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Scientific Evolution, Creation Theologies and African Cosmogonies in Dialogue: Toward a Christian Theology of Evolution

Ameh Ejeh

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SCIENTIFIC EVOLUTION, CREATION THEOLOGIES,
AND AFRICAN COSMOGONIES IN DIALOGUE:
TOWARD A CHRISTIAN THEOLOGY OF EVOLUTION

A Dissertation

Submitted to the

Faculty of Theology

McAnulty Graduate School of Liberal Arts

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

in Systematic Theology

By

Rev. Ameh Ambrose Ejeh

November 2007

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Rev. Ameh Ambrose Ejeh

2007

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ABSTRACT

SCIENTIFIC EVOLUTION, CREATION THEOLOGIES,
AND AFRICAN COSMOGONIES IN DIALOGUE:
TOWARD A CHRISTIAN THEOLOGY OF EVOLUTION

By

Rev. Ameh Ambrose Ejeh

November 2007

Dissertation supervised by Anne M. Clifford, C. S. J., Ph.D.

This is a dissertation in which the question of cosmic origins is examined from three perspectives, namely, Scientific Theories of Evolution, Christian Theologies of Creation, and African Cosmogonies, respectively. Through the use of comparative-dialogic and dialectic methods, and the application of the models of contact/dialogue and confirmation/integration in ways of relating science with religion, the insights of these three perspectives are examined and analyzed in the formulation of a Theology of Evolution that conceives of evolution as a medium of divine creativity.

The themes of evolutionary process, interconnection, interrelation and interdependence in nature, the mystery and sacredness of nature and the teleology and destiny of creation examined in this study form the basis for a Theology of Evolution. It is an interconnection and interrelatedness that is grounded in the Trinity itself. Together we form an ongoing community of beings where all creatures have a kinship relationship

with each other, past, present and future. The cosmos in a unity, it is all one piece, although of different layers. Humanity is the highest level of this ongoing process, nonetheless, part of a wider evolutionary process in a universe where God made “things make themselves”.

Just as no creation theology today can ignore the insights of scientific evolution, so too, no other branch of theology can ignore Theology of Evolution. The implications for all theology, including African Christian theology, are crucial. This is equally evident in ecological issues where theology of Evolution has a direct ethical implication.

DEDICATION

This dissertation is dedicated to my biological father and my spiritual father:

My Late Father:
Mr. Lawrence Onoja Ejuh

and

My Late Bishop
Most Revd. Fidelis Ogah Orgah, D.D.

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Our elders say that the persistence and perseverance of a child in spite of apparent weaknesses and inadequacies are indications of the support system around him/her. The completion of this study program has been made possible by God's grace and the network of support from family, friends, mentors, individuals and communities who have and continue to stand behind me on my journey through life. I am eternally grateful to you, my God, for creating me and sustaining me through it all and I thank you for all the people you have blessed me with.

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at Emmanuel Secondary School, Ugbokolo, Nigeria, and St. Augustine's Major Seminary Jos, Nigeria.

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Vitalis Torwel, Rev. Fr. Mathew Asemagama, Sr. BrideChristiline Ogiri, DMMM, Rev. Fr. John Wangbu, Rev. Fr. Philemon Okoh, C.M., Rev. Fr. Reginald Nwauzo, Rev. Sr. Grace Onaivi, SON, Rev. Fr. Stephen Akange, Rev. Fr. Gabriel Owoh, Rev. Fr. Marinus Iwuchukwu, Rev. Rev. Fr. Joseph Nietlong, Rev. Fr. Daniel Melaba, Rev. Sr. Josephine Okwori, D.C., Rev. Fr. Joseph Okwunjo, as well as the many others who cannot be personally named here but to whom I am no less grateful.

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ABBREVIATIONS (ACRONYMS)

AAS	-----	<i>Acta Apostolicae Sedis</i>
AFER	-----	African Ecclesial Review
AMECEA	-----	Association of Member Episcopal Conference in East Africa
ANE	-----	Ancient Near East
ATR	-----	African Traditional Religion
AP	-----	Anthropic Principle
CATHAN	-----	Catholic Theological Association of Nigeria
CCH	-----	Common Cosmic Home
CTNS	-----	Christian Theology and Natural Science
C & E	-----	Creation and Evolution
FV	-----	<i>Force Vital</i>
GNP	-----	God and the New Physics
ISR	-----	Issues in Science and Religion
NASA	-----	National Aeronautics and Space Administration
PT	-----	Philosophical Theology
WAP	-----	Weak Anthropic Principle
SAP	-----	Strong Anthropic Principle
SECAM	-----	Symposium of Episcopal Conferences of Africa and Madagascar
S & R	-----	Science and Religion
QT	-----	Quantum Theory
UP	-----	Uncertainty Principle

PREFACE

The timeliness of this study lies mostly in the need for a more inclusive and holistic understanding of God, the universe and humankind, as well as the implications of Theology of Evolution for ecology. In the face of climate change and all the consequences that ensue, an understanding of God, creation and humankind that helps us to adequately respond to the ethical challenge of ecological problems is crucial.

Furthermore, as Pope John Paul II rightly pointed out, “new knowledge has led us to realize that the theory of evolution is no longer a mere hypothesis”. Simply put, evolution has come to stay. Just as creation theology cannot ignore the insights of evolution, so also, no other branch of theology can ignore Theology of Evolution, because the implications of Theology of Evolution for other branches of theology are enormous. These implications are equally manifested in African Christian Theology that has areas of contact with Theology of Evolution.

The newspapers, journals, magazines; radio and television; and other news media are replete with news about debate and controversy between adherents of evolutionism and creationism. One is left with the impression that the proponents of either side are convinced that you cannot believe in God the creator and at the same time accept the teachings of evolution or *visé versa*. What we are faced with, however, is not a choice between whether the world came into existence as a result of God’s creative act or evolution, but an understanding that evolution is the medium of divine creativity because God creates through the process of evolution. Based on this proposition the conflict model, in ways of relating science and religion, is unacceptable. This is a model that

hinges on how scientists conceive of their own methods: Are the methods claiming that only through scientific research do we have access to reality? It also hinges on how biblical literalists conceive of God: Is God a totally transcendent deity who intervened to create each species individually? Both of these extremes are problematic. Therefore, this dissertation develops common grounds and middle grounds between these two extreme positions. Although this dissertation is written from an academic perspective, it provides some insights for a better understanding of the relationship between creation and evolution in ordinary day-to-day- discussion by developing these areas of compatibility.

No discussion on the question of origins is complete without the perspective of traditional societies. The treatment of African cosmogonies fulfills this requirement. By using the comparative-dialogic methods, and applying the models of contact/dialogue and confirmation/integration, the perspectives of scientific evolution, creation theologies and African cosmogonies are examined and analyzed in the formulation of a theology of evolution.

Therefore, this dissertation provides some insights for a better understanding of the areas of compatibility and common grounds between creation and evolution in ordinary day-to-day- discussion, although it is written from an academic point of view.

The quest for truth necessarily requires that the insights of different perspectives on the understanding of reality be considered. No one perspective has the whole truth to the exclusion of others. This explains why this study examines the question of origins from the perspectives of creation theologies, scientific evolution and African cosmogonies with the hope that the insights of these will bring us closer to the truth about God, the universe and humankind.

We all owe a dept of gratitude to all the scholars and authors who have and continue to share their ideas and insights on the question of cosmic origins as manifested in the discussion on creation and evolution. I am particularly appreciative of the opportunity provided by these scholars and authors and the inspiration through their works, some of which I have cited in this study. It is my hope that the same inspiration I got from reading their books be found by those who will read this dissertation in part or in whole.

GENERAL INTRODUCTION

This dissertation entitled “Scientific Evolution, Creation Theologies and African Cosmogonies in Dialogue: Toward a Christian Theology of Evolution”, is set against the backdrop of the question: Is the universe a product of Scientific Evolution¹ or of God’s Creation?² A key word in this question is *or*, because, implied in this word and question, is the assumption that the universe is either the result of scientific evolution or God’s creation. On the contrary, this dissertation will argue for the compatibility of these two positions. However, to have a better understanding of the nature of the relationship between creation and evolution, and to be able to make a better assessment of this relationship, a brief analysis of the various positions of relating science with religion is necessary.³

Although the rudimentary stages of the relationship between creation and evolution could be traced back to the early Greek natural philosophers and people of

¹ Scientific Evolution: This refers to scientific evolution as opposed to theistic evolution. Scientific evolution includes all theories of evolution that are mechanistic and deterministic with little or no place for the idea of intelligence, meaning and teleology in creation, all of which theistic evolution upholds. Unlike theistic evolution therefore, scientific evolution makes no reference to the Creator-God but reduces the cosmos to a product of the interplay of natural and mechanical forces of chance and necessity.

Evolution: In this study, the term “evolution” has an extended usage. It “refers not only to the transformation of life on earth, but also to the unfolding of the entire cosmic story.” John Haught, “Evolution” in *The Harper Collins Encyclopedia of Catholicism*, edited by Richard McBrien (San Francisco: Harper Collins, 1995), 497. This explains why this dissertation will examine different theories of evolution but with specific reference to the Big Bang cosmology and Darwinian theory of evolution which will be treated in detail.

² Creation: Technically, this word refers to the original and on-going act of God by which the universe was created and is sustained in being, but in general usage, the term might refer to the “universe” as such. The term “creation” is therefore used with reference to the Judeo-Christian concept of creation found in the biblical accounts of creation especially as recorded in Genesis. However, in this study the term “creation” also applies to the same concept of a God-created universe in traditional cultures/societies, for example, in African Traditional Religion (A.T.R), in which the understanding of the universe as God’s creation is taken for granted.

³ A good summary of the different ways of relating science (the world of science) with religion (the world of religion) is provided by Zachary Hayes in his book, *The Gift of Being: A Theology of Creation* (Collegeville, Minnesota: The Liturgical Press, 2001), 18-22. However, a more detailed analysis of ways of relating science with religion is provided by John F. Haught and Ian G. Barbour and these will be referred to and cited as this “General Introduction” is developed.

ancient near eastern cultures,⁴ the actual debate on the effect of scientific evolution on the traditional concept of creation came in the wake of the scientific revolution in the 17th century. As a result of development in science following this period of the revolution, questions like these started to be raised: Does science invalidate religion/theology and make it intellectually implausible? What is the place of a loving and purposeful Creator-God in the face of scientific theories of evolution? How can the question of meaning and teleology in creation and in human existence withstand the inroad of theories based on the discoveries and hypothesis of mechanistic science?

The background to the debate on the effect of scientific evolution on creation is rooted in the question of the relationship between science and religion in general. A good survey of this debate and controversy shows four general patterns by which people view the relationship between science and religion. The first group is of the opinion that science and religion are fundamentally incompatible, therefore in conflict with each other. The second group holds that science and religion need not be in opposition with each other because they have different methodologies and objectives. Therefore, they do not have anything to do with each other. This position called “independence” by Ian Barbour or “contrast” by John Haught, suggests that science and religion are allowed to pursue different courses as they go their separate ways.⁵ The third position argues for recognition of common grounds between science and religion in spite of the distinctions that exist between them. This argument is based on the understanding that science and religion exist together, interact necessarily and have inevitable implications for each

⁴ Ernan McMullin, “Introduction: Evolution and Creation” in *Evolution and Creation*, edited by Ernan McMullin (Indiana, Notre Dame: University of Notre Dame, 1985), 3-8.

