of literacy requires the integration of both ecological literacy and spiritual literacy. See Ibid., 259-281.


441 Ibid., 246, 257. Italics in original. King uses the word “earthing” in reference to “fastening or attaching things together” and/or to “the process of ‘grounding.’” Ibid., 246.

442 Ibid., 247-248, 251. In relation to this idea, King notes that we need “a new consciousness of the Earth” and that the story of the universe helps us to be awakened for the new consciousness. Ibid., 247, 256.

443 Ibid., 252-253, 258.
holistic development within cosmogenesis, especially within the Earth community context. It leads learners toward ecological and spiritual literacy by guiding them, in light of the epic of evolution, in their individual and collective ways of knowing, feeling, and acting. The meaning of ‘ecospiritual literacy’ is three-fold – i.e., a competence i) to understand humanity’s deep embeddedness in the Earth community, ii) to sense the divine sacredness within all of creation, and iii) to participate passionately in the human role of enhancing the sacred Earth community.

As this basic definition implies, ecospiritual literacy is neither “an esoteric knowledge for specialists” nor “a sentimental plea to ‘love nature.’” It is not restricted to “the acquisition of professional training and skills” to solve environmental problems. Rather, it asks more profound questions, such as who we are, where we come from and belong, and how we ought to live within the world. By inviting learners to face these fundamental questions in the epic of evolution, the concept of ecospiritual literacy encourages them to see and to reflect on the whole of reality in which a three-fold relationship among God, human beings, and the rest of creation is deeply integrated. In doing so, ecospiritual literacy directs students to find their own interconnection with Earth as a whole and to experience the divine presence permeating creation so that they can deeply engage in protecting and nurturing the sacred community.

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444 Previous sections have described cosmogenesis as a single reality of an emergent, novel, irreversible, and creative process that has both physical and spiritual dimensions. The Earth community is a part of this larger cosmological context.

445 Rue points to a holistic way of knowing, feeling, and acting: “To know one’s place in the cosmos is to know something of immense spiritual value. But more than this … our knowing affects our doing. But knowing is never enough. To act on what we know requires that we also feel.” Rue, Everybody’s Story, xiii.

446 McFague, A New Climate for Theology, 58.


448 These features are not alien to the Catholic tradition but are rooted in it. The three components of ecospiritual literacy are well exemplified in the life and thought of St. Francis of Assisi. First, Francis recognized that all of creation is intimately related and that this relationship is fraternal. He was able to see his fraternal relationships with all the elements of creation and to understand that we are as dependent on the elements of creation as they are dependent on us. Second, Francis could sense that God’s presence permeates creation and that every creature reflects the power, wisdom, and sacredness of God in its own unique way. The whole world was a locus to encounter God, and all of creation was a revelation of God. Finally, Francis acted for what he understood and felt in creation. In finding himself as a member of the large family of creation and feeling the divine presence in all family members, Francis treated all things courteously and respectfully, especially the weaker and the poorer members. For Francis, caring for creation was neither a duty nor an obligation, but arose out of an inner love in which all creation is intimately united and sacred. See Ilia Delio, A Franciscan View of Creation: Learning to live in a Sacramental World (St. Bonaventure, NY: Franciscan Institute, 2003), 11, 19-20; Delio, Warner, and Wood, Care for Creation, 85-86, 130; Eric Doyle, “‘The Canticle of Brother Sun’ and the Value of Creation,” in Franciscan Theology of the
This comprehensive approach of ecospiritual literacy, which highlights the integrated relationships among the Divine, Earth and humans, is distinct from current concepts in ecological education. For example, Christian environmental stewardship is limited to describing the God-human partnership for managing a passive Earth and tends to ignore the relationship between God and the rest of creation as well as the human-Earth relationship. On the other hand, ecological literacy and Earth literacy focus on the Earth-human relationship and overlook the relationship of both humanity and the rest of creation with the Divine. Ecospiritual literacy, however, stresses the intimate and inextricable unity of the Divine-Earth-human relationship by paying balanced attention to all three players in the relationship. This approach is crucial for RCEE. By appreciating all three relations, a new RCEE model based on ecospiritual literacy will avoid anthropocentrism and/or extreme biocentrism. Ecospiritual literacy also can promote an RCEE model that helps Catholics discover the Divine within – and infinitely beyond – the interconnected web of creation, so they can relate their ecological practices with their faith in inspiring ways. This meaningful re-connection of God with creation can transform how people of faith encounter the world today.

b. Framework

David Orr, as examined in Chapter One, develops the concept of ecological literacy in terms of the cognitive, the affective, and the behavioural dimensions. In adopting Orr’s holistic approach, this section will employ the three dimensions to establish a framework of ecospiritual literacy and will reflect on the implications of the epic of evolution through this three-fold frame. While the exterior structure of ecospiritual literacy is parallel with Orr’s ecological literacy, my proposal will be distinct from Orr’s in terms of interior subjects. Unlike ecological literacy, ecospiritual literacy is rooted in a time-developmental context that involves both physical and spiritual dimensions; this allows its three aspects to highlight the deeper meaning of the larger


449 As we have seen, both Teilhard and Berry share this insight. Raimon Panikkar describes the threefold relationship among the Divine-human-Earth by way of his ‘cosmotheandric principle.’ For Panikkar, the Divine, the human, and Earth are “the three irreducible dimensions which constitute the real.” The three dimensions interpenetrate and cannot be isolated. “If I climb the highest mountain,” writes Panikkar, “I’ll find God there, but likewise if I penetrate the depths of an apophatic Godhead, I shall find the World there.” Raimon Panikkar, The Cosmotheandric Experience: Emerging Religious Consciousness (Maryknoll, NY: Orbis Books, 1993), 60, 150-151.
reality to which we belong and which the divine presence permeates. The conceptual characteristics of each of these three dimensions of ecospiritual literacy are considered below.

The cognitive dimension of ecospiritual literacy focuses on understanding the inescapable embeddedness of human beings in the universe, especially in the Earth community. Based on the scientific understanding of cosmogenesis, which describes the creation of the universe as an emergent, novel, irreversible, and creative process, ecospiritual literacy asserts that human beings, like the other creatures, have emerged from and are integral within the evolutionary process of the universe. In other words, humans are “not the great exception to evolution” but are “integrially part of evolution.” By stressing the deep embeddedness of humanity within the epic of evolution, ecospiritual literacy helps learners to change their self-understanding from the master of creation to a member of the larger world – i.e., as “a component of the larger Earth community.” In this respect, ecospiritually literate people “do not live on the earth but quite literally within the earth.” This emphasis on humanity’s embeddedness in the Earth community further affirms the unbroken continuity between humanity and the rest of creation; that is, that human beings have “a communal heritage with all other creatures” and are “profoundly and intrinsically interconnected with every other creature.” What ecospiritual literacy emphasizes here is that human beings have a single destiny that is integral to the destiny of the rest of creation. Humanity cannot survive as a lone species. If the Earth community is

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451 Ilia Delio, “Evolution and the Rise of the Secular God,” in *From Teilhard to Omega*, 41. In relation to this idea, Berry also similarly writes: “The human is neither an addendum nor an intrusion into the universe. We are quintessentially integral with the universe.” Berry, *The Great Work*, 32.


455 Berry, *The Dream of the Earth*, 43.
damaged, then human life is proportionately diminished; thus, the concept of ecospiritual literacy stresses that “[t]he well-being of the Earth is primary. Human well-being is derivative.”

The affective dimension of ecospiritual literacy is embodied in a deep sense for the sacredness of creation. By highlighting the spiritual dimension of the universe and the divine presence within the unfolding process of the universe, ecospiritual literacy invites learners to see the inner aspect of the world in which they are rooted and helps them to feel the presence of the sacred in the whole of creation. In particular, ecospiritual literacy encourages students to become sensitive to the sacred in the reality of the present, not simply in the biblical world of the past. For the ecospiritually literate person, Earth is experienced as “the primary religious reality,” and every particular existence is sensed as “a mode of divine presence.” This emphasis on affective connection with the divine sacredness within all of creation directs learners to experience the Earth community, to which they belong, as a “sanctuary.” In addition to it being a biological community, Earth becomes “a very special sacred community.” In this community, all creatures have sacred value in and of themselves, and no being can be declared more sacred than another. All beings, in their own way, express the wonder and splendour of the sacred community, and contribute to its unfolding. Therefore, for the practitioner of ecospiritual literacy, the material world is no longer seen as a distraction to their spiritual life; rather, they are enchanted by the sacred dimension in the physical reality and pursue their spiritual life in an integral way within Earth rather than in otherworldly ways.

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456 Swimme and Berry, *The Universe Story*, 243.


458 Berry and Clarke, *Befriending the Earth*, 16, 19.


460 Berry and Clarke, *Befriending the Earth*, 43.


The behavioural dimension of ecospiritual literacy highlights the role that humans play in the Earth community. Here, the human role is not simply described as “nature protection” but rather as “participation” in the process of the sacred Earth community. Namely, human beings are called to act as “participating members” or “coparticipants” rather than as “stewards” or “co-creators.”

Ecospiritual literacy’s emphasis on participation neither accepts the human role as a more privileged one nor rejects the special role of humanity in the world. Rather, it affirms that humans, as self-reflective beings, have significant power in shaping the future of Earth and that they ought to participate in their own particular role for guiding the unfolding process of Earth, just as all other beings play their own roles in the journey of Earth.

In order to lead students to participate in their particular role, ecospiritual literacy focuses on inspiring them to have a passion for protecting the Earth community, in which they are embedded and where the Divine pervades. By inviting learners to reflect on what it means to be a member of the sacred Earth community, ecospiritual literacy helps them to realize that they are called to responsibly participate in the great work of nurturing the whole Earth community and for protecting the manifestations of divine sacredness. In doing so, ecospiritual literacy encourages students to be awakened with “the zest for life” that can reinforce enthusiastic actions for the present and future of the Earth community.

In this sense, an ecospiritually literate person has both a “passion for the world” and a “will to act” that enables them to engage in concrete ecological practices. For the ecospiritually literate, the task of caring for sacred creation is accomplished through a joyful participation rather than the burdensome duty or a religious obligation imposed by stewardship.

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463 Berry, The Great Work, 8; Rasmussen, Earth Community Earth Ethics, 292.

464 See Dalton and Simmons, Ecotheology and the Practice of Hope, 73; Berry and Clarke, Befriending the Earth, 98; Tucker, “Thomas Berry and the New Story,” 10.

465 Teachers should avoid paralyzing or disempowering their students by over-stressing humanity’s sinful participation in ecological destruction. Though this approach can be temporarily effective to alert them to the severity of the current ecological crisis and their responsibility for it, a pedagogy lacking in true inspiration will elude fundamental change. See Mary Evelyn Tucker, “Daring to Dream,” in Holy Ground: A Gathering of Voices on Caring for Creation, ed. Lyndsay Mosely (San Francisco, CA: Sierra Club Books, 2008), 24-25.

466 See Haught, Christianity and Science, 80; Edwards, Ecology at the Heart of Faith, 26.


468 See Dalton, A Theology for the Earth, 64. In using Teilhard’s words, it also can be said that the ecospiritually literate participate in their role “with the joy of action and the love for life.” Teilhard, The Future of Man, 111.
To sum up, the concept of ecospiritual literacy reveals some of the implications of an evolutionary cosmology in terms of the cognitive, the affective, and the behavioural dimensions. For instance, in light of the epic of evolution, the cognitive dimension reveals its anthropological aspect; the affective dimension reveals its spiritual aspect; and the behavioural dimension reveals its ethical aspect. While each aspect of ecospiritual literacy has its own distinctive feature, each is not considered individually but interacts with the other dimensions; together, the three components represent a unique and dynamic model of ecospiritual literacy. Through the integrated conceptual frame, the concept of ecospiritual literacy encourages learners to touch on the very depths of “a rapport among the divine, the natural, and the human” in the enlarged cosmological context. In doing so, ecospiritual literacy aims to help learners to understand their interrelationship within the Earth community, to feel the divine sacredness within creation, and to act passionately for the well-being of the sacred Earth community, so that they can be transformed in terms of their minds, hearts and hands.

D. Summation

A contemporary scientific understanding of cosmic evolution, as examined in this chapter, reveals that the universe originated from the initial singularity and has been developing constantly through time. That is, the universe is not a static entity; it is a single unfolding reality and a seamless process of becoming. Based on this new perspective of the universe, evolutionary cosmology describes the universe’s ongoing 13.8 billion-year journey as a single comprehensive story – i.e., as the epic of evolution. Through the story of the universe, evolutionary cosmology provides the most comprehensive context for understanding our world, and shifts our understanding of the universe from a fixed and mechanistic cosmos to an emergent, novel, irreversible, and creative process of cosmogenesis. While cosmogenesis, from a modern scientific perspective, is seen merely as a physical process, this chapter pointed out that

469 In this sense, the conceptual framework of ecospiritual literacy consists of a prism rather than three separated lenses.

470 Berry, *The Sacred Universe*, 146.

471 Rue describes this new understanding of the evolutionary world in a succinct way: “The universe is not a place where evolution happens, it is the evolution happening. It is not a stage on which dramas unfold, it is the unfolding drama itself.” Rue, *Everybody’s Story*, 43. Italics in original.
authentic evolutionary cosmology ought to involve the spiritual dimension of the universe as well.

In order to find a spiritual vision of evolutionary cosmology, this chapter has explored the cosmological perspectives of Pierre Teilhard de Chardin and Thomas Berry. Both Teilhard and Berry offer a comprehensive understanding of the universe, one embracing religious and scientific perspectives. According to Teilhard and Berry, the universe has had both psychic-spiritual and physical-material dimensions from its very beginning and has evolved toward increasing complexity and unity. Teilhard and Berry view spirit and matter not as separate entities, but as two interrelated dimensions of the same reality. Each sees God as pervading the whole of reality and enabling its evolutionary process. By synthesizing the inner and outer aspects of cosmogenesis, Teilhard and Berry encourage us to see the whole phenomenon, in which the Divine, the universe, and human beings are deeply integrated. Their holistic view of cosmogenesis overcomes a dualistic approach that divides matter and spirit. They transform our understanding of the material world from simply a physical or biological place to a biospiritual reality.

Finally, this chapter has established the concept of ecospiritual literacy in the light of the interrelated physical and spiritual nature of cosmogenesis. This new concept invites learners to situate themselves in the enlarged evolutionary context and helps them to see or to read what the universe is articulating about itself in the Earth community. In particular, ecospiritual literacy encourages students to understand how they are deeply embedded within the larger world, to sense the divine sacredness which all of creation reveals, and to participate in their role for enhancing the sacred community of creation. In doing so, ecospiritual literacy surmounts the anthropocentrism of a stewardship approach and includes a spiritual aspect of the world which both ecological literacy and Earth literacy have either missed or insufficiently developed.\footnote{While my proposal of ecospiritual literacy is somewhat similar to Earth literacy in terms of being constructed within the larger cosmological context, ecospiritual literacy is more comprehensive than Earth literacy because this new concept more adequately addresses the spiritual and ecological dimensions of the universe.} Ecospiritual literacy is not a minor addendum to the basic content of present RCEE programs. Rather, it is a foundation upon which to build, direct, and guide a new implementation of RCEE. Questions remain, however: how might ecospiritual literacy be articulated to learners accustomed to traditional concepts such as environmental stewardship; how might the
constitutive themes of ecospiritual literacy be more effectively developed; what might be needed to concretize ecospiritual literacy in RCEE form? The next chapter will respond to these questions by suggesting metaphors of ecospiritual literacy and exploring a new way of understanding RCEE.
CHAPTER 3
A Metaphorical Approach to Ecospiritual Literacy

This chapter will highlight the main features of ecospiritual literacy, using a metaphorical articulation that expands the understanding of this newly formed concept and develops a new image that can overcome the limitations of stewardship. Ultimately, by using a different metaphor, ecospiritual literacy can inspire learners to understand, feel, and act in novel ways. For the metaphorical approach to ecospiritual literacy, this chapter will employ Sallie McFague’s metaphorical method. According to McFague, metaphor is “indigenous to all human learning” and plays a fundamental role in our communication about an unfamiliar subject.473 By examining McFague’s metaphorical theology, this chapter will develop a metaphorical application for ecospiritual literacy. In light of McFague’s methodology, the chapter will subsequently examine two metaphors that provide a fresh insight for advancing ecospiritual literacy. The metaphors chosen for this task are the ‘Book of Creation’ and the ‘Grammar of Creation.’474 While the former will be mainly concerned about highlighting the context-based approach of ecospiritual literacy, the latter will focus on practical ideas for developing ecospiritual literacy. In order to demonstrate a specific example of the Grammar of Creation, this chapter will further investigate Berry’s Cosmogenetic Principle and its implications for the cosmological model of the Trinity. By paying close attention to what is implied in the Cosmogenetic Principle, this chapter will reveal the physical and spiritual dimensions of the Grammar of Creation, and will highlight the Cosmogenetic Principle as the fundamental grammar for enhancing ecospiritual literacy.

A. Sallie McFague’s Metaphorical Theology

One of the main concerns for McFague is how to develop a new theological method “for the gospel to be heard in our time.”475 For this task, she proposes a theology that employs new

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474 Both metaphors – i.e., ‘book’ and ‘grammar’ – have the merit of being suggestive of the term ‘literacy.’

metaphors and models. In aiming to explore McFague’s approach, this section will examine how she understands metaphors and the relation of a metaphor to model and concept. McFague’s examples of reimagining Christian ecological metaphors will also be demonstrated here. I conclude with what McFague’s theology implies for a metaphorical vision of ecospiritual literacy. This section does not propose to study McFague’s metaphorical theology in full or to analyse her sampling of ecological metaphors. The main objective is to review McFague’s metaphorical method and adopt her approach for developing metaphors of ecospiritual literacy.

A1. McFague’s Notion of Metaphor

a. A Definition and Main Characteristics

According to McFague, a metaphor is defined as “a word or phrase used inappropriately. It belongs properly in one context but is being used in another.” That is, a metaphor is the application of a familiar word or phrase to an unfamiliar context. In seeing one thing as something else or pretending “this” is “that,” a metaphor finds “a thread of similarity” between two dissimilar things and uses the better-known as a way of articulating something about the lesser-known. To put it in another way, metaphor is “an attempt to say something about the unfamiliar in terms of the familiar, an attempt to speak about what we do not know in terms of what we do know.” McFague does not view a metaphor as an illustrative rhetorical device or a literary ornament superimposed on ordinary language, but rather regards it as ordinary language. A metaphor, “like a finger pointing to the moon,” uses ordinary language to move beyond it into the unknown.

As its definition implies, a metaphor speaks in an indirect mode. McFague states that a metaphor does not “direct attention to ‘the thing’ but directs it elsewhere in such a way that ‘the thing’ is

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476 McFague’s emphasis on a new theological method does not entail a radical departure from the Christian tradition. In developing a metaphorical theology, she takes her cue from the metaphorical parables of Jesus. See McFague, Metaphorical Theology, 18-19, 44-45; idem, Speaking in Parables, 72-80.

477 McFague, Models of God, 33. Italics in original.

478 McFague, Metaphorical Theology, 15.


480 McFague, Metaphorical Theology, 16; idem, Speaking in Parables, 60.

481 McFague, Metaphorical Theology, 7.
That is, a metaphor, by redescribing ‘the thing’ in an indirect way, attempts to provide further illumination of ‘the thing’ and to bring about new insight.\textsuperscript{483} For McFague, metaphorical language does not attempt to offer a direct description or information. In assuming that we have no direct access to reality or to God, McFague’s metaphorical theology is concerned with creating meaning and with discovering new understandings rather than presenting explicit definitions.\textsuperscript{484} For instance, to speak of God as mother is not to define God as mother but is to invite us to find new aspects of God in relation to some qualities associated with mothering.\textsuperscript{485} In this sense, it can be said that a metaphor provides a “grid or screen” on which the unfamiliar or the unknown is viewed and interpreted.\textsuperscript{486}

Another characteristic of a metaphor is the tensive relationship of “is” and “is not.” According to McFague, a metaphor, unlike a symbol resting on likeness, holds the dialectic tension between the positive and the negative, and expresses simultaneously both connection and disconnection.\textsuperscript{487} In other words, when we use “this” as a metaphor to understand “that,” we find that “this” has both similarities and dissimilarities with “that.”\textsuperscript{488} For instance, whether we speak of God as father or mother, each metaphor is in the tension of the “is and is not” in relation to God. Through the tension created by the juxtaposition of similarities and dissimilarities, metaphors intend to capture our attention and invite us to extend our thoughts. Good metaphors, for McFague, intrigue, shock, bring unlike together, and entertain a novel possibility, so that they help us to move toward new understandings.\textsuperscript{489}

\textsuperscript{482} McFague, \textit{Speaking in Parables}, 78.

\textsuperscript{483} Ibid., 77-78. In this sense, McFague notes that “a good metaphor moves us to see our ordinary world in an extraordinary way.” Ibid., 4.

\textsuperscript{484} McFague, \textit{Metaphorical Theology}, 38; idem, \textit{Models of God}, 33-34; idem, \textit{Speaking in Parables}, 16.

\textsuperscript{485} McFague, \textit{Models of God}, 33-34.

\textsuperscript{486} McFague, \textit{Speaking in Parables}, 29; idem, \textit{Models of God}, 34. In relation to this, McFague notes that metaphor is an “epistemological tool” for interpreting the unfamiliar or the unknown. McFague, \textit{A New Climate for Theology}, 131.

\textsuperscript{487} McFague, \textit{Metaphorical Theology}, 65.

\textsuperscript{488} Ibid., 34.

\textsuperscript{489} Ibid., 17. See also McFague, \textit{A New Climate for Theology}, 107-108. For McFague, the parables of Jesus (such as the lost coins and the buried treasures) are examples of good metaphors; they intrigue and have shocking aspects by bringing together dissimilarities, and in so doing they open novel possibilities to understand God. McFague, \textit{Metaphorical Theology}, 17.
McFague recognizes that all metaphorical language is partial and provides limited insight. That is, a metaphor is not the only way to refer to a subject, but is one of the ways to do so.\(^{490}\) This means that we must acknowledge the open-endedness and the tentativeness of our interpretation of metaphors. As she writes, “we cannot say our metaphors ‘correspond’ to ‘what is’; at best, we can only say that they seem appropriate to our experience, they ‘fit’ or seem ‘right.’”\(^{491}\) McFague insists that metaphorical theology requires a pluralistic approach, one that embraces multiple metaphors.\(^{492}\) This pluralistic character of metaphorical theology, according to McFague, is helpful not only to express the richness and variety of the God-world relationship but also in avoiding the idolatry and irrelevance that accompany the exclusion of other ways of speaking about Christian faith.\(^{493}\) In this sense, an important task of metaphorical theology is to construct new metaphors that adequately express the claim of Christianity for our times.\(^{494}\)

**b. Relationship of Metaphors, Models, and Concepts**

One of the main themes that emerges from McFague’s metaphorical theology is the relationships among metaphors, models, and concepts. While metaphors are usually the work of an individual, some metaphors gain wide popularity and become major ways of presenting comprehensive and coherent explanations.\(^{495}\) McFague designates this “dominant metaphor, a metaphor with staying power” as a model.\(^{496}\) Having sufficient stability and scope, models are not only sustained metaphors but also systematic ones. On the one hand, models, derived from metaphors, retain the main characteristics of metaphors. On the other hand, models are more systematic metaphors with structural and organizing potential.\(^{497}\) With its systematic quality, models go a step further.

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495 McFague, *Metaphorical Theology*, 23; idem, *Models of God*, 34. McFague presents the metaphor “God the father” as a good example of this case. In becoming model, “God the father” has permitted more comprehensive and coherent theological thoughts. As McFague puts it, “[i]f God is seen as father, human beings become children, sin can be understood as rebellious behavior, and redemption can be thought of as a restoration to the status of favored offspring.” Ibid.
497 Ibid., 23, 67, 103, 193.
beyond the metaphorical in the direction of conceptual language; they help us to organize our understanding about an unfamiliar domain and reach “toward qualities of conceptual thought.”

In this sense, models can be understood as the bridge from metaphors to concepts, that is, “mediators between metaphors and concepts.”

By highlighting the role of metaphors and models for metaphorical theology, McFague does not negate the importance of concepts; metaphorical theology does not stop at the level of metaphors and models but must deal with conceptual language as well. Defining a concept as “an abstract notion,” McFague notes that the role of concept is to generalize an idea or thought, rather than create new meanings as metaphors do. For this purpose, conceptual language inclines “toward univocity, toward clear and concise meanings for ambiguous, multileveled, imagistic language.” While McFague recognizes the distinction between conceptual language and metaphorical language, she also understands concepts in a continuum with metaphors and models. In her view, conceptual language is metaphorical in the sense that it brings together dissimilarities and attempts to interpret reality indirectly, as metaphorical language does. In their same metaphorical roots, concepts highlight similarity within dissimilarity in order to focus on precision and consistency for abstraction, while metaphors and models maintain the tension between the similarity and the dissimilarity for the purpose of capturing our attention and imagination.

In McFague’s view, metaphorical (i.e., imagistic) language and conceptual language are not only in a continuum but also in a symbiotic relationship. They function in “intrinsic interdependence rather than remaining entirely distinct from one another.” As she writes, “[i]mages ‘feed’ concepts; concepts ‘discipline’ images. Images without concepts are blind;

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498 Ibid., 23.
499 Ibid., 28.
500 Ibid., 22, 25.
501 Ibid., 26.
502 Ibid. In McFague’s view, while conceptual language has the advantage of ordering and analysing in a logical fashion, concept alone can lose imagistic richness and diversity. Without the power of metaphor, concepts can be limited as “mere translation into a more generalized and abstract vocabulary.” Ibid., 118.
503 Ibid., 16, 26.
504 McFague, Models of God, 32.
505 McFague, Metaphorical Theology, 119. Italics in original.
concepts without images are sterile.” In this symbiotic relationship, metaphors, models, and concepts are not connected hierarchically; there is no suggestion which is higher or better. Metaphors and models are not mere illustrations for concepts, and concepts are not on a higher level than metaphors and models. As metaphors and models require conceptual interpretation, concepts also are never free of the need for enrichment by metaphors and models. Like “colleagues,” each needs and complements the other in the mutual dependence that sustains a metaphorical theology. In their different functions, they participate “in the one task of interpreting our being in the world.”

A2. Reimagining Christian Ecological Metaphors

McFague’s notion of metaphor reminds us of the significance of imagination in metaphorical theology. According to McFague, metaphors and models arise from imagination, that is, they are “the products of imagination” rather than literal images of reality. She argues that metaphorical theology works not in an ordered system but “at the foundational level of the imagination.” For McFague, it is in the imagination where the familiar and the unfamiliar join together and become transformed into new possibilities. By framing the familiar in an unfamiliar context, metaphorical theology attempts to bring about a “certain shock to the imagination” so that new insights can be glimpsed. In this sense, imagination is “the chief mover” of metaphorical theology; it allows us “to see our ordinary world in an extraordinary way.”

Realizing the powerful role of imagination in metaphorical theology, McFague invites us to reimagine ecological metaphors (or more precisely, models). According to McFague, what is

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506 Ibid., 26.
507 Ibid.
508 Ibid., 124.
509 Ibid., 26. Italics in original. In relation to this idea, McFague suggests that a theologian should be a “poet-philosopher” who is able to find both appropriate metaphors and models from contemporary experience and elucidate their conceptual implications for Christian faith. McFague, Models of God, 32, 35.
510 Ibid., 91.
511 McFague, Models of God, 40.
512 McFague, Speaking in Parables, 77.
513 Ibid., 4, 57.
514 Since McFague proposes ecological metaphors involving both organizing structure and conceptual interpretation, it might be better to refer to her proposal in terms of ‘ecological models.’ As mentioned earlier, McFague names a dominant metaphor, which has both a metaphorical and conceptual nature, and is used in a wider range, as a model. However, depending on the context, she uses the terms ‘metaphor’ and ‘model’ interchangeably.
needed in our ecological age is a new sensibility that is holistic, responsible, and inclusive of all forms of life. An important task of metaphorical theology for an ecological sensibility, then, is to construct new metaphors and models that evoke an imaginative vision of the intimate relationship between God and the world or between Earth and humanity.\textsuperscript{515} McFague asserts that the new imaginative metaphors ought to highlight the “interdependence and mutuality” of the whole of reality and to empower “a sensibility of care and responsibility toward all life.”\textsuperscript{516} In McFague’s view, traditional metaphors such as God as king, ruler, and master are not commensurate with the ecological sensibility needed in our time; these monarchical metaphors, which are dualistic, hierarchical, and imperialistic, accentuate the distance between God and the world, and are not concerned with the other-than-human world.\textsuperscript{517} In this regard, McFague contends that dysfunctional metaphors need to undergo deconstruction and to be reconstructed with some alternative models that are consonant with a new sensibility for the ecological age and for Christian faith.\textsuperscript{518}

In her development of Christian ecological metaphors, McFague focuses her attention on the story of the universe, what she calls “the common creation story.”\textsuperscript{519} In this larger cosmological context, McFague re-visions the relationships among God, the universe, and humans, setting the stage for a new ecological model: the universe (or world) as God’s body.\textsuperscript{520} In describing the common creation story as the embodiment of all that is, this model holds that the entire universe is formed “in God’s own reality, bodied forth in the eons of evolutionary time.”\textsuperscript{521} It is “God’s

\begin{superscript}{\textit{In this dissertation, I will more often use the term ‘metaphor’ than the term ‘model’ in order to avoid confusion for readers who are not familiar with McFague’s terminology. See McFague, “Imaging a Theology of Nature,” 207-208.}}\end{superscript}

\textsuperscript{515} McFague, \textit{Models of God}, 3, 13, 38.