⁵ John F. Haught, *Science and Religion: From Conflict to Conversation* (NY/Mahwah, NJ.: Paulist Press, 1995), 9-23; and Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues* (San Francisco: Harper Collins, 1997), 77-103.

other. This position called “contact” (Haught) or “dialogue” (Barbour) advocates mutual and fruitful interaction between science and religion. The fourth position goes even further to state that not only are there common grounds between science and religion, they both support and endorse each other especially at the deeper level (Haught), or a metaphysical level that leads to a systematic synthesis (Barbour).

From the standpoint of creation and evolution, which is the focus of this study, the debate and controversy over the relationship between science and religion also plays out in the evolution-creation debate and controversy where the discussion equally follows four main patterns. The first, which is the conflict position, is exemplified in the extreme opposite views of the nature of the universe as expressed by biblical literalists and biblical fundamentalism on one hand, and scientific materialism on the other. Biblical fundamentalism presents a literal interpretation of the creation accounts in the book of Genesis which is considered to be infallible. As a result of this, biblical literalism/fundamentalism leads some Christians to attempt to construe the Genesis accounts of creation as science: “creation science”, and to the complete exclusion of any alternative understanding of how the universe may have come into existence.⁶ At the opposite extreme is the purely materialistic and mechanistic approach to the understanding of the origin of the universe as proposed by some versions of theories of evolution. This position proposes that the universe, life and mind, and indeed all of reality can be reduced to matter and explained in material terms. This position also holds that every event comes from a logical and lawful result of the event that went before, all of which can be predicted by scientific laws of cause and effect that govern every action and reaction in the universe. Thus, while the former attributes creation to an almighty,

⁶ John F. Haught, *Science and Religion*, 11-12; and Ian G. Barbour, *Religion and Science*, 82-84.

loving and purposeful Creator-God, the latter views all of these as a result of chance and accident in the blind and purposeless interaction between physical and mechanical forces operating within the universe.⁷

The second position, contrast/independence, proposes ideas with the aim of heading off any potential conflict between creation and evolution. From this standpoint, the biblical accounts of creation are viewed as standing on their own merits and scientific theories of evolution also stand on their merits since both of them have different objectives and different concepts, one religious, the other scientific. The Bible does not teach science, neither are the Genesis accounts of creation primarily concerned with the origin of the universe and of life as such. Scientific evolution is based on the application of certain techniques for investigating nature to determine *how* the universe functions. From these investigations, scientists make predictions that they compare with the results of their experiments to understand the components of the universe and to determine *how* they operate. Creation accounts, on the other hand, are based on a religious belief that explains *why* the universe came into existence in the first place and the purpose for which it was made. Therefore, creation and evolution are concerned with different sets of truths and the plausibility of one does not depend on the vindication of the other. Furthermore, the distinction between the words “how” and “why” is significant because scientific evolution deals primarily with the “how” questions while creation concerns itself more with the “why” questions. Scientific evolution addresses what philosophers call “secondary causality” --- how things operate and how one event flows from the other. Creation accounts which are based on a religious belief are, on the other hand, more pre-

⁷ The position of scientific materialism is analyzed by Ian G. Barbour in *Religion and Science*, 78-82.

occupied with “primary causality” --- the more fundamental and ontological questions of why things exist at all, and why they are sustained in being.⁸

The third position argues for contact or dialogue between scientific evolution and creation. Resisting the conflict position which causes opposition and the contrast position which overly compartmentalizes evolution and creation, the contact/dialogue position seeks to identify common grounds that could be used for fruitful conversation. Although the attempt here is not to base creation faiths on scientific ideas or *vice versa*, there is an acknowledgment that both evolution and creation have inevitable implications for each other. One of such areas of contact is found in the observations made by some scientists and Christians that the “Big Bang” cosmology has some elements of agreement with the biblical creation accounts that are relevant for fruitful dialogue.⁹ The Big Bang theory, according to this group, postulates a beginning in creation¹⁰ which agrees with the first Genesis account: “In the beginning...” Furthermore, the Big Bang cosmology and Einstein’s theories of relativity, according to scholars, demonstrate that what we have is a universe that is neither eternal nor necessary. It is a universe that is radically finite.¹¹ If the universe is finite, then one could argue for its contingent nature and this calls for an

⁸ The principle of causality --- primary and secondary--- referred to here is based on Aristotelian philosophy and used by theologians to explain how God creates and how he relates with creation. In the teaching of Thomas Aquinas and other medieval theologians, this principle is further developed to explain *creatio-ex-nihilo* and *creation-continua*. As First Cause, God is the source of existence of everything, but at the secondary level, he remains involved and guides creation as creatures participate in the work of creation. For more information on this, see Frederick Copleston, *A History of Philosophy: Volume II, Medieval Philosophy* (Westminster, Maryland: The Newman Press, 1960), 363-374. Zachary Hayes also developed this idea in his book referred to and cited earlier, *The Gift of Being: A Theology of Creation*, 50.

⁹ Haught, *Science and Religion*: 106-109.

¹⁰ Barbour, *Religion and Science*: 91. While some people are of the opinion that the “Big Bang” theory postulates a beginning in creation, Barbour observes that some others see it as this theory as positing the concept of oscillating or cyclic universe if viewed from the standpoint of a possible preceding “Big Crunch”. However, it is important to remark that many scholars (Arthur R. Peacocke, Ian G. Barbour, John Polkinghorne and others) caution against “baptizing” the Big Bang theory which does not postulate a beginning as such.

¹¹ Haught, *Science and Religion*, 115.

explanation that transcends the universe itself. John Haught puts it quite succinctly in his observation where he states:

To say that something is contingent means that there is no necessity for its having come into existence at all ---- or for its being the way it is---- as there may have been if matter were eternal or infinite. *This* particular universe, even science now seems to imply, need not be here. But since it is here, the question legitimately arises as to *why* it exists if it did not have to. And once we have asked this question we have already brought science into close contact with theology (and religion).¹²

Integration/Confirmation, the fourth and last in this category, goes even beyond contact/dialogue. However, Haught and Barbour differ in their interpretation of this model. While Haught suggests a “confirmation” in which the universe is viewed as rational, ordered and grounded in divine love and providence. He therefore advocates the development of common grounds and areas of compatibility between science and religion, while at the same time respecting their distinctions. Barbour on the other hand, suggests that scientific evolution and creation can “integrate” on a deeper metaphysical level towards a systematic synthesis.¹³ Some examples of these are: In natural theology, where for instance, one could argue from the evidence of design and order in the universe to the place of a purposeful Creator-God; theology of nature where scientific theories help in the reformulation of doctrines of creation and of human nature; and from the position of evolutionary and process thought through which the underlying inclusive

¹² Ibid., 115

¹³ Barbour, *Science and Religion* 77-103.

metaphysics in scientific evolution and creation can be developed by way of a systematic synthesis.¹⁴

In this dissertation, the insights of contact/dialogue and confirmation/integration models will be developed and applied because they provide a solid basis for the argument that creation and evolution are indeed compatible and that God creates by means of evolution. Therefore, this study proposes a theology of evolution. The three perspectives to be examined are: creation theologies, scientific theories of evolution, and African cosmogonies which represent the position of traditional societies in this discourse. The insights from these perspectives will then be analyzed and developed as a foundation for a theology of evolution based on their common grounds and areas of compatibility.

The Thesis of this Study

In the presentation of the thesis of this dissertation, I wish to reiterate the original question posed at the beginning: Is the universe a product of scientific evolution or God's creation? This is because implied in this question is the assumption that the universe is either the result of scientific evolution or of creation by God. However, I think that the question is not one of *either ...or*, but, *both ... and*. In other words, it is not that the universe came into existence as the result of scientific evolution or of creation by God, but both scientific evolution and creation, because God creates through the process of evolution. We are therefore challenged to see evolution and creation not as conflicting or contrasting positions, not even only as compatible positions, but more so as positions that

¹⁴ Ibid., 98. Barbour, in this particular place, made these observations with reference to science and religion in general. However, I think that to a certain degree, they are equally applicable to the discussion on scientific evolution and creation, which is the main focus of this dissertation.

are inseparable, because evolution is envisioned as the medium of divine creativity. It is this position that I intend to support and develop in this study.

The position I propose, of course, is not an entirely new position. It is a position that, according to some scholars, is based on ideas dating back to ancient historical periods. Ernan McMullin, for example, traces the rudimentary stages of evolutionary ideas in creation to natural philosophers of the early Greek world.¹⁵ However, the first major approach to integrating creation faith with evolution, by a Catholic scholar, is that of the Jesuit paleontologist and theologian, Pierre Teilhard de Chardin (1881-1955). Teilhard, in his epic vision, remains among the most thoroughgoing and painstaking individuals who presents a landmark and revolutionary synthesis of science and religion (scientific theories of evolution and Christian theologies of creation). His approach was the first major Catholic response to the challenge posed by Charles Darwin's theory of evolution presented in his works, *The Origin of Species*, and *The Descent of Man*, published in the years 1859 and 1871 respectively. Teilhard's approach is the one that many other scholars since then have continued to hold and develop. This position leads to what is now being called "theistic evolution".

Theistic evolution position will be developed based on the insights from creation theologies, scientific theories of evolution, and African cosmogonies which will be analyzed using the models of contact/dialogue and integration/confirmation.¹⁶ In the development of a theology of evolution, I will draw on ideas of process and evolutionary

¹⁵ Ernan, McMullin., "Introduction: Evolution and Creation" in *Evolution and Creation*, edited by McMullin Ernan, 3-8.

¹⁶ Contact/dialogue and Integration/Confirmation: This is the position that I hold and hope to further develop in this study. However, with regard to "integration", mine will be a "qualified Integration" --- a kind of integration that recognizes and respects the distinctions, rather than attempt to blur or gloss over them, while at the same time working toward a unified whole.

thought in the works of Teilhard de Chardin, Alfred North Whitehead and Charles Heartshone. In addition, the African concept of nature as articulated in the works of John Mbiti, Placid Temples, Emeffie Ikenga-Metuh, Kwesi Dickson, Bolaji Idowu, Aylward Shorter and other scholars will be treated. Organic and holistic concepts of creation as developed in the work of Sallie McFague, as well as other related sources will be given attention. It is my hope that this study will provide new insights into the concepts of God, creation and of humankind as well as the places that these hold within the framework of evolution. Finally, this study will examine the implications of theology of evolution for ecology, a major ethical issue that arises from this study, and for African Christian theology.

The place of African cosmogonies in this dialogue is based on the fact that they represent a perspective of traditional societies. In African cosmogonies we find expressions of cultures and religions that are profoundly rooted in the belief that the universe is the handwork of God. From the standpoint of this study therefore, African cosmogonies form another perspective on creation as very different from scientific evolution. African cosmogonies can be understood against the backdrop of African Traditional Religion (A.T.R.) from which they emerge. In A.T.R and African culture in general, every aspect of reality has a religious dimension to it. From the African philosophical standpoint therefore, creation is essentially religious. As John Mbiti aptly puts it, “Africans are notoriously religious...Religion permeates into all the departments of life so fully that it is not easy or possible always to isolate it.”¹⁷ Divinity and sacredness permeate every aspect of the life of an African, both as individuals and as a

¹⁷ Mbiti, John. S., *African Religion and Philosophy*, Second Edition (Botswana: Heineman Educational Publishers, 1989), 1.

community. All existents, past present and future, are conceived in religious terms. To the traditional African therefore, the question of the universe as the handwork of God is *a given*, because the assumed belief is that the universe is created by God. An estimated number of three thousand peoples (tribes) exist in Africa. Each of these has a religious system arising from a fairly distinct culture of its own, yet of similar characteristics. Although these religious systems manifest some distinctions as you move from one part of Africa to another, at their deepest level, they are essentially the same. The diversity of religious systems is equally manifested in the different ways by which Africans understand the universe as expressed in their creation myths. The African concept of creation recognizes the indispensable place of the Creator, and the unity and purpose of creation. This is expressed in themes such as interaction/interrelatedness, incremental development, sacredness/mystery, and teleology/destiny.