\textsuperscript{516} Ibid., 60.

\textsuperscript{517} Ibid., 19. See also McFague, “Imaging a Theology of Nature,” 210-211.

\textsuperscript{518} McFague, \textit{Models of God}, 20-21. McFague notes that metaphorical theology is “open to change, willing to risk the disorientation of new ‘truths’” and that its important task is to encourage “nontraditional, unconventional, novel ways of expressing the relationship between God and the world.” McFague, \textit{Models of God}, 35.

\textsuperscript{519} McFague, \textit{The Body of God}, 38-47; idem, \textit{A New Climate for Theology}, 49-50, 59. McFague’s focus on the common creation story is borrowed from Berry’s cosmological thought. Like Berry, McFague believes that the common creation story is a fundamental context of everything that is, and therefore it is essential to learn about it if we are to know how to think and talk about God, the world and humanity. McFague, \textit{The Body of God}, 45.

\textsuperscript{520} McFague, “Imaging a Theology of Nature,” 211; idem, \textit{The Body of God}, ix, 141-150; idem, \textit{A New Climate for Theology}, 72-74.

\textsuperscript{521} McFague, “Imaging a Theology of Nature,” 213.
The body model, then, helps us to think of God as immanent in the world while retaining God’s transcendence. By uniting the divine immanence and transcendence, the model of the universe as God’s body underscores the “profound interrelationship between God and the world.” McFague’s model of the universe as God’s body also reimagines the Earth-human relationship. This model perceives that human beings, “as inspirted bodies,” are not only interrelated with others who compose the body of God, but also have a special responsibility for the well-being of the body as a whole. By imagining our place and role within the body of God, the body model helps us to think differently about whom we are and how we behave in the world.

While McFague emphasizes the importance of the model of the universe as God’s body, she recognizes the necessity of other models for the ecological era, and invites us to imagine God as mother, lover, and friend of the world. These models reveal that God is present in and to the world “as the kind of other, the kind of Thou,” and has an “intrinsic relationship” with all things as a mothering, loving, and befriending presence. In envisioning God as a personal presence, each model, in its own way, pictures the way God loves, acts, and relates in the world. McFague argues that these models imply an accompanying ethic of response and responsibility to the world. “[A]s the imago dei,” she writes, “we are called to mother, love, and befriend the world, both other human beings and the earth.” In this sense, our lifestyle modeled on God as mother,

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522 Ibid. In this model, the world is not identical with God (as our own bodies are not identical with us), but is seen to be within God. McFague, *A New Climate for Theology*, 71; idem, “Imaging a Theology of Nature,” 213.

523 McFague, *The Body of God*, 20. Although the model of the universe as God’s body emphasizes the embodiment of God in the material world, it does not mean that God is reduced to the world. What the body model implies is “immanental transcendence or transcendent immanence.” McFague, *The Body of God*, 21, 154.


527 For McFague, these personal and agential models suggest that God is not completely identified with the world or the universe. Without the use of these models, she argues, the metaphor of the universe as God’s body is strictly pantheistic. McFague, *The Body of God*, 140; idem, *Models of God*, 71-72; idem, “Imaging a Theology of Nature,” 213.


529 Ibid., 86.
lover, and friend, ought to be one committed to “the creating, saving, and sustaining activities of God in relation to the world.”

In summary, McFague understands a metaphor as a way to encounter the unfamiliar domain through the familiar. By seeing something in terms of another, McFague’s metaphorical method intends to spark our imagination and aims to move us toward a new understanding of God and the world. Her theology avoids using dead metaphors which do not evoke fresh views, and stresses the need to construct new transformative metaphors and models which dare us to think differently. In particular, McFague argues that the significant task of metaphorical theology, for today, is to create new ecological models that undergird a holistic sensibility and express “a unified, interdependent framework for understanding God-world and human-world relations.”

While McFague believes that her examples of models (e.g., the universe as God’s body and God as mother, lover, and friend) are appropriate imaginative pictures for the ecological age, she also recognizes them as partial accounts, and opens up the necessity for alternative ecologically sensitive metaphors and models.

A3. Implications for the Concept of Ecospiritual Literacy

McFague’s metaphorical approach to theology gives rise to three implications for an articulation of ecospiritual literacy.

First, the articulation of the abstract concepts of ecospiritual literacy would be enhanced by the use of a metaphorical approach and the development of imagistic pictures. As McFague explains, concepts have a symbiotic relationship with metaphors; concepts give “sight” for metaphors, metaphors provide “food” for concepts. Since metaphors have the ability to enrich conceptual ideas, a concept alone is less effective unless it is expressed within a specific picture. Ecospiritual literacy should be accompanied by its metaphors so that its conceptual meaning is concretized and deepened.

Ibid., 91.

By highlighting the construction of newer ‘models,’ McFague transcends the creation of simple images and points to the development of dominant metaphors with conceptual meaning. As previously mentioned, McFague’s approach to metaphorical theology involves not only the construction of new metaphors, but the engagement of conceptual thought, as well. In this sense, McFague describes her method as a “thought experiment” with metaphors and their accompanying concepts. Ibid., 20, 57.

Ibid., 20.

Second, imagination is a crucial component for developing the metaphors of ecospiritual literacy. McFague’s metaphorical method suggests that an important task in the creation of new metaphors is “to imagine in some detail and depth the relationship between God and the world.” Metaphors can be powerful vehicles in bringing about new insights and for motivating us, when they have the imaginative power that resonates in our minds and hearts. This implies that metaphors of ecospiritual literacy ought to be advanced by stretching our imaginations in ways that help us to imagine ourselves in the larger cosmological context, and to see the whole reality through both an ecological and spiritual lens.

Finally, the main characteristics of metaphors, (i.e., indirect, tensive, and pluralistic), provide basic guidelines on how to develop metaphors of ecospiritual literacy. These criteria imply that metaphors of ecospiritual literacy ought to be ‘likely accounts’ that redescribe the cosmological context in an indirect way. They should hold the tensive character of ‘is and is not’ that evokes our attention. They should also seek a diversity of new metaphors that open us to fresh understandings. By following these basic principles, metaphors of ecospiritual literacy can create new possibilities for understanding, feeling, and doing in relation to the larger context of the universe and the Earth community.

B. Metaphorical Applications for the Concept of Ecospiritual Literacy

The aim of this section is to concretize and deepen the concept of ecospiritual literacy by investigating two types of metaphors. The first part of this section will suggest the Book of Creation as a root metaphor for ecospiritual literacy. This proposal will be outlined by exploring how the metaphor of ‘the Book of Creation’ has been used in the Roman Catholic tradition, how characteristics of this metaphor relate to the concept of ecospiritual literacy, and how metaphorical implications of the Book of Creation lead ecospiritual literacy to describe the integral relationship among God, the universe, and humanity. The second part of this section will

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535 I use the term ‘root metaphor’ to indicate a radical model on a large scale. According to McFague, a root metaphor is “the most basic assumption about the nature of the world or experience that we can make when we try to give a description of it.” In her view, a root metaphor enables us to see reality through a key image. McFague, Metaphorical Theology, 23, 28, 109.
propose ‘the Grammar of Creation’ as a guiding metaphor for ecospiritual literacy. Since this new metaphor has been used by both Pope Benedict XVI and Pope Francis, their description of its basic meaning will be examined. I subsequently expand on the understanding of the Grammar of Creation by reflecting on the inner dimension of cosmogenesis. Based on a cosmological understanding of the Grammar of Creation, I then suggest what conditions are required for the development of ecospiritual literacy.

**B1. The Metaphorical Root of Ecospiritual Literacy: The Book of Creation**

**a. The Book of Creation in the Catholic Tradition**

The concept of ecospiritual literacy finds its metaphorical root in the Catholic Tradition that regards creation, alongside the Bible, as one of ‘two books’ of divine revelation. In fact, it was common for the early Church Fathers to see that a true knowledge of God was available not only from the Book of Scripture but from the Book of Creation, as well. When St. Anthony the Abbot (c.251-356) was asked by a philosopher how he could endure life without the comfort of books, he answered: “My book, sir philosopher, is the nature of created things, and it is always at hand when I wish to read the words of God.” St. Augustine of Hippo (c.354-430) similarly stated:

> Some people read books in order to find God. Yet there is a great book, the very appearance of created things. Look above you; look below you! Note it; read it! God, whom you wish to find, never wrote that book with ink. Instead, He set before your eyes the things that He had made. Can you ask for a louder voice than that? Why, heaven and earth cry out to you: “God made me!”

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536 By a ‘guiding metaphor,’ I mean a metaphor that aids us in reflecting on the subject of the root metaphor in more concrete and practical ways.

537 While the image of ‘grammar’ is implicitly rooted in the Book of Creation, explicit references to the metaphor of the Grammar of Creation have appeared in the statements of Pope Benedict XVI and Pope Francis.


Explicit references to the metaphor of the Book of Creation are also found in the writings of St. John Chrysostom (c.347-407)\textsuperscript{540} and St. Maximus the Confessor (c.580-662).\textsuperscript{541} If authors who \textit{implicitly} refer to the metaphor of creation as a book were included, the list would be much greater.\textsuperscript{542} While references to the metaphor of the Book of Creation had different nuances, the early Catholic tradition clearly had the idea that creation was an external expression of the Divine – a ‘book’ by which God could be known.

The metaphor of Book of Creation extended to the Medieval Age. The metaphor found vivid expressions in the writings of St. Bernard of Clairvaux (c.1090-1153),\textsuperscript{543} Hugh of St. Victor (c.1096-1141),\textsuperscript{544} and Meister Eckhart (c.1260-1327).\textsuperscript{545} St. Bonaventure of Bagnoregio (c.1221-1274) made frequent use of the metaphor. In his \textit{Breviloquium}, Bonaventure writes that:

\[\text{The universe is like a book reflecting, representing, and describing its Maker, the Trinity, at three different levels of expression: as a trace, an image, and a likeness. The aspect of trace is found in every creature; the aspect of image, in the intellectual creatures or rational spirits; the aspect of likeness, only in those who are God-conformed.}\textsuperscript{546}

\textsuperscript{540} St. John Chrysostom held that everybody, “the unlearned, as well as the wise man,” could receive a sufficient lesson from creation. The Bible, however, was available only to the literate and/or the wealthy. St. John Chrysostom, \textit{The Homilies of St. John Chrysostom, Archbishop of Constantinople, on the Statues, or, to the People of Antioch}, trans. Edward Budge (Oxford, UK: John Henry Parker, 1856), 162-163.

\textsuperscript{541} St. Maximus the Confessor described creation as a book containing not only “letters and syllables,” which are particular aspects of creatures, but also “words,” which are more universal aspects of creation. Maximus insisted that the book of creation, like Scripture, revealed the incarnated Logos. St. Maximus the Confessor, \textit{On Difficulties in the Church Fathers: The Ambigua}, trans. Nicholas Constas (Cambridge, MA: Harvard University Press, 2014), 193, 195.


\textsuperscript{543} “Believe me who have experience, you will find much more laboring amongst the woods than you ever will amongst books. Woods and stones will teach you what you can never hear from any master.” St. Bernard of Clairvaux, “Letter 107: To Henry Murdac,” in \textit{The Letters of St. Bernard of Clairvaux}, trans. Bruno Scott James (Chicago, IL: Henry Regnery Company, 1953), 156.

\textsuperscript{544} “[T]his whole sensible world is a kind of book written by the finger of God… and each creature is a kind of figure… established by the divine will to manifest… the invisible wisdom of God.” Hugh of St. Victor, “On the Three Days,” in \textit{Trinity and Creation: A Selection of Works of Hugh, Richard and Adam of St Victor}, eds. Boyd Taylor Coolman and Dale M. Coulter (Turnhout, BE: Brepols, 2010), 63-64.


For Bonaventure, each creature was an external word of the Book of Creation, (though some reflected the divine more fully than others). Reading this book belonged to “the privilege of the highest contemplatives.”\footnote{St. Bonaventure of Bagnoregio, \textit{Collations on the Six Days}, The Works of Bonaventure, Vol. 5, trans. José de Vinck (Paterson, NJ: St. Anthony Guild Press, 1970), 179. Although Bonaventure’s view bears a somewhat hierarchical understanding of creation, it is still quite radical given the geocentric worldview of his time.} Through the reality of human sin, however, the Book of Creation became illegible, as though it were written in an unknown language. There was a need for another book (i.e., Scripture) through which the Book of Creation was enlightened.\footnote{Ibid., 32, 190.} Bonaventure believed that human beings could understand God’s wisdom by reading these two books in harmony.\footnote{See Bonaventure, \textit{The Breviloquium}, 81.}


metaphor of ‘mechanism.’ The world of nature became identified “as a material thing bereft of vitality, spirit, or value.”\textsuperscript{553} The Book of Creation became closed.

Nevertheless, the metaphor of creation as a book was not completely forgotten in the Catholic Church. In the last decades, attempts to reopen the Book of Creation have arisen in the works of contemporary ecotheologians such as Ilia Delio, John Hart, Zachary Hayes, and Charles Cummings. They, in line with the Patristic and Medieval theologians mentioned above, have attempted to reunite the separated ‘two books’ tradition and to present the material world as a part of the divine revelation.\textsuperscript{554} This movement is not merely limited to the boundary of ecotheology but is also found in the magisterium of the Catholic Church. For instance, Pope John Paul II frequently used the metaphor of the Book of Creation in his statements, and encouraged us to read “almost another sacred book whose letters are represented by the multitude of created things present in the universe” so that we can contemplate the divine manifestation within the world.\textsuperscript{555} Pope Benedict XVI also stated that reading the Book of Creation “is one and indivisible,” and that to read it helps us to find God’s omnipotence and goodness in the visible world.\textsuperscript{556} Recently, Pope Francis, in employing the same metaphor several times in his encyclical

\textsuperscript{553} Forrest Clingerman, “Reading the Book of Nature: A Hermeneutical Account of Nature for Philosophical Theology,” \textit{Worldviews} 13, no. 1 (2009): 76. According to McFague, new root metaphors such as mechanism and machine were developed after the scientific and technological revolution and influenced the shaping of our worldview. McFague, \textit{The Body of God}, 33-34.


"Laudato Si’," asserted that the universe as a whole is “a precious book” written by God, and that the whole of creation is not only “a constant source of wonder and awe” but also “a continuing revelation of the divine.”  

In summary, the history of the Book of Creation in the Catholic tradition reveals that the ‘book’ metaphor has served as a vehicle for understanding divine revelation within the created world. Although the popularity of the metaphor has waned, recent examples of usage show a promising potential for revival; indeed, the Book of Creation is not a dead metaphor but a reawakened one that requires a new interpretation for today.

In particular, the ecological significance of the Book of Creation is on the rise since the metaphor can play a fundamental role in changing our perceptions of the material world and our attitudes to Earth. If the metaphor of the Book of Creation is “more fully developed,” as Berry writes, “this could lead to a more effective concern for the survival of the planet.”

Today, evolutionary cosmology helps us revitalize and reinterpret the ‘Book of Creation’ metaphor. From the new cosmological perspective, the Book of Creation is much older and larger than the one imagined in the Patristic and Medieval periods. Evolutionary cosmology tells us that the Book of Creation is not a completed work, but an ongoing story still being written in an emergent, creative, and irreversible process. The new Book of Creation, as Dalton writes, is “not only the static components of the cosmos that revealed the Divine, but more

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557 Francis, "Laudato Si’," #85. See also ibid., #6, #12, #239.

558 While this section has examined the metaphor of the Book of Creation in the Catholic tradition, it by no means is exclusive to the Catholic Church. References to the metaphor are also found in the Orthodox and Protestant churches. See Bartholomew, *On Earth as in Heaven*, 128-130; Kenneth J. Howell, *God’s Two Books: Copernican Cosmology and Biblical Interpretation in Early Modern Science* (Notre Dame, IN: University of Notre Dame Press, 2002), 209; Gould, “Book of Nature,” 210; Hess, “God’s Two Books,” 130-131.

559 This persistent and resilient ability of the Book of Creation satisfies a basic condition of the root metaphor that McFague suggests. For her, a root metaphor is not easily changed but persists throughout the ages since it is a radical model or archetype by which people define their way of seeing the world. McFague, *Metaphorical Theology*, 67, 109-110.

560 Berry, *Evening Thoughts*, 53.

561 In order to illustrate the scale of the cosmic evolution, Haught invites us to imagine the entire history of the universe in a set of thirty big books. Each book is 450 pages long, and each page of every book represents one million years of cosmic history. In the whole set of books, Earth appears in volume 21, and modern humans do not arrive until the very last page of the last volume. This example helps us to realize the great scale of the Book of Creation. John F. Haught, *Resting on the Future: Catholic Theology for an Unfinished Universe* (London, UK: Bloomsbury, 2014), 102.
prominently the events of cosmogenesis.” As a large, rolled-up scroll is unfurled gradually, the cosmic Book of Creation reveals a seamless story, involving both physical and spiritual dimensions, inviting us to read and appreciate.

b. The Book of Creation as the Root Metaphor of Ecospiritual Literacy

The Book of Creation can serve as a root metaphor for ecospiritual literacy for the following four reasons.

First, the Book of Creation metaphor has had staying power throughout the centuries. The metaphor is not simply a temporary tool used by only a few individuals, but rather a long-term instrument employed by a collective imagination, that includes the thoughts of Patristic and Medieval theologians as well as the Magisterium. In other words, the Book of Creation is a root metaphor that has not simply been invented, but has been widely received by a community.

The concept of ecospiritual literacy can draw on the metaphorical staying power of the Book of Creation in order to situate the former within the longevity of the Catholic tradition. This approach can lend credence for establishing the concept of ecospiritual literacy in Catholic ecological education and for introducing the new concept to learners, particularly those who are in favor of traditional concepts like stewardship.

Second, the Book of Creation has metaphorical cogency in highlighting the context-based approach of ecospiritual literacy. By comparing cosmogenesis (the lesser-known) to the Book of Creation (the better-known), ecospiritual literacy can capture the imaginative picture of the cosmological context as a single story book and can encourage learners to read its great story which is written “in the very structure of the universe, in the galaxies of the heavens and in the

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562 Dalton, A Theology for the Earth, 123.


564 See Ernst M. Conradie, The Earth in God’s Economy: Creation, Salvation and Consummation in Ecological Perspective (Zurich, SZ: LitVerlag, 2015), 224. Echoing McFague, Conradie notes that root metaphors have staying power and are not simply an invention for temporal purpose. As he writes, “while metaphors could be invented, root metaphors are more typically received.” Ibid.

565 Although ecospiritual literacy pursues novel insights rather than the repetition of traditional environmental ideas, it does not intend to be separated from the Catholic tradition. One of the purposes of ecospiritual literacy is to develop a fresher, more comprehensive vision within the Catholic tradition, so that the tradition itself evolves and is renewed. The metaphor of the Book of Creation can facilitate the articulation of a new vision for ecospiritual literacy in light of Catholic tradition.
forms of the Earth.” For learners who are unfamiliar with the story of the universe, the metaphor of the Book of Creation can intrigue and provide fresh insight by raising these questions: when did the book begin; how big is the book and how old is its story; where are we in the story of the book; what does the whole story tell us? In doing so, ecospiritual literacy will be able to help learners to pay more attention to the whole context in which they belong rather than limiting themselves to the merely human world.

Third, the Book of Creation is imbued with spiritual significance. In fact, the origin of this metaphor is found in the desire to place creation alongside the Bible as “two distinct, yet related, sources of knowledge of God.” What this original idea implies is that the visible world refers to the invisible Word and from within reveals a manifestation of the Divine; that is, the created world has an inner spiritual dimension, not unlike a spiritual book. This view resonates with the idea of an ecospiritual literacy that emphasizes both the physical and spiritual aspects of the universe. Employing the image of the world as a spiritual book, ecospiritual literacy is capable of promoting a holistic way of reading the world beyond seeing its merely outer aspect so that students develop not only an ecological literacy but also a spiritual one.

Finally, the Book of Creation is universally accessible which permits it to develop other supporting metaphors that amplify the concept of ecospiritual literacy. That is, the Book of Creation is “a collection of metaphors and models” that aids in the concretization of ecospiritual literacy. For instance, by inviting learners to see the universe in terms of a book, ecospiritual literacy raises a number of questions: what are the ‘messages’ in the book; who are the ‘author’ and ‘reader’ of the book; and what is the ‘grammar’ of the book? These images can readily be accommodated within the metaphoric space of the Book of Creation. With concrete metaphors,

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566 Berry, The Sacred Universe, 99. Compared to McFague’s ‘the universe as God’s body’ metaphor, the Book of Creation is better positioned to describe the time developmental process of cosmic evolution. In fact, the book metaphor includes the temporal dimension of the world; as a book has a beginning, middle, and end, cosmogenesis also can be imagined as a Great Book with a beginning, middle, and presumed end.


568 Clingerman, “Reading the Book of Nature,” 78. A root metaphor, according to McFague, provides a wide range in which other metaphors can be developed. For example, the kingdom of God, as a root metaphor of Christianity, has a capacity to generate other helpful images that describe the relationships among God, the world, and humanity. McFague, Metaphorical Theology, 23, 146. Echoing McFague, Jane Kopas similarly notes that a “root metaphor has sufficient generality that it allows for the development of more specific images in a variety of forms.” Jane Kopas, Sacred Identity: Exploring a Theology of a Person (Mahwah, NJ: Paulist Press, 1994), 36.

ecospiritual literacy will deepen its conceptual meaning and assist students in understanding various aspects of the larger cosmological context.

c. Relevant Images of the Book of Creation for Ecospiritual Literacy

By adopting the Book of Creation as its root metaphor, the concept of ecospiritual literacy aids learners in seeing the world as a revelatory text infused with meaning. If creation can be said to be a book revealing the divine mystery, then it must possess the capacity to divulge some meaning about God. Extending this idea to the larger cosmological context, ecospiritual literacy instructs that the universe is not a meaningless collection of things, but an active subject expressing profound messages. In other words, the world is neither simply a resource to satisfy human need nor merely a garden entrusted to human care; rather, it is “a curiously living text” that attempts to communicate meaning. In highlighting the revelatory nature of the universe, ecospiritual literacy encourages learners to read its living pages, which are still evolving, and to discover “various levels of meaning,” particularly spiritual and ecological meanings within the cosmological context. While traditional readings of the Book of Creation are mainly focused on discerning God’s character and desires, ecospiritual literacy leads students to have more holistic readings that aim to find messages “not only about God but also about the harmonious relationship of interdependence.”

Based on its root metaphor, ecospiritual literacy casts light on a new image, God as author, which helps learners to envision God in terms of the epic of evolution. In the view of ecospiritual literacy, the Divine Author has not completed, and indeed is still writing, the cosmic book. To put it differently, the epic of evolution emerges from the Original Author and is continuing through the ongoing work of the Author. While there is no unfolding story apart from

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570 Tanzella-Nitti, “The Two Books Prior to the Scientific Revolution,” 244. See also Delio, Warner, and Wood, Care for Creation, 82.


573 Cummings, Eco-Spirituality, 59.

574 The assumption here is that to see the world as a book is to view it as necessarily having an author. Catholic tradition reminds us that as the Bible has God as its author; so, too, does the Book of Creation.

its Author, the freedom and power of the Book of Creation is not determined. From the cosmological perspective of ecospiritual literacy, the Author creates the Book of Creation that develops itself; that is, God does not manipulate the world with His power but allows cosmogenesis to tell its story in its own spontaneous ways. As Bauerschmidt writes, “[t]he world is still the story God wants to tell, but that story is one that is the story of free creatures acting freely.” This is not to say that God as author has never been involved in visible ways in the book’s plot or has merely remained as a mysterious being. In actual fact, the Divine Author, by taking on a human nature, entered into the story of the universe as a visible character. Through Jesus Christ, we can find “the foundational presence of the author who has wished to reveal himself therein [the Book of Creation].” Indeed, God as the world’s author is not only the original source of the whole story but also a visible character in its plot; the Author leaves traces in every page of the Book of Creation in visible and invisible ways.

In highlighting the Book of Creation as a root metaphor, the concept of ecospiritual literacy also evokes an imaginative picture of a human as reader. The image of the human as the reader of the Book of Creation fits well in describing the self-reflective consciousness of a human being caused by cosmic evolution. With the metaphor of ‘reader,’ ecospiritual literacy reminds us that the human has a distinctive ability to reflect on the whole story of the universe in a way that other beings cannot. By speaking of human beings in terms of reflective readers, ecospiritual literacy does not limit humans to mere observers of the outside world. Rather, human beings are a part of the Book of Creation that they read, and are also characters who emerged from and have

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580 Bauerschmidt, “God as Author,” 583.
a role in the plot of the book.\textsuperscript{581} In Clingerman’s words, “[t]he readers are characters, reading from inside the book itself.”\textsuperscript{582} This unique position of the human within the Book of Creation suggests the interactive relationship of the reader and the book – i.e., “a mutually enhancing human-Earth relationship.”\textsuperscript{583} In the view of ecospiritual literacy, human beings are not only influenced by the Book of Creation but also participate in interpreting and building its meaning. It is through the interaction between humanity and Earth that the future plot of the Book of Creation is developed.\textsuperscript{584} 

In short, the concept of ecospiritual literacy, by employing the Book of Creation as its root metaphor, suggests an imaginative way of describing the integral relationship between God and the universe and/or between the world and humans in light of an evolutionary cosmology; as a book is intimately related to its author and its reader, there is a profound integrity among God, humans, and the rest of the universe. This imaginative picture helps students to increase their awareness of the dynamic universe as a whole; that is, the world is not a static textbook but an unrolling scroll involved not only with “our personal story as well as our community story” but also with “our sacred story.”\textsuperscript{585} By arousing interest in the comprehensive story of the Book of Creation, ecospiritual literacy inspires students to move beyond the human-centered world to a deeper engagement with the whole of reality. In other words, the concept of ecospiritual literacy encourages learners to “enter profoundly into the inner reality of the created world in terms of affective intimacy,” and to see the whole dimension of the world from within.\textsuperscript{586} While the Book of Creation metaphor has a power that enables the concept of ecospiritual literacy to illuminate the larger cosmological context, it does not have a capacity to explain how the whole of reality is properly read. This limitation leads us to examine another metaphor for developing ecospiritual literacy.

\textsuperscript{581} Shannon, “Genetic Engineering and Nature,” 335; Clingerman, “Reading the Book of Nature,” 82; Bauerschmidt, “God as Author,” 583.

\textsuperscript{582} Clingerman, “Reading the Book of Nature,” 82.

\textsuperscript{583} Berry, \textit{The Great Work}, 61.

\textsuperscript{584} Clingerman, “Reading the Book of Nature,” 82; Shannon, “Genetic Engineering and Nature,” 335-336. In highlighting the role humans play in the future of the world, Shannon argues that they are editors of the Book of Creation as well as its readers. Ibid., 336-337.

\textsuperscript{585} Berry, \textit{The Great Work}, 83.

\textsuperscript{586} Berry, \textit{The Christian Future and the Fate of Earth}, 38. This idea echoes Pope Francis’s words: “As believers, we do not look at the world from without but from within.” Francis, \textit{Laudato Si’}, #220.

a. Respecting the Grammar of Creation: Pope Benedict XVI and Pope Francis

In his encyclical, *Caritas in Veritate*, Pope Benedict XVI teaches that creation contains within it a “grammar” which is given by God. As the metaphor ‘grammar’ implies, Benedict XVI sees creation as having its own “inbuilt order” that determines how humans interact with it.587 By highlighting the Grammar of Creation, Benedict XVI rejects the view that creation is simply “raw material to be manipulated at our pleasure” or “a collection of contingent data.”588 For him, creation, as a “a wondrous work of the Creator,” has a design “prior to us” and “expresses a design of love and truth.”589 From this perspective, Benedict XVI exhorts respect for the Grammar of Creation; just as we need to follow the rules of grammar to learn a particular language, so too should we understand and abide by the pattern of nature that the Creator has inscribed.590 As Benedict XVI states, “we must respect the inner laws of creation, of this earth; we must learn these laws and obey these laws if we wish to survive.”591 The Pope recommends responsible human use of and appropriate ends for God’s gift of nature. In his view, the God-given grammar “sets forth ends and criteria for its wise use,” and human beings ought to cooperate with these; by drawing from the Grammar of Creation, humans can develop the values needed to cultivate and protect the natural world.592

While Benedict XVI emphasizes the need to respect the Grammar of Creation and to work with it, he does not develop the metaphor to include the intrinsic value of that creation. Donal Dorr identifies this limitation: “It would only be a short step for him to go from this ‘grammar’ of nature to affirming that each of the elements of nature has its own inherent value, but he does not

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588 Ibid.
take this final step.” Rather, Benedict XVI, by calling attention to the dangers of neo-paganism and biocentrism, remains anchored in the distinction between humanity and nature. Although Benedict XVI’s attention to the Grammar of Creation reveals improved ecological sensitivity, he still shows the absence of a worldview of interdependence between humanity and the rest of creation, and holds a marked reluctance to place any emphasis on the inherent value of creation. For him, the Grammar of Creation means the laws governing the natural world, not human beings.

Pope Francis further develops Pope Benedict XVI’s emphasis on the Grammar of Creation. Like his predecessor, Francis claims that humans ought to discern in creation “a grammar written by the hand of God” so they can protect and care for it. He also notes that interventions in the natural world are legitimate if they are meant to be beneficial for all and are performed responsibly; for the wise and responsible use of nature, humans must acknowledge and abide by the inbuilt Grammar of Creation. In *Laudato Si’*, Francis reemphasizes the idea of the Grammar of Creation through his use of the term “laws.” He insists that humans, who are endowed with the unique gift of intelligence, can fulfill their responsibility to Earth when they learn and follow “the laws of nature and the delicate equilibria existing between the creatures of this world.” That is, human beings are called to respect the “inherent laws” of creation in the sense of living within the pattern of the created world rather than trying “to impose their own laws and interests on reality.”

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595 Deane-Drummond argues that despite his emphasis on protecting creation, Benedict’s understanding of the Grammar of Creation is not extended to the more open approach that highlights the spiritual aspect of the created world beyond its instrumental value. Celia Deane-Drummond, “What are the Resources for Building a Christian Ethos in a Time of Ecological Devastation,” in *Christian Faith and the Earth*, 171.


597 Francis, “Fraternity, the Foundation and Pathway to Peace,” #9.

598 Francis, *Laudato Si’*, #68.

599 Ibid., #69, #75.
Whereas Benedict XVI’s understanding of the Grammar of Creation does not explicitly affirm the intrinsic value of the whole of creation, Francis vividly articulates that “every creature has its own value and significance.” In Francis’s view, other creatures, not merely humans, have worth in themselves and possess their own purpose independent of their usefulness. In other words, creation is neither “an insensate order” nor a mere “object of utility.” Rather, it is a subject who “reflects in its own way a ray of God’s infinite wisdom and goodness.” Francis’s focus on the intrinsic value of creation implies that God allows the universe to grow according to its own grammar and its own potential in such a way so that all of creation freely speaks of God’s love and greatness. For Francis, the Grammar of Creation is not only divinely-infused but also autonomous and dynamic; it is not a passive instrument, but an active guide that witnesses to the “intrinsic dignity of the world.” By following the inherent grammar of the universe, humans, “as part of [that] universe,” can learn to interact with the rest of creation.

In summary, the approaches of Pope Benedict XVI and Pope Francis to the Grammar of Creation seek something similar in terms of exhorting respect for the inherent laws inscribed in the world. From their perspective, if a sustainable life is possible within creation’s grammar, then we will need to live in harmony with that grammar. While Benedict XVI upholds an instrumental rather than an intrinsic valuation of creation, Francis affirms creation’s inherent value and purpose, and assigns a more dynamic character to the Grammar of Creation. Though Francis does not enter into detail about how to construe the Grammar of Creation, his more open approach to the inbuilt law of creation signals a desire to move Catholic social teaching on the environment beyond

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600 Ibid., #76. For Francis, to say that each creature has intrinsic value does not mean that it has absolute value being apart from God. See Ibid., #90.
601 Ibid., #69, #83-84.
602 Ibid., #115.
603 Ibid., #69. By citing the Catechism of the Catholic Church, Francis supports his emphasis on the intrinsic value of creation: “Each creature possesses its own particular goodness and perfection…. Man must therefore respect the particular goodness of every creature, to avoid any disordered use of things.” Ibid. See also Catholic Church, Catechism of the Catholic Church, 2nd ed. (Vatican City, VA: Libreria Editrice Vaticana, 1999), #339.
604 Ibid., #80, #84.
605 Ibid., #115.
606 Ibid., #89. Unlike Benedict XVI, Francis affirms that human beings inherently are part of creation: “Nature cannot be regarded as something separate from ourselves or as a mere setting in which we live. We are part of nature, included in it, and thus in constant interaction with it.” Ibid., #139. In Laudato Si’, Francis constantly emphasizes the interrelatedness and interdependence between humanity and the rest of creation. See Ibid., #70, #86, #138, #240.
anthropocentrism toward a more robust cosmological position.\textsuperscript{607} As Dorr reminds us, it is an important task for the contemporary Catholic Church to be aware of the Grammar of Creation within the wider cosmological context, so that guidelines for learning how to respect the integrity of the whole of creation may be offered.\textsuperscript{608}

**b. Cosmological Implications of the Grammar of Creation**

Attention to the ‘the Grammar of Creation’ metaphor within the evolutionary context leads to a growth in imagination that allows one to see how the universe – i.e., the Book of Creation – unfolds its story. From the evolutionary cosmological perspective, the Grammar of Creation provides imaginative ways to reflect on the inner dimensions of cosmogenesis.

To begin with, the Grammar of Creation implies that cosmogenesis has an internal structure and functioning principles; as human language is spoken or written in a way that follows formal rules, the story of the universe is unfolded by an inner order of patterns.\textsuperscript{609} In other words, the Book of Creation is not randomly written or pointlessly developed; rather, it is ordered, structured, and organized according to grammatical rules that permit the Book of Creation to disclose its ecological and spiritual dimensions.\textsuperscript{610} Haught argues that the cosmic grammar provides “coherence and continuity to the series of events” that comprise the story of the universe.\textsuperscript{611} In his view, the dramatic sequence of cosmogenesis is in perpetual motion due to its inbuilt propensity for order. “[I]n the absence of reliably functioning grammatical rules,” he writes, “the world would have no narrative coherence and hence would remain unintelligible.”\textsuperscript{612}

\textsuperscript{607} In fact, the Grammar of Creation presents a more holistic approach than natural law, which has been a central feature of the Catholic moral tradition. David Cloutier argues that the Grammar of Creation encourages the natural law tradition to shift from a human-centered focus to a whole-life approach that includes ecological considerations. David Cloutier, “Working with the Grammar of Creation: Benedict XVI, Wendell Berry, and the Unity of the Catholic Moral Vision,” *Communio* 37 (Winter 2010): 618.

\textsuperscript{608} Dorr, *Option for the Poor and for the Earth*, 457-458.

\textsuperscript{609} See Brockelman, *Cosmology and Creation*, 33.

\textsuperscript{610} In this sense, it can be said that an overall directionality is built into cosmogenesis. As noted earlier, Teilhard presents this insight by highlighting that the universe evolves in the direction of increasing complexity.

\textsuperscript{611} Haught, *Resting on the Future*, 73. Haught argues that the metaphorical reference to laws does not fit well in describing the principles of cosmogenesis. In his view, ‘law’ as metaphor implies a too static and mechanical image for picturing cosmic patterns. Therefore “[a] metaphorical shift from law to grammar is appropriate to a dramatic universe.” Ibid., 74.

\textsuperscript{612} Ibid., 83.
While the Grammar of Creation entails that cosmogenesis follows certain observable principles, this factor does not mean that the cosmic story is determined in advance and/or is entirely predictable. In fact, grammar itself guides the way language is constructed for communication.\textsuperscript{613} Although grammatical rules are firm, they still allow language to have an endless array of indeterminate meanings.\textsuperscript{614} Similarly, the Grammar of Creation permits cosmogenesis to explore the full range of its possibilities. In its open-endedness, the cosmic grammar enables unpredictable outcomes as the universe story unfolds so that novelty is constantly emerging in the evolutionary process.\textsuperscript{615} The emergence of unpredictable newness, as Haught writes, “does not violate the grammatical rules but employs them as enabling conditions for the expression of new narrative content.”\textsuperscript{616} Even though the story of the Book of Creation is written with respect to the Grammar of Creation, it is not fixed in advance by inbuilt patterns but is open instead to new meanings. In this regard, the Grammar of Creation can be understood “as enabling rather than imprisoning restraints.”\textsuperscript{617}

Meanwhile, to say that the Grammar of Creation enables cosmogenesis is not to suggest that God simply allows the universe to run its course while remaining apart from it. On the contrary, the Grammar of Creation allows for God to dwell within all the patterns and dynamisms of cosmogenesis. God, who endows the universe with its grammar, is not rendered absent by the self-organizing activities of the universe, but “is intimately present to each being, without impinging on the autonomy of his creature.”\textsuperscript{618} As the very ground and source of cosmogenesis, God interpenetrates every part of the Grammar of Creation and “is interiorly present to the whole creation.”\textsuperscript{619} From this perspective, the Grammar of Creation illuminates the intimate connection

\textsuperscript{613} Ludwig Wittgenstein makes a similar point: “Grammar does not tell us how language must be constructed in order to fulfill its purpose, in order to have such-and-such an effect on human beings. It only describes and in no way explains the use of signs.” Ludwig Wittgenstein, \textit{Philosophical Investigations}, trans. G.E.M. Anscombe (Oxford, UK: Basil Blackwell, 1968), 138.

\textsuperscript{614} Haught, \textit{Resting on the Future}, 179.

\textsuperscript{615} Ibid., 106-107. See also Peacocke, “Theology and Science Today,” 37. According to Peacocke, the Grammar of Creation can be understood as an “inbuilt creative potentiality of all-that-is.” Ibid.

\textsuperscript{616} Haught, \textit{Resting on the Future}, 74.

\textsuperscript{617} Ibid., 178.

\textsuperscript{618} Francis, \textit{Laudato Si’}, #80.

between God and cosmogenesis, and thereby affirms that the universe as a whole “not only manifests God but is also a locus of his presence.”

The Grammar of Creation further suggests that God, who is radically present within cosmogenesis, is always at work in and through the cosmic grammar, and does not passively fade into the background as “some kind of diffuse spiritual gas permeating everything.” What the Grammar of Creation particularly highlights here is that God’s action ought not to be understood as a simple supplement to the principles of cosmogenesis, but as “a constantly influencing factor” embedded in the evolutionary process and empowering its dynamics. Johnson shares a similar vision: “God does not act like a bigger and better secondary cause” but rather “empowers the structure of creation which operates with its own integrity.” To put it differently, God acts as an internal source of cosmogenesis rather than as an external cause of the evolutionary process. From this perspective, the idea of a divine designer with the capacity to undermine the Grammar of Creation fails to grasp the action of God in the world. God’s creative action is expressed not by way of an external intervention that overturns the Grammar of Creation, but through an “unfolding [of] the potentialities of the universe.” Within the Grammar of Creation, God practices “a divine ‘letting be’ that supports the creation in its freedom and co-operates with it respecting the integrity of creation.”

To sum up, the Grammar of Creation reveals that cosmogenesis has its own patterns and self-organizing ability; that is, the cosmological context involves “an order and a dynamism that human beings have no right to ignore.” Far from being a neat logical plan, the Grammar of Creation enables cosmogenesis to proceed in an “unscripted adventure” in the context of

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620 Francis, *Laudato Si’*, #88.
621 Peacocke, “Theology and Science Today,” 34.
628 Francis, *Laudato Si’*, #221.
directionality.\textsuperscript{629} This does not deny that the evolutionary process is itself an expression of God’s will. In fact, the Grammar of Creation encourages a recognition of divine immanence in every cosmic event. It discloses the depth of God’s relation to living phenomena. In doing so, the Grammar of Creation reflects the interplay between God and the universe as a whole; God and cosmogenesis are not identical, but they are also inseparable. As Polkinghorne remarks, God shares “the unfolding course of creation with creatures, who have their divinely allowed, but not divinely dictated, roles to play in its fruitful becoming.”\textsuperscript{630}

c. Suggestions of the Grammar of Creation for Ecospiritual Literacy

The concept of ecospiritual literacy adopts the Grammar of Creation as its guiding metaphor, assisting learners to reflect on the larger cosmological context. Following the Grammar of Creation metaphor, ecospiritual literacy will be able to provide guidelines explaining how to read the Book of Creation. In order to fulfill this requirement, the Grammar of Creation makes a number of suggestions.

First, the Grammar of Creation metaphor suggests that ecospiritual literacy requires a certain recognition that cosmogenesis is capable of self-articulation. In fact, a basic assumption of the Grammar of Creation is that the universe as a whole can be imagined as a \textit{language system} with an organic or living structure rather than a \textit{mechanistic system} with an inert or static structure.\textsuperscript{631}

In other words, the universe is not a silent object but a communicative subject; it has “its own eloquent language” and “narrates” its comprehensive story according to its grammar.\textsuperscript{632}

Embracing the language of the universe leads ecospiritual literacy to emphasize our need to see cosmogenesis as “open and intercommunicating systems,” in which the various natural

\textsuperscript{629} Johnson, \textit{Ask the Beasts}, 173.

\textsuperscript{630} Polkinghorne, “Kenotic Creation and Divine Action,” 94.


\textsuperscript{632} John Paul II, “Psalm 18, God Creator Creates Brilliance of Sun,” #3, #6. Although language, today, is recognized as a purely human property in most contemporary societies, many indigenous people have believed that the natural world has its own way of speaking, and have emphasized the importance of communication between the natural world and human beings. See Earth Bible Team, “The Voice of Earth: More than a Metaphor?,” in \textit{The Earth Story in the Psalms and the Prophets}, ed. Norman C. Habel (Sheffield, UK: Sheffield Academic Press, 2001), 25-26.
phenomena speak to us and in which God is able to communicate to us through them.\textsuperscript{633} With this emphasis, ecospiritual literacy awakens students to “how the great conversation takes place within the universe community,” and illuminates how they are involved with the intercommunicating universe through a form of ongoing dialogue.\textsuperscript{634} 

In revealing cosmogenesis as capable of communicating to us, the Grammar of Creation further suggests that ecospiritual literacy requires a sensitivity which attunes us to the language of the universe. Such attunement reconnects our minds and hearts to the surrounding world and enables us to enhance our sensitivity to its communication through “attentive ears and open eyes.”\textsuperscript{635} It is analogous to what McFague calls “attention epistemology” which requires one to “[pay] close attention to something other than oneself.”\textsuperscript{636} By emphasizing “detailed, careful, concrete attention” to the other-than-human language and grammar of the world, ecospiritual literacy leads learners away from isolation into a relation with the universe as a whole.\textsuperscript{637} It is important for ecospiritual literacy to encourage students to leave their confinement and to recover “a sensitivity to primordial communication within the universe.”\textsuperscript{638} By doing so, ecospiritual literacy will be able to help them to find “the message contained in the structures of nature itself.”\textsuperscript{639}

\textsuperscript{633} Francis, \textit{Laudato Si’}, #79.

\textsuperscript{634} Swimme and Berry, \textit{The Universe Story}, 42.

\textsuperscript{635} John Paul II, “Psalm 18, God Creator Creates Brilliance of Sun,” #6. Bonaventure reminds us in dramatic fashion that if we fail to attune to the created world, we invite the wrathful revolt of creation against us. Bonaventure writes: “Therefore, any person who is not illumined by such great splendor in created things is blind. Anyone who is not awakened by such great outcries is deaf. Anyone who is not led by such effects to give praise to God is mute. Anyone who does not turn to the First Principle as a result of such signs is a fool. Therefore open your eyes, alert your spiritual ears, unlock your lips, and apply your heart so that in all creation you may see, hear, praise, love and adore, magnify and honor your God lest the entire world rise up against you.” Bonaventure, \textit{Itinerarium Mentis in Deum}, 61.

\textsuperscript{636} McFague, \textit{The Body of God}, 49.

\textsuperscript{637} McFague, \textit{Super, Natural Christians}, 29.

\textsuperscript{638} Swimme and Berry, \textit{The Universe Story}, 42. In fact, we have forgotten our capacity for communication with the universe and have become autistic in our interactions with the larger reality. Berry points out the problem of our inability to communicate with the larger world: “[t]he more we are absorbed into our own selves, the less competent we become in our patterns of communication with the outer world.” Berry, \textit{The Sacred Universe}, 146. For Berry’s concern about our autistic presence in the whole of the world, see Berry, \textit{The Dream of the Earth}, 16-17; Berry and Clarke, \textit{Befriending the Earth}, 20.

\textsuperscript{639} Francis, \textit{Laudato Si’}, #117.
In addition to attuning ourselves to the larger cosmological context, the Grammar of Creation implies that ecospiritual literacy requires deep listening to what the universe is articulating about itself in the Earth community. Deep listening is an act of knowing from rather than an act of knowing about. The purpose of deep listening is not simply to find knowledge about the Earth community, but to learn from the wisdom it narrates. By cultivating deep listening, ecospiritual literacy encourages a “humble receptiveness” to what Earth teaches. Reading the Book of Creation necessitates a receptivity to messages from the Earth community. In a vision supported by Panikkar, what is called for in ecospiritual literacy is that “we cease to put ourselves in an exclusively active attitude, that we learn to be passive as well.” In this sense, it can be said that ecospiritual literacy is concerned about an attitude of studentship rather than stewardship. By stressing deep listening, ecospiritual literacy encourages learners to become not simply caretakers of Earth concerned with managing the environment, but students of Earth concerned with learning from its ecological and spiritual communications.

In conclusion, the Grammar of Creation, as a guiding metaphor for ecospiritual literacy, provides an imaginative picture of cosmogenesis that highlights its communicative capacity; the evolving universe articulates itself according to its grammar which is rooted in and empowered by God. Based on this vision of the Grammar of Creation, ecospiritual literacy invites students to immerse themselves in this language system, to attune themselves to the communication of the universe, and to learn from its profound messages through deep listening. Ecospiritual literacy does not narrowly focus on quick solutions for our ecological crisis; rather, it is more concerned with developing a communicative ability with the larger reality to which students belong, so a holistic relationship to that reality is fundamentally recovered. Learning the Grammar of Creation is the first step toward an advancement of ecospiritual literacy and is an important prerequisite for reading the Book of Creation. By learning the cosmic grammar, students will

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become more open to their interrelatedness within cosmogenesis, to sense the sacredness of creation, and to commit to their role in the Earth community.

C. Three Basic Principles of the Grammar of Creation

The previous section proposed the Grammar of Creation as a guiding metaphor for ecospiritual literacy, and highlighted that the universe unfolds itself according to its own grammar which is ultimately grounded in God. Is there a concrete example of the Grammar of Creation that articulates both the characteristics of the unfolding universe and the Divine therein? To respond to this question, this section will explore Berry’s Cosmogenetic Principle, (briefly introduced in Chapter Two), and examine how Berry’s proposal specifies the Grammar of Creation operative in the epic of evolution. For this task, this section will be comprised of three parts: part one will describe Berry’s understanding of the Cosmogenetic Principle; part two will interpret Berry’s proposal for a cosmological model of the Trinity; and part three will assess relevant implications for the development of ecospiritual literacy.

C1. Understanding Berry’s Cosmogenetic Principle

a. The Cosmogenetic Principle at a Glance

Berry argues that the dynamics of our emerging universe are governed by the Cosmogenetic Principle. This principle postulates 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.”

This is not to say that the same structures are everywhere in the universe, but that the same dynamics involved in building the structures are also at work, or at least latent in, every

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644 This integrated approach is drawn from McFague’s connection of metaphors with scientific views of reality. For instance, McFague develops ‘the universe as God’s body’ metaphor by relating it to evolutionary cosmology. This section links the ‘the Grammar of Creation’ metaphor to Berry’s Cosmogenetic Principle. For McFague’s description of the role of metaphor in science, see McFague, *Metaphorical Theology*, 75-102; idem, *Body of God*, 93-94, 242.

645 Swimme and Berry, *The Universe Story*, 66. This view is based on the “Cosmological Principle” defined by Albert Einstein in 1931. The Cosmological Principle states that all places of the universe are alike – i.e., that they are homogeneous on a large scale. Recognizing that this principle still remains in a spatial orientation, Berry, with Swimme’s collaborative work, extends it to establish the Cosmogenetic Principle in a time developmental context. While the Cosmological Principle assumes that “the distribution of matter and energy is basically the same throughout the universe,” the Cosmogenetic Principle surmises that “the dynamics of development are basically the same throughout the universe.” Ibid., 66-67.
other place. This assumption is based on evidence from the development of the universe, rather than on deduction from a particular theory of evolution. Berry writes that the Cosmogenetic Principle emerges from a “post hoc evaluation of cosmic evolution.” He acknowledges that the Cosmological Principle “is not something to be proven” because “[o]nly someone who has visited every place in the universe could say from immediate observation whether or not such principles are true.” For Berry, the Cosmogenetic Principle is a reasonable assumption made on the basis of observable reality.

In Berry’s view, the Cosmogenetic Principle zeroes in on the dynamics that confer form and structure on existence. These form-producing dynamics are latent (or active) everywhere in the universe. The structures of the universe are created by these forces. Berry claims that “in some sense the structures of the universe were ‘aimed at.’” His point here is that the structures of the universe are not completely accidental; they are not the results of random occurrences in an indifferent universe. The Cosmogenetic Principle holds that new forms and structures of the universe emerge from “a coordinated sequence of transitions” through time. Cosmogenesis builds its formation through “a series of decisions on a branching tree of possibilities.” This implies that the unfolding universe has a great deal of creative freedom that is nonetheless characterized by a certain direction.

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646 Ibid., 67.
647 Ibid., 66-67. Berry’s approach to the Cosmogenetic Principle is grounded on observation of the cosmic and biological evidence, yet he is seemingly more concerned with “principle” than with “fact.” Ibid., 66.
648 Ibid., 72. Swimme similarly notes that the Cosmogenetic Principle comes from “reflection on the evolutionary data” and attempts “to surmise various tendencies in the record.” That is, the Cosmogenetic Principle is “not a theory but simply a summary of these surmises.” Brian Swimme, “Cosmic Directionality and the Wisdom of Science,” in *Science and Religion: In Search of Cosmic Purpose*, ed. John F. Haught (Washington, DC: Georgetown University Press, 2000), 95.
649 Swimme and Berry, *The Universe Story*, 67.
650 Ibid.
651 Ibid., 69-70.
652 Ibid., 69.
653 Ibid., 69-70.
654 Ibid., 70, 71.
655 Berry expresses this view in the following statement: “The movement into the future through one sequence of these pathways is free, in the sense that at each branchpoint in the universe a fundamental decision is made determining that particular direction. But the movement is also determined, in the sense that at each branchpoint only a particular set of options presents itself.” Ibid., 71.
of cosmic evolution, the Cosmogenetic Principle reveals that “vast webs of pathways exist potentially at every place in the universe.”

Berry explains that the Cosmogenetic Principle has three essential elements: differentiation, subjectivity, and communion. These three forces are the basic principles of cosmogenesis that work at all levels of reality. They refer to “the governing themes and the basic intentionality of all existence.” Berry believes these laws emerge from a scientific understanding of the universe and are the “basic tendencies of the universe that govern its entire structure and functioning.” He emphasizes the importance of the Cosmogenetic Principle by way of the consequence of its absence: “Were there no differentiation, the universe would collapse into a homogeneous smudge; were there no subjectivity, the universe would collapse into inert, dead extension; were there no communion, the universe would collapse into isolated singularities of being.” Berry suggests that these three principles of cosmogenesis function together to provide for the dynamics according to which the universe exists and evolves; the sequence of events in the universe is shaped by this threefold principle. In this regard, it can be said that the Cosmogenetic Principle identifies “the reality, the values, and the directions in which the universe is proceeding.” The following three sections will explore meanings of each principle.

b. Differentiation

According to Berry, differentiation is “the primitive expression of the universe” that displays an extraordinary variety of being. While the universe as a whole is seen as a single evolving reality, the unfolding of the universe emerges in a process of diversification. That is, cosmogenesis is not some endlessly extended homogenous reality but “is composed of clearly articulated entities each of which is unique and irreplaceable.” From the beginning of time, the universe has articulated itself through an infinite diversity. Each created being is a unique

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656 Ibid.
657 Ibid.
659 Swimme and Berry, The Universe Story, 73.
660 Berry, Evening Thoughts, 145.
661 Berry, The Dream of the Earth, 45. Berry proposes a number of synonyms for the term ‘differentiation’: diversity, complexity, variation, disparity, multiform nature, and articulation. Swimme and Berry, The Universe Story, 71-72.
expression of the unfolding world. Without this process of differentiation, there is no existent reality.  

The law of differentiation affirms that no duplication can occur in the universe, that nothing is absolutely identical. Berry argues that no two things in the universe are the same; the more closely we examine a particular thing, the more clearly we see how different it is from everything else. Following this line, differentiation represents “the inherent indestructible value of the individual.” Each single being has its own special character. The distinctiveness of each presence makes the world beautiful and abundant: “Each being gives to the universe something that no other being can provide.”

Differentiation exhibits the infinite power of the universe to constantly create new forms of being. As Berry depicts, “[a]t the heart of the universe is an outrageous bias for the novel, for the unfurling of surprise in prodigious dimensions throughout the vast range of existence.” There is no repetition in this irreversible scheme of cosmogenesis. Continuous transformation rather than unchanging preservation is witnessed throughout the process of differentiation.

c. Subjectivity

The law of subjectivity is concerned with the inside nature or interior dimension of things. Berry argues that each individual being has its own inner structure, intelligibility, spontaneity, and self. Even the simplest atom has its own interiority and cannot be understood by its exterior

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663 Berry, The Dream of the Earth, 106. Berry’s reflections on ‘the uniqueness of being’ are relevant here: “Each articulation is unrepeatable and irreplaceable at whatever level, from the subatomic to the galactic, from the iron core of the earth to the flower, from the eagle in flight to the human persons who walk over the land.” Ibid.

664 Swimme and Berry, The Universe Story, 74.

665 Berry notes that “[e]ach leaf is different, as is each snowflake, each flower, each dawn, each sunset.” Berry, The Christian Future and the Fate of Earth, 55.

666 Swimme and Berry, The Universe Story, 73.

667 Berry, The New Story, 10.

668 Berry, The Christian Future and the Fate of Earth, 55.

669 Swimme and Berry, The Universe Story, 74.

670 Ibid., 74-75.

dimension alone. In highlighting the inner aspect of the individual, subjectivity reminds us that the universe does not consist of inert and passive matter. According to Berry, “[t]his subjectivity, while expressed by the scientist in its physical form, cannot be reduced to crass matter, for ultimately there is no such thing as matter independent of intelligible form.” That is, every differentiated being possesses a degree of inner value that is integral to its physical dimension. Subjectivity is the determining factor that gives existence both its identity and dignity. Because of this subjectivity, every being is experienced as a “thou” rather than as an “it,” with an accompanying right to be revered.

Subjectivity invites us to recognize “a capacity of self-articulation inherent in the universe.” Berry claims that each individual has “an inner capacity for self-manifestation” and organizes itself through the power of self-articulation. Subjectivity is found in the self-organizing dynamics of every being in the universe. Berry insists that all beings, by their own dynamics of subjectivity, “participate directly in the cosmos-creating endeavor,” contributing in their unique ways.