These characteristics are by no means unique to African cosmogonies since they are found in many other creation myths around the world as well. However, in creation myths from Africa, one could argue that these characteristics are combined in a unique way that makes African cosmogonies a viable asset in the common effort to work out a more holistic and integral concept of creation within the context of a theology of evolution. It is this unique combination of the major themes in African cosmogonies that make the African concept of creation original. In this study therefore, I hope to show how these major themes give African cosmogonies an indispensable place in the dialogue on the origin and nature of the universe, and demonstrate that a critical analysis of creation myths from Africa show that African cosmogonies embody, at least potentially, some of

the vital elements necessary for the development of a theology of evolution and eco-theology (ecology and theology).

Finally, as a Catholic and an African, from the *Idoma* people of Nigeria, the question of the relationship between creation and evolution cannot be conceived in complete isolation from my background. This is because socio-cultural/geographical location is often a factor that cannot be entirely divorced from one's theological reasoning. Therefore, while I hope, in this study, to make a contribution to Christian theology by offering a Catholic perspective on evolution, I am also seeking to articulate a theology that is appropriate to the African context. These elements converge in an explanation of the special place of African cosmogonies in the dialogue between creation and evolution. This is an interesting combination that is yet to be explored in depth by other students or scholars, hence an indication of originality in this study.

Theological Relevance

The relationship between scientific evolution and creation is a central issue in Creation Theology today. This is evident from the numerous questions and lectures, discussions and conferences as well as the volumes of literature published on the topic. This topic has become ever more relevant because of the realization that creation theology holds a central place in theological studies and exerts enormous influence on all other branches of theology. For instance, our concept of creation impacts our understanding of God and of his Son Jesus Christ in and through whom the universe was created, and in the life giving and animating role of the Holy Spirit (Trinity, Christology, Pneumatology). These are major biblical themes as we see in Pauline and Johannine

literatures, for instance, in the hymn of creation (Col.1:15-20); Spirit as life giver and animator (2Cor. 3.6; Jn. 6: 63). The Nicean creed also testifies to this: “We believe in one Lord, Jesus Christ, the only Son of God ...Through him all things were made...” Similarly, our concept of creation has implications for our understanding of life, the purpose of existence, and the question of after-life (Soteriology and Eschatology). It also impacts our understanding of the place of human beings in creation, their relationship with other creatures on the planet Earth and in the universe at large (Theological Anthropology and Eco-Theology).

Another major consideration on the theological relevance of scientific evolution and creation is that, besides the need for a common search for truth, this quest is necessary for the well-being of the human person, the growth of the community and the universe and the general health of the planet earth. This point was again emphasized by His Holiness, Pope John Paul II, in his address to the participants of the Vatican sponsored conference on the occasion of the Newton Tricentennial (three hundredth anniversary of the publication of Isaac Newton’s *Philosophiae Naturalis Principia Mathematica*).¹⁸ The Pope reiterates the need for fruitful dialogue and interchange between science and religion to develop the common grounds toward mutual enrichment and in the human quest for truth as well as a new unified vision. Drawing on history and experience to buttress his point, the Pope states by way of a rather rhetorical question that: “Just as Aristotelian philosophy, through the ministry of such great scholars as St.

¹⁸ Pope John Paul II’s “Message to George Coyne, S.J., Director of the Vatican Observatory”, on the relationship between Science and Religion at the conference to mark the Newtonian Tricentennial (Three Hundred Anniversary) of Isaac Newton’s *Philosophiae Naturalis Principia Mathematica*, June 1, 1988, in *Physics, Philosophy and Theology: A Common Quest for Understanding*, edited by Robert J. Russel, William R. Stoeger, S J., and George V. Coyne,S.J., Third Edition (Vatican City State: Vatican Observatory Foundation, 1977), M1.

Thomas Aquinas, ultimately came to shape some of the most profound expressions of theological doctrine, so can we not hope that the sciences of today, along with all forms of human knowing, may invigorate and inform all parts of the theological enterprise that bears on the relation of nature, humanity and God?¹⁹

Finally, the crucial question of the relationship between scientific evolution and creation demands urgent attention because the future course of history rests heavily on the terms of this relationship. Humankind and the entire universe cannot afford to let scientific evolution and creation to be set at war with each other. What is required is a concerted effort by people of both groups, theologians and scientists alike, to work for a mutual and fruitful interchange between evolution and creation. Responding to this crucial need, Alfred North Whitehead made this observation:

When we consider what religion (which is the basis for of creation theologies) is for mankind, and what science (which is the basis for scientific evolution) is, it is no exaggeration to say that the future course of history depends upon the decision of this generation as to the relations between them. We have here the two strongest forces ... which influence men, and they seem to be set one against each other ---the force of our religious institution, and the force of our impulse to accurate observation and logical deduction.²⁰

Although Alfred North Whitehead published this work over three decades ago, his ideas continue to maintain their relevance in this area of study till this day.

Evolution has come to stay. There is no running away from it. Religion/Theology must acknowledge this inevitable fact and learn to address the nature of the relationship that should exist between creation and scientific evolution. If, as Pope John Paul II himself acknowledged, evolution is more than just another hypothesis, then

¹⁹ John Paul II., Pope John Paul II's "Message to George Coyne, SJ., Director of the Vatican Observatory", M12.

²⁰ Whitehead, Alfred. N., *Science and the Modern World* (New York: The Free Press, 1967), 181-182.

the challenge before theologians and Christian scientists is to present a modern and intellectually plausible Christian perspective of evolution. Just as Augustine used Plato's ideas and Aquinas used Aristotle's, modern theologians are challenged to utilize the results of the research and discoveries of modern science on the universe for a better understanding of our origins and our relationship to the rest of nature, hence the need for a theology of evolution.

Scope, Methodology and Feasibility

The relationship between scientific evolution and creation in the question of the origin of the universe is a wide and diversified topic and so, the approach of scholars in their research is also varied and multi-perspective. Some of the scholars approach this study from a purely scientific dimension while others approach it from a purely philosophical perspective, yet others approach it from an exclusively religious perspective. The approach used in this particular study is both comparative and dialectic. It will therefore be an examination of scientific evolution, creation theologies and African cosmogonies from the standpoint of religion, philosophy and the findings of scientific research. However, this study is limited to a broad theoretical analysis of the conclusions from the discoveries of science and will not deal with the details of mathematical and experimental scientific research.

By way of methodology therefore, this study shall be developed along four dimensions, namely: historical, analytical, comparative-dialogic, and finally a synthesis. The historical dimension of this study will include a survey of the origin and development of the universe from the standpoint of scientific evolution, creation

theologies and African cosmogonies. This will be followed by an analysis of the concept of creation from each of these three aspects. From the comparative-dialogic perspective, I shall examine scientific evolution, creation theologies and African cosmogonies in their relationship with each other as the merits and demerits of each are identified and evaluated, one against the other. Finally, I will do a synthesis of the results of the interplay between these three aspects of the concept of creation in an attempt to strengthen the position of integration/confirmation. In this study therefore, it is my hope that by following this four-fold methodology, I shall demonstrate how scientific evolution, creation theologies and African cosmogonies make a collective contribution toward developing a more holistic and integral concept of creation within the context of the theology of evolution.

In spite of my lack of expertise in the natural sciences, I believe that this study is credible. Secondly, this work is made possible by the availability of numerous sources on the subject available in the libraries of Duquesne University, University of Pittsburgh, Pittsburgh Theological Seminary, and Carnegie Mellon University as well as other resources at my disposal.

General Outline and Brief Summary of Chapters

Title: Scientific Evolution, Creation Theologies and African Cosmogonies in Dialogue: Toward a Christian Theology of Evolution.

Chapter 1 (Christian Theologies of Creation):²¹ The first chapter addresses the topic of creation from the perspective of the Judeo-Christian tradition based on the biblical account, with particular reference to the Genesis accounts of creation, and Wisdom Literature in the Jewish First Testament and the Gospel of John and Pauline Corpus in the Christian Second Testament. Theologies of creation in the early history of the Church and the Middle Ages will then be surveyed.

Chapter 2 (Scientific Theories of Evolution): This second chapter will present pre-scientific Greek philosophical notions of evolution be a survey of scientific theories on the evolution on the universe, and the evolution of life forms and human evolution. Here, the emphasis will be on the Darwinian theories of evolution, and the Big Bang theory that was later proposed as a model of an evolving universe. The chapter closes with an examination of the challenges posed by scientific evolution on traditional Christian concept of creation.

Chapter 3. (African Cosmogonies): No discussion on the question of the origin of the universe, life forms and human life is complete without the perspective of traditional societies. This requirement is fulfilled by African cosmogonies. As a perspective of traditional societies, therefore, African Cosmogonies will be treated in the third chapter. A general introduction to African Traditional Religion (A.T.R.) is presented because African cosmogonies are products if A.T.R. A selection of examples of creation myths from different parts of Africa is surveyed. This is followed by an

²¹ Although the title begins with scientific theories of evolution, the first chapter addresses creation theologies because, historically, these precede scientific theories of evolution.

analysis of African concept of *inter-being* as exemplified in the relationship between cosmogonies and community in Africa.

Chapter 4 (Toward a Theology of Evolution): Based on a comparative-dialogic methodology, the fourth chapter identifies the areas of compatibility of the first three chapters --- Christian theologies of creation, scientific theories of evolution and African cosmogonies --- and develops their insights in the proposal of a theology of evolution (theistic evolution). Ideas from evolutionary and process thought will be employed in this enterprise.

Chapter 5 (Summary, Evaluation and Implications): The final chapter shall be a summary of the chapters (1- 4), an evaluation based on the basic themes that run through the chapters: Interconnection/interrelatedness; incremental development/evolutionary process; sacredness/mystery, and teleology/destiny. This will be followed with an examination of the implications of a theology of evolution for ecology (eco-theology) and for African Christian theology examined within the context of the models of inculturation and liberation, the hallmark of African Christian theology, and how these play out by way of praxis.

General Conclusion: The general conclusion simply reiterates the basic themes addressed in the dissertation and their relevance to this study.

CHAPTER ONE

CHRISTIAN THEOLOGIES OF CREATION

Introduction

The title of this dissertation is: “Scientific Evolution, Creation Theologies and African Cosmogonies...”, however, this order is reversed so that “Creation Theologies” are addressed first, in chapter one, “Scientific Theories of Evolution” will be addressed in chapter two. The rationale for this is that in chronological order, Creation Theologies come before Scientific Theories of Evolution. “Creation”¹ in this study refers to the concept of creation based on the biblical creation narratives, especially those recorded in the book of Genesis, the Prophets and Wisdom Literature in the Jewish First Testament, and in the Gospel of John and the Epistles to the Colossians and Philippians in the Christian Second Testament.