While subjectivity often refers to the inner articulation of each individual being, it is also essential to the entire universe. The universe is filled with structures comprised of less complex individuals who subsequently exhibit self-organizing and self-manifesting dynamics on the more macro level. It follows from this that creation never ceases to move toward the fulfillment of

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672 Swimme and Berry, *The Universe Story*, 75. Berry notes that while the inner dimension is invisible to the eye, we can recognize it by our intelligence. Ibid.

673 Thomas Berry, “Classical Western Spirituality and the American Experience,” *Cross Currents* 31, no. 4 (Winter 1981-1982): 397-398. As previously mentioned, Berry understands cosmogenesis as both a physical and spiritual process; therefore, all matter in the universe has a spiritual component in addition to its physicality.

674 See Berry, *The Christian Future and the Fate of Earth*, 55, 121.

675 Berry, *Evening Thoughts*, 50.

676 Berry and Clarke, *Befriending the Earth*, 25.

677 Swimme and Berry, *The Universe Story*, 75.

678 Ibid.

679 See Ibid., 34, 75.
its potential. Over time, the capacity for interiority consistently increases along with the increased complexity of the cosmic structure.

d. Communion

Berry’s third cosmogenetic principle is communion, which signifies the interrelatedness of all creation. While the universe “evolves into beings that are different from each other, and that organize themselves,” the universe also “advances into community” in which everything is intricately interwoven. In the universe community, “[t]o be is to be related,” and “relationship is the essence of existence.” This web of relationship is stretched throughout the universe, and each being is directly connected to every other existence in the cosmic web. In this sense, each member of the universe community is inseparable from every other member of the community. Even though alienation can be felt psychologically, on the ontological level, nothing in the vast web of the universe can exist in isolation. Berry writes that “[e]verything in the universe is genetically cousin to everything else. There is literally one family, one bonding, in the universe, because everything is descended from the same source.”

Due to the unbroken bond of communion, Berry insists, “every atomic particle is present to every other atomic particle in an inseparable unity.” Through this mutual presence, every being influences the other and finds its fulfillment. Since all that exists is ultimately interdependent and is sustained by everything else, “nothing is completely itself without

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680 For instance, Berry argues that where Earth was once molten rock, it now fills its air with the songs of birds. Ibid., 76.

681 Berry, The Dream of the Earth, 45; idem, “Classical Western Spirituality and the American Experience,” 398.

682 Swimme and Berry, The Universe Story, 77. For Berry, ‘communion’ is synonymous with: interdependence, kinship, mutuality, reciprocity, internal relatedness, interconnectivity, complementarity, and affiliation. Ibid., 72.

683 Ibid.

684 Berry, The New Story, 11. This communion is experienced in the phenomenon of gravitational attraction. In gravitational interaction, each being in the universe attracts and is attracted to every other being in the universe. Berry, The Dream of the Earth, 46, 107.


686 Berry and Clarke, Befriending the Earth, 14.

687 Ibid. See also Berry, “The Cosmology of Religions,” 108.


Humans, as part of this communion of all subjects, are most fully themselves in communion with other beings. In this regard, Berry emphasizes that “[i]t is the destiny of our present and all future generations to develop this capacity for communion on new and more comprehensive levels.”

Berry argues that the capacity for uniting the various components of the universe (communion) allows the vast diversity of beings (differentiation) to come into existence and maintain their own inner dimension (subjectivity). For instance, interconnectivity organized millions of constituent parts to form the Sun, which is completely different from these parts and has its own inner depth and self-organizing dynamics. Whether through particle attraction or sexual reproduction, it is communion that allows for a new and unique entity to be realized or be born; communion permits differentiation and subjectivity to flourish. In this sense, increased capacity for differentiation or subjectivity is inseparable from the capacity for communion.

In summary, each principle of cosmogenesis has its own characteristics. Each offers a unique contribution to the evolutionary process. Differentiation allows the other to be completely other and enables the universe to abound in its diverse uniqueness. Subjectivity speaks to each being’s inner dimension and reveals the self-organizational dynamics of the universe. Communion establishes the intimate bond among all beings and represents the unbreakable unity of that same universe. However, these laws are not three distinct dynamics of the universe. Even though explored individually, no law exists in isolation. All three mutually shape one another and

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690 Berry, *The Dream of the Earth*, 91. Berry warns that “[t]o be locked up in a private world, to be cut off from intimacy with other beings, to be incapable of entering the joy of mutual presence” is “a kind of supreme evil in the universe.” Swimme and Berry, *The Universe Story*, 78.

691 Ibid., 219.


694 Berry, *The Christian Future and the Fate of Earth*, 121.

695 Swimme and Berry, *The Universe Story*, 77.


697 In reflecting on these basic cosmic principles, Daniel P. Scheid notes that differentiation articulates that “the other is other”; subjectivity articulates that “the other is for itself”; and communion articulates “the other and I [are] for each other.” Daniel P. Scheid, *The Cosmic Common Good: Religious Grounds for Ecological Ethics* (New York, NY: Oxford University Press, 2016), 76.
interact with one another’s laws in the functioning of the universe.\textsuperscript{698} They coexist as part of a single cosmogenetic principle that grows “in the direction of an increasing differentiation, a deepening subjectivity, and a more comprehensive communion within the total order of the real.”\textsuperscript{699} Together, these three fundamental laws – yet One Principle – provide the lifeblood of the universe’s evolutionary process and form “an indivisible triune reality.”\textsuperscript{700}

\textbf{C2. The Cosmogenetic Principle and the Trinity}

Berry proposes that the tripartite structure of the Cosmogenetic Principle can make the Trinity intelligible to our times. Corresponding to each principle, Berry’s Trinitarian model presents “the Father as the principle of Differentiation; the Son as the icon, the Word, [and] the principle of inner articulation; [and] the Holy Spirit as the bonding force holding all things together in a creative, compassionate embrace.”\textsuperscript{701} Berry’s understanding focuses more on divine activity in the world and less on the transcendent persons of the Holy Trinity. With a focus on the world, differentiation, subjectivity, and communion can be understood as the Trinity’s threefold force animating the becoming of the world.\textsuperscript{702} While these principles do not contradict the unity of Triune life, each corresponds to a distinct and proper role in the Trinity.\textsuperscript{703} The connection between the three tendencies embedded in the universe and the Trinity is an intimate one. Here I will examine what each principle of cosmogenesis signifies in relation to the Trinity and what this reveals for creation.\textsuperscript{704}

\textsuperscript{698} Swimme and Berry, \textit{The Universe Story}, 73.
\textsuperscript{699} Berry, \textit{The New Story}, 9.
\textsuperscript{701} Berry, \textit{The Christian Future and the Fate of Earth}, 56.
\textsuperscript{702} Ibid., 81. Berry’s proposal is accordant with the perspective of Thomas Aquinas. Aquinas holds that “in all creatures there is found the trace of the Trinity, inasmuch as in every creature are found some things which are necessarily reduced to the divine Persons as to their cause.” St. Thomas Aquinas, \textit{Summa Theologica}, Vol. 1, trans. Fathers of the English Dominican Province (New York, NY: Benziger Brothers, Inc., 1947), 238 (pt. I, q. 45, art. 7).
\textsuperscript{703} Such an understanding can also incorporate the notion of \textit{perichoresis}, which describes the mutual indwelling of the divine persons in the Trinity. From the perspective of \textit{perichoresis}, the Triune God’s unity and diversity are not opposed, but flourish in relation to each other. See Edwards, \textit{Ecology at the Heart of Faith}, 71-74; idem, \textit{Breath of Life}, 154, 177-178.
\textsuperscript{704} For the purposes of economy, I do not treat arguments surrounding the doctrine of the Trinity here, nor do I compare Berry’s proposal with Trinitarian models. Rather, I focus on a new way of thinking about the Triune God implied by the Cosmogenetic Principle.
a. Differentiation as Divine Self-Expression

In Berry’s thought, the First Person of the Trinity is reflective of differentiation. We see this differentiation in our lives; all beings have their own specific shape, traits, and unique way of being and perceiving the world. When we turn our attention to the unique manifestations of existence, we become aware of the indescribable fecundity of the Creator. Differentiation in creation reveals the inexhaustible effervescence of God’s creative power toward “perfection of the universe.”

Following an excerpt from St. Thomas Aquinas, Berry argues that the diversity of creatures emerges from the self-expression of divine fruitfulness:

...[B]ecause his goodness could not be adequately represented by one creature alone, he [God] produced many and 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 is simple and uniform, in creatures is manifold and divided; and hence the whole universe together participates in the divine goodness more perfectly and represents it better than any single creature whatsoever.

For Berry, diversity in the universe issues primarily from divine intention. This does not mean that the Father creates in accordance with a preconceived blueprint. Rather, the divine source enables the universe to proceed toward diversity and complexity so that novelty may continuously appear. Through the divine initiative of the Father, all creatures are the magnificent ongoing result of divine self-expression within the evolutionary process.

When variety in all things is seen as an expression of divine fecundity, it becomes clear that each creaturely existence mirrors a different aspect of the Divine. The Triune God is manifested in various created embodiments, and every particular existence presents a special mode of divine

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705 Berry and Clarke, Befriending the Earth, 16-17. See also Dalton, A Theology for the Earth, 129.


707 Berry, The Christian Future and the Fate of Earth, 17-18, 107. See also Berry and Clarke, Befriending the Earth, 17; Aquinas, Summa Theologica, 246 (pt. I, q. 47, art. 1). Berry also applies Aquinas’s idea to the diversity of expressions of revelatory experience developed in and through a variety of religious traditions. In his view, the divine can be more fully revealed in the totality of religious experience: “If there is revelation, it will not be singular but differentiated. If there is grace, it will be differentiated in its expression. If there are spiritual disciplines or sacraments or sacred communities, they will be differentiated.” Berry, The Christian Future and the Fate of Earth, 18; idem, “The Earth,” 37.

708 Berry, The Dream of the Earth, 79.

709 In this regard, I agree with Johnson’s argument that “we should no longer think of God as having a plan for the evolving universe, but rather a vision.” Elizabeth A. Johnson, Quest for the Living God: Mapping Frontiers in the Theology of God (New York, NY: Continuum, 2007), 197. Italics in original.
presence. Berry stresses that “[t]here is an awe and reverence due to the stars in the heavens, the sun, and all heavenly bodies; to the seas and the continents; to all living forms of trees and flowers; to the myriad expressions of life in the sea; to the animals of the forests and the birds of the air.” We see myriad expressions of the divine face in the vast variety of life, and our primary revelatory experience is more pronounced within our surrounding world. As such, the diverse species of Earth can be viewed as revelatory signs of God, highlighting how “[t]he impress of the divine is everywhere.”

b. Subjectivity as Inner Articulation of the Numinous Mystery

According to Berry, the second person of the Trinity is reflective of the principle of subjectivity. This correlation is derived from Berry’s understanding of Christ. For Berry, Christ is neither distinct from the universe nor a being superadded to the universe at a later time. Rather, Christ is present in cosmogenesis from the very beginning. This Christ aspect is integral to the numinous dimension of the universe and is materially manifested in human form via the event of the incarnation. With this, the Son can be understood as the ultimate mode of subjectivity – i.e., the inner articulation of the “pervasive, numinous, guiding mystery in the universe.” In and through this deep subjectivity – i.e., the Logos – the world emerges. In Berry’s words,
“[a]ll things emerge into being within this numinous context.” Subjectivity is thus the origin and source from which the universe story springs.

This understanding of subjectivity enables the Christ aspect of the universe to be seen throughout creation. If all beings emerge from the same divine inner articulation, each must have its own numinous interior aspect, regardless of its outer dimension. All creatures have “the sacred depth” in and of themselves, as opposed to a mere extrinsic or instrumental value assigned by human beings. “Every being has its own voice,” writes Berry. “Every being declares itself to the entire universe.” The Logos is perpetually articulated through the language of every creature; “[n]ot to hear the natural world is not to hear the divine.” From this perspective, the universe is not composed of objects, but of beings that exist as subjects with the capacity for a self-articulation resonant with the numinous mystery. The creature as subject, then, is more than a medium for God’s revelation. Each being also participates with its own identity in the numinous Christ context. Each living thing is a protagonist capable of partaking of the subjectivity of the universe and contributing to the unfolding process of the larger whole.

c. Communion as Relational Divine

In Berry’s Trinitarian model, the Holy Spirit is expressive of the principle of communion. Berry argues that a supreme mode of communion exists within all beings of the universe. As demonstrated in “the tendency toward the bonding of each being with every other being in the universe,” this divine communion is radically relational. The relational act of the divine communion allows differentiated individuals to emerge “in that gorgeous profusion and yet comprehensive unity we observe about us.” Without “the bonding, the holding together of things,” nothing would happen in the universe; the entire evolutionary process depends on “the

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718 Berry and Clarke, Befriending the Earth, 78.
719 Berry, The Great Work, 163. See also Anne Hunt, Trinity: Nexus of the Mysteries of Christian Faith (Maryknoll, NY: Orbis books, 2005), 106.
720 Berry, The Great Work, 4.
721 Berry, The Sacred Universe, 145. Berry similarly remarks that “[t]o wantonly destroy a living species is to silence forever a divine voice.” Berry, The Dream of the Earth, 46.
722 See Berry, Evening Thoughts, 23; idem, The Christian Future and the Fate of Earth, 55.
723 Berry, The New Story, 11-12; idem, The Dream of the Earth, 135. See also Berry, Evening Thoughts, 41.
724 Berry, The Christian Future and the Fate of Earth, 55.
725 Berry, The Great Work, 163.
inner spirit of reality.” In cosmic terms, this divine communion can be understood as “the Life-Giver, empowering the emergence of the universe.” The inter-relational character of the universe emerges from this divine source. This communion maintains the universe as an integral community.

With the Holy Spirit understood as communion, and the divine relationship considered omnipresent to creation, it naturally follows that the whole universe is a sacred union. In Berry’s words, “the universe itself is the primary sacred community.” Through the sacred community, the unspeakable closeness of a Triune God, who deeply interacts with creatures through the evolutionary processes, is made manifest; in the sacred community, we find “the sublime expression of the deepest mystery of the universe” that manifests a profound intimacy. There is nothing outside the sacredness of the universe community; no being can be declared more sacred than another in the intimate bond of the divine communion. Every creature is an essential member of this holy web; no being can be eliminated without a loss for the whole. As Berry writes, “everything is needed,” and “without the perfection of each part, something is lacking from the whole.” In concert, then, all beings express the wonder and splendour of the sacred community.

To conclude, Berry’s cosmological model of the Trinity presents a new way of thinking about Father, Son, and Holy Spirit in the context of our present understanding of cosmogenesis. Each principle of cosmogenesis – differentiation, subjectivity, and communion – reveals a Triune God present in all of creation. The principle of differentiation displays a divine self-expression that

726 Berry and Clarke, Befriending the Earth, 16.

727 Edwards, Breath of life, 79.

728 Berry and Clarke, Befriending the Earth, 16. See also Berry, “Christianity in an Emergent Universe,” 366. As in Psalm 104 where Spirit breathes life into all of creation, in Berry’s view, it is the binding force of the Spirit which brings form unto matter. (Ps 104:28-30) By bringing forth life in creation and holding all things together, the Spirit enables the universe to exist in a sacred union, and to grow toward a more perfect communion with the Triune God. See Berry, The Christian Future and the Fate of Earth, 56; O’Hara, “Thomas Berry’s Understanding of the Psychic-Spiritual Dimension of Creation,” 93.

729 Berry, “Classical Western Spirituality and the American Experience,” 398. See also Edwards, Breath of life, 128-129.

730 See Berry, Evening Thoughts, 57-58. Berry argues, in effect, that the total order of the universe is disrupted when the sacred quality of any being is deprived. Berry, The New Story, 11.

731 Berry, Evening Thoughts, 58. Edwards similarly argues that communion “does not diminish individual uniqueness but enables it to exist.” That is, the divine communion allows every creature, in its own differentiated way, to participate in the sacred dimension of the whole community. Edwards, Breath of life, 133.
brings diverse beings into the evolutionary process. The principle of subjectivity articulates the numinous mystery of the Christ dimension of the universe and manifests each being as an authentic subject. The principle of communion reveals the divine bond that runs through the sacred web of evolving relationships. From different perspectives, differentiation, subjectivity, and communion point to the same divine reality. These principles exhibit distinctive modes of divine expression within the unfolding universe. Berry’s cosmogenetic model affirms that the universe is the primary revelation of a Triune God.

C3. Implications for Ecospiritual Literacy

Berry’s Cosmogenetic Principle makes a unique contribution to concretizing the Grammar of Creation by suggesting the great cosmic themes of differentiation, subjectivity, and communion. The cosmological understanding of the Grammar of Creation is enhanced by reflecting on “the three characteristics of the universe as manifested from the beginning.” When ecospiritual literacy’s attention is focused on this cosmic grammar, the following implications are accentuated.

First, the Cosmogenetic Principle leads ecospiritual literacy to highlight our integrated relationship with the universe as a whole. The cosmic grammar reminds us that the various parts of the universe are “outwardly differentiated, inwardly articulated, and bonded together in a comprehensive intimacy,” and reveals that we are engaged with these common features of cosmogenesis. In other words, we exist integrally with the unfolding universe, a “one single multiform event.” By emphasizing our integral relationship with cosmogenesis, ecospiritual literacy encourages learners to live in accordance with the dynamics of the universe. In fact, each principle of the cosmic grammar (i.e., differentiation, subjectivity, and communion) has the power to shape and transform a student’s relationship with every living entity. With sensitive attuning to these principles, views and actions can be brought into greater harmony with the rest

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732 Berry’s approach to the Trinity mirrors Pope Francis’s reflections on the Triune God in creation: “The Father is the ultimate source of everything, the loving and self-communicating foundation of all that exists. The Son, his reflection, through whom all things were created, united himself to this earth…. The Spirit, infinite bond of love, is intimately present at the very heart of the universe, inspiring and bringing new pathways. The world was created by the three Persons acting as a single divine principle, but each one of them performed this common work in accordance with his own personal property.” Francis, *Laudato Si*, #238.

733 Berry, “Classical Western Spirituality and the American Experience,” 397.


735 Berry, *Evening Thoughts*, 169.
of creation. By way of the Cosmogenetic Principle, ecospiritual literacy can develop the teachings of Pope Benedict and Pope Francis on respect for the Grammar of Creation in more concrete ways. These include respect for biodiversity, respect for each life as a subject worthy of existence, and respect for the layers of interconnectivity that lend resilience to a variety of ecosystems.\footnote{More concrete ideas concerning these suggestions will be explored in Chapter Four.}

Furthermore, the Cosmogenetic Principle directs ecospiritual literacy to challenge us “to read reality in a Trinitarian key.”\footnote{Francis, \textit{Laudato Si’}, #239.} In Berry’s Trinitarian model, based on cosmic grammar, the Triune God is not simply the one, supreme, unchanged being beyond creaturely experience; rather, the Trinity is also deeply involved in creation and operative within all that exists.\footnote{This idea echoes the view of Rahner: “[T]his God is not merely the eternally distant mystery beyond the world and our existence. Rather, this God has made himself the innermost principle of the world’s movement…. It is Christianity’s conviction that this innermost, divine, fundamental dynamism is at work everywhere in the world.” Karl Rahner, “Christianity’s Absolute Claim,” chap. in \textit{Theological Investigations}, Vol. 21, trans. Hugh M. Riley (New York, NY: Crossroad, 1988), 175.} Throughout the galaxies, stars, mountains, animals, and flowers, the life of the Trinity is dynamically present as the diverse breadth of divine self-expression, the sacred depth of the inner articulation of the numinous mystery, and the intimate strength of divine relationality. By underscoring these divine trinitarian tendencies, ecospiritual literacy invites learners to see the world through a Trinitarian key. When reality is seen through differentiation, subjectivity, and communion, students will be better positioned to observe that every part of the universe exists in a “trinitarian dynamism,” that “each creature bears in itself a specifically Trinitarian structure.”\footnote{Francis, \textit{Laudato Si’}, #239, #240. Anne Hunt has a similar view: “[A]ll reality is stamped with the Trinity, at every level. The whole world is thus a symbol of the Trinity.” Hunt, \textit{Trinity}, 106.} This leads learners to realize that they are mirrors of the Trinity and participants in the Trinitarian process. Their own fulfillment is discovered when they are clothed in the Trinitarian mystery; that is, when they turn toward the threefold divine nature.

To sum up, the Cosmogenetic Principle supports ecospiritual literacy by illuminating both the physical and numinous dimensions of the universe. In highlighting the larger cosmological context as “a geophysical and biospiritual reality,” the threefold principle of cosmogenesis guides learners to relate to its totality; that is, to be drawn into greater relationship with the entire
universe, and the Triune God who pervades it.\textsuperscript{740} Regarding this holistic implication of the Cosmogenetic Principle, ecospiritual literacy adopts the principles of differentiation, subjectivity, and communion as the Trinitarian cosmic grammar through which students read the Book of Creation. As they come to understand “the language of the earth” and “how to read the Great Book of the World” through this fundamental threefold grammar, their sense of the integral relationship among the Triune God, the Earth community, and humanity is enlarged and deepened.\textsuperscript{741}

D. Summation

In light of McFague’s theology, a metaphorical approach to the concept of ecospiritual literacy has great potential. According to McFague, metaphor functions as an “interpretive lens” through which we see the world.\textsuperscript{742} Through its metaphorical lens, McFague’s theology is concerned about “redescriptions or new readings” of reality, in place of old descriptions or readings, that transform our consciousness.\textsuperscript{743} McFague’s metaphorical vision conveys the significance of metaphors for articulating the concept of ecospiritual literacy. When ecospiritual literacy has an imaginative picture of the larger cosmic context, it is better positioned to redescribe the epic of evolution so that our view of the world is changed. McFague’s methodology also suggests particular norms for arriving at appropriate metaphors. In light of the main characteristics of a metaphor (i.e., indirect, tensive, and pluralistic), ecospiritual literacy can develop new imaginative pictures through which the story of the universe can be interpreted and arouse our interest in the larger context of the universe.

Based on McFague’s metaphorical vision, this chapter has developed two metaphors of ecospiritual literacy. As the root metaphor of ecospiritual literacy, the Book of Creation metaphor enhances our awareness of the larger whole and encourages us to come out of our own

\textsuperscript{740} McDonagh, \textit{To Care for the Earth}, 95. See also Scheid, \textit{The Cosmic Common Good}, 78-79.

\textsuperscript{741} Thomas Berry, “Our Children: Their Future,” in \textit{Only the Sacred: Transforming Education in the Twenty-First Century}, ed. Peggy Whalen-Levitt (San Bernardino, CA: The Center for Education, Imagination, and the Natural World, 2011), 13. Although ecospiritual literacy adopts the principles of differentiation, subjectivity, and communion as the cosmic grammar, the Cosmogenetic Principle is not the only grammar of creation. There can be other forms of grammar active in guiding the shape of creation.

\textsuperscript{742} McFague, \textit{The Body of God}, 18, 200.

\textsuperscript{743} McFague, \textit{Models of God}, 26.
world so that we encounter the larger reality. It invites us to imagine the world as a revelatory text in which God, as its author, pervades, and on which we, as its reader, reflect. Through the metaphor of the Book of Creation, ecospiritual literacy teaches how God, the universe, and the human are integrally present in one unfolding story and how human beings, in particular, can find their place in the whole of reality. While the Book of Creation metaphor is concerned with a context-based approach of ecospiritual literacy, instructing learners about ‘what to read,’ the Grammar of Creation metaphor is concerned with the principle and dynamics of cosmogenesis, instructing learners about ‘how to read.’ The metaphorical wisdom of the Grammar of Creation can nurture a richer theological imagination, one that sees the whole of the universe as a communicative language system that abounds with ecological and spiritual messages.

Berry’s Cosmogenetic Principle concretizes the Grammar of Creation in the larger cosmological context. In Berry’s view, the universe is enlarged through differentiation, proclaimed by subjectivity, and organized by communion; the Triune God is manifested through these three principles. That is, the Cosmogenetic Principle reveals both the governing laws of the evolutionary process and the activity of the Trinity. Drawing from Berry’s proposal, ecospiritual literacy adopts differentiation, subjectivity, and communion as the Trinitarian cosmic grammar. This grammar helps students to see the world in terms of both its physical and spiritual aspects. Ecospiritual literacy invites them to read the Book of Creation according to the threefold cosmic grammar that sees the universe as a meaningful, evolving process rather than a pointless, static place. When learners find themselves in an ecologically and spiritually meaningful world, they will be better able to understand their deep embeddedness in the Earth, to sense the divine sacredness within creation, and to participate in their role of enhancing the sacred Earth community. The efficacy of ecospiritual literacy invariably depends on how profoundly students are engaged in the whole of reality, how intimately they are attuned to its message, and how deeply they communicate with and within it.
The focus of this dissertation now turns to developing an RCEE model based on the concept of ecospiritual literacy. As outlined in the previous chapter, ecospiritual literacy, through its context-based approach, highlights the interrelated relationships among the Triune God, the universe, and humanity, and invites us to see both the ecological and spiritual messages in the world. By adopting ecospiritual literacy as the basis of RCEE, a new educational model that seeks the integral development of our thoughts, feelings, and actions in relation to the larger processes of the universe and Earth can be developed. In the fulfilment of this task, the present chapter will examine a new way of understanding RCEE that draws from ecospiritual literacy, and will propose ‘transformative learning’ as a new educational paradigm for RCEE. In developing this new model of RCEE, O’Sullivan’s notion of integral development will also be studied. After establishing an educational foundation for RCEE, the guiding principles for its development will then be considered. A basic assumption here is that if RCEE wants to bring about deep changes in our minds and hearts, it ought to embody transformative learning principles in its total design rather than simply teaching ecology as a subject in fragmented curricula. While suggesting unifying principles rooted in ecospiritual literacy, how to fit our identity into the great community of existence, how to develop an ecologically sensitive spirituality, and how to live sustainably within the Earth community are questions that must be addressed. By reflecting on these questions, RCEE can develop its basic principles that will move its educational themes and directions toward an ecological conversion. Finally, in finding a way to apply and promote the main principles of RCEE, this chapter will survey place-based learning. This approach can help the basic principles of RCEE to be practised and advanced in our actual context beyond the theoretical level. When RCEE is developed in relation to the living processes of our local place, which is beyond the limits of the classroom, it will be in a better position to foster the integral development of thoughts, feelings, and actions.

A. A New Approach to RCEE

As the conceptual foundation of RCEE, ecospiritual literacy demands a change in educational approach. This new approach of RCEE does not simply entail superficial improvements by
repairing traditional environmental education; rather, it challenges us to redesign and reconstruct the educational paradigm itself. This section aims to examine the new paradigm for RCEE that ecospiritual literacy promotes. In the first part, I will investigate how the new model is different from the conventional approach of environmental education and what the new paradigm mainly highlights. In the second part, I will explore what O’Sullivan’s transformative vision of integral development suggests for advancing a new paradigm for RCEE. A methodology that helps to develop basic principles of RCEE on the basis of O’Sullivan’s insights will then be suggested.

A1. Reimagining the Educational Paradigm of RCEE: Transformative Learning

Adopting the ecospiritual literacy concept as the basis for RCEE leads to a reimagining of a new educational paradigm of ‘transformative learning’ that aims to bring about a fundamental change by seeking deeper levels of learning in a more holistic context. This new paradigm is distinguishable from a transmissive model of environmental education. In fact, the dominant approaches to environmental education have traditionally focused on transmitting information about environmental problems or have paid attention to increasing scientific knowledge and skills for protecting the environment. The assumption of this educational paradigm is that if students become more knowledgeable about environmental issues, they will, in turn, change their behaviours. While an informational learning model can instil an environmental consciousness and offer guidance on environmental protection, whether such a knowledge-focused linear model is sufficient for addressing today’s ecological crisis is open to question.