A study such as this cannot claim to be exhaustive; therefore, the focus of this chapter is on a selected survey of creation theologies as developed in the Christian tradition. This selected survey shall focus specifically on the traditional² concept of creation as developed in the Jewish First and Christian Second Testaments, the early Christian theologies of creation in church tradition, and the official position of the Catholic church on creation as articulated in statements and decrees from early church

¹ Creation: Although in a very general sense the term “creation” might be used to refer to the “universe” or the “world” as such. Technically, however, the word “creation” refers to the original and on-going act of God by which the universe was created and continues to be sustained in being. This is the common understanding of the term in Catholic theology, and this is the sense in which the word is used in this study.

² Traditional, as distinct from the contemporary analysis of creation theologies which attempt to explain creation in a way that makes it compatible with certain ideas from other disciplines such as cosmology, especially scientific theories of evolution. The contemporary approach is the focus of the fourth chapter of this study.

councils and encyclicals right up to the end of the middle ages. This chapter is therefore divided into the following three sections:

- 1) Creation in the Biblical Tradition. Under this section, the following themes will be addressed: The theme of Creation in the Jewish First Testament and The theme of Creation in the Christian Second Testament.
- 2) Creation Theology in the Tradition of the Church. This includes the theme of Creation Theology in the Early Christian Era: 1st -11th Centuries, and the theme of Creation in the Church of the Later Middle Ages with attention to the Councils of Lateran IV (1215) and Florence (1442).
- 3) A Conclusion Reiterating the Major Creation Themes in the Chapter.

1.1. Creation Theology in the Biblical Tradition

The Christian theologies of creation are rooted in the biblical tradition whose central theme is God the creator and redeemer. The belief in God as the creator, sustainer and the goal of creation runs through the pages of Scripture from the Jewish First Testament to the Christian Second Testament. This is evident from the affirmation of God as creator of the universe in the very first book of the Bible, the book of Genesis, and again as creator and redeemer in the last book, the book of Revelation. The book of Genesis opens with: “In the beginning when God created the heavens and the earth...” (Gen.1:1) and the book of Revelation sums it all up with the same theme: “Worthy are you, Lord God...for you created all things, because of your will they came to be and were

created...” (Rev. 4:11); expressing confidence of the chosen people in God’s saving work, the Psalmist says: “But God will redeem my life, will take me from the power of Sheol” (Ps.49:16) at the vision of the triumph of the elect, a cry from the throne of God in heaven is heard declaring that: “Salvation comes from our God, who is seated on the throne, and from the Lamb” (Rev. 7:10).³ Such texts point out the inseparable link between creation and redemption for God’s creative work reaches its completion in his redemptive work.

The Bible therefore remains the primary locus and base from which the doctrine of creation in the Christian tradition draws its teaching. Since the first and second testaments of the Bible flow into and from each other, creation in the Bible will be examined in this section under the following headings:

- The Theme of Creation in the Jewish First Testament.
- The Theme of Creation in the Christian Second Testament.

1.2. The Theme of Creation in the Jewish First Testament

The concept of creation in the Jewish First Testament is set against the backdrop of the Jewish understanding of the nature of God –Yahweh. In the worldview of the Hebrew people, part of what goes into the understanding of God is his creative, sustaining and redeeming power, the ever present creativity of Yahweh. Creativity is so much identified with Yahweh God that the Priestly account (Gen. 1:1-2:4) of creation

³ Donald Senior (Gen. Ed.), *The Catholic Study Bible* (New York: NY, Oxford University Press, 1990).

underscores the ease with which Yahweh creates. He creates just by mere words. Hence the chorus: “God said let there be... and there was...”

To further elaborate this important point, the observation of Dianne Bergant and Carroll Stuhlmeuller is pertinent. According to them, the word "Creator" in the Hebrew language is a participle. If translated literally as a participle the word would mean, “the one (who is) creating.” From the Hebrew understanding therefore, the word Creator depicts Yahweh as a God who is actively present in his action right here and now.⁴ The present and Yahweh’s enduring presence in his creative work is therefore the primary emphasis of the creation narratives. The past, origins or beginnings come only as secondary issues. This is because the important issue in creation, according to the mentality of the Hebrew people, is not when the universe came into being, nor is the emphasis on creation itself but on Yahweh, the creator, and his relationship with creation. Through the creation accounts in the book of Genesis the Hebrew people express their unique appreciation of God’s presence in their lives and in his role as creator and redeemer.

The other aspect of the Hebrew worldview that is relevant to this discussion is demonstrated in the way they perceive and express the nature of reality. The ancient Hebrews, unlike the Greeks who engaged in philosophical speculations, tended to be concrete and practical. This is evident from the way the creation account opens: בְּרֵאשִׁית, וַאֲת הָאָרֶץ בְּרָא אֱלֹהִים, אֵת הַשָּׁמַיִם, וְאֵת הָאָרֶץ

(*B’reshit bara Elohim et hash-shamayin w’et ha’ares*) “In the beginning God created the heavens and the earth...” The plain, down to earth, and practical manner with

⁴ Dianne Bergant, and Carrol Stuhlmeuller, “Creation According to the Old Testament” in Ernan McMullin, ed., *Evolution and Creation* (Notre Dame, Indiana.:University of Notre Dame Press, 1985), 153.

which the Hebrew people spoke of God as distinct from the speculative and philosophical approach of the Greeks leaves us with a great lesson. While the Greeks philosophized about the nature of God and his attributes, the Hebrews presented a more personal, loving, caring and creative God who is involved in creation, especially in the lives of his people. As Bruce Vawter rightly puts it, “this knowledge was God’s gift to Israel and Israel’s gift to the world.”⁵

The accounts of creation in the Jewish First Testament include a description of events which took place when no creature had been brought into existence. Thus, these accounts are extrapolations that express the reflective conception of the Hebrew people about God and his relationship to the world. Yahweh, God, is the creator and sustainer of the universe, which they refer to as “the heavens and the earth.” God is not only a creator but also one who disposes and brings order out of chaos -- *tohu va bohu* -- as he creates. And so, at the initial stage all is chaos and darkness with the surging waters of the primordial deep covering the earth from above. But then, over and above this and distinct from it all is the spirit of God described as “hovering over the waters.” The spirit of God, *ruah elohim*, God himself is therefore actively and directly at work in bringing creation into being.

However, the creation narratives in the Jewish First Testament are not without parallels. These narratives reflect the creation accounts of the polytheistic religions of the Ancient Near East (ANE) as expressed in the *Enuma Elish*, the *Epic of Gilgamesh* and the *Atrahasis*, originating from the Egyptian, Babylonian and other Mesopotamian traditions. Based on evidence from their research, scholars generally agree that these ANE creation accounts form a significant influence on the Genesis creation narratives. A

⁵ Bruce Vawter, *A Path Through Genesis* (New York N.Y.: Sheed and Ward, 1956), 37+.

major area of similarity is found in the general succession of events whose identical pattern is present in both sets of creation accounts. First, there is chaos at the beginning. This is then followed by the creation of the firmament, the dry land and the heavenly bodies. Finally, there is the creation of human beings. The Mesopotamian cosmogonies portray the gods as founders of the world making cities and canals, taming the seas and channeling the cosmic water and creating mountains and valleys as well as human beings.⁶ In a similar way, the Egyptian influence is reflected in the Memphite cosmogonic traditions which point out the important role that light plays in creation as the watery mass is increasingly given shape. The Memphite version of creation also envisions creation happening through “the tongue”, that is, through the speech of Ptah. All these themes are reflected in the Genesis creation narratives.⁷

In spite of these apparent similarities however, there are significant areas of differences that mark the Genesis creation narratives out as unique in their own rights. The cosmogonies of the ANE, especially, the Babylonian myth, (*Enuma Elish*) suggest the eternity of matter, because matter existed in the person of the first gods from the very beginning. Furthermore, these cosmogonies envision the astral realm as inhabited by a multiplicity of deities. Over and above this level of understanding, the Genesis accounts insist on the absolute authority of Yahweh God over the entire creation including the heavens and all of matter. By emphasizing the creatureliness of the heavenly bodies and matter, the Genesis accounts duly exults Yahweh God as the creator *par excellence*.

Another significant area of difference in these accounts is that in the ANE cosmogonies creation started to unfold through conflict between these deities. Madurk

⁶ Richard J. Clifford, *Creation Accounts in the Ancient Near East and in the Bible* (Washington, D.C.: The Catholic Biblical Association of America, 1994), 139.

⁷ *Ibid*, 141.

and Tiamat, for instance, engaged in a conflict and the heavens and earth came into existence out of the slain body of Tiamat. In contrast to the creation accounts of the ANE, a key and unique theme which runs through the Genesis creation narratives is the active, purposeful and personal role of the Creator God, the one true God, the maker and sustainer of the universe, who created out of his own power as God. The Genesis creation narratives portray a conflict-free environment in which God maintains absolute control over creation. Clifford expresses this point quite succinctly when he said that “Genesis begins with a dark and watery mass swept by a massive wind, after which God speaks, creates, separates, and molds.”⁸

Although the liturgical pattern of the creation account in Genesis 1 is reflected in the account of the creation of humans in *Enuma Elish*, there is a significant difference in the purpose for the creation of human beings. In the Babylonian myth, the main purpose for creating human beings is to make them slaves in service of the gods.⁹ In contrast to this, the Genesis account demonstrates an exalted status of human beings created in the image and likeness of God himself. Human beings are a unique species with a dual relationship, namely, as being created in the image and likeness of God and as beings with a special relationship with other created beings who are their co-inhabitants. This unique position carries with it a special responsibility. Human beings, as representatives of God and co-creators with him, are charged with the duty of responsible stewardship even as they exercise dominion over other creatures.

The authors of the creation accounts in the Jewish First Testament took for granted the “how” of the creation of the universe. Therefore we would be expecting too

⁸ Ibid., 141.

⁹ Ibid., 143.

much if we looked for answers to “how the universe was created” in these Genesis texts. The primary focus, as indicated before, is not how the universe came into existence but the relationship of God as creator to his creatures. Bernhard Anderson further develops this point when he said that there is “a historical intention” to the Genesis creation accounts. Creation does not stand in isolation but remains an integral part of history. The creation accounts are part of Israel’s attempt to confess their faith in Yahweh God as the Lord of history, hence the connection with patriarchal times whose stories follow the creation narratives.¹⁰ Using their imagination therefore, the authors of Genesis expressed their belief in Yahweh God, the creator and Lord of history, in pictorial, concrete and poetic manner that does not belong to the sphere of natural science. And as Bruce Vawter observes, the fact that we have two distinct accounts of creation rather than one (Gen: 1 & 2) is a further testimony to the fact that the authors were not out to put across empirical data based on critical or scientific account but a simple, nonetheless, intelligible expression of their belief in God the Creator and his relationship to the his creatures.¹¹ These observations become clearer with a closer look at the Genesis creation texts that will be analyzed in the next sub-section.

1.2.1. Creation in the Book of Genesis

The book of Genesis, is, as the title clearly indicates, a book of “beginnings” or “origins.” Chapter 1 – 2:1-4, a semi-poetic prologue in a liturgical setting, introduces the book of Genesis just as Genesis is an introduction to the entire Bible. The stage is therefore opened for a universal drama giving an account of order being brought out of

¹⁰ Bernhard W. Anderson, *Creation Versus Chaos* (Philadelphia: Fortress Press, 1998), 40- 41.

¹¹ Bruce Vawter, *A Path Through Genesis*, 47.

chaos, heaven and earth being formed, plants and animals being created and the epic story of humankind as the crowning of God's creation. The themes of interrelationship and interdependence and interconnection in creation under the care and control of Yahweh God, the creator is central to the Bible, thus, we have creation accounts take their rightful place at the beginning in the book of Genesis. A Jewish scholar, W. Gunther Plaut, emphasizes this same theme of relationship and interdependence in his beautifully worded introduction:

The prologue is cast in the form of a prose poem. It is written in terse controlled phrases with rhythmic repetitions, the slow ascent of the cosmic drama culminating in the creation of man and the serene postscript describing the sanctification of the seventh day. In sparse, austere language it speaks of God, the world and man in relations to each other and reveals the basic and unalterable dependence of the world on the presence of God. The prologue tells with the assurance of faith, of life's foundations, and it is in the light of faith that it must be read and understood.¹²

In this section of the dissertation, an attempt will be made to further develop the meaning of creation recorded in these opening verses of the book of Genesis as understood by the ancient Jewish tradition. These Genesis texts, like the rest of the Bible, developed from the testimonies of a community of believers expressing their faith in God, the faith of the Jewish people in Yahweh God, the creator. In my analysis of these texts therefore, I shall be guided more by the historical-critical method of interpretation, although there are many other ways used by biblical scholars to interpret the Bible.¹³

¹² W. Gunther Plaut (et al) ed., *The Torah: A Modern Commentary* (New York: Union of American Hebrew Congregations, 1981), 16.

¹³The book of Genesis has been understood and interpreted in different ways by different traditions over the centuries. Scholars, in their analysis, identify four traditions developed by exegetes in medieval times and the various interpretations that they have given. Medieval exegesis identified four senses of Scripture. The first of these is the literal or historical understanding and interpretation. In this sense, the text means exactly what it says. Secondly, we have Christological or allegorical meaning of Scripture. In this understanding, both the First Jewish Testament and Second Christian Testament texts are

1.2.2. Genesis 1: 1-2.4a

The first account of creation in the Jewish First Testament (Gen. 1.1-2.4), which is second chronologically, is attributed to the Priestly tradition in Israel. The Priestly materials reflect Israel's experience of exile in the sixth century. This tradition emphasizes the blessing of God that endures no matter how desperate the situation may be, because God is all-powerful. There was need to revive the spirit and religious balance of the people of Israel because the exile experience had dealt a devastating blow on them both politically and theologically. The survivors of this traumatic experience of the exile were then faced with a major challenge to reconstruct and to reinterpret the covenant relationship between God and his people and the promise made to their ancestors. One way to achieve this was to reassert their belief in the power of God -- the God whose power works wonders in creation, the God who re-creates when destruction strikes, and a God whose power brings order and harmony out of chaos. Bernhard W. Anderson observes that a major theological motif behind the Priestly account therefore is the power of God's word through which all creation came into existence and who sustains all things in being. The transcendence of Yahweh God the creator underscores the Priestly creation narrative. And Anderson puts it like this:

interpreted in the light of Christ himself and of the Church. The third level of interpretation is the anthropological or moral sense. In this category there is an attempt to interpret the Scriptures by applying it to the lives of individual or groups in the community and the society in general. The fourth and final category of the interpretation of Scripture is the analogical or eschatological sense or meaning. In this understanding the Scripture texts are applied to the end of the world and the second coming of the Messiah. However, Bergant and Stuhlmüller also observe that since the biblical traditions developed from the testimony of communities of believers expressing their faith in God, most current interpretations have grown out of the historical-critical method applied by contemporary biblical scholars with the aim of discovering the original meaning of the texts and the theological background from which the texts developed. The historical-critical method was developed in response to the rise of science as a model discipline in 19th century Universities.

The sovereignty of God is expressed more forcefully in the Priestly account which bears the marks of profound theological reflection about creation in the cosmic sense. In this account God is exalted and transcendent. The creator's only point of contact with the creation is the uttered command, which punctuates the creative drama with the refrain: "And God said...and it was so" The emphasis on the power of God is a significant characteristic of the Priestly tradition in general.¹⁴

The creation account by the Priestly tradition roughly follows this order: On the first day, God created the heavens and the earth, as well as the light. On the second day, a dome which is the sky was created to separate the waters above from the waters below. On the third day, God created the dry land – earth, and the sea, as well as vegetation on the land. On the fourth day we have another set of light created to separate the day from the night, one governing the day (the Sun) and the other governing the night (the Moon). On the fifth day, the sea creatures were created. Then, on the last day of his work, the sixth day, the land creatures were created, followed by human beings whom God created last of them all.

From these accounts of creation in the Jewish First Testament, which reflect the Semitic cosmogony, the basic structure could be summed up in this way: To begin with, we see the phrase "the heavens and earth", which is used for universe since there is no word for universe in Hebrew. The account lays out a structure of three levels. The earth, of course was flat, with hills and mountains here and there. Some of the bigger hills and mountains were believed to be situated at the edge of the earth. Above was a dome-shaped sky, a firmament of solid bowl set up above with the earth below it. The sky,

¹⁴ Bernhard W. Anderson, *From Creation to New Creation* (Minneapolis: Fortress Press, 1994), 28-29; Claus Westermann, *Genesis 1-11: A Commentary*, trans. John J. Scullion, 2nd ed. (Minneapolis: Augsburg Publishing House, 1984), 85.

believed to be solid, was also thought to be joined to the earth at the edges. Then, there was Sheol below the earth and the abyss.¹⁵

While creation through God's word is demonstrated in this Priestly account, this should not be understood in a general or abstract sense. This explains why some scripture scholars would caution that the primary emphasis of the Priestly authors in the way Genesis 1 is narrated is not only to portray creation through God's word, but also the power of God's word through his command. Claus Westermann also observes that the theological motif of the word of God in this account is important. He however goes further than Anderson to state that the main purpose of the Priestly authors in adopting this literary style is to arrange the text in an order whereby a network of successive sentences corresponds to the order of God's creative work following the pattern that God's commands were brought into fulfillment. The emphasis is on God's command and the fulfillment of his command through his word which demonstrates his power as God and his purpose in creation. In the Priestly account, therefore, we see the special significance of God's word of command which issues from his power as God, and this, as a matter of fact, is a characteristic that permeates all of Priestly theological thinking. Thus, in comparing God's action in history with God's action in creation, the only difference would be that while in the first case the command is directed to a person, for instance Abraham, or to a mediator, like in the case of Moses, in the second case the command has no addressee because it is a creation command.¹⁶

The priestly authors leave us with no doubt about their belief in the total dependence of creation on God and the absolute authority of God over creation as

¹⁵ For more on the Hebrew cosmogony see Bruce Vawter, *A Path Through Genesis*, 41-42.

¹⁶ Claus Westermann, *Genesis 1-11: A Commentary*, translated by John J. Scullion, 2nd edition (Minnneapolis: Augsburg Publishing House, 1984), 85.

Yahweh God the creator. Therefore, there is no suggestion that God is identified in anyway with any power immanent in nature as it is in the cosmogonies of the ANE. Yahweh God, the creator is completely independent from the primeval watery chaos into which he brought order as he created the world. In his analysis of the Hebrew word for create, *bara*, Anderson observes that it is used to refer exclusively to the effortless nature of divine creative act in which God brings into being something entirely new.¹⁷ In other words, the word *bara* (create) in the Hebrew mentality can only be used to describe an act of God. The emphasis placed on the absolute power and transcendence of God in his creative work as articulated in Genesis 1 has made some scholars use this account as part of a defense of the doctrine of creation *ex nihilo*.¹⁸ Although the language of the Priestly authors comes close to the idea of creation *ex nihilo*, there is no explicit mention of this concept in the Genesis creation narratives. But then, as Anderson observes:

The unconditional sovereignty of God and the complete dependence of creation on God's transcendent will (that is articulated by the Priestly authors is) an affirmation that is only further underscored by latter discussions in which creation *ex nihilo* was made explicit.”¹⁹

The full-blown concept of creation *ex nihilo* had to wait for latter generations under the influence of Greek philosophical reasoning that was absent from the more practical and faith-based mind-set of the Hebrew people.

The Priestly tradition also asserts the unique and special place of humankind and their glory and dignity by the way they came into being. This unique and special status as

¹⁷ Bernhard W. Anderson, *From Creation to New Creation*, 8.

¹⁸ References to the defense of *creatio ex nihilo* in Genesis 1 is found in Walter Eichrodt, “In the Beginning: A Contribution to the Interpretation of the First Word of the Bible,” in *Creation in the Old Testament*, edited by Bernhard W. Anderson; IRT 6;(Philadelphia: Fortress Press, 1986), 65-73; idem, *Theology of the Old Testament*, translated by J. A. Baker; OTL; 2.vols.; (Philadelphia: Westminster, 1961-67), 2.101-6.

¹⁹ Bernhard W. Anderson, *From Creation to New Creation*, 8.

the crowning of God's creative works, according to Plaut, is demonstrated in the manner of their creation. Plaut describes it in these words, "in anticipation (of the making of human beings) the text shifts into a lower gear; the words "God said" are not, as previously, directly followed by a creative act but by a further resolve, almost contemplative in nature: "Let us make man...in our image, after our likeness..."²⁰ (1: 26-27). By creating humankind in his image and likeness, Yahweh-God placed humankind in a unique position which equally carries with it, a special responsibility to be co-creators and stewards of creation.

The primary aim of the Priestly authors in this creation narrative therefore, was to reawaken trust in God and confidence in his providential care which was absolutely necessary for the restoration of Israel. The focus in these texts are basically theological and anthropological rather than any history of origins or cosmologies from the modern perspective. A further proof of this is the apparent inconsistencies and inaccuracies that we see as we read through the narrative. Any attempt to interpret the Genesis creation narratives from a strictly modern philosophical and scientific method would be reading into the texts ideas that were foreign to the ordinary Hebrew mind.

1.2.3. Genesis 2: 4b –25

Bergant and Stuhlmüller observe that while the first creation account, according to the order in the book of Genesis, grew out of the Jews' exile experience of dissolution, the second account reflects the appropriation of royal ideology by the people of Israel and how this developed into their concept of a nation --- a national identity as the chosen

²⁰ W. Gunther Plaut (et al) ed., *The Torah: A Modern Community*, 22.

people of God.²¹ The second account, which is first chronologically, is attributed to the Yahwist tradition. This is the earliest and most comprehensive of the four sources from which the Jewish First Testament developed. The work of the Yahwist tradition dates back to the late tenth century or early ninth century during the reign of King Solomon or one of his successors. It is believed to have been written in Judah, probably in Jerusalem, with the primary aim of showing that the Davidic Dynasty was a fulfillment of the promise made by God to Abraham. We see in this account a reflection of a tradition that worked towards legitimizing the institution of the monarchy in Israel.²² This creation narrative, like the first, is therefore an anthropological and a theological account rather than a cosmological treatise on the origin of the universe. It is a reflection of the faith experience of the chosen people of God and this fact remains valid in spite of the inconsistencies and inaccuracies that may be identified if we analyze the account from the point of view of modern historical mindset.

Commenting on the primary concern of the Yahwistic tradition, Karl Rahner observes that the Yahwistic account is an etiology, a story rich in symbolism that is used to identify and articulate what they believed to be the cause of the condition of the people at that time.²³ This etiology reflects different phases of the experience of the people in their relationship with God. For instance, it gives expression on the one hand of the loving and intimate relationship with God, the gracious and benevolent Gardener, and on the other hand, it reveals the event of sin and alienation from God as seen in chapter three. Like the first creation account, this narrative equally borrows ideas and themes

²¹ Dianne Bergant, and Carrol Stuhlmueller, "Creation According to the Old Testament" in Ernan McMullin, ed., *Evolution and Creation* Ernan McMullin, ed., *Evolution and Creation*, 156.