744 The term ‘transformative learning’ is drawn from O’Sullivan’s work, which was examined in Chapter One.


747 See Sam Mickey, Whole Earth Thinking and Planetary Coexistence: Ecological Wisdom at the Intersection of Religion, Ecology, and Philosophy (New York, NY: Routledge, 2016), 120; Judson, A New Approach to Ecological Education, 3-4. Jessica L. Crowe contends that even though many people increase their knowledge of
Acknowledging this problem, the transformative learning paradigm of RCEE focuses on more holistic and integrative modes of learning that nurture learners to be ecologically and spiritually literate in the larger cosmological context, especially in the Earth community. Instead of simply concentrating on information transfer, the new paradigm of RCEE is concerned with fostering a comprehensive vision of the Earth community; that is, not only ecological issues but also the spiritual aspects of the world and the role of humanity in it are considered. This transformative learning paradigm suggests that the goal of RCEE is to help learners experience “profound interior conversion” rather than simply training them for a technical role such as reducing fuel use or recycling rubbish. In this sense, the focus of RCEE today, as Pope Francis states, should not be limited to teaching only environmental literacy, namely “scientific information, consciousness-raising, and the prevention of environmental risks,” but ought to be broadened toward “establishing harmony within ourselves, with others, with nature and other living creatures, and with God.” In doing so, RCEE ought to focus on imbuing us with “a more passionate concern for the protection of our world” and with an “interior impulse which encourages, motivates, nourishes, and gives meaning to our individual and communal activity.”

The concept of ecospiritual literacy enables the transformative learning paradigm of RCEE to develop into a deeper educational experience through various modes of learning. While traditional environmental education tends to be limited to the dimension of ‘learning about the environment,’ the new paradigm of RCEE involves three dimensions of learning, which are linked to the cognitive, affective, and behavioural aspects of ecospiritual literacy: ‘learning

environmental science, they do not change their personal practices to reflect more sustainable ways of living. Crowe, “Transforming Environmental Attitudes and Behaviours through Eco-spirituality and Religion,” 76.


749 Francis, Laudato Si’, #217.

750 Ibid., #210.

about, in, and for the Earth community.’ By this holistic form of learning, RCEE can assist learners to develop each component of ecospiritual literacy in more integrated ways. In the dimension of ‘learning about the Earth community,’ RCEE can support students to understand anthropological aspects about the world so that they renew their ecological identity in relation to the rest of creation; in the dimension of ‘learning in the Earth community,’ RCEE can aid students to sense the spiritual aspect in the world so that they deepen their spiritual sensitivity to the sacredness of creation; and in the dimension of ‘learning for the Earth community,’ RCEE can encourage students to find their role for the world so that they commit to an ethical orientation centered on the well-being of the whole life community.

Through this threefold integrated approach, RCEE aims to change “our way of thinking, feeling and living” in relation to the Earth community. In the transformative learning paradigm of RCEE, Earth is not simply a passive object to be observed, but an active subject that guides our learning. As metaphors of ecospiritual literacy suggest, Earth as a whole is like a Great Book that reveals ecological and spiritual messages through its grammar; like a generous teacher, the Earth community invites us to think about our interrelatedness with the rest of creation, to feel the divine sacredness within creation, and to live in more responsible ways for all of creation. By suggesting a new way of seeing the whole of reality, the transformative learning paradigm of RCEE calls learners to develop an interactive attitude of ‘befriending the earth’ rather than simply being limited to a linear attitude of ‘saving the environment,’ and to become more attuned to the messages of the Earth community. By doing so, RCEE intends to facilitate students to be more concerned with learning how they relate within the surrounding natural world and how they think, feel, and live, both ecologically and spiritually, in the larger community of life.

A2. Edmund O’Sullivan’s Transformative Learning and Integral Development

According to O’Sullivan, while transformative learning aims at making a profound change in our thoughts, feelings, and actions, this fundamental transformation does not occur independently in a human cultural structure separated from the larger world. Rather, it comes as a result of “an integral endeavor” which connects us with the deep structure of the universe and its dynamic

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753 Francis, Laudato Si’, #216.
wholeness. That is, real transformation requires an integral development which “links the creative evolutionary processes of the universe, the planet, the earth community, the human community, and the personal world.” In O’Sullivan’s view, our presence on Earth is “an integral part of the evolutionary process of the universe and the evolution of planet earth,” and therefore our personal development ought to be integrally related to planetary development. O’Sullivan’s description of integral development implies that transformative learning is not simply self-centred work to bring about a change, but rather, it is integrative developmental work toward a greater engagement with the world. In this respect, an important task of transformative learning is to encourage learners to step into, rather than outside of, the larger world, so an enchantment with the whole life community can be realised.

O’Sullivan advances his transformative vision for integral development by linking it to the three principles of differentiation, subjectivity, and communion. For O’Sullivan, these three principles exist as “dynamic emergent evolutionary processes,” and at a most fundamental level define “the very essence of creativity itself.” He affirms that the entire creative sequences of

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754 O’Sullivan, “The Project and Vision of Transformative Education,” 1, 8, 11.
756 O’Sullivan, Transformative Learning, 214, 222. O’Sullivan states that current western ideas on development are allied to the notions of growth for market economics. Despite his critical view on market-driven development, O’Sullivan does not suggest abandoning the concept of development itself. For him, it is more important to retrieve the original meaning of development which is embedded in the evolutionary process, so that we resist the vision of education for a global marketplace. Therefore, O’Sullivan claims that transformative education must deal with a new conception of development that will transcend the limitations of anthropocentric development within a market point of view and that will be integral to planetary, community, and personal development. O’Sullivan, “The Project and Vision of Transformative Education,” 8; idem, Transformative Learning, 208; idem, “Beyond Globalization: Visioning Transformative Education within a Politics of Hope,” Review of Education, Pedagogy, and Cultural Studies 23, no. 3 (2001): 320-321.
757 O’Sullivan asserts that our educational tradition has taught us to see ourselves as separate from the wholeness of the world; that is, our educational journey has been “a pilgrimage into estrangement” and thereby has caused us to be locked into anthropocentrism. Recognizing this problem, he insists that transformative learning ought to involve “a journey into intimacy with the universe.” O’Sullivan, Transformative Learning, 169, 195. See also Edmund O’Sullivan and Marilyn Taylor, “Glimpses of an Ecological Consciousness,” in Learning Toward an Ecological Consciousness: Selected Transformative Practices, eds. Edmund O’Sullivan and Marilyn Taylor (New York: NY: Palgrave Macmillan, 2004), 7-9, 13.
758 Drawing from Thomas Berry’s works, O’Sullivan employs the principles of differentiation, subjectivity, and communion. These three principles, as examined in the previous chapter, are basic tendencies of the universe and identify the directions in which the universe proceeds. Here, in order to avoid repetition, I will not explain the three principles in detail. For O’Sullivan’s description of each principle, see O’Sullivan, Transformative Learning, 190-193, 210-211.
evolution (i.e., the universe process, the Earth process, the life process, and the human process) are governed by these three basic principles, and argues that our physical, spiritual, and ethical formations are rooted therein. In other words, just as the universe has emerged by way of these three principles, so too can our own formation be understood in the light of differentiation, subjectivity, and communion. This understanding of integral development guided by the foundational principles of the universe implies that transformative learning is based on the dynamic creativity of the universe. In relation to these three cosmological principles, transformative learning can help students break away from old and static ways of human-centred development and encourage them to integrate with the creative processes of evolutionary development.

O’Sullivan understands the meaning of integral development as an ongoing journey through open-ended learning rather than a one-time achievement of instructive teaching. That is, integral development is the continuous exploratory quest for deep transformation; it is “less concerned with trying to find fixed facts and more concerned with identifying what we need to learn to live well” ecologically and spiritually. In highlighting an ongoing process of integral development, O’Sullivan implies that transformative learning is not confined to a rigid and informative curriculum but is an educational pilgrimage seeking “our own creative response to the ongoing evolution of all life.” A basic concern of transformative learning is “a process of learning that has a sense of adventure,” not “a closed process of knowledge accumulation.” As such, transformative learning encourages students to be involved with a continuous connection to the

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larger reality, whereby they can experience ongoing change in their thoughts, feelings, and actions in relation to the unfolding processes of the world.\textsuperscript{766}

Drawing on O’Sullivan’s educational vision of integral development, I am proposing a methodology of ‘transformative construction,’ one that seeks integrative, creative, and continuous learning processes for ecospiritual literacy. This transformative construction approach adopts the three principles of differentiation, subjectivity, and communion as its key vehicle to reintegrate learners into the larger cosmological context, to link them to the creativity of the universe, and to foster ongoing conversion. In the transformative construction method, ecospiritual literacy is more than a thematic object for educating; it is an intrinsic and essential part of transformative learning. By interpreting the anthropological, spiritual, and ethical dimensions of ecospiritual literacy in light of these three cosmic principles, the transformative method helps nurture one’s ecological identity, spiritual sensitivity, and ethical commitment.\textsuperscript{767} Metaphorically speaking, transformative construction reflects upon the Book of Creation through the threefold Grammar of Creation while highlighting multiple levels of learning (i.e., learning about, in, and for the Earth community) so that learners pursue an integral development of head, heart, and hands.

\section*{B. Basic Principles of RCEE}

Based on the transformative construction methodology, this section will focus on establishing concrete principles which will guide the main focus of RCEE. This task will be approached under the three categories of transformative construction drawn from the threefold dimensions of ecospiritual literacy: the anthropological, the spiritual, and the ethical. Each category will be reflected on through the principles of ‘differentiation,’ ‘subjectivity,’ and ‘communion.’ With these principles as guideposts, this section will reflect on how to renew ecological identity, deepen spiritual sensitivity, and engage in ethical commitments. The goal is to develop a more


\textsuperscript{767} O’Sullivan argues that our authentic development ought to be integrated in the context of the three principles of differentiation, subjectivity, and communion. By reflecting on the three principles, he suggests guidelines for developing our ecological self, spirituality, and ethical imperative. See O’Sullivan, \textit{Transformative Learning}, 223-224, 228-232, 260-262.
comprehensive form of RCEE on the way to “a new synthesis” in our understanding of the
relationships among God, Earth, and humanity.768

B1. Renewing Ecological Identity in Relation to the Rest of Creation

The principles of differentiation, subjectivity, and communion re-situate human formation within
the larger context of an evolving Earth and thereby offer an opportunity to help individuals to
rethink their human identity.769 In aiming to promote “a new way of thinking about human
beings,” this section will examine how each principle provides an anthropological insight, and
how RCEE can renew an ecologically sensitive identity in relation to the rest of creation.770

a. Differentiation: Developing a Larger Self through the Breadth of Creation

The principle of differentiation suggests that we ought to expand our sense of self in relation to
the larger diversity of the universe. We have seen how differentiation implies an expansiveness
of multiplicity in the emerging universe; through “the cosmic drive toward breadth,”
cosmogenesis constantly gives birth to new forms and different beings.771 Humanity, like the rest
of creation, gradually emerged from this differentiating process and is an intrinsic part of it. By
placing human identity in the wider circle of differentiation, RCEE can reveal that human
selfhood is much broader than previously thought; that is, the human is not merely limited to the
individualistic or minimal self in human society but is extended to the planetary or cosmic self in
the larger reality.772 In Tucker’s words, “we are not only part of humankind but of Earthkind; we
are not simply human beings but universe beings.”773

768 I borrow the phrase “a new synthesis” from Pope Francis. He argues that an authentic humanity calls for
a new synthesis capable of overcoming the false arguments of recent centuries. Francis, *Laudato Si’*, #112, #121.
Although Francis does not elaborate on the meaning of a new synthesis, we can assume that the expression indicates
the importance of our relationships “with others, with God and with the earth.” He states: “human life is grounded in
three fundamental and closely intertwined relationships: with God, with our neighbour and with the earth itself.”
Ibid., #66, #70.

769 Berry, *The Great Work*, 162.

770 Francis, *Laudato Si’*, #215.

771 Hathaway and Boff, *The Tao of Liberation*, 282. See also Swimme and Berry, *The Universe Story*, 73-74.


773 Mary Evelyn Tucker, *Worldly Wonder: Religions Enter Their Ecological Phase* (Chicago, IL: Open
Court, 2003), 11.
An emphasis on ‘macrophase’ identity via differentiation affirms that the human belongs to a far larger and much older community; that is, human beings are enrolled in “Milky Way citizenship” and Earth community membership – they belong to more than their own nationality. In particular, humans come into being “in and through the Earth,” and exist as “an integral member of this larger community of existence.” In underscoring this larger perspective, RCEE can employ the metaphor of “Earthling” which pictures the human as a being formed from and rooted in the Earth community. By portraying human beings as ‘Earthlings,’ RCEE can help students to understand that Earth is the maternal source of humanity and is a vital dimension of human selfhood. Since humans as Earthlings are naturally integrated with the Earth community, it can be said that Earth itself is the larger dimension of human beings; through Earth, true human identity can be more fully understood.

While highlighting the enlarged ecological identity, RCEE can further invite learners to imagine how big their neighborhood is. In fact, Earth is not simply a place which consists of a big human population but a great community which evolves in a process of ongoing diversification; like the human, the myriad forms of life also emerge from Earth and exist as component members of the larger community. If all Earthly beings are derived from one source and have the same membership therein, then the notion of neighbour naturally extends beyond the human to include

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776 See Kureethadam, *Creation in Crisis*, 49; Berry, *The Sacred Universe*, 69; O’Sullivan, *Transformative Learning*, 215; Johnson, *Quest for the Living God*, 185. The term ‘Earthlings’ echoes that human beings emerge as *imago mundi*. Describing humans as *imago mundi*, Jürgen Moltmann argues that we are the product of nature and exist as part of it. In Moltmann’s view, the notion of *imago mundi* embraces a human identity immersed in the world. We ought to begin with the larger context in which humans are rooted if we wish to understand what it means to be human. Jürgen Moltmann, *God in Creation: A New Theology of Creation and the Spirit of God*, trans. Margaret Kohl (Minneapolis, MN: Fortress Press, 1993), 51, 186-187.

777 Berry, *The Sacred Universe*, 69; idem, *The Dream of the Earth*, 81. Pope Francis similarly notes that Earth, like “a beautiful mother who opens her arms to embrace us,” sustains and fulfills us; like other earthly beings, “our very bodies are made up of her elements, we breathe her air, and we receive life and refreshment from her waters.” Francis, *Laudato Si’*, #1, #2.

778 Berry, *The Christian Future and the Fate of Earth*, 42; idem, *The Dream of the Earth*, 195, 219. This view does not neglect the importance of Christ for an understanding of true humanity. In fact, our true identity is fully realized in Christ, and a transcendent dimension must be added to the phenomenal world in order to truly realize our authentic selves. However, since Earth includes this transcendent dimension through the incarnation of Christ, it might be said that our ecological identity can be more fully understood via Earth.
the rest of creation.\textsuperscript{779} To put it differently, other-than-humans, unique in themselves, are “global neighbours” as well; they are more than mere background decoration.\textsuperscript{780} By widening the boundary of neighbour, RCEE can enable individual students to identify also as a “universal self”: that is, as constituting an identity in the ‘neighbourhood’ of nature writ large.\textsuperscript{781} The realization of a universal self can lead one’s concern to move from a narrow focus on the ego to a broader appreciation of the vast range of existence.\textsuperscript{782} For Earthlings in a global neighbourhood, their concern ought to move “beyond family, nation, and even [their] own species to identify, in the broadest possible horizon, with all life.”\textsuperscript{783}

Through an expanded self-identification in the context of diverse neighborhoods, RCEE can challenge a hierarchical understanding of humanity’s place in creation with a more horizontal view of human identity. As the principle of differentiation implies, the human is one kind of being among other different kinds of beings; that is, “one species among millions of other species on a planet.”\textsuperscript{784} In the comprehensive Earth context, every species has its own uniqueness and plays a vital role in maintaining the integrity of the whole community; therefore, “no part is intrinsically higher or lower.”\textsuperscript{785} From such a perspective, the differences between human and nonhuman realms cannot be viewed in their vertical and hierarchical aspects. This is not to say that all beings are qualitatively at the same level in an egalitarianism sense; rather, it means that everything is special and superior in its own way. Birds are best at flying, fish are best at


\textsuperscript{780} Biviano, \textit{Inspired Sustainability}, 24, 33.

\textsuperscript{781} Sallie McFague, \textit{Blessed Are the Consumers: Climate Change and the Practice of Restraint} (Minneapolis, MN: Fortress Press, 2013), 77.

\textsuperscript{782} Ibid., xiii.

\textsuperscript{783} McFague, \textit{The Body of God}, 109.

\textsuperscript{784} Ibid. See also Hallman, \textit{A Place in Creation}, 97-98; Toolan, \textit{At Home in the Cosmos}, 190.

swimming, trees are good at creating oxygen, and humans are gifted at reflective thinking.\textsuperscript{786} When superior qualities are interpreted in this fashion, the distinctiveness of human identity can involve itself with a more earthly and horizontal dimension; that is, humanity is unique in the same way in which all other species are unique; uniqueness does not confer overall superiority.\textsuperscript{787} To put it simply, human beings are not “the crown of creation” but unique “citizens of planet earth,” along with other-than-humans who are also special members.\textsuperscript{788} In this sense, developing a larger self, after all, is a process which integrates humans within the diversified whole rather than elevating them above all others. Indeed, a person who has an authentic macrophase identity finds himself or herself not on the apex of some hierarchical ladder but in the horizontal circle of diversity.

\textbf{b. Subjectivity: Awakening Ecological Vocation through the Depth of Creation}

The principle of subjectivity opens new vistas for our meaning and purpose in the world. Subjectivity reminds us that each individual thing in the universe has its own interior dimension and depth; by articulating its inner reality, every being contributes to the self-organizing dynamics of cosmogenesis and participates in “the cosmos’s drive toward greater depth.”\textsuperscript{789} This perspective of subjectivity leads us to reflect on our interior identity and to raise the age-old question ‘why are we here?’ What is clear, from the view of subjectivity, is that humanity is not the meaningless outcome of a random cosmic event.\textsuperscript{790} Rather, human beings retain their own significant role to play in the world; they do not just form an arbitrary part of the world, but are called to contribute to the deepening of the universe’s own interiority.\textsuperscript{791} Stated somewhat

\textsuperscript{786} Berry and Clarke, \textit{Befriending the Earth}, 102.

\textsuperscript{787} Paul W. Taylor argues that while humans are different from other species in having certain abilities that they lack, many other-than-humans also have capacities that humans lack. Taylor writes: “It is true that a human being may be a better mathematician than a monkey, but the monkey may be a better tree climber than a human being.” Paul W. Taylor, \textit{Respect for Nature: A Theory of Environmental Ethics} (Princeton, NJ: Princeton University Press, 1986), 129, 131.

\textsuperscript{788} McFague, \textit{The Body of God}, 107, 119.

\textsuperscript{789} Hathaway and Boff, \textit{The Tao of Liberation}, 284. See also Swimme and Berry, \textit{The Universe Story}, 75-76.

\textsuperscript{790} Echoing this view, Pope Francis states: “When the human person is considered as simply one being among others, the product of chance or physical determinism, then ‘our overall sense of responsibility wanes.’” Francis, \textit{Laudato Si’}, #118. See also Benedict XVI, “If You Want to Cultivate Peace, Protect Creation,” #2.

differently, humans are part of the larger reality not simply as “objects among all the other objects that make up the universe,” but also as “subjects who participate in the subjectivity of the universe.”

In order to highlight the distinctive purpose and role of humanity, RCEE can draw the students’ attention to the unique self-conscious subjectivity of the human. As Teilhard remarks in *The Human Phenomenon*, humanity’s inner form of self-consciousness is the result of the long evolutionary process of the universe. Through human self-consciousness, cosmogenesis is revealed to itself and is able to reflect on itself. From this perspective, human consciousness is understood as a particular form of subjectivity of the universe; that is, as “an instantiation of a broader and more fundamental cosmic subjectivity.” As an instance of the universe that comes to self-consciousness, humanity is seen not as a separate subject but as a mode of the universe itself. In this sense, it can be said that the human “does not speak for Earth but as an extension of Earth.”

By describing self-reflective consciousness in terms of a continuation of cosmic subjectivity, RCEE can emphasize that humanity’s peculiar purpose and commitment is not limited to the human world but extends to the larger process of the universe; as a special mode of reflexive consciousness, humanity ought to in some sense guide and energize the universe and Earth processes. To put it differently, humanity’s vocation is given “not primarily for the human, but for the perfection of the entire universe.”

The unique capacity of self-reflective consciousness further implies that human beings are the only species who can plan with deliberation; through the exercise of free choice, they can make

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792 Nolan, *Jesus Today*, 175.


794 Scheid, *The Cosmic Common Good*, 74. Scheid also describes human consciousness as “the intensification of cosmic subjectivity” and “the expression of the universe’s self-awareness.” Ibid., 75.


and act upon self-conscious decisions that affect their given environments. This means that humanity possesses a significant power in the shaping of the future of the Earth community. As Berry writes, “[t]he planet that ruled itself directly over these past millennia is now determining its future largely through human decision.” By underlining this decisive human power, RCEE can remind us that humans are moral agents with the freedom to choose; they can either enhance or inhibit the well-being of the Earth community. This human capacity is a special gift and a great responsibility. As “responsible decision makers,” human beings ought to be attentive to their ecological vocation; that is, to the call to preserve and enhance the Earth community as a whole. In responding to this call, they are able to participate in the sacred work of God’s ongoing creation. This significant role is not limited to a handful of environmentalists but includes the whole of humanity; beyond any personal callings, every human being is individually called to an ecological vocation.

While all human beings, as self-conscious creatures, have a special responsibility to protect and foster all of creation, this must be done in a way that upholds the subjectivity of other creatures. In fact, other-than-humans possess their own subjectivity, and are uniquely gifted with their own abilities and goals; they are not simply objects consigned to human care but contributors to the unfolding process of the Earth community. As humans have their own mission, other beings are also called on to play a unique role in the universe story and to respond to God in their own special way. In highlighting the subjectivities of various species, RCEE can suggest that


800 Berry, *The Great Work*, 58. Similarly, Berry states: “In the future, almost nothing will happen without human involvement. We cannot make a blade of grass, but in the future there is liable not to be a blade of grass unless we accept, protect, and foster it.” Berry, *The Christian Future and the Fate of Earth*, 72. See also Berry, *The Dream of the Earth*, 19, 133.


803 In this sense, the role of humanity can be understood as that of “a cooperator with God in the work of creation.” Francis, *Laudato Si*, #117.


805 Conradie, *An Ecological Christian Anthropology*, 81. Franciscan theologian John Duns Scotus’s principle of *haecceitas* (“individuation” or “thisness”) supports this notion of the subjectivity of all beings. Scotus
human responsibility for the Earth community is not a higher or more privileged duty, but a defining role for the human species.  

In other words, the ecological vocation assigned to our existence neither entitles us to any superior position in the world nor disregards the subjective significance of other species; rather, our unique vocation requires a cooperation with the rest of creation. From this perspective, the ecological identity of the human can be understood not as *Homo faber* but as *Homo cooperans*, as those who cooperate with others in the world. In a cooperative relationship with the rest of creation, human beings participate responsibly by fulfilling their ecological vocation.

c. Communion: Strengthening Mutual Kinship through the Relationality of Creation

The principle of communion helps us to discover and enhance our relational identity with other members of the Earth community. Communion, as studied earlier, indicates that the entire universe is held together through relationships and evolves toward “growth in relationality.”

Having emerged from a relational world, humans are intimately connected to all other beings – “no line can be drawn to ultimately separate humanity from the rest of creation.” It follows that our identity cannot be defined in isolation from other-than-humans. It is only in relation to those around us, that we fully understand ourselves. As Conradie notes, “[t]he relationship with others constitutes my identity.” This relationality is not optional. Although we can ignore or resist certain relations, our identity is irrevocably constituted by relationships with other

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uses the term *haecceitas* to describe the unique dignity not only of human persons but of other created beings. Every created being has a distinct “thisness” that distinguishes it from other creatures and that makes it God-like in its specificity. By referring to the inherent dignity and uniqueness of each particular being, the notion of *haecceitas* places great emphasis on the subjective core of all living things. Delio, *A Franciscan View of Creation*, 37-39.

806 Dalton, *Ecotheology and the Practice of Hope*, 73. McFague argues in a similar vein that our particular role in the world ought to be understood “not as the measure of all things, but as the measurer – the ones who can admire, reflect on, take care of all the rest.” McFague, *A New Climate for Theology*, 47.

807 Santmire, “Healing the Protestant Mind,” 75.


beings.\textsuperscript{812} “Who we are,” then, is in some sense “who they are,” writes McFague; that is, “whatever we are and have is based in and derived from those others.”\textsuperscript{813}

For developing this relational sense of identity, RCEE can propose a kinship model, one that views humans and other-than-humans as ontological siblings. The common origin of creation revealed by contemporary science supports humanity’s kinship with the rest of creation.\textsuperscript{814} That is, since we share a common ancestry with the rest of creation, we are all “genetic kin in the great community of life.”\textsuperscript{815} Kinship is not to be identified here with the romantic personification of the natural world. The kinship model reinforces humanity’s integral link with other creatures as well as the co-existence of the Earth’s beings in a state of belonging.\textsuperscript{816} Adopting a kinship approach can help students to open their hearts to deep communion with the rest of creation; through such universal communion, students can more intimately connect with other creatures and be united “in fond affection with brother sun, sister moon, brother river and mother earth.”\textsuperscript{817}

In highlighting the deep communion pervasive in creation, the kinship model enables us to see every being as a subject rather than as an object. According to this vision, when we view all

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\item McFague, \textit{The Body of God}, 119-120.
\item Kinship may be a felicitous image, but it is based on scientific truth. Evolutionary biology reveals that atoms in the human brain have much in common with atoms in plants and animals. More than 99% of the active genes in human beings are identical with those of chimpanzees. With these examples, Ian G. Barbour argues that humanity’s kinship with other-than-humans is supported by modern science. Ian G. Barbour, “Scientific and Religious Perspectives on Sustainability,” in \textit{Christianity and Ecology}, 388.
\item Francis, \textit{Laudato Si’}, #92. Pope Francis finds this expression in the spirituality of St. Francis. In his \textit{Canticle of the Creatures}, St. Francis sings of his kinship with all creation: the sun, the moon and the stars, the wind and the earth, and fire and water. Francis sees human and non-human creatures as siblings of a single family, all of whom give praise and glory to God. The familial model reminds us that we are as dependent upon the elements of creation as the elements of creation are dependent upon us. St. Francis of Assisi, “The Canticle of the Creatures,” in \textit{Francis of Assisi: Early Documents}, Vol. 1, eds. Regis J. Armstrong, J. A. Wayne Hellmann, and William J. Short (Hyde Park, NY: New City Press, 1999), 113-114. See also Delio, \textit{A Franciscan View of Creation}, 19-20.
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beings as brothers and sisters, we can understand that they exist as subjects relating to other subjects; they are “present to other components of the universe in a subject-to-subject relationship.”818 If each being as subject is capable of communion with other beings as subjects, then the world itself can be understood as “a communion of subjects,” not as “a collection of objects.”819 The kinship between humanity and the rest of creation implies, in Martin Buber’s suggestive phrase, an “I-Thou” rather than an “I-It” relationship.820 In an “I-Thou” relationship, the rest of creation is more than a natural phenomenon vulnerable to anthropocentric objectification; other creatures are affirmed as ends in themselves, and not merely as means to an end.821 With its emphasis on the “thou” dimension of other-than-humans, RCEE can correct the tendency to objectify other members of the Earth community, and heighten an appreciation of how each being is a genuine subject. When we recognize other creatures as possibilities for intersubjective communion and an I-Thou relation, our kinship identity is enhanced.

An understanding of kinship in terms of ‘I-Thou’ further highlights a mutual relationship between human beings and other-than-humans. As Buber reminds us, we influence others as we, in turn, are influenced by others: “[m]y Thou affects me, as I affect it.”822 The relationship is reciprocal; the human and the rest of creation are heavily interdependent and sustained in their mutual presence. Accordingly, humans no longer hold unrestrained power over other natural creatures. It is only in the context of cosmic mutuality that the human and the other-than-human will flourish. The kinship model calls us to “relinquish our radical self-centered ‘I’ and recognize

818 Berry, “The Ecozoic Era,” 196. McFague describes the subject-subject relation as “the agent-agents model,” while she calls the subject-object relation as “the agent-thing model.” In her view, a sustainable future calls us to move from a subject-object model of being to a subject-subject one. McFague, Super, Natural Christians, 95-96.

819 Swimme and Berry, The Universe Story, 243.

820 In his book I and Thou, Martin Buber describes two types of relationships between humans and other-than-human – “I-It” and “I-Thou.” According to Buber, while we, in the I-It relation, simply experience the other as an inactive object (a subject-object relation), we, in the I-Thou relation, encounter the other as an active subject (a subject-subject relation). For instance, when we approach a tree in terms of an I-It relation, we can classify it and study its structure, but the tree remains a mere object with an instrumental value for us. When we enter into an I-Thou relation with that same tree, however, we become “bound” to the inherent value of the tree as a subject, and our relationship becomes direct and mutual. Martin Buber, I and Thou, trans. Ronald Gregor Smith (New York, NY: Charles Scribner’s Sons, 1958), 3-12.