²² *Ibid.*, 156.

²³ Karl Rahner, *Hominization: The Evolutionary Origin of Man as a Theological Problem* (New York: Herder and Herder, 1965), 32-44.

from Ancient Near Eastern religious traditions. However, the Yahwist authors represented these religious traditions in the light of the situation of the people of Israel and their religious faith.

The Yahwistic tradition focuses on the terrestrial aspect of creation. It is both earth-centered and anthropomorphic, thus we see a good deal of emphasis on the earth and on God represented in human terms. First, the desolation and barrenness of the earth is attributed to lack of rain and the absence of the human creature to till the soil. God had not sent the rain, which is a major source of life, and he had not formed humankind. God, like a seasoned potter, proceeds to form the first human creature from the earth --- *ha'adama*, taken from the ground. God forms this human creature (earth creature) and breathes into his nostrils the breath of life and it became a living creature. This reflects other creation stories in the ANE where the creation of humans from the earth is a widely held concept, as could be found among the Egyptians and in the Babylonian account of the creation of Enkidu. The difference however is that while Genesis 1 emphasizes the dignity of humans being as creatures made in the image and likeness of God, in the creation accounts of ANE, except for the Egyptians, the humans are made only as slaves for the gods. What we see in these accounts, as in Genesis 1, is the continuous work that God engages in to sustain creation as well as to bring it to completion. After he formed this first human creature, God put the creature in the garden that he had planted in Eden, and “out of the ground, the Lord made various trees grow ...” (2:9). However, God realized that there was need to do more to bring creation to completion. He tried to make up for what was lacking in creation for as he said : “It is not good for the man to be alone. I will make a suitable partner for him” (2:18). God therefore proceeds to make the

animals but realizes again that none of these could serve a suitable partner to this unique being that he created. He then proceeds to form the woman, but this time, out of the rib of the human creature. It is in this woman then that the human creature attains completion.²⁴

The uniqueness of the Genesis narrative, in comparison the ANE accounts, is again demonstrated in the acknowledgement that the creation of humans reached completion only after the woman was made and the man and woman were put together. This reflects a stage of civilization that recognized the special place of the woman in creation in general and the necessity of her existence for the completion of the human creature.²⁵ Although the Genesis creation accounts should be not be interpreted literally, a good observation of the accounts demonstrate the element of inter-connection, inter-relatedness and inter-dependence that is evident in creation. What is higher, the human creature, being formed from that which is lower, the ground; the various trees that God made to grow, again, out of the ground. A higher creature being made out of a lower creature. The creation account in the book of Genesis, therefore, appears to demonstrate a process in the pattern of creation, one development after another, through the direct creative act of Yahweh-God the creator on whom all creation depend. It is this *developmental process* that the Priestly authors present in a liturgical setting expressed in a doxology for God's creative work that culminates in the Sabbath rest of the seventh day.

²⁴ Some scholars today observe that the distinction of gender came up only after Eve was created from the rib taken out of the side of the earth-creature. The first human creature was not ascribed any gender before the creation of Eve. PhyllisTribble and Claus Westermann are among those who make this observation.

²⁵ Claus Westermann, *Creation*, translated by John J. Scullion (Philadelphia, Fortress Press, 1974), 72. See also *Genesis 1-11: A Commentary*, translated by John J. Scullion, 2nd edition (Minnneapolis: Augsburg Publishing House, 1984), 85.

From the literature published on creation, we know that the Genesis creation narratives are given the greatest attention in most discussions on the theme of creation in the Jewish First Testament, and rightly so, because they form the primary biblical base for God's work in creation. However, the theme of creation is not limited to the Genesis creation narratives. The next section will therefore examine a selected section of the books of the Prophets as well as Wisdom Literature that make contributions to the theme of creation.

1.2.4. Creation in the Prophetic Tradition

The prophetic books and the messages of the prophets were products of the institution of prophetism in Israel. They give accounts of how a succession of Israelites were chosen and commissioned by God to speak in his name to his people (Dt. 18: 15-20). In visions, dreams, and ecstasies the prophets received messages from God and transmitted them in turn to the people through sermons, writings, and symbolic gestures. In the prophetic books we find expressions of judgment passed on the moral conduct of the people of Israel based on the covenant relationship established between them and God. The prophetic tradition reveals messages from God that are full of sublime truths and lofty morals communicated to the people in the name of God. While the theme of creation is present either explicitly or implicitly in all the prophets, I shall limit this examination to a select few.

In the prophetic literature, it is evident that creation came into existence out of the power of Yahweh. Amos, for instance, credits Yahweh God of Sabaoth with the creation of the mountains and the winds, and the dawn and dark (4:13). In a similar way Jeremiah emphasizes the "great power" and "outstretched arm" with which Yahweh Sabaoth, the

God of Israel, made the heavens and the earth (27:5), creating, sustaining and orderly controlling the elements put in them like the sun, moon, and sea (31:35-37). However, for a more detailed account of creation in the prophetic tradition, one must examine the works of Deutero-Isaiah and Ezekiel.

1.2.5. Deutero-Isaiah (40-55).

The background to the second part of the book of Isaiah is the message of consolation and hope that God sent to his people through an anonymous poet to whom this text is generally attributed. Most scholars trace Deutero-Isaiah to the period towards the end of the Babylonian exile at about the year 540 BCE. The author of Deutero-Isaiah believed that Jews in exile in Babylon or other exilic locations had ceased to be Israel proper, because they were no longer dwelling in the promised land in Canaan but away in a foreign land among foreign and pagan gods. They had fallen back into the position of their ancestors who, before their liberation, were under oppression and enslavement by Pharaoh in Egypt. As the specially chosen people of God, the Jewish people did not properly exist away from the promised land, without temple, rituals and officials. His prophetic message was therefore that of a new Exodus-Conquest, a kind of new creation, a new phase of liberation to bring the chosen people of God back to their home land.

In contrast to the sharp and stern words of God's judgment as found in the first part of Isaiah (Chapters 1-39), Deutero Isaiah (Chapters 40-55) offers a message of consolation and hope for a better future when the exiled would be freed and allowed to come back to Israel again. Consequently, the central theme of this text is about creation and re-creation, a promise of liberation and salvation by God who created and who alone

has the power to recreate. The introductory chapter opens at the point where the prophet is advised to speak tenderly to Jerusalem and give comfort to God's people about the new beginnings, a time of re-creation:

A voice cries out: In the desert prepare the way of the Lord! Make straight in the wasteland a highway for our God! Every valley shall be filled in, every mountain and hill shall be made low; the rugged land shall be made a plain, the roughcountry, a broad valley" (Is.40:3-4).

Commenting on the vision of the author of Deutero-Isaiah, Clifford gives an insight into his connection between the Exodus-Conquest and Hebrew cosmogony:

For him Exodus-Conquest and cosmogony are one and the same event (the defeat of Pharaoh and the successful entry into Canaan) and cosmogony (the defeat of Sea, or Desert, interposing itself between the people and its allotted land) accomplished the same purpose --- the coming into being of Israel in its land.²⁶

In a similar way, Brevard S. Childs makes a good analysis of the image of "highway" employed by Isaiah. Childs remarks that "within Second Isaiah the theme of a highway is part of a larger set of images describing the transformation of the wilderness into a garden (41:18ff; 42:15ff.) in order to facilitate the return of the exiles".²⁷ These returnees according to Childs, are not merely refugees but are the "redeemed" (35.9) who have been transformed and ransomed, making them ready for the new life as a new creation.²⁸ Thus we see in Isaiah a striking connection between creation and redemption as explicitly stated in opening verse of Isaiah chapter 43 "But now, thus say the Lord, who created you, O Jacob, and formed you O Israel: Fear not, for I have redeemed you; I have called you by name: you are mine...". Unlike the perspective of creation in the

²⁶ Richard Clifford, "Creation in the Jewish First Testament", in Robert J. Russell, William R. Stoeger, and George V. Coyne, eds., *Physics Philosophy and Theology: A Common Quest for Understanding* (Vatican City State: Vatican Observatory, 1988), 158.

²⁷ Brevard S. Childs, *Isaiah* (Louisville/Kentucky: Westminster John Knox Press, 2001), 299.

²⁸ *Ibid.* 299.

Genesis accounts where creation of the world took place once and for all, Deutero-Isaiah focuses primarily on Israel, the beloved and chosen people of God, and God's continual presence in their lives, redeeming and recreating them (43:1; 44:1; 45:11-12). Thus Deutero-Isaiah prophesizes that God will bring about a renewed existence for his people -- a new exodus-conquest/cosmogony, a new creation, a new people. Just as the author identifies the relationship between this divine act and that of the exodus period, he also points out the differences:

Thus says the Lord, who opens the way in the sea and a path in the mighty waters, who leads out chariot and horsemen, a powerful army, till they lie prostrate together, never to rise, snuffed out and quenched like a wick. Remember not the events of the past, the things of long ago consider not; See, I am doing something new ! Now it springs forth, do you not perceive it? In the desert I make a way, in the wasteland, rivers. Wild beasts honor me, Jackals and Ostriches, for I put water in the desert and rivers in the wasteland for my chosen people to drink, the people whom I formed for myself, that they might announce my praise. (43:16-21)

The difference here is that this time, the people of God will be led, not through the water as in the exodus times, but through the desert. Clifford observes that the story of redemption from Pharaoh which is expressed in verses 16-17 is now being replaced as a national story by this new redemptive act through the wilderness as verse 18 states "remember not the events of the past."²⁹

1.2.6. Prophet Ezekiel

Ezekiel, a prophet and a priest, was the first prophet called to prophesize outside of the land of Israel. His call came to him while Israel was in exile in the land of Babylon. However, most commentators are of the opinion that the book was not written

²⁹ Richard J. Clifford, "Creation in the Jewish First Testament", in *Physics, Philosophy and Theology*, 159.

by one person at a time, but a product of a faith community who recorded and edited this work over time based on the treasured memory of the message and teachings of prophet Ezekiel himself³⁰ The first part of Ezekiel consists of negative prophesies foretelling judgment, doom and condemnation. Here, the prophet foretells more bad news, a further devastation and more exile for the people of God. These prophesies of doom and judgment came true when King Nabuchadnezzar destroyed Jerusalem in the year 587BCE (Ez. 1-24). This is followed by a section of prophesies against foreign nations. The last part, (Ez. 33-48), which is called the prophesies of consolation, focuses on renewal and restoration, a new creation, a new Israel, a new covenant and a new temple that God would bring for his people. Foretelling the restoration that would come after the exile, God asked Ezekiel to say to his people: “I will gather you from the nations and assemble you from the countries over which you have been scattered, and I restore you to the land of Israel...” (11:17). In chapter 36, there are prophesies about regeneration of the land and of the people to avenge what was done to them by the enemy nations. Commenting on this text, Jesus Asurmend Ruiz says: “This passage is one of the best known in Ezekiel. It is true that it represents one of the summits of the OT.”³¹ Ezekiel prophesizes that the mountains of Israel shall grow branches and produce abundant fruit for the people of God who would soon be returned to their land. The land shall be tilled and sown to welcome the crowds of people and beasts who will be re-settled on it. Cities shall be re-peopled and ruins re-built. Humans and beasts alike shall multiply and be fruitful (Ez. 8-11). God’s generosity this time shall exceed that which went before

³⁰ Bruce Vawter & Leslie J. Hope, *Ezekiel: A New Heart* (Grand Rapids: Michigan, William B. Erdmans Publishing Company, 1991), 3.