822 Buber, I and Thou, 15.
When we seek relational bonds, and renounce all attitudes of possession and/or ownership of nature, we can then move “in an interactive circle of mutual kinship.” Through mutual kinship, we are not merely caretakers of Earth, but friends with the rest of creation. A fellow-feeling toward other creatures enhances our interaction. Dynamic interaction further enhances our relational identity. Indeed, it is in this mutually enhancing manner that our ecological identity is fully expressed.


This section aims at providing spiritual principles in tune with the cosmological process. As we have seen, Berry argues that cosmogenesis mirrors the Trinitarian God in its principles of differentiation, subjectivity, and communion. His insight implies that with more sensitive attuning to these principles, our spirituality can be brought into the trinitarian dynamism of the divine presence. Extending Berry’s vision, we now turn to how each principle reveals the presence of the Triune God in creation and how RCEE can enhance our spiritual sensitivity in relation to each principle.

a. Differentiation: Evoking the Sense of the Sacramental in the Variety of Life

The principle of differentiation suggests that the whole of creation, in all its wonderful diversity, is essentially sacramental. When differentiation is understood as reflecting God the Father, the source of all reality, creation’s variety helps us to find the divine creativity and to sense “the infinite fecundity of God.” In this view, every creation is considered as an aspect of divine self-diffusive goodness in the world. As a mode of divine self-expression, each creation, then, is

823 Delio, Warner, and Wood, Care for Creation, 183.
824 Johnson, Women, Earth, and Creator Spirit, 28.
825 In developing a notion of ‘mutuality,’ Franciscan theologians Michael and Kenneth Himes have recovered the concept of ‘companionship.’ Following St. Francis’s example, the Himes brothers argue that the rest of creation is less an object (It) to use and abuse, and more a subject (Thou) that offers companionship. For the Himes brothers, companionship implies “mutuality” and excludes “the reduction of either side of the relationship to a tool of the other’s purposes.” All creation thrives in the midst of mutually supportive relationships. Himes, Fullness of Faith, 109 (internal quotation), 110-11.
intended to manifest the richness of God’s creative power from which it emerges.\textsuperscript{828} “[N]o creature is excluded from this manifestation of God.”\textsuperscript{829} From this perspective, it can be said that all of creation is a “sacramental expression of the Creator” and that we live in a “sacramental universe.”\textsuperscript{830} Every star, every animal, and every tree is fundamentally sacramental in the sense of “making real God’s invisible presence tangible in time and space.”\textsuperscript{831} By evoking this sacramental sensibility in the manifold variety of creation, RCEE can help learners to become aware of the Divine immanent in the world. Once students can see God in all things, they will be able to proclaim, “the more diverse the creation, the greater the glory of God.”\textsuperscript{832}

Sacramental sensibility, which the principle of differentiation promotes, is not limited to seeing other-than-humans as merely symbols of God, but affirms their capacity to reveal the divine presence.\textsuperscript{833} Since God is truly present in our highly differentiated universe, the rest of creation, which emerges from within that context, is not just “an arbitrary sign,” but “really shares in and expresses the qualities that exist in an infinite degree in its Creator.”\textsuperscript{834} In other words, all of creation has an “innate value” via its participation in the continuing revelation of the Divine, and

\textsuperscript{828} Hunt, \textit{Trinity}, 101, 107; Delio, Warner, and Wood, \textit{Care for Creation}, 43. Bonaventure’s metaphor of a stained-glass window offers a helpful educational way for explaining the sacramentiality of the variety of creation: “Indeed, in every creature there is a refugelence of the divine exemplar. …As you notice that a ray of light coming in through a window is colored according to the shades of the different panes, so the divine ray shines differently in each creature and in the various properties.” Bonaventure, \textit{Collations on the Six Days}, 179. For Bonaventure, every creation is like a window displaying myriad shapes and colors, media that open up the divine reality. As the stained-glass window produces an array of color when light pours in, in a similar fashion, creatures reveal the divine creativity in their own ways. As God expresses God’s self in creation, creation, in turn, expresses the Creator in each individual being and its unique qualities. Delio, \textit{A Franciscan View of Creation}, 28.

\textsuperscript{829} Francis, \textit{Laudato Si’}, #85.


\textsuperscript{832} Delio, \textit{A Franciscan View of Creation}, 39.

\textsuperscript{833} When creation’s value lies only in its symbolism, our sacramental sensibility can be limited to utilitarianism. In fact, Christian sacramentalism traditionally has tended to see the natural world simply as a way to reach God or as a means of attaining spiritual states. For overcoming this utilitarian tendency, the focus of sacramental sensibility needs to be placed on creation itself, that is, on creation’s capacity to manifest the divine presence. See Toolan, \textit{At Home in the Cosmos}, 38; McFague, \textit{Super, Natural Christians}, 172.

\textsuperscript{834} Terence L. Nichols, \textit{The Sacred Cosmos: Christian Faith and the Challenge of Naturalism} (Grand Rapids, MI: Brazos Press, 2003), 66. Similarly, Francis states: “[E]ach creature reflects something of God and has a message to convey to us.” Francis, \textit{Laudato Si’}, #221.
not just a “symbolic value” for the mediation of the divine presence. The diversity of creation can be experienced as the prime mode of the divine presence and becomes a locus for encounters with the abundance and majesty of God, not simply a reminder of the divine goodness.

In cultivating a sacramental sensibility through the variety of life, RCEE can lead us to open ourselves to the experience of a deep sense of wonder. When we have a profound encounter with the divine presence “in all its manifold relationships” in creation and find “the inexhaustible riches of God,” wonder is the natural response to the sacramental experience. In his masterpiece, The City of God, St. Augustine shares a sense of wonderment, arising out of encounters with the divine presence in the diversity of creation:

Shall I speak of the manifold and various loveliness of sky, and earth, and sea; of the plentiful supply and wonderful qualities of the light; of sun, moon, and stars; of the shade of trees; of the colours and perfume of flowers; of the multitude of birds, all differing in plumage and in song; of the variety of animals, of which the smallest in size are often the most wonderful, – the works of ants and bees astonishing us more than the huge bodies of whales?

As this extract implies, to wonder based on sacramental sensibility is to appreciate the extraordinary power of things to be, and to recognize their divine origin. Wonder, here, is neither merely a special kind of emotion nor a way of knowing; it is, rather, an opening into the “numinous presence whence all things come into being.” By approaching the variety of life

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835 McDougall, The Cosmos as the Primary Sacrament, 73. Despite my emphasis on the innate value of creation, I do not deny its symbolic value; that is, each entity in creation can be a direct revelation of the divine as well as a symbol for the Divine.

836 See Edwards, Ecology at the Heart of Faith, 77-78; Nash, Loving Nature, 112-113; Sallie McFague, Life Abundant: Rethinking Theology and Economy for a Planet in Peril (Minneapolis, MN: Fortress Press, 2001), 149-150. The emphasis on creation’s sacramental nature does not imply an identification of the Divine with creation, as in pantheism. God and creation, to use a metaphor from Niels Henrik Gregersen, are like “fire and iron, which constitute one reality as long as the iron is heated up by the fire, but become two quite different things, when taken apart.” Niels Henrik Gregersen, “Christology,” in Systematic Theology and Climate Change: Ecumenical Perspectives, eds. Michael S. Northcott and Peter M. Scott (London, UK: Routledge, 2014), 38.


839 Berry, The Great Work, 49. In this respect, it can be said that “to deepen our capacity to appreciate the wonders of nature” is “an act of faith.” Canadian Conference of Catholic Bishops, “You Love All That Exists… All Things Are Yours, God, Lover of Life,” #15.
with this openness to wonder, RCEE can aid learners to awaken enchantment in the sacred breadth of creation. Students will be able to broaden their spiritual sensitivity, as they are “astonished and overwhelmed at the extravagant profligacy of creation” which erupts from the divine source.840

The sacramental sensibility, which results in a deep experience of wonder, further motivates us to praise God. When we marvel at the immensity and grandeur that creation’s biodiversity generates, our hearts are filled with admiration and are stimulated to praise the Creator God, the foundation of all that exits.841 St. Francis’s ‘Canticle of the Creatures’ expresses this awestruck praise:

Praised be You, my Lord, through Sister Moon and the stars,
in heaven You formed them clear and precious and beautiful.
Praised be You, my Lord, through Brother Wind,
and through the air, cloudy and serene, and every kind of weather,
through whom You give sustenance to Your creatures.842

The hymn of St. Francis suggests that the diversity of creation can enhance our praise of God. The more we wonder at the spectacle of the countless diversities of creation, the more deeply we praise the glory of God, who enables “the continuous eruption into being of those myriad forms.”843 While the rest of creation can be seen as assisting our praise of God, this view does not suggest that other creatures need human beings to voice their praise of God. On the contrary, all of creation is already praising the divine goodness and majesty in its own distinctive way.844 As Moltmann writes, “in the community of creation ‘everything that has breath’ praises the Lord.”845 In this sense, it can be said that our praise of the Divine is not merely a privileged human practice but rather a part of the “participation in the great liturgy of the universe.”846

840 Brockelman, Cosmology and Creation, 80.
841 Francis, Laudato Si’, #87, #238.
842 For entire text, see St. Francis, “The Canticle of the Creatures,” 113-114.
843 Brockelman, Cosmology and Creation, 79. See also Vincie, Worship and the New Cosmology, 24, 54; Delio, A Franciscan View of Creation, 12, 19.
845 Moltmann, God in Creation, 71.
846 Berry, The Christian Future and the Fate of Earth, 66. See also Bauckham, Living with Other Creatures, 205. From this perspective, the sacramental sensibility based on the principle of differentiation does not support the model of human priesthood which sees the role of the human as mediating between God and the rest of
highlighting this view, RCEE can encourage learners to immerse themselves in creation’s biodiversity and to be more attentive to the sacramental expressions of all of creation. When students become more sensitive to the manifold praises of creation and are able to praise God with other creatures, they will be in a better position to respect “the otherness of the creatures in their own integrity” and to resist “the relentless trend towards total humanizing of the world.”

b. Subjectivity: Appreciating the Divine Logos in the Beauty of Creation

The principle of subjectivity helps us to appreciate the divine Logos embedded within and arising out of the unfolding world. When we reflect on the Second Person of the Trinity in terms of subjectivity (i.e., the principle of inner articulation), we can understand that the Word is intrinsic to the whole evolutionary process of the universe and holds the expressive power through which the world comes into existence. While at one level, the divine Logos does not determine the creative expressions of the world, at another level, the inner articulation of the Word comes to expression through the materiality of creation and seeks concrete embodiment in every creation. From this perspective, the incarnation of the divine Logos is seen as emerging from within the world rather than from above. As Leonardo Boff writes, “[t]he incarnation is already present at the beginning of the universe. The Son who was always within, accompanying the evolutionary process—Christus evoluter—comes into bloom.” Thus, attention to the creation. As Richard Bauckham contends, such an idea of humanity as creation’s priest can deprive creation’s own praise of God. Bauckham, “Joining Creation’s Praise of God,” 49, 51.

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847 Ibid., 52.

848 In the Christian tradition, the divine Logos is most often used to indicate the Son of God, whom the prologue of the Gospel of John proclaims to have become flesh. While the original Greek word ‘λόγος (logos)’ can be translated in different ways, including ‘Word,’ ‘speech,’ ‘principle,’ ‘rationality,’ I use the term ‘divine Logos’ and its translation as ‘Word’ interchangeably to highlight the expressive power of the Son. See Niels Henrik Gregersen, “Deep Incarnation: Why Evolutionary Continuity Matters in Christology,” Toronto Journal of Theology 26, no. 2 (2010): 176, 179; Robert Govaerts, Cosmic Prayer and Guided Transformation: Key Elements of the Emergent Christian Cosmology (Eugene, OR: Pickwick Publications, 2012), 35.


850 These authors describe incarnation as the emergent manifestation ‘from within’ the world: Francis, Laudato Si’, #236; McDougall, The Cosmos as the Primary Sacrament, 121; Ludwig, Reconstructing Catholicism, 199; Bruce Sanguin, Darwin, Divinity, and the Dance of the Cosmos: An Ecological Christianity (Kelowna, BC: CopperHouse, 2007), 43.

851 Boff, Cry of the Earth, Cry of the Poor, 178. In this sense, the incarnation is not simply an isolated event in which the Son came into the world at a certain period, but rather the emergent manifestation of the Word that is integrally united with creation. Delio, Christ in Evolution, 56; Berry and Clarke, Befriending the Earth, 73, 78. According to this line of thought, the presence of Jesus Christ is not merely limited to a particular historical time but is open to the whole evolutionary process. As Gregersen writes, Jesus Christ is “not a bygone historical individual,
interiority of creation leads us to find the “inner positive relation between the world and the Word.” Since they are bound together as part of a single, continuous whole, we know the sacred depth of creation through the divine Logos, and we comprehend the external expression of the inner Word through every creation.

To develop a sense of the divine Logos within the world, RCEE can encourage learners to be attentive to the beauty of creation. From the perspective of subjectivity, every creation can be seen as emerging through divine inner articulation and thereby being endowed with “its own inner radiance” which reflects the Word. “Like a crystal lamp illumined from within by the light of Christ,” each creation, in its own beauty, radiates the light of the Word. In this sense, the beauty that we encounter in the natural world can be understood as “revelatory of the creative activity of the Word.” Stemming from the interior, the beauty of creation manifests an outward appearance of the divine Logos and participates in the divine reality. That is, the beauty revealed by each creation is not simply a decoration of the Word but an extension of the Word. The sense of the divine Logos, therefore, can be deepened through the experience of natural beauty. By inviting students to gaze upon the beauty of creation, RCEE can stimulate them to sense the divine Logos within the world and to realize that the world is full of divine splendour.

When learners appreciate the divine Logos in the beauty of creation, their spiritual sensitivity can be further enhanced to see the intrinsic value of each creation. As the principle of subjectivity implies, the rest of creation is not primarily defined by its relation to humanity but rather carries...
its own value as a revelation of the divine Logos.\footnote{59} The beauty of creation, in its revelatory character, affirms this intrinsic worth hidden in every creation and highlights its own unique identity which cannot be substituted. In this sense, creation’s beauty, as a manifestation of the Word, relates more to the sacred depth of creation rather than its externality and “goes beyond the mere considerations of utility.”\footnote{60} The more we appreciate the depth of natural beauty through which the Word shines, the more we come to recognize that all creatures have “an intrinsic value independent of their usefulness.”\footnote{61} Whether or not it is useful or attractive to us, all of creation is beautiful in its own particular way and has irreplaceable value in itself.\footnote{62} “By learning to see and appreciate beauty,” therefore, we can learn “to reject self-interested pragmatism” and to stop treating the rest of creation “as an object to be used and abused without scruple.”\footnote{63}

In nurturing a spiritual sensitivity that recognizes the intrinsic beauty and value of creation, RCEE can help learners to develop a sense of reverence for every creation. When we are truly moved by creation’s beauty and its sacred aspect, it is a natural response to honour that creation.\footnote{64} In fact, every creation, as a participating subject in the divine Logos, has inherent beauty and absolute dignity. By virtue of its capacity for articulating the incarnate Word, all of creation deserves to be revered for what it is in itself; no creation can be deemed a mere ‘thing’ or be considered second class.\footnote{65} From this perspective, it is appropriate to understand that to respect the rest of creation is to have reverence for the divine Logos. As John Mizzoni insists,

\footnote{59} See Nash, \textit{Loving Nature}, 58; Hunt, \textit{Trinity}, 107; Case-Winters, \textit{Reconstructing a Christian Theology of Nature}, 95.\footnote{60} Kureethadam, \textit{Creation in Crisis}, 297. See also Haught, “Religious and Cosmic Homelessness,” 167; Nieuwenhove, “Retrieving a Sacramental Worldview in a Mechanistic World,” 542.\footnote{61} Francis, \textit{Laudato Si’}, #140.\footnote{62} See Patrick T. McCormick, \textit{God’s Beauty: A Call to Justice} (Collegeville, MN: Liturgical Press, 2012), 121, 148. McCormick argues that the traditional aesthetic approach tends to be limited to seeing the rest of creation in terms of its visual appeal, and suggests developing a new approach that sees the deeply hidden beauty; in his words, we ought to move from “a derivative aesthetic, which is only interested in nature to the degree that it pleases and entertains us,” to “an autonomous aesthetic, which recognizes the intrinsic dignity and worth of all of nature.” Ibid., 123, 148.\footnote{63} Francis, \textit{Laudato Si’}, #215. In this regard, John Paul II states that “[t]he relationship between a good aesthetic education and the maintenance of a healthy environment cannot be overlooked.” John Paul II, \textit{Peace with God the Creator, Peace with All Creation}, #14. See also Francis, \textit{Laudato Si’}, #215.\footnote{64} Berry, \textit{The Dream of the Earth}, 10.\footnote{65} See Delio, Warner, and Wood, \textit{Care for Creation}, 204; Cummings, \textit{Eco-Spirituality}, 36.
“we should reverence creation, as much as we reverence Christ.”866 This view does not mean that creation and Christ are identical or deserve the same veneration; rather, it suggests that a profound respect for each creation is a way to reverence the divine Logos.867 Therefore, the reverence evoked in the beauty of creation opens a pathway toward the Word. By highlighting a reverence for natural beauty, RCEE can encourage students to attune their spiritual sensitivity to the mystery of the Word and help them find the reality of Christ in the natural world.

Although this section focuses on the beauty of creation, it is important not to neglect the destructive and violent dimensions of the natural world. Berry argues that the universe as a whole encompasses not only a story of beauty and majesty, but also a story of violence and disruption; that is, it is like “a drama filled with both elegance and ruin.”868 When we reflect on the entire story of cosmogenesis, we can understand that the universe has evolved through destructive processes and that the cosmic evolution has creatively engaged violence and disruption; the beauty of creation often emerges from this inherently difficult situation. Berry explains this fact by citing the example of a supernova explosion, the great collapse of an older star that eventually gives birth to a newer star with different life forms.869 From this perspective, I suggest that educators do not over-romanticize the beauty of creation and help students to understand the destructive and violent dimensions of the natural world, which can be a way of strengthening creative beauty. As Christ reaches to the glory of the Resurrection through His suffering on the cross, the great beauty of creation unfolds by engaging in a continuous struggle with natural forces. A fuller discussion of the role of destruction, violence and suffering in cosmogenesis, and their association with spirituality is beyond the limits of this thesis.

c. Communion: Cultivating the Sense of Koinonia in a Bioregional Community

The principle of communion suggests that the Koinonia, the fellowship of the Holy Spirit, embraces all of creation and brings about its sacred unity.870 When communion is understood as

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867 Cummings, *Eco-Spirituality*, 86, 90.
868 Swimme and Berry, *The Universe Story*, 47.
869 See Ibid., 47-61.
870 While the Greek term ‘κοινωνία (koinonia)’ is generally translated as ‘communion,’ ‘fellowship,’ ‘brotherhood,’ and ‘common life of sharing,’ I use the capitalized form for ‘Koinonia’ to emphasize fellowship of
reflecting the Holy Spirit, the meaning of Koinonia expands to encompass the entire creation beyond the boundaries of the Church or society. In other words, the Koinonia of the Spirit unites “not only the human community, but all creatures in a relationship of kinship.” Just as the Spirit forges the communion of the Trinity, the Koinonia of the Spirit in creation fosters the power of unity and cooperation among all beings. As a result of the deep communion formed by the Spirit, every creation is woven into a relationship of community and exists in the form of communities. In this sense, it can be understood that “the community of creation, in which all created things exist with one another, for one another and in one another, is also the fellowship of the Holy Spirit.” It follows that to be in communion with the community of creation is a way to be in the Koinonia of the Spirit. Through right communal relationships with the rest of creation, we can be more conscious of our relationship to the Spirit.

In order to cultivate the sense of the Koinonia, RCEE can lead students to focus on a bioregional community. A bioregion, according to Kirkpatrick Sale, is “any part of the earth’s surface whose rough boundaries are determined by natural characteristics rather than human dictates, distinguishable from other areas by particular attributes of flora, fauna, water, climate, soil, and landforms.” As “an identifiable geographical area of interacting life systems,” each bioregion

the Holy Spirit. For definitions of koinonia, see Anne Primavesi, Cultivating Unity within the Biodiversity of God (Salem, OR: Polebridge Press, 2011), 17-18.

871 Edwards, Jesus the Wisdom of God, 119. See also Jürgen Moltmann, The Spirit of Life (Minneapolis, MN: Fortress Press, 1992), 9-10; Edwards, Breath of Life, 118-121. In this chapter, I capitalize ‘Spirit’ to distinguish the Holy Spirit from other similar spirit-related words (the human spirit, community spirit, and so forth).


874 Moltmann, The Spirit of Life, 10.

875 See Edwards, “For Your Immortal Spirit Is in All Things,” 65; idem, Breath of Life, 179.

876 Although the Spirit permeates Earth as a whole, focusing on a bioregional community in which we reside is effective for concretely experiencing the Koinonia of the Spirit. By inviting learners to be attentive to their bioregion, RCEE can help them cultivate a sense of Koinonia in a specific community of creation, rather than in some generalized planetary context.

is interdependently related to one another and becomes a life community where various members
in this particular bioregion are sustained by communal relationships.\textsuperscript{878} In this view, the
boundaries of a bioregional community are based on the interaction and the connection among
human beings, the soil, water, plants, animals, and the landscape, rather than on the separating
lines of political borders.\textsuperscript{879} Such a perspective of a bioregion is helpful for us to understand the
Koinonia of the Spirit that works beyond the artificial boundaries and thereby holds all things
together. That is, the Spirit urges “the formation of community across the boundaries of faith and
nation,” and bioregions are witnesses to the power of the Spirit.\textsuperscript{880} In this respect, a bioregional
community can be understood as the locus where the Koinonia of the Spirit is vividly embodied.
The more we are authentically integrated within a bioregional community, the better we
experience the Koinonia of the Spirit that pervades and sustains the community of creation.\textsuperscript{881}

In highlighting the Koinonia of the Spirit expressed in a bioregional community, RCEE can
encourage learners to promote spiritual intimacy with their natural surroundings. As the principle
of communion implies, the Spirit is a unifier or a uniting force who “brings together all of
creation into one common biotic family,” and is intimately present at the heart of the community
of creation.\textsuperscript{882} From this perspective, the bioregional community we inhabit does not simply
assume a physical form but holds a spirit power with which to be reckoned.\textsuperscript{883} By becoming
intimate with our local bioregion, we can be immersed in the Koinonia of the Spirit that leads
“all creation into a peaceable relationship with itself.”\textsuperscript{884} As we grow in the sense of the
Koinonia within a bioregional community, our spiritual intimacy with the rest of creation also
intensifies. That is, when we live in intimate interaction with our natural surrounding

\textsuperscript{878} Berry, \textit{The Dream of the Earth}, 166, 169. See also Berry, \textit{The Sacred Universe}, 50-51.

\textsuperscript{879} Michael Vincent McGinnis, “The Bioregional Quest for Community,” \textit{Landscape Journal} 19, no. 1-2
(January 2000): 85. Although bioregions have their own boundaries, they are really only circumscribed and defined
by transitional regions, rather than strict borders. These boundaries are not rigid, as in political ones, but permeable,
and may be marked by ecotones. John Charles Ryan, “Humanity’s Bioregional Places: Linking Space, Aesthetics,

\textsuperscript{880} Grey, \textit{Sacred Longings}, 114.

\textsuperscript{881} As the unique qualities and union of each regional community reveals, the Koinonia of the Spirit that
empowers the community of creation creates “a unity which is never uniformity but a multifaced and inviting
harmony.” Francis, \textit{Evangelii Gaudium}, #117.

\textsuperscript{882} Wallace, \textit{Finding God in the Singing River}, 7. See also McDonagh, \textit{To Care for the Earth}, 119.

\textsuperscript{883} Berry, \textit{The Great Work}, 88; Hart, \textit{Sacramental Commons}, 201.

community, our spiritual sensitivity grows to encompass the other beyond our ego boundaries and widens to see the rest of creation as a spiritual companion. In and through the spiritual bond between ourselves and our natural surrounding community, we can continuously pursue a spirituality that transcends our narcissistic individualism and is engaged with the Koinonia.

When the sense of the Koinonia is cultivated through intimacy with a bioregional community, the natural outcome is a sense of joy. An intimate relationship with a bioregion enables us to see the community to which we belong as “a communion of subjects” rather than an arrangement of isolated objects. That is, the world is not a lonely island but “an integral natural community” in which all of creation enjoys spiritual companionship in the Koinonia. An encounter with this deeper and broader communion awakens within us a joyous attention to the community of creation beyond individual self-absorption and selfishness. By means of a greater engagement with the Koinonia in the larger community, we realize that the world is intrinsically “a joyful mystery” rather than simply “a problem to be solved.” Although a recognition of the ecological destruction of the planet reminds us of the great difficulties we face, a spirituality based on the Koinonia of the Spirit encourages us to focus on “a sense of joy in the world” and to find “the gift of delight in existence.” By emphasizing a joyful spirituality flowing from the Koinonia, RCEE can inspire us to celebrate the community of creation. Through a delightful celebration of community, we will be more passionately able to seek the sacred unity with the rest of creation and thereby respond to the Spirit who calls all of creation into a communal


886 This deep sense of intimacy with a bioregional community not only enhances a communal spirituality but also translates into a way of avoiding the degradation of life communities. As Berry articulates, “[o]nly intimacy can save us from our present commitment to a plundering industrial economy.” Berry, *The Great Work*, 99.

887 Swimme and Berry, *The Universe Story*, 199, 243; Berry, *The Great Work*, 16, 82; idem, *The Christian Future and the Fate of Earth*, 63, 75.

888 Berry, *The Dream of the Earth*, 179.


890 Francis, *Laudato Si’*, #12.

891 Berry and Clarke, *Befriending the Earth*, 110. Emphasis on a sense of joy does not entail neglect of the world’s problems. Rather, finding joy and delight in the community of creation can bring about great enthusiasm for coping with the difficulties of the world. When our heart is full of joy in the Spirit, we will be more motivated to act on behalf of our world. It is “joy and merrymaking,” as McCormick notes, “that will transform and animate our hearts and make creation sustainable.” McCormick, *God’s Beauty*, 116. See also Jay B. McDaniel, “God, Sustainability, and Beauty,” *Journal of Religion & Society*, Supplement Series 3 (2008): 117.
relation; we will find hope and the psychic-spiritual energy that we will need to address the enormous challenges posed by the ecological crisis.  

B3. Engaging in Ethical Commitments for the Well-Being of the Earth Community

The purpose of this section is to develop ethical guidelines drawn from the principles of differentiation, subjectivity, and communion. As Berry argues, these principles not only carry anthropological and spiritual implications, they also suggest a basis for an ethical formation.  

Through the lens of these principles, this section will examine how our present culture and direction in the modern world violates the evolutionary process of the whole world and how RCEE can suggest ethical imperatives for the well-being of the Earth community.

a. Differentiation: Promoting Ecological Pro-life beyond Mono-cultures

The principle of differentiation, which reveals the universe’s drive toward creative diversity, challenges us to reflect on our anthropocentric mono-cultures. As opposed to the cultivation of individual diversity, the modern industrial paradigm, as well as economic globalization, value efficiency and productivity that encourage homogeneity, standardization, and an invariant process of multiplication. This violates the basic direction of the Earth’s processes that tend toward constant creative differentiation. Whereas the Earth community evolves through “a highly differentiated complex of life systems,” the human world, today, seeks to find its development only in “a vastly extended sameness.” This modern preference for mono-cultures

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892 See Swimme and Berry, The Universe Story, 268; Berry, The Sacred Universe, 48.


894 By using the term ‘mono-cultures,’ I indicate human activities which demand uniformity for more profit and which ignore the well-being of other species. Examples of mono-cultures are found in the mass-production processes of industrial technology and global trade, monocrop farming of industrial agriculture, and selective forms of fishing that focus on the exploitation of certain species.

895 O’Sullivan, Transformative Learning, 148, 231-232; Berry, The Great Work, 149, 163; McDonagh, To Care for the Earth, 94; Scheid, The Cosmic Common Good, 76.

896 Berry, The Christian Future and the Fate of Earth, 120; idem, The Great Work, 163; O’Sullivan, Transformative Learning, 231. See also Rasmussen, Earth Community Earth Ethics, 114.

897 Berry, The Great Work, 147. This problem is particularly destructive in agribusiness. Industrial agriculture uses land on an enormous scale for producing a single crop, and thereby boosts agricultural yield. Although this monocropping can effectively increase profits through mass production, it causes the diverse ways of traditional farming to disappear, accelerates the rates of soil loss, and diminishes the variety of life in its ecosystems. Northcott, The Environment and Christian Ethics, 279-280, 312; Kureethadam, Creation in Crisis, 225-226;
results in a lack of respect for other species and reduces them to a commodity status. As the diverse members of the Earth community are disregarded and destroyed, their creative outpouring and sacramental expressions are diminished and weakened. Humanity’s monocultural focus favouring the myth of progress contributes to the Earth becoming a “wasteworld rather than wonderworld.”

Against the human-centered mono-cultures of the contemporary world, the principle of differentiation leads RCEE to promote an ecological pro-life stance that stresses respect for all life. From the perspective of differentiation, each creation has its own unique character that emerges from the divine fecundity, and therefore all life, not merely human life, is valuable. In this context, the task and the concern for protecting humans cannot be separated from the defense of other-than-humans. As John Paul II states, “[r]espect for life and for the dignity of the human person extends also to the rest of creation.” By widening the circle of respect for life, RCEE can help learners to broaden pro-life issues such as abortion, euthanasia, and the abolition of the death penalty so that they may develop ecological pro-life strategies that highlight the protection of all of creation. To promote ecological pro-life does not require changing the pro-life agenda of the Catholic Church, but it does ask for a more extended, integrative approach to the Church’s concern about preserving life. While respect for life in the human womb is an important concept, the traditional pro-life approach alone is not enough for overcoming the problems of pro-monocultures unless it encompasses the entirety of creation in the cosmic womb. If there is a lack of respect for other species, if we fail to protect other life forms, then

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I use the term ‘ecological pro-life’ to emphasize respect and care for all life forms. The original idea of ecological pro-life is adopted from the insight of the Catholic Bishops of the Philippines, who describe the ecological crisis as “the ultimate pro-life issue.” Catholic Bishops of the Philippines, “What is Happening to Our Beautiful Land?”, in *And God Saw That It Was Good*, 317.


protection of human life also withers away. Pro-human life is a derivative of pro-ecological life; to be authentically pro-life, one has to be authentically pro-Earth, and vice versa.

In order to develop and promote ecological pro-life, RCEE can encourage learners to view biodiversity through the lens of differentiation, and help them realize the importance of species preservation. The principle of differentiation, as examined earlier, reminds us that various species of the Earth community are the ongoing result of cosmic evolution and divine self-expression. Through biodiversity, we experience both the evolving creativity of cosmogenesis and the inexhaustible richness of the Divine. On this score, human destruction of biodiversity not only invalidates some hundreds of millions of years of the Earth’s creative development but also silences modes of divine manifestation. To put it differently, aborting or destroying the life of other species is a form of biocide and deicide. While one may argue that destruction of biological diversity can be restored by our efforts to reverse the damage, we must realize that the value of extinct species is irreplaceable and irretrievable. Like every human life, the uniqueness of each species is a onetime only endowment that will never occur again. From this perspective, protecting biodiversity should be the primary goal of ecological pro-life. By

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907 This is not to say that human intervention for ecological restoration is unimportant. Rather, it stresses the importance of preserving biodiversity before it is in great peril.

908 In this regard, Berry calls attention to the seriousness of the ‘extinction’ of species that we are bringing about. Extinction is a perpetual reality because there is no possibility for a revival if a species is terminated. Berry, *The Dream of the Earth*, 9; Swimme and Berry, *The Universe Story*, 246-247. See also Sean McDonagh, *The Greening of the Church* (Maryknoll, NY: Orbis Books, 1990), 87-89.
preserving and promoting the variety of life, we will be able to increase and strengthen not only “evolutional creativity” but also “the diversity of sacramental experience.”

In emphasizing protection of biodiversity, RCEE can help students to promote ecological pro-life in terms of neighbourly love rather than mere environmental obligation. According to the principle of differentiation, neighbourhood in the unfolding world has no preordained boundaries, and likewise the idea of neighbourly love encompasses all members of the Earth community. In this view, the biblical mandate to ‘love your neighbour as yourself’ is expanded “from selected human neighbors to the whole-Earth neighborhood.” Based on this expanded purview of neighbourly love, ecological pro-life resists a utilitarian approach to biodiversity. While a monocultural stance on other-than-humans is merely interested in their pragmatic value for human uses or their potential market value, ecological pro-life regards other life forms as possessing an intrinsic value, apart from human interest; whether other species are useful for human needs or not, ecological pro-life seeks to protect them for their own sake. In this sense, it is appropriate to understand that ecological pro-life is advanced through selfless activities of care for preserving other species. When one’s efforts for the protection of biodiversity are pursued through the practice of neighbourly love, authentic ecological pro-life values will naturally develop.

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909 Hastings, Whole-Earth Ethics for Holy Ground, 106. To help students actively participate in protecting biodiversity, RCEE can suggest concrete actions: for example, safeguarding species which face extinction, campaigning to stop ruthless exploitations which eradicate habitats of different species, questioning the sale of genetically modified seeds which threaten diverse native plants, consuming local seasonal foods which defends regional food distribution systems, and supporting restorative works which eliminate the pollution of ecosystems and improve their quality. See Belden C. Lane, Ravished by Beauty (New York, NY: Oxford University Press, 2011), 166; McDonagh, The Greening of the Church, 88; Delio, Warner, and Wood, Care for Creation, 165; Francis, Laudato Si’, #37, #42.

910 Rasmussen, Earth Community Earth Ethics, 260-261; Johnson, Quest for the Living God, 198; Hastings, Whole-Earth Ethics for Holy Ground, 6, 99; Patricia M. Mishe, “The Integrity of Creation: Challenges and Opportunities for Praxis,” in Christianity and Ecology, 594; Stephen Rand, “Love Your Neighbour as Yourself,” in The Care of Creation, 143-146.

911 Hastings, Whole-Earth Ethics for Holy Ground, 124.

b. Subjectivity: Nurturing Green Asceticism beyond Consumerism

The principle of subjectivity, which highlights the sacred depth of each creation, raises a question about consumerism. From the perspective of subjectivity, all of creation, in its subjective depth, carries its own intrinsic value and articulates the numinous mystery. However, consumerism objectifies other forms of life for human consumption, and reduces their value and depth to a commodity that can be bought and sold. When the rest of creation is simply a commodity, it turns into an object for markets and ceases to be acknowledged or honoured. With its emphasis on other-than-humans as mere commodities for human use, consumerism leads to a disregard for their inherent rights. While every being, in view of subjectivity, has “the right to be, the right to habitat, and the right to fulfill its role in the great community of existence,” consumerism abuses the rights and dignity of the rest of creation by promoting the attitude that “only the human is capable of having rights.” As a result, the Earth community as a whole is increasingly colonized by capital and is desacralized; that is, it is reduced to “a heap of material objects for unbridled consumption and wanton destruction.” As McDaniel writes,

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913 According to Laura M. Hartman, consumerism is defined as “an ideology that sees consumption as an identity-forming, meaning-making activity.” McFague similarly defines consumerism as “a cultural pattern that leads people to find meaning and fulfillment through the consumption of goods and services.” Laura M. Hartman, “Consumption,” in Routledge Handbook of Religion and Ecology, eds. Willis Jenkins, Mary Evelyn Tucker, and John Grim (New York, NY: Routledge, 2017), 318; McFague, Blessed Are the Consumers, x. As these two definitions imply, consumerism does not simply make an issue of consumption itself as a problem; the consumption of material goods is a basic activity embraced by society. A problem with consumerism, which this section questions, is a materialistic attitude toward the world and an overconsuming or gluttonous lifestyle. See McDaniel, “God, Sustainability, and Beauty,” 109.

914 Berry, The Christian Future and the Fate of Earth, 120-121; O’Sullivan, Transformative Learning, 232.


916 Jay B. McDaniel, Living from the Center: Spirituality in an Age of Consumerism (St. Louis, MO: Chalice Press, 2000), 146. In fact, inherent rights are not limited to human beings but are extended to all of creation. The principle of subjectivity implies that every creation possesses its own intrinsic value, a value not assigned by human beings. Based on this view of subjectivity, we can recognize other-than-humans as endowed with inherent rights apart from their usefulness to a dominant subject. Others have issued support for the inherent rights of the rest of creation. See Hart, Sacramental Commons, 135-138; Hastings, Whole-Earth Ethics for Holy Ground, 7-8; Berry, The Christian Future and the Fate of Earth, 50; idem, The Great Work, 5; idem, “An Ecologically Sensitive Spirituality,” Journal of the Society for the Study of Christian Spirituality 5, no. 2 (Fall 1997): 4.

917 Berry, The Sacred Universe, 133. Although human rights ought to be recognized and revered, they are also limited and relative. Human rights and the rights of the rest of creation should be developed hand-in-hand. As Berry writes, “[w]e have human rights. We have rights to the nourishment and shelter we need. ... But we have no rights to deprive other species of their proper habitat. ...We have no rights to disturb the basic functioning of the biosystems of the planet. We cannot own the Earth or any part of the Earth in any absolute manner.” Berry, The Great Work, 5.

918 Kureethadam, Creation in Crisis, 327.
“[w]hen consumerism reigns, the planet itself becomes a collection of objects, not a communion of subjects.”

Consumerism not only damages the value and rights of the rest of creation but also violates our own subjectivity. Whereas every being, through its own inner articulation, participates in the universe’s drive toward a greater sacred depth, consumerism lures us to attach ourselves to an exterior quality that then moves us to desire more than is necessary. In this culture of consumerism, we seek our happiness in the pursuit of material gain, which emphasizes exteriority over interiority. Instead of deepening our interior aspect, we grasp for outside things and substitute self-expression through material acquisitions for our inner fulfillment. As we become more attached to a consumerist lifestyle, we ourselves are consumed by greed and our heart becomes emptier, out-of-touch with our subjectivity. Following this course, we are reduced to self-enclosed manipulated consumers, working merely in order to consume. When we become passive consumers rather than active agents, we simply follow a “use and throw away” logic and become indifferent to the “social responsibility on the part of consumers,” that can be a way to articulate our subjectivity. Although the “interior articulation of its own reality is the immediate responsibility of every being,” we, by following false promises of consumerism, neglect our own role in the Earth community. In this sense, consumerism turns us into irresponsible persons who are unable to appropriately respond to the need of the world as a whole.

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919 McDaniel, Living from the Center, 146.
921 Hathaway and Boff, The Tao of Liberation, 288.
922 See Northcott, The Environment and Christian Ethics, 73; Biviano, Inspired Sustainability, 173, 176; Bartholomew, On Earth as in Heaven, 98; Francis, Laudato Si’, #204.
923 From this perspective, consumerism subverts our subjective identity. In the consumerist world, the basis of the human subject is the act of consumption, and our identity, as such, can be expressed in the proposition: “I buy, therefore, I am.” Delio, Warner, and Wood, Care for Creation, 175.
924 Francis, Laudato Si’, #123, #206.
925 Berry, The Dream of the Earth, 134.
926 Wirzba, Living the Sabbath, 72.
In resisting the direction of consumerism, the principle of subjectivity directs RCEE to nurture green asceticism, aiming at a shift from a “throwaway culture” to a “culture of care.” For this purpose, green asceticism suggests that we adjust our lifestyle choices to respect the intrinsic value and the inherent rights of other subjects. Supporting the subjectivity of each creation, green asceticism particularly encourages us to limit our desires for overconsumption and requires moderation (or temperance) in the use of material goods. Simply put, the path of green asceticism is by way of “subtraction,” not “accumulation.” For developing green asceticism, it is essential to emphasize “a refusal to turn reality into an object simply to be used and controlled” and to teach “clear-minded self-restraint.” Such ascetic efforts, however, should not be imposed as a burdensome duty against our will. Rather, RCEE ought to encourage us to practise an ascetic lifestyle of “voluntary self-limitation.” An essential element of green asceticism is the willingness to make personal sacrifices (or self-restraint) in order to respect the subjectivity of each creation. Indeed, an authentic ascetic action is a self-conscious decision that arises out of our inner depth, not from external constraints.

In stressing voluntary restraint, green asceticism leads us to live in joyful simplicity. When we focus on the sacred depth of reality and seek inner fulfillment, following the principle of subjectivity, we can find satisfaction and happiness in a simpler way of life, rather than attaching ourselves to unnecessary wants or assumed needs. Green asceticism, with its conviction that “less is more,” encourages a simplistic lifestyle, “one capable of deep enjoyment free of the

927 Francis, *Laudato Si’*, #16, #231. By ‘green asceticism,’ I do not mean traditional ascetic practices which stress excessive self-denial. Green asceticism can be understood as disciplined living for the well-being of creation. I use the term ‘green asceticism’ to highlight the moral effort required in said task. One may prefer gentler phrases such as ‘voluntary simplicity’ or ‘living simply,’ which resonate in contemporary culture. Although such phrases are relevant, they do not fully capture the committed nature of human responsibility in an ideal Earth community. See Neil Darragh, “An Ascetic Theology, Spirituality, and Praxis,” in *Eco-Theology*, eds. Elaine Wainwright, Luiz Carlos Susin, and Felix Wilfred (London, UK: SCM Press, 2009), 82-83.


930 Francis, *Laudato Si’*, #11, #105. The Canadian Conference of Catholic Bishops provides several examples of practising green asceticism: “To ‘fast’ from actions that pollute, to embrace whatever inconveniences may arise from running a ‘greener’ household, to decrease our use of fossil fuels and to tithe time, treasure and talent to environmental causes may all be aspects of this response.” Canadian Conference of Catholic Bishops, “You Love All That Exists,” #16. See also Francis, *Laudato Si’*, #211.

obsession with consumption.”

In the view of green asceticism, adopting a simpler life is not meant to be a lesser life or to be doleful. Rather, a modest way of living, when embraced voluntarily and consciously, can be a way of liberating us from greed and allowing us to live life to the fullest. By freeing us from consumer attitudes, green asceticism opens “new possibilities for conviviality that do not require possession or consumption.” To put it differently, green asceticism does not advocate that one denies pleasure, but embraces “happy sobriety.” “By giving up the pursuit of many trivial satisfactions,” writes Darragh, “we are able to pursue those few things that are most valuable to us, most of which can only be enjoyed and admired, not possessed or consumed.”

Through its emphasis on voluntary self-restraint and joyful simple living, green asceticism helps learners to engage more deeply with the well-being of the Earth community. While ascetic practices, based on the principle of subjectivity, respect one’s inner value and reject the excessive desire to possess and control the rest of creation, they do not seek flight or detachment from the world. Rather than attempting to escape from the world, green asceticism empowers us to fight on behalf of other subjects. In this sense, RCEE can extend individual ascetic efforts to challenge environmental policies of governments and large corporations. For instance, we can bring “healthy pressure” to bear on those who have political or economic power by changing our lifestyles. Through self-conscious efforts, such as consumption-reduction, being energy-wise, and reduce-reuse-recycle initiatives, we can compel politicians or entrepreneurs to adopt ecologically sustainable policies. Despite the slowness of change, RCEE ought to convince us

932 Francis, *Laudato Si’*, #222.

933 Bartholomew, *On Earth as in Heaven*, 203; Francis, *Laudato Si’*, #223.

934 Darragh, “An Ascetic Theology, Spirituality, and Praxis,” 84. Although ascetic effort involves struggle for self-control, it provides a sense of joy by liberating us from compulsive consumerism. The goal of green asceticism is “moderation, never repression,” and its content is “positive, not negative.” Bartholomew, *On Earth as in Heaven*, 201.

935 Francis, *Laudato Si’*, #224. See also Charles Murphy, “The Good Life from a Catholic Perspective: The Problem of Consumption,” in *And God Saw that It Was Good*, 329.

936 Darragh, “An Ascetic Theology, Spirituality, and Praxis,” 84.

937 See Bartholomew, *On Earth as in Heaven*, 98, 201; Canadian Conference of Catholic Bishops, “You Love All That Exists,” #16; Rasmussen, *Earth-Honoring Faith*, 249-250; Ruether, *Gaia & God*, 188. With this approach, green asceticism is distinguished from traditional asceticism, which is sometimes misunderstood as a habit of limiting or avoiding any interaction with the world.

938 Francis, *Laudato Si’*, #206.

939 Darragh, “An Ascetic Theology, Spirituality, and Praxis,” 83; Canadian Conference of Catholic Bishops, “You Love All That Exists,” #16. In this sense, green asceticism includes not only an inward aspect but
that daily ascetic practices can make a difference and inspire collective transformation. As Francis states, “[t]hey benefit society, often unbeknown to us, for they call forth a goodness which, albeit unseen, inevitably tends to spread.”

**c. Communion: Fostering Sustainable Community beyond Sustainable Development**

The principle of communion, which underlines the relationality of all of creation, leads us to contemplate our sustainable future. Through the lens of communion, we can understand that the “capacity for bonding of the components of the universe with each other” enables various different beings to be continuously sustained together, and that likewise the sustainability of the Earth community depends on and grows through this relational bond. One might argue that sustainable development is an adequate notion for nurturing ecological sustainability. In fact, sustainable development is a widely known concept that addresses interrelated global issues such as poverty, inequality, and environmental degradation. In illuminating “a possible path for continuing development and rendering it sustainable,” this concept aims at increasing eco-social concerns and forming international action plans. However, while the core principle of sustainable development has the dual purpose of providing for both human needs and the preservation of the environment, in practice, human development invariably takes priority over

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940 Francis, *Laudato Si’,* #212.


942 The term sustainable development was launched by the Brundtland United Nations Report (World Commission on Environment and Development) in 1987. According to the Brundtland Report, sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” It is a process of change in which “the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change” are in accordance with the current and the future needs of humanity. World Commission on Environment and Development, *Our Common Future* (Oxford, UK: Oxford University Press, 1987), 43, 46.

943 Sustainable development became central to the agenda of the UN conference on Environment and Development in 1992 in Rio de Janeiro, and subsequent UN conferences have developed the concept and an accompanying ethical framework. As a result of these events, sustainable development has become popularized in international treaties and is widely recommended as an antidote to global social, economic, and ecological crises. Rasmussen, *Earth Community Earth Ethics*, 15.

environmental sustainability. As Boff points out, “whenever conflicts arise between the two sides, the decision falls on the side of [human] development and growth and against arguments for ecological sustainability.” The key to sustainable development is the notion of ‘development’ itself, and with the concept of ‘sustainable’ as modifier.

By applying the principle of communion as used in RCEE, the sustainable development model active in most Western industrialized nations is shown to be unconcerned with the interrelatedness of all life and fails to acknowledge that humanity’s sustainable future cannot be understood apart from the destiny of the rest of creation. This model holds a human-centered understanding of sustainability and remains “a captive of the development-and-growth paradigm.” While the model of sustainable development places emphasis on limiting our material demands for present and future needs, its central approach tends to promote ‘the myth of progress,’ whereby economic growth is created concurrently with environmental sustainability. Pope Francis points out deep flaws in this view of sustainable development:

In this context, talk of sustainable growth usually becomes a way of distracting attention and offering excuses. It absorbs the language and values of ecology into the categories of finance and technocracy, and the social environmental responsibility of business often gets reduced to a series of marketing and image-enhancing measures.

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945 Hallman, *A Place in Creation*, 120-121; Hathaway and Boff, *The Tao of Liberation*, 39-40. David G. Hallman points out the ambiguity of the concept of sustainable development, which has caused different interpretations. For instance, environmental groups have understood this concept to demand major restrictions on the traditional economic approach of industrialized countries and focused their efforts on the adjective “sustainable.” However, many governments and industries have used the concept to justify their present activities that favour human development, even at the expense of the environment. For them, the noun “development” has been the focus. Hallman, *A Place in Creation*, 119-120.

946 Boff, *Cry of the Earth, Cry of the Poor*, 66. In this sense, Boff describes sustainable development as “an oxymoron.” Ibid., 67.

947 Rasmussen, “Next Journey,” 114; idem, *Earth Community Earth Ethics*, 134. In other words, sustainable development supports concern for the environment “in so far as it must be sufficiently healthy to meet present and future human needs.” Anne M. Clifford, “From Ecological Lament to a Sustainable *Oikos*,” in *Environmental Stewardship*, 251.


950 Francis, *Laudato Si’*, #194.
In this regard, it is difficult to expect that sustainable development, with its bias toward human development, can contribute to fostering the well-being of the Earth community as a whole. If sustainable development is not freed from an expanding global economy and industrialized development, it will not be able to develop authentic sustainability for all of creation. As long as sustainable development focuses on merely “material and one-dimensional-mere growth” rather than the deep communion of all of creation, sustainability is “nothing but rhetoric and illusion.”

The principle of communion suggests that RCEE promotes sustainable communities as an alternative approach to sustainable development. In the principle of communion, the Earth community is the context in which we find our extended family members and experience the Koinonia of the Holy Spirit. Since we are derivative from and seamlessly woven into the larger sacred evolving community, our sustainable future is dependent “not so much on what we do for ourselves but on what we do for earth as a whole.” In highlighting the importance of our responsibility for a flourishing Earth community, the concept of sustainable community places emphasis on not only improving the lives of human beings but also in supporting the well-being of other-than-humans. Differently said, sustainable community focuses on a “community in which the nurturing of just and equitable relationships both within the human family and also between humans and the rest of the ecological community can occur.” The basic criterion of sustainable community is the good for all beings rather than merely private human needs. In all manner of decision-making, whether they are economic or social, the notion of a sustainable community asks what effect our actions have on other members of the Earth community.

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951 Boff, *Cry of the Earth, Cry of the Poor*, 67.


954 Hallman, *Spiritual Values for Earth Community*, 15.

sustainable community, one must consider the flourishing of all beings, and “the intent of economic and social policies and practices” ought to be for “the nurturing of relationships within community.”

In advancing the notion of a sustainable community, RCEE can encourage students to be more consciously attentive to the local communities in which they belong. In fact, a local community is a positive focus for our sustainable future in as much as it encourages intimate relationships and responsibilities. When the notion of a sustainable community is based on the local level, it is in a better position to emphasize respect for other beings and responsible actions for the community’s well-being. In this sense, sustainable community requires us to seek a just and sustainable way of living within the framework of our local communities. Whereas sustainable development tries “to wrap the besieged environment around the ever-expanding economy,” sustainable community is concerned about “how we wrap both economy and environment around healthy local and regional communities.” For this reason, the intention of sustainable community is to reduce “dependence upon outside forces and unstable commodity markets,” and instead to increase “the capacity of communities to take care of their own most essential needs.” In doing so, sustainable community aims for a more viable economic growth for local citizens, and flexible solutions to local problems, rather than uniform recipes that overlook the complexities of a given region.

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957 Hallman, Spiritual Values for Earth Community, 15. At the local level, humanity’s profound connection with nature is more vividly revealed, and concrete proposals for communal practices are more easily inspired. This is evident in the lack of enthusiasm for more abstract global initiatives such as protection of the atmosphere and oceans, whereas more tangible, perceivable, familiar, local-based initiatives elicit more emotionally charged responses. Ryan, “Humanity’s Bioregional Places,” 99.


959 Rasmussen, “Global Eco-Justice,” 525. See also Rasmussen, Earth Community Earth Ethics, 131, 153; idem, Earth-Honoring Faith, 347.

960 Rasmussen, Earth Community Earth Ethics, 146. This view does not mean that sustainable community is limited to exclusive localism, which insists on ‘no trade’ and/or ‘no global markets.’ For sustainable community, the local is understood not simply as an individual community which is isolated from the whole, but as the basic unit of the global which becomes a starting block for the sustainability of the Earth community. With the focus on the local level, sustainable community enables people to identify their own needs and responsibilities within the context of their community. In doing so, sustainable community seeks healthy growth of their own communities and is open to transnational cooperation, aiming at the flourishing of the whole Earth community. See Rasmussen, “Next Journey,” 123-124.

961 See Francis, Laudato Si’, #144, #180; Hallman, A Place in Creation, 141.
The local community-focused approach, which sustainable community promotes, demands the active and constant participation of local citizens. While sustainable development tends to favor a plan for sustainability from above, led by institutional leaders, sustainable community seeks a new way of living from below, led by all members of the community. In other words, everyone is a designer and has an important role in advancing sustainable community; rather than relying on the decision-making power of elites, sustainable community encourages widespread and decentralized grassroots participation. For sustainable community, participation need not be grandiose; rather, it promotes small-scale projects in a self-sufficient way. For instance, citizens can engage in cooperatives that develop renewable energy for local self-sufficiency or can support community-shared agriculture that connects local farmers with local consumers. By encouraging learners to participate in various community actions on a small scale, RCEE can teach that sustainable community is advanced by “higher degrees of cooperation, mutual support, and collaborative problem solving.” Through this participation in the community, a deeper concern for the well-being of the whole Earth community emerges and a more intimate communion is developed. In this sense, it can be said that our sustainable future calls for not merely “self-improvement on the part of individuals” but a “community conversion.”

C. A Suggestion for Applying the Principles of RCEE: Place-Based Learning

This section proposes place-based learning as a way of applying and promoting the principles of RCEE. Place-based learning begins with a tangible place that surrounds the learner, rather than with mere information about the ecosystems of Earth or global ecological situations. By

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962 Toolan, *At Home in the Cosmos*, 121.
963 See Rasmussen, “Next Journey,” 119-120, 128; Francis, *Laudato Si’*, #144. In this regard, Rasmussen argues that sustainable community is guided by the principle of subsidiarity, which respects decentralized participation in local communities while minimizing the intervention by larger and distant institutions. Rasmussen, *Earth-Honoring Faith*, 347; idem, *Earth Community Earth Ethics*, 336-337.
966 Francis, *Laudato Si’*, #219.
967 This view does not mean that environmental knowledge is unimportant or unnecessary. The emphasis here is that place-based learning considers a place as a starting point for applying the principles of RCEE; before teaching about global warming or biological extinction on the planet, place-based learning encourages students to
situating the learning in the students’ own place beyond the confines of the classroom, place-based learning aims at helping them to engage with the place as a primary teacher and to interact with all that the place is – its plants, its animals, and its landscapes.\footnote{See David W. Orr, “Place as Teacher,” chap. in \textit{Hope is an Imperative: The Essential David Orr} (Washington, DC: Island Press, 2011), 213, 226-228; David Sobel, \textit{Place-Based Education: Connecting Classrooms and Communities} (Great Barrington, MA: The Orion Society, 2013), 11-18; Smith and Williams, “Ecological Education,” 164-165. This idea echoes the context-based approach of ecospiritual literacy, which was examined in Chapter Two.} A basic assumption of place-based learning is that a place is not a static reality peripheral to the human dimension but a living reality expressing its own inner qualities “in a continuing process of transformation.”\footnote{Berry, \textit{The Great Work}, 13.} In other words, a place is the time-developmental and meaningful context “where God, human, and earth intersect in one small point.”\footnote{Frank Fromherz, “A Sense of Place,” in \textit{All Creation is Groaning: An Interdisciplinary Vision for Life in a Sacred Universe}, eds. Carol J. Dempsey and Russell A. Butkus (Collegeville, MN: The Liturgical Press, 1999), 262.} In all of its vitality, a place generates a living story and reveals ecological and spiritual meanings. Using a place as an integrating context, in which we can find its anthropological, spiritual, and ethical aspects, place-based learning assists us in reflecting on who we are, where we encounter the divine presence, and how we ought to live in relation to other living components of a place. Place-based learning involves following the three components that support the principles of RCEE.