³¹ Jesus Asurmend Ruiz, “Ezekiel” in William R. Farmer, ed., *The International Bible Commentary: A Catholic and Ecumenical Commentary for the Twenty-First Century*. (Collegeville, Minnesota: The Liturgical Press, 1998), 1076.

because this is a new beginning that surpasses the old one. Ezekiel then proceeds to communicate the prophecy for the regeneration of the people themselves.

For I will take you away from among the nations, gather you from all the foreign lands, and bring you back to your own land. I will sprinkle clean water upon you to cleanse you from all your impurities, and from all your idols I will cleanse you. I will give you a new heart and place a new spirit within you, taking from your bodies your stony hearts and giving you natural hearts. I will put my spirit within you and make you live by my statutes, careful to observe my decrees. You shall live in the land I gave your fathers; you shall be my people and I will be your God. (Ez. 24-28)

In this text we see the connection between the regeneration of the people and that of the land. These were both terms of the covenant that God established with his people Israel. They were to be God's people and he would be their God and they would be inhabitants of the land of promise. Jesus Asurmend Ruiz observes that "heart" and "spirit" are symbolic of the entire human person. He concludes by pointing out the link between this text and the creation narrative in the book of Genesis stating that:

In our passage the reaction is impressive, the vision spectacular. We cannot help but think that we have here (as already in 36:26-28) a new creation. And with good reason: the similarities with Genesis 2 are many. The vocabulary is intentionally chosen to suggest this comparison to the readers, as are the references to Israel's theological traditions ... There is no hesitation in declaring that we have here a new creation, a re-created Israel.³²

But then, this recreation and restoration would take place not just for the sake of Israel but for God's sake as well. For, "when the nations see Israel's return to its land, they will draw only one conclusion: Israel's national deity has acted to save the people. By restoring Israel to its land, God could uphold God's own dignity before the rest of the

³²Jesus Asurmend Ruiz, "Ezekiel" in William R. Farmer, ed., *The International Bible Commentary: A Catholic and Ecumenical Commentary for the Twenty-First Century*, 1076-1077.

world.”³³ This regeneration would be two-fold: an internal regeneration, transforming the people from within their hearts, “new heart and a new spirit” as well as external regeneration which would show its effects in the re-population of the cities and a famine-free fertile land that would support the new population. (Ez. 36: 29-30)

The passage in Ezekiel that captures this theme of new creation most beautifully is the famous vision of the valley of dry bones in chapter 37:1-14. This was a vision that captured the image of the future restoration and new creation, Israel rising to new life from the graveyard of the land of Babylon. Although this text has been interpreted by some scripture scholars as basis for the doctrine of the resurrection from the dead in the Christian tradition, I shall confine myself here to the theme of creation and recreation which is articulated by Prophet Ezekiel in this vision of the valley of dry bones.

Dry bones, hear the word of the Lord! Thus says the Lord God to this bones: See, I will bring spirit into you, that you may come to life. I will put sinews upon you, make flesh grow over you, cover you with skin and put spirit in you so that you may come to life and know that I am the Lord. Thus says the Lord God: O my people, I will open your graves and have you rise from them, and bring you back to the land of Israel...I will put my spirit in you that you may live, and I will settle you upon your land; thus you shall know that I am the Lord (Ez. 37:4-7; 12-14)

The use of the Hebrew word *ruah* (spirit) provides a link between this new phase of creation and that of Genesis in which we see the significant role of the spirit of God in the work of creation. This line of continuity between the Genesis creation account and Ezekiel’s vision of the valley of dry bones is further conveyed by the double stage process in the act of creation and recreation. In Genesis, Adam was first formed from the ground, and in the second stage, God put his breath into the nostrils, and through this breath of life, Adam became a living being. In a similar way, in Ezekiel’s vision of dry

³³ Bruce Vawter & Leslie J. Hope, *Ezekiel: A New Heart*, 163.

bones, we see that the first stage of regeneration is the formation of bodies around the bones (37:4-8), and the second stage is the actual animation of the body by the spirit, which issued from “the four winds” (37:9-10). The prophet Ezekiel wanted to prove to his fellow exiles that the same Lord who created human beings by first bringing the earth creature, Adam, into being, is the one bringing Judah back into life, hence the similarity in the pattern of creation and regeneration.³⁴

Ruiz, in the same vein makes a link between Ezekiel and the Exodus event. The dry bones in Ezekiel’s vision, according to Ruiz, are a reflection of a situation of despair. The passage presents the exile experience in Babylon as reminiscent of the experience of slavery in Egypt. In view of the theological importance which the traditions of the Exodus event has taken on in the psyche of the people of Israel, which Ezekiel himself was very familiar with, it is of no surprise that he would interpret the plight of his people in the light of the first experience of exodus from bondage in Egypt.³⁵

By way of conclusion, Deutero-Isaiah and Ezekiel are therefore among the prophets who developed the theme of creation and re-creation in the light of God’s relationship with his people Israel. In the book of Genesis the accounts focus on the creation of the heavens and the earth presented as having taken place once and for all. The prophetic tradition however, focuses primarily on Israel and the recreation of Israel, the chosen people of God who had fallen from being a people to a non-people, having lost their existence as a people in the event of the exile. The prophets thus speak of recreation, a new creation by the same God who created them in the first place and formed them into his own people. It is in the same frame of mind that Richard J. Clifford

³⁴ Bruce Vawter & Leslie J. Hoppe *Ezekiel: A New Heart*, 166-167.

³⁵ Jesus Asurmend Ruiz, “Ezekiel”, 1078.

observes that the theme of new creation in Deutero-Isaiah points to a renewal of the theme of the exodus-conquest which was God's first act that created the people of Israel, bringing them into existence.³⁶ Thus, as we see in both Deutero-Isaiah and Ezekiel, the emphasis is on God's restoration and salvation. Scattered in exile in the land of Babylon, the people could not properly exist as a covenanted people of God away from the land, temple and rituals. There was thus a need for God to recreate them, to make a new creation, a new land, a covenant, a new temple and a new people with a new heart.

An important nuance to this dimension is that it underscores the fact that creation is not once and for all but a continuous exercise. We therefore see a new perspective from that of Genesis, because Deutero-Isaiah presents creation not just as God's act in the beginning but also God's continuous involvement in creation and re-creation throughout history. This is most beautifully expressed in Isaiah 43: 16-21 which opens like this: "But now, thus says the Lord, who created you, O Jacob, and formed you, O Israel: fear not for I have redeemed you; I have called you by name and you are mine... For I am the Lord, your God, the Holy one of Israel, your savior" (Is. 43: 1-3). Here the theme of creation is directly linked with redemption. The creative word by which God made heaven and earth remains the same redemptive word by which Israel was created as a people of God--- liberated from slavery in Egypt and later from exile in Babylon.

It is clear therefore that in the prophetic tradition, the themes of creation, liberation from slavery and bondage in Egypt in the exodus event and redemption from forces of evil are all intertwined, for these form the basis of Israel's faith in God. This same interconnection between creation and redemption in the creation texts of the

³⁶ Richard J. Clifford, "The Hebrew Scriptures and the God of Creation," *Theological Studies*, 46 (1985), 517.

prophetic tradition is further developed in the creation themes of Wisdom Literature, these will be addressed in the next sub-section.

1.2.7. Creation in Wisdom Literature

The Wisdom or Sapiential books in the Jewish First Testament include the books of Job, Psalms (didactic psalms), Proverbs, Ecclesiastes (Qoheleth), the Song of Songs, Wisdom (Wisdom of Solomon), and Sirach (Ecclesiasticus). They are also called the didactic literature because the primary purpose of these books is instruction. The literary style displays a skillful use of balanced and symmetrical phrases—parallelism, that is characteristic of Hebrew poetry. Here also, we have the personification of Wisdom (*hokimah/sophia*) as a female, “Lady Wisdom” which Roland E. Murphy describes as “the most striking personification in the entire Bible.”³⁷ Wisdom literature is a modern designation for various genre of literature that grew out of a movement among the ancient oriental people who busied themselves with gathering, preserving and expressing the products of human experience. This information then served as a helpful resource toward understanding and solving the problems of life as they affected the people of their own generation and preserved for reference for future generations. Among the people of Israel in particular, the movement addressed basic and vital questions such as the origin and destiny of human and non-human creation, the problem of pain and suffering, the question of good and evil, happiness and misery in life and about death and after-life. These were initially preserved by way of oral tradition but they eventually found their

³⁷ Roland E. Murphy, *The Tree of Life* (Michigan: Grand Rapids Wm. B. Eerdmans Publishing Co., 1996),133.

way into the Jewish First Testament in the form of chants and odes, proverbs and epigrams as well as the Psalms ---those Psalms that are primarily for didactic purposes.³⁸

The theme of creation in wisdom literature is so significant that wisdom theology has been described as creation theology.³⁹ In most of the Wisdom Literature as in the book of Genesis, the primary focus is not on the actual origins of the universe but in the harmony and order in creation established by God. Wisdom, sometimes personified as a manifestation of God, is identified as that through whom this order and harmony in creation is perceived. The ability to discern this order and to live in harmony with other creatures is also attributed to wisdom. In a somewhat anthropomorphic language, God, in Wisdom Literature, is presented as an architect or artisan who constructs the universe as one would build a great edifice. Although subordinate to God as the first of his creation, wisdom becomes a second divine person who continues to inspire the work of creation. There is an emphasis on the element of divine will that is implanted in creation from the very beginning. This divine will can be discerned, discovered and followed by any one who seeks with sincerity and seriousness.⁴⁰ Among the texts that have creation as their primary focus are, Psalms 8; 19:2-7; 29; 89:6-19; 104; Proverbs 8, Sirach 24, and

³⁸ The words of wisdom are cultivated by a specially gifted group of people called *Sages*. They were well informed in the tradition of the people, the affairs of the society, and the governance of governance. They were men of letters, scribes and they were skilled in ways of counseling and instructing both kings and young people alike. King Solomon is believed to be the most illustrious of the sages and the originator of wisdom literature in Israel. Many of the wisdom books therefore bear his name including those that were not personally authored by him. Attempts to date these books have posed some difficulties. There is a general agreement however that they are postexilic or at least took their final form after the period of the exile. For more on the nature and composition of Wisdom Literature, see Roland E. Murphy, *Wisdom Literature and Psalms* (Nashville: Abingdon Press, 1983), 13-17.

³⁹ Walter Zimmerli's idea about wisdom theology as creation theology is analyzed in Leslie J. Hoppe, "Biblical Wisdom: A Theology of Creation", *Listening* 14 (1979): 198; Hans-jurgen Hermission, "Observations on the Creation Theology of Wisdom," in Bernard Anderson, ed. *Creation in the Old Testament* (Philadelphia: Fortress Press, 1983), 118-119; and Roland E. Murphy, *The Tree of Life: An Exploration of Biblical Wisdom Literature* (New York: The Anchor Bible Reference Library, 1990), 118.

⁴⁰ Richard J. Clifford, "Creation in the Jewish First Testament", in *Physics, Philosophy and Theology*, 160.

Wisdom of Solomon 7. Following the order of arrangement in Bible and their relevance for the liturgical life of the Church, the theme of creation in the book of Psalms will be addressed first.

1.2.8. The Book of Psalms

The theme of creation is found in various forms in the different groups of Psalms. Drawing on the work of other scholars, Clifford makes reference to an alleged distinction between two creation traditions in the book of Psalms. The first tradition develops the theme of the creation of the world, while the second develops the creation of human beings. The first tradition is found in the genre of *hymns of praise* which are employed to underscore the theme of Yahweh's majesty while the second appears in the genre of *lament* where they are used as a base for petitions and appeals to God especially in time of need.⁴¹

The most famous example of Psalms in the first tradition is probably Psalm 8. Here we can see clearly how the psalmist develops the theme of creation of the world in the genre of hymns praising the majesty of God in creation.

O Lord, our God, how awesome is your name through all the earth!
You have set your majesty above the heavens! When I see your
heavens, the work of your fingers, the moon and the stars that you
set in place ---- what are humans that you should be mindful of
them, mere mortals that you care for them...(Ps: 8:2; 4-5)

Sometimes the psalmist emphasizes the effortlessness with which Yahweh God creates which is reminiscent of the Priestly account in Genesis 1. By mere word of mouth, creation begins to unfold according to the command of God:

⁴¹ Richard J. Clifford, *Creation Accounts in the Ancient Near East and in the Bible*, 151. Clifford however remarks that both traditions were linked after the exile.

By the Lord's word the heavens were made; by the breath of his mouth all their host. The waters of the sea were gathered as in a bowl; in cellars the deep were confined...For he spoke, and it came to be, commanded and it stood in place...(Ps. 33: 6-9)

A good example of Psalms in the second tradition is the genre of *communal laments* --- Psalms 44, 74, 77, 89. The Psalms of communal laments reflect a theme of creation that emerges from a crisis situation in the land of Israel. When the existence and stability of the community as a people is threatened, they recall the wonderful acts of Yahweh which brought them into existence in the first place. In their plea, rhetorical questions such as these emerge: O Lord! Why would you allow your people whom you brought into existence to be annihilated? In the face of a current threat, the people called desperately on Yahweh to renew his creative acts. A good example of this is found in Psalm 77 which reflects a time when Israel's existence was threatened. The psalmist in desperation asks "Will the Lord reject us forever, never again show favor?. Has God's love ceased forever? (vs 8-9) The psalmist reasserts the superiority of Yahweh over other nations and their gods, the adversaries of Israel. As we saw in the creation texts of the other books examined, the primary focus here is not so much on the initial act of creation, rather, the emphasis is on understanding the divine creative act as a continuous sustaining and recreating power by which Yahweh wards off the threat of foreign enemies.

The recreation and redemption of Israel is depicted in combat language in which Yahweh demonstrates his supremacy over forces of nature. A good example of these is found in Psalm 74: 12-17.

Yet, you, God, are my king from of old, winning victories through out the earth. You stirred the sea in your might; you smashed the heads of dragons on the waters. You crushed the heads of Leviathan, tossed him of for food to the sharks. You opened up

springs and torrents, brought dry land out of the primeval waters.
Yours the day and yours the night; you see the moon and sun in
Place. You fix all the limits of the earth; summer and winter you
made...

These ideas and images reflect the creation themes of ANE cosmogonies. The difference however is that here we see Yahweh's victory over the forces of nature: the sea and the great sea monsters (vss12-14). Yahweh controls the chaotic waters, taming them and channeling them into spring and torrents. The forces of darkness are brought under control and converted into peaceful and harmonious rhythms of day and night (v16) and the formations of the seasons of the year (vs17).

Besides the genre of communal laments, the other Psalm which is replete with creation theme is Psalm 104. The context again is reminiscent of Genesis creation texts. "You spread out the heavens like a tent...you fix the earth on its foundation never to be moved..." (vss. 2-5). The power of Yahweh is demonstrated over the unlimited waters and night that impede the growth of human community. Yahweh's action in the storm turns this around and creates an environment favorable to human development and society. There is a clear demonstration of the power of Yahweh over the forces of nature which he created and then brings under control for the sake of the human community. The heavens and the earth, the waters, plants and animals are made to coexist in harmony making the environment suitable for human growth and development.

In the book of Psalms, we see a close connection between creation and Israelite worship.⁴² This connection is found in many Psalms (66:5; 96:4ff; 104; 115; 119; 136:5ff; 145-148) but mostly in the *enthronement Psalms* (95:3-6; 96:4-10; 100:3). To further elaborate this point, a closer look at Psalm 96 is appropriate.

⁴² Leo Scheffczyk, *Creation and Providence*, trans. Richard Strachan (New York: Herder and Herder, 1970) 15-17.

Sing to the Lord a new song; sing to the Lord all the earth. Sing to the Lord bless his name; announce his salvation day by day. Tell God's glory among the nations; among all peoples, God's marvelous deeds. For great is the Lord and highly to be praised, to be feared above all gods. For the gods of the nations do nothing, but the Lord made the heavens... Give to the Lord you family of nations, give to the Lord, glory and Might; give to the Lord the glory due to his name! Bring gifts and enter his courts; bow down to the Lord, splendid in holiness. Tremble before God, all the earth; say among the nations: The Lord is king. The world will surely stand fast, never to be moved. God rules the peoples with fairness...(Ps. 96:4-10).

In the Psalms, we also see the connection between creation in the past and creation as continued in the present as well as into the future. As the people of Israel bless and praise God for the wonders of his creation in the past, they see the creator's power still manifest in the way he governs the present, especially in the lives of human beings (Ps.66: 5). Scheffczyk then concludes by saying that "in worship creation is understood and experienced as a present event, already implying the knowledge of a *creatio continua*, which in turn directly leads to the idea of God's conservation of the world."⁴³

1.2.9. The Books of Proverbs, Sirach and Wisdom.

In the books of Proverbs, Sirach and Wisdom, we see a variety of rich creation themes situated within the context of a female personification of Wisdom (*hokmah/sophia*), the medium of creation. Some scholars trace the root of this genre to the Egyptian concept of *maat*, ---"order", which is often personified as a woman who serves as the basis for the world and for human life.⁴⁴ Roland Murphy states that in her multi-faceted role, wisdom personified as Lady Wisdom stands as a "powerful motivating

⁴³ Leo Scheffczyk, *Creation and Providence*, 16,

⁴⁴ Richard Clifford, in *Physics, Philosophy and Theology*, 160.

figure [who] sweeps all the practical wisdom of Israel into the orbit of her personality.”⁴⁵

But then, this description does not exhaust the meaning of Lady Wisdom as one who originated from God before creation, serves as a co-craftswoman planning and shaping creation and being involved in the lives of humans. This is because the very origin and authority of Lady Wisdom suggests more than just a personified order of creation.

Wisdom is identified with the Lord to a certain degree. She serves as the voice and revelation of God himself, not just the self-revelation of creation. She serves as a divine summon that is issued in and through creation. She is heard sounding through the vast realm of the entire created world as her voice influences human experience.⁴⁶

In Proverbs 8, Wisdom is personified as a gracious woman distinct from God, but first in the order of creation “The Lord begot (created) me, the first born of his ways, the forerunner of his prodigies of long ago; From of old I was poured forth, at the first before the earth...”(22-23). In this text, verses 22 to 31, we see the highest form of wisdom identified with the spirit of God through which the universe was created and sustained in being and through whom humankind is enlightened. The text concludes with the affirmation that wisdom rejoices in the inhabited world and delights in humankind (30-31). Wisdom is within creation and creation came into being through her, yet she transcends creatures and becomes a medium for advice to humankind to obey divine ways: “So, now, O children listen to me; instruction and wisdom do not reject! Happy the man who obeys me and happy those who keep my ways...” (32-33). In Proverbs 8, 22-31, God is depicted as an artisan or architect who, through wisdom, his co-craftswoman, constructs the world the way a great edifice is built:

⁴⁵ Roland Murphy, *The Tree of Life*, 160.

⁴⁶ Ibid. 37-38.

When he established the heavens I was there, when he marked out the vault over the face of the deep; when he made firm the skies above, when he fixed fast the foundations of the earth; when he set the seas in limit, so that waters should not transgress his command; there was I beside him as his craftsman... (27-30a).

Creation is presented as a product of divine will and word. This divine will is implanted in creation and could be discovered by those who seek it with sincerity and seriousness.

In the time of Ben Sirach (Ecclesiasticus) (ca. 180 B.C.E.), the meaning of Lady Wisdom and the interpretation of Wisdom developed even further. We are once again introduced to a great female figure mysteriously created by God from the very beginning. In chapter 24, Lady Wisdom reveals her origin, status and the unique role that she plays in creation, in a manner similar to that of Proverbs 8: 22-31.

From the mouth of the Most High I came forth, and mistlike covered the earth. In the highest heavens did I dwell, my throne. On a pillar of cloud. The vault of the heavens I compassed alone, through the deep abyss I wondered. Over the waves of the sea, over all the land, over every people and nation I held sway... (24:3-6)

By use of delicate words like “mistlike”, she describes herself. And like the spirit of God hovering over the waters of chaos in Genesis 1:2, Lady Wisdom covers the earth. But she is not confined to the earth. She dwells in the highest heavens (24:4) and from “the assembly of the Most High she opens her mouth” (24: 2). And like God himself, Lady Wisdom has dominion over creation (24:6), and so, despite her locus in God, she is made available to all creation and is active in the lives of human beings.

In Sirach also, Wisdom is closely associated with the Lord, but not completely identified with him. She comes from him and remains with him forever (Sir. 1:1). Wisdom is also closely associated with “fear of the Lord” (1:12) She is poured out on

creation (1:8), and she “inebriates men with her fruits” (1:14; 18; 24). Ben Sirach goes further to emphasize the continual active presence of God in creation especially in the lives of human beings. Using the image of the potter molding clay according to his pleasure, he explains how human beings are continually shaped and reshaped according to the will of the Creator who then assigns them to their duties (33:13). But this does not deprive human beings of the exercise of their freewill. Human freedom is not marred in any way since they remains free to make decisions and to choose whether to follow God’s commandments or to reject them (15:14-17).

The goodness of creation is clearly affirmed in chapter 39 verse 16. Further, no handiwork of God is better than the other (39:34) for they all have their role to play in creation:

How beautiful are all his works! Even to the spark and the fleeting vision! The universe lives and abides forever; to meet each others need, each creature is preserved. All of them differ, one from another, yet none of them has He made in vain, for each in turn, as it comes, is good; can one ever see enough of their splendor?
(42:23-25)

Here we see the theme of interdependence, interconnection and interrelation among creation. The differences that exist among creatures are not to be exploited in a negative way to divide creation into grades and classes, one lower, the other higher, one more important and the other less so. The dignity of each creature must be upheld because each creature participates in the goodness of the creator according to its nature and status. It is in the varieties that exist in creation that the glory of the creator is clearly demonstrated.

The book of Wisdom, likely written less than a hundred years before the coming of Christ is titled “Wisdom of Solomon” and rightly so because wisdom pervades it all. Some scholars believe that in Wisdom of Solomon, the theme of Lady Wisdom (*Sophia*) reaches its highest expression. There is a marked presence of elements from Israelite tradition (Prov. 8; Isaiah 40-46; Genesis 1-3 and the Psalms). There is also a strong influence of Hellenistic thought found in the vocabulary, concepts and a philosophical treatment of the knowledge of God (13:1-9). In addition there are also traces of elements from the cult of the Egyptian goddess, *Isis*. From the very beginning, Lady Wisdom is depicted as a kindly spirit (1:6) who councils human beings. However, she does not dwell in “souls that plot evil” or in “a body under the debt of sin” (1:4). And although kind, “she acquits not the blasphemer of his guilty lips...” (1:6). A further description of her nature states that she possesses “a spirit that is intelligent, holy, unique