First, place-based learning is a reminder of the importance of rapport with a particular local place. In developing a sense of belonging and responsibility, place-based learning reconnects education “to locality, i.e. the place where education takes place.”\footnote{Rolf Jucker, \textit{Our Common Illiteracy: Education as if the Earth and People Mattered} (Frankfurt am Main, DE: Peter Lang, 2002), 294.} Before teaching abstract knowledge, place-based learning introduces students to the mysteries of place and aids them in developing loyalties to their own.\footnote{Orr, \textit{Earth in Mind}, 96-97.} Put differently, the priority of place-based learning is to help learners “become native” to the specific place in which they live.\footnote{Orr, “Place as Teacher,” 224. Orr argues that humanity today is used to being a “resident” who is a temporary occupant, instead of becoming an “inhabitant” who dwells in intimate and mutual relationship with a place. While a resident knows little and cares little for their residing place, an inhabitant has a sense of care and rootedness. In this sense, Orr emphasizes that in order to address the ecological crisis, human beings ought to recover a sense of place and must learn how to reinhabit their surroundings. Orr, \textit{Ecological Literacy}, 130-131.} This emphasis on a personal
relationship with one’s immediate surroundings does not mean that place-based learning encourages expressions of parochialism or narrowness. For place-based learning, global awareness and action are still necessary and important.\textsuperscript{974} What place-based learning stresses is that a particular local place becomes, in many ways, the primary vehicle for reinventing the planetary community. By moving closer to a local place, one necessarily lives closer to a larger life community and is more concerned about caring for the whole Earth.\textsuperscript{975} Taking a specific place seriously, as Orr says, “would change what humans think needs to happen at the global level.”\textsuperscript{976}

Second, place-based learning stresses close and direct experiences with natural places, rather than mere study of the environment in an abstract way or watching nature films.\textsuperscript{977} In fact, while secondhand knowledge of nature through mediated sources is still important, it cannot be a substitute for actual firsthand encounters with nature.\textsuperscript{978} As Rolf Jucker writes, “[w]e learn better if we are exposed to reality, rather than mediated abstractions and reductionist images of it.”\textsuperscript{979} In highlighting the importance of education through direct experiences, place-based learning takes students outside and encourages them to look, listen, smell, and feel the natural phenomena of the place, giving it their full attention.\textsuperscript{980} Differently said, place-based learning supports learners to get “up close and personal” with the place around them, so they can “be immersed in nature’s sights, sounds, smells, tastes, [and] textures.”\textsuperscript{981} It follows that place-based learning is

\textsuperscript{974} Orr, \textit{Earth in Mind}, 160.
\textsuperscript{975} See Hathaway and Boff, \textit{The Tao of Liberation}, 357; McFague, \textit{Super, Natural Christians}, 43-44.
\textsuperscript{976} Orr, \textit{Earth in Mind}, 160.
\textsuperscript{977} This emphasis on direct contact with the natural world is particularly important today. As more people live in an indoor world of office buildings and shopping malls, there is less opportunity for close encounters with natural places. The lack of direct experience with nature makes an appreciation or sensitivity for the place around us difficult. McFague, \textit{Super, Natural Christians}, 118-119; Orr, \textit{Ecological Literacy}, 88-89; Berry, \textit{The Great Work}, 15.
\textsuperscript{979} Jucker, \textit{Our Common Illiteracy}, 292.
\textsuperscript{980} Smith and Williams, “Ecological Education,” 165; Orr, \textit{Earth in Mind}, 96; Matt Sanger, “Sense of Place and Education,” \textit{The Journal of Environmental Education} 29, no. 1 (Fall 1997): 5. For place-based learning, instruction is not limited to indoor classrooms but can take place anywhere; local parks can be turned into classrooms, and the river can become a textbook. Sobel, \textit{Place-Based Education}, 4, 8.
\textsuperscript{981} Judson, \textit{A New Approach to Ecological Education}, 27.
not simply limited to “a mind’s eye experience” but requires “a body’s eye one.” Through hands-on learning experiences, place-based learning allows students to “learn about nature from nature,” and assists them in having a more vital relationship with the natural world surrounding them and the Earth community as a whole.

Finally, place-based learning encourages students to have immediate encounters with the wild dimensions of a place. In fact, a natural place itself, as well as each of its members, possesses its own inner spontaneities that are beyond human control and domestication. To put it differently, a place involves “a wild component,” which is “uncontrolled by human dominance.” This wildness is not merely found in wilderness areas; it can be experienced everywhere. Whether in rural places or in urban contexts, wildness surrounds and affects us. Assisting learners to have close encounters with a place’s inherent wildness, place-based learning leads them to be connected to “a creative spontaneity” of the larger context beyond the human-created environment. By doing so, place-based learning highlights that real ecological and spiritual learning is part of the larger world and comes through the experiences of its wildness; that is, important lessons for ecospiritual literacy emerge from “more direct contact with the natural aspects of a place” rather than being confined to “deliberate teaching situations between people.”

Berry’s childhood experience in the meadow near his family home illustrates an instance of place-based learning, which highlights a particular place, a direct experience, and wildness. Berry recalls the day when he walked into a meadow and encountered the profound mystery of wild nature encompassing him:

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982 McFague, *Super, Natural Christians*, 43. McFague similarly compares two metaphors: ‘hike’ and ‘map.’ A more direct relationship with the natural world is emphasized, in her view, by the ‘hike’ metaphor, rather than the ‘map’ metaphor. Ibid., 42.


986 Judson, *A New Approach to Ecological Education*, 28; McFague, *Super, Natural Christians*, 124. Although wildness is more vividly found in the form of wilderness preserves (e.g., Banff National Park), place-based learning does not limit wildness to the size or remoteness of an area; the component of wildness can be found even in a small city park. Wieren, *Restored to Earth*, 77; Scheid, *The Cosmic Common Good*, 80; McFague, *Super, Natural Christians*, 124.


988 Orr, *Ecological Literacy*, 89; Malcolm Margolin, “Indian Pedagogy,” in *Ecological Literacy*, 78.
Down below was a small creek and there across the creek was a meadow. It was an early afternoon in late May when I first wandered down the incline, crossed the creek, and looked out over the scene. The field was covered with white lilies rising above the thick grass. A magic moment, this experience gave to my life something that seems to explain my thinking at a more profound level than almost any other experience I can remember. It was not only the lilies. It was the singing of the crickets and the woodlands in the distance and the clouds in a clear sky.989

This early experience, for Berry, was more than a romantic encounter with nature; it was place-based learning which provided the basis for developing his ecological and spiritual literacy. The meadow, with its differentiated parts, its own inner spontaneity, and the communion of its components, offered Berry an opportunity to see “the connection between that meadow and the vast expanses of the universe.”990 Berry experienced the magnificence of the universe and the numinous presence through his “personal encounter with the local cosmos.”991 Berry’s meadow experience shows that the direct experience of wildness in a particular place helps us to read the Book of Creation and thereby promotes transformative learning toward ecological conversion. Berry notes how this meadow experience shaped his ethics: “This early experience, it seems, has become normative for me throughout the entire range of my thinking. Whatever preserves and enhances this meadow in the natural cycles of its transformation is good; whatever opposes this meadow or negates it is not good. My life orientation is that simple. It is also that pervasive. It applies in economics and political orientation as well as in education and religion.”992 Just as Berry encountered the Book of Creation in a grassy meadow with white lilies and began to learn the deeper meaning communicated by it, we too can learn how to read the Great Book through interaction with our surroundings and find meaning from our direct experiences with its wilder aspects.993

In conclusion, place-based learning allows RCEE to apply its principles to specific places and promote them through firsthand encounters with wildness. By focusing on particular places and the experiences of their wildness, RCEE can help us to encounter the Book of Creation in a more

989 Berry, The Great Work, 12.
991 Scheid, The Cosmic Common Good, 78. Berry’s boyhood experience in the meadow was not limited to a one-time transformative moment in the past. Over the years, Berry returned to the meadow epiphany as the primary reference for his identity, spirituality, and ethical commitment. Berry, The Great Work, 13.
992 Ibid.
tangible way and to find the Grammar of Creation in our immediate surroundings. That is, through “direct experiences in particular locales that have the feel of wildness,” RCEE can support us in being more personally engaged with the larger context and lead us to recognize intensely the cosmological grammars of differentiation, subjectivity, and communion that pervade the here and now.  

This approach allows us to develop “a dialogue with a particular place,” so that we can enhance an “intimate rapport with the surrounding universe.” When we recover an integral relation within the cosmological process through intimacy with a local cosmos, we will be better positioned to renew ecological identity, to deepen spiritual sensitivity, and to engage in ethical commitments.

D. Summation

As the conceptual basis of RCEE, ecospiritual literacy suggests a new educational paradigm – transformative learning. While a traditional model of environmental education tends to emphasize informative and instructive teaching, the transformative learning paradigm of RCEE focuses on more integrative modes of learning – i.e., learning about, in, and for the Earth community. Through the holistic forms of learning, the new educational paradigm of RCEE seeks deeper educational experiences that are tuned to the messages of the Earth community and aims at developing the anthropological, spiritual, and ethical dimensions of ecospiritual literacy. O’Sullivan’s vision of integral development provides a methodological insight for advancing the transformative learning approach of RCEE. In highlighting the integration of our personal development with the unfolding processes of the world, O’Sullivan suggests that our transformative formation ought to be integrally related to the foundational principles of the evolutionary universe, that is, with the principles of differentiation, subjectivity, and communion. Adopting O’Sullivan’s suggestion, RCEE can establish the transformative construction methodology that promotes our anthropological, spiritual, and ethical formation through these

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994 McFague, *Super, Natural Christians*, 120. Echoing this view, Scheid encourages us to find the Grammar of Creation (i.e., through the principles of differentiation, subjectivity, and communion) in particular local places: “This tree, this park, this pigeon: they are all part of the cosmic story that is our own story; they are witnesses to the universe’s drive to differentiation; they possess their own subjectivity; and they are made for communion.” Scheid, *The Cosmic Common Good*, 80.

three cosmic principles. By way of this approach, RCEE is able to construct transformative learning principles that support the integral development of thoughts, feelings, and actions.

The transformative learning principles of RCEE, drawing from the transformative construction, focus on three approaches: how to renew ecological identity in relation to the rest of creation; how to deepen spiritual sensitivity to the divine presence in creation; and how to engage in ethical commitments for the well-being of the Earth community. By reflecting on each approach through the grammars of differentiation, subjectivity, and communion, this chapter has suggested more concrete principles of RCEE, which collectively inspire ecological conversion. By renewing ecological identity, RCEE can guide us to develop our larger self through the breadth of creation, awaken ecological vocation through the depth of creation, and strengthen mutual kinship through the relationality of creation. By deepening spiritual sensitivity, RCEE can lead us to evoke the sense of the sacramental in the variety of life, appreciate the divine Logos in the beauty of creation, and cultivate the sense of Koinonia in a bioregional community. By engaging in ethical commitments, RCEE can promote ecological pro-life beyond mono-cultures, nurture green asceticism beyond consumerism, and foster sustainable community beyond sustainable development. Suggesting these principles as guideposts toward ecological conversion, RCEE helps us to be integrated into the creative processes of the larger reality so that we can turn ourselves from a human-centered world to the sacred Earth community. When we strive to engage in such an integrating context, real transformation that enables “the development of new convictions, attitudes, and forms of life” will occur.996

As a way to apply and promote the basic principles of RCEE, this chapter has proposed a place-based learning that highly favours direct experiences with the wildness of particular places. This approach allows the principles of RCEE to be connected with the vital local context beyond the confines of the classroom, also to be advanced by firsthand encounters rather than secondhand experiences, and to be guided through the wildness of the place beyond the human-created artificial context. It follows that the transformative learning of RCEE ought to be promoted by interaction with the living context around us, rather than one-way abstract teaching. Through the interplay with our immediate surroundings, RCEE can support us in developing intimacy with the cosmic grammars of differentiation, subjectivity, and communion, and encourage us to see

996 Francis, Laudato Si’, #202.
the larger Book of Creation – that is, the Earth community – as a whole. In this sense, our local place is not merely an object of study or protection but a subject teaching the Grammar of Creation and helping us to read the Book of Creation. The more we are tuned to the ecological and spiritual messages of the Great Book through place-based learning, the better we can nurture our ecospiritual literacy and move toward ecological conversion.
CONCLUSION

1. Summary

The primary concern of this study was to develop a model of RCEE that guides and promotes the ecological conversion of people. For this purpose, the concept of ecospiritual literacy was proposed and the basic principles of RCEE rooted in this concept were established. This approach was achieved by way of a four-fold process.

The first step of the dissertation was to undertake a critical examination of popular concepts that are widely used in contemporary environmental/ecological education. For this task, the study critically analysed the strengths and weaknesses of the notion of Christian environmental stewardship along with concepts of ecological and Earth literacy. Through this process, I reached the conclusion that these current models, despite their contributions, have limitations in providing a deep conceptual basis for RCEE. In underscoring the necessity of a new and more comprehensive concept, the study continued to further examine Thomas Berry and Edmond O’Sullivan’s analyses of education that seek an integrated approach in the context of an evolutionary cosmology. They emphasize that an important role of education today is to help integrate ourselves within the larger context of the universe, and Earth in particular, so that we become not only ecologically literate, but also spiritually literate. Based on Berry and O’Sullivan’s educational insights, I emphasized the significance of the cosmological context for developing a stronger foundation of RCEE; that is, a new concept of RCEE ought to be formulated in a way that integrates ecological and spiritual literacy within the larger reality.

In the second step, this dissertation explored an evolutionary cosmology as the context for developing a concept of RCEE and thereby provided a solid basis for the formation of ecospiritual literacy. The integrated cosmological visions of Pierre Teilhard de Chardin and Thomas Berry played an important role in this process. Their new cosmological perspective, based on scientific and theological readings of the cosmological context, highlighted the universe as having both physical and spiritual aspects from its origin; that is, the material world is not simply a static physical or biological place but rather an unfolding biospiritual reality in which God, the universe, and humanity are integrated. Drawing from their integrated cosmological insights, I created the concept of ecospiritual literacy, which seeks both ecological and spiritual development. For the conceptual framework of ecospiritual literacy, the study synthesized
anthropological, spiritual, and ethical aspects of an evolutionary cosmology and suggested three main foci: humanity’s deep embeddedness in the Earth community, the divine sacredness within all of creation, and the human role for enhancing the sacred Earth community. Through its integrated frame, ecospiritual literacy is concerned with the whole phenomenon of our larger reality and with its deeper meaning.

The third step focused on concretizing and deepening the newly created concept of ecospiritual literacy through metaphorical articulation. For this project, the study examined McFague’s metaphorical method and developed metaphors that reveal the main features of ecospiritual literacy. The metaphors, explored in this process, were ‘the Book of Creation’ and ‘the Grammar of Creation.’ As a root metaphor, the Book of Creation enables ecospiritual literacy to highlight the revelatory nature of a world that manifests an integral relationship among God, humanity, and the rest of creation. Through its guiding metaphor of ‘the Grammar of Creation,’ ecospiritual literacy suggests that the evolving universe has its own inner order and dynamism and that God is interiorly present to the unfolding world and works through its inherent laws. Berry’s cosmic principles of differentiation, subjectivity, and communion, which reveal both the physical and spiritual dimensions of cosmogenesis, made a significant contribution to concretizing the Grammar of Creation. It follows that sensitive attuning to these cosmic grammars, and the deep learning resulting from their messages, are important prerequisites for advancing the cause of ecospiritual literacy.

In the final step, a new model of RCEE, based on the notion of ecospiritual literacy, was established. To this end, I proposed ‘transformative learning’ as an educational paradigm for guiding the main focus of RCEE, and developed a transformative construction methodology by adopting O’Sullivan’s vision of integral development. Drawing from these foundations, the study focused on establishing a set of transformative learning principles for RCEE, formed by reflection on each category of anthropological, spiritual, and ethical formation through the lens of the Grammar of Creation (i.e., differentiation, subjectivity, and communion). By doing so, the study highlighted the integral development of our ecological identity, spiritual sensitivity, and ethical commitments. The basic principles of RCEE, which this study proposed, have not exhausted all the educational themes for achieving our complete transformation. However, these principles are worthwhile in terms of motivating us to change our heads, hearts, and hands. When RCEE practices and promotes these principles through place-based learning, which
stresses direct experiences with our immediate surroundings, it will be better positioned to inspire ecological conversion.

Throughout the four steps of this dissertation, the context-based approach of ecospiritual literacy has been highlighted. Unlike the content-focused model of traditional environmental education, the context-based approach invites learners to situate themselves beyond the human-centered world in a larger cosmological context, and encourages them to see, from within, not only the outer aspect of the world but also its inner face. This approach enables ecospiritual literacy to advance an integrated kind of ‘seeing,’ that is, to view the world in both an ecological and spiritual way.\textsuperscript{997} With its emphasis on seeing the whole aspect of the larger reality, the context-based approach of ecospiritual literacy helps students to view the world as a Book of Creation revealing the three-fold relationship of Divine-human-rest of creation. Rather than simply imparting environmental knowledge, the context-based approach encourages learners to see or read the Great Book through the grammars of differentiation, subjectivity, and communion, so that they seek transformative learning that leads to an ecological conversion.

2. Implications

Ecospiritual literacy has significance in terms of providing a solid foundation for RCEE. Improving the limitations of present educational models, such as Christian stewardship and ecological/Earth literacy, ecospiritual literacy makes a great step forward in developing a more comprehensive and holistic approach. When the concept of ecospiritual literacy is the basis of RCEE, five implications emerge, and these are distinguishable from current trends in environmental/ecological education.

First, ecospiritual literacy highlights the importance of an evolutionary cosmology for developing RCEE. This new cosmological vision, which Teilhard and Berry promote, sees the

\textsuperscript{997} Teilhard stresses the importance of seeing. Comprehending the intimate relationship between matter and spirit, he suggests that one must learn to see deeper dimensions of the world beneath its surface layer: “one could say that the whole of life lies in seeing…. To try to see more and to see better is not, therefore, just a fantasy, curiosity, or a luxury. See or perish. This is the situation imposed on every element of the universe by the mysterious gift of existence. And thus, to a higher degree, this is the human condition.” Teilhard, \textit{The Human Phenomenon}, 3. In fact, how we see the world is consequential; our view of the world determines our stance before the reality around us. When the natural world is viewed solely as nothing more than raw material, a fundamental change in minds and hearts toward a sustainable future is difficult to imagine.
universe as a seamless emerging reality and offers a dynamic perspective that is coherent with the scientific worldview and the Christian faith; it also reveals the vast interconnectedness of God, the universe, and human beings in evolutionary developments. Based on this larger cosmological context, ecospiritual literacy provides opportunities to see not only humanity’s place and role in the single unfolding reality, but also God’s ongoing creative activity in the evolutionary process of the world. This integrated approach of ecospiritual literacy enables RCEE to help students to broaden their ecological and spiritual horizons, to see themselves as inhabitants of a numinous world, rather than wanderers in a meaningless material reality. While Christian environmental stewardship, rooted in the old cosmological paradigm, is intertwined with both an anthropocentric view and a theological dichotomy between the spiritual and the physical, the new cosmological understanding of ecospiritual literacy assists RCEE to embrace a more holistic vision of the world and to seek harmony with the living process of the larger sacred reality.

Second, the concept of ecospiritual literacy allows RCEE to guide us to understand Earth as a subject, rather than as an object to be merely studied. Unlike current models of ecological education, which teach about the natural world as a passive object, ecospiritual literacy leads RCEE to highlight Earth as an active subject (i.e., as our primary teacher) that reveals ecological and spiritual messages. By seeing the Earth community as a primary educator, RCEE can inspire learners to be more concerned with learning how they relate within the surrounding natural world and how they can live ecologically and spiritually in the larger community of life. In this regard, an important task of RCEE is to help students to be integrated within the entire Earth community so they can learn how to fit into the great community of existence, how to develop spiritually through an Earth-friendly spirituality, and how to live sustainably with Earth itself, their primary teacher. It follows, then, that RCEE will call learners to move beyond an attitude of simply ‘saving the Earth’ by being more attentive to the messages of the Earth community. Through an emphasis on deep attention, RCEE can promote interaction between humans and Earth as well as humanity’s integral development within the larger community of life. When the human-Earth relationship is developed “in a mutually enhancing manner,” a transformation of the heart, which is needed to overcome the ecological crisis, can be effected.998

998 Berry, The Christian Future and the Fate of Earth, 47; idem, The Great Work, 55.
The third implication of adopting ecospiritual literacy as the basis for RCEE is the emergence of more adequate metaphors for understanding God-world and human-world relationships, namely, ‘the Book of Creation’ and ‘the Grammar of Creation.’ These new metaphors will nurture a Catholic model of ecological education in ways that current metaphors, such as Christian environmental stewardship, cannot. For instance, ‘the Book of Creation’ can capture the imaginative picture of the larger cosmic context that reveals the great story of the Divine-Earth-humanity triad and helps us to see the world as a revelatory text infused with communicative meaning. Embracing ‘the Grammar of Creation’ can develop a theological imagination that sees the whole of the universe as a language system revealing its ecological and spiritual dimensions. By adopting these two metaphors, ecospiritual literacy allows RCEE to appreciate the depth of ecological and spiritual meanings revealed by and in the unfolding world. In this sense, an important task of RCEE, metaphorically speaking, is to help students to read the Book of Creation through the Grammar of Creation, and to learn from its profound messages. By doing so, RCEE can support students in transformative learning that leads to profound inner conversion.

Fourth, the concept of ecospiritual literacy enables RCEE to embrace a holistic view of the world and to develop an integrated approach toward ecological conversion. While traditional models of environmental education, such as Christian stewardship and environmental literacy, tend to ignore the spiritual aspect of the world and to limit themselves to a fragmentary approach toward ecological concerns, ecospiritual literacy encourages RCEE to pursue an integral development of thoughts, feelings, and actions, concerned with both the physical and spiritual dimensions of the larger reality. The point here is that an ecospiritual literacy-based RCEE demands a substantial change in the way we think, feel, and act toward the Earth community; focusing on any one of these domains is insufficient in fostering genuine ecological conversion. In its integrated approach, ecospiritual literacy allows RCEE to be more deeply attentive to various modes of instruction, that is, to ‘learning about, in, and for the Earth community.’ Through this threefold process, RCEE can attune students to the anthropological, spiritual, and ethical implications that the larger context reveals, so that they learn how to renew their ecological identity, how to deepen their spiritual sensitivity, and how to engage in their ethical commitments for the well-being of the Earth community.
Finally, ecospiritual literacy leads RCEE to encourage a positive approach toward ecological conversion. From the perspective of ecospiritual literacy, a profound inner conversion occurs through motivation and inspiration rather than mere ethical urging. That is, genuine, lasting transformation in one’s life does not proceed from simply “a sense of obligation” but emerges “as the result of a personal decision which brings us joy and gives meaning to our lives.” In this sense, ecospiritual literacy suggests that the focus of RCEE is less about stressing fear and more about stimulating an attraction for the world; to achieve transformative change, students ought to be motivated by attraction, rather than by apocalyptic threats. This is not to say that dealing with the terrible aspects of the ecological crisis is unnecessary. Since we rarely change our ways until fear initially sets in, some fear for the state of contemporary ecology may be in order. However, beyond the negative motive, we need to feel a strong attraction to our reality because a fundamental change in our hearts cannot occur without an inspirational vision for the world. It follows that RCEE ought to help us become re-enchanted with the larger reality beyond human society, so that we passionately read the Book of Creation and learn from its messages. As we are moved and experience a great change by being fascinated with a good book, so too can enchantment with the Great Book of the World be a fundamental driving force that inspires and motivates ecological conversion.

3. Suggestions for Future Research

The concept of ecospiritual literacy suggests that RCEE guides students to an ecological conversion through an ongoing learning process rather than a one-time event. In order to support that learning process, ecospiritual literacy encourages RCEE to pursue its continuous development by interacting with other areas of study. In this final section, I will briefly introduce two suggested areas for future study.

My first recommendation for further research is an adaptation of lectio divina that enhances ecospiritual literacy. Lectio divina, a longstanding spiritual practice for reading Scripture, consists of four stages: lectio (reading), meditatio (meditation), oratio (praying), and

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999 Francis, Evangelii Gaudium, #269.
1000 See Berry and Clarke, Befriending the Earth, 94-95.
Through these four progressive movements, *lectio divina* helps us to pay attention to the Sacred Text, to reflect on its meaning, to respond to its messages, and to open up to the possibility of being transformed by the text. A number of authors propose that the practice of *lectio divina* can be adapted to become a way of encountering the natural world (i.e., the Book of Creation). For instance, Nancy Menning reorients *lectio divina* toward reading nature religiously and applies its four stages to an ecological setting. This practice, which engages the natural world through an adaptation of *lectio divina*, can be called ‘*lectio creationis.*’ Since *lectio divina* is already widely practiced in Catholic circles, *lectio creationis* has potential benefits in terms of familiarity and expandability. If or when *lectio creationis* develops its educational approach, it can be a practical model for reading the Book of Creation and can provide us with a concrete method for reinforcing ecospiritual literacy. In this sense, I recommend *lectio creationis* as a promising area for future study that can be employed as a related RCEE program.

The second area where I would suggest future research is in the filed of dialogue between liturgy and RCEE. Several theologians argue that liturgy is a fruitful source for ecological reflection.

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1001 M. Basil Pennington concisely summarizes the process of *lectio divina*: “As we listen to the Word (*lectio*), a word, a phrase, a sentence, may well strike us, and we let it reverberate within, opening and expanding, forming and shaping (*meditatio*), calling forth varied responses (*oratio*) until finally we simply rest in the Reality to which it all leads (*contemplatio*).” M. Basil Pennington, *Lectio Divina: Renewing the Ancient Practice of Praying the Scriptures* (New York, NY: The Crossroad Publishing Company, 1998), 66.


For example, sacramental practices, which draw upon the elements of the natural world such as water, oil, and bread, facilitate our encounter with the divine grace and encourage us to value the material world. The liturgical cycle, which depends upon the temporal movement of natural phenomena such as sunset and sunrise or the seasons, highlights God’s creative action in the process of the world and helps us to see all of reality as a divine disclosure. As these examples imply, liturgical practices are pregnant with creative possibilities for guiding us to experience the spiritual aspect of the world and for developing ecological and spiritual sensitivity toward the larger reality. Moreover, liturgy is the natural place where the majority of the faithful receive basic religious education; it has a powerful influence on Christian formation. If RCEE is engaged in liturgical practices, it can have a more immediate and practical impact on daily Christian life. Therefore, I suggest that future research should be concerned with the ecological potential of liturgy; through a dialogue with everyday liturgical acts, RCEE will be able to develop a more effective pedagogical approach for ordinary Catholics.

The two areas of future study suggested above imply that RCEE based on ecospiritual literacy requires ongoing interaction with current spiritual practices of the faithful. To put it differently, RCEE should be connected to the spiritual life of the faithful, rather than merely limited to environmental education curricula that underscore so-called ‘green practices’ such as recycling papers or using public transportation. It follows that RCEE does not simply exist as an extra program for promoting environmentalism, but calls for a more comprehensive approach. As ecospiritual literacy encourages us to become both ecologically and spiritually literate, RCEE ought to develop “a new synthesis” capable of integrating ecological actions and spiritual practices. Through this integrating process, RCEE will be able to design more practical educational programs that can help the faithful to experience transformative learning. I leave this pedagogical and pastoral task for future research.


1009 Francis, Laudato Si’, #121.
I want to reflect, in closing, on a passage by Thomas Berry, which first inspired my own journey toward ecospiritual literacy:

What do you see? What do you see when you look up at the sky at night at the blazing stars against the midnight heavens? What do you see when the dawn breaks over the eastern horizon? What are your thoughts in the fading days of summer as the birds depart on their southward journey, or in the autumn when the leaves turn brown and are blown away? What are your thoughts when you look out over the ocean in the evening? What do you see?¹⁰¹⁰

Berry’s questions encourage us to contemplate our gaze on the Earth community. In fact, most of the time we seldom see various natural phenomena of our planet or merely see its exterior appearance; we often position ourselves at the center of the larger community of life and regard it as mere ‘environment’ providing raw material for our own disposal. This utilitarian gaze blinds us to seeing the inherent integrity of the physical and spiritual dimension of the world. Our inability to see the whole phenomena of Earth results in alienation from the rest of creation and the revelatory presence of the Divine.

In responding to this problem, ecospiritual literacy invites us to come out of the human-centered world and to see the larger reality with a holistic gaze; it helps us to read the larger world as the Book of Creation and to learn from its messages. In this approach, the Earth community is not simply viewed as “a system which can be studied, understood and controlled” but is seen as “a reality illuminated by the love which calls us together into universal communion.”¹⁰¹¹ From this perspective of ecospiritual literacy, then, the focus of RCEE is more than advancing environmental skills or protecting nature; by leading students to reconnect with the great book of God’s creation, RCEE ought to support them to communicate with it, so that they can learn how their identity, spirituality, and ethical commitments are able to be transformed in relation to the Earth community as a whole.

¹⁰¹⁰ Berry, The Sacred Universe, 170.
¹⁰¹¹ Francis, Laudato Si’, #76.


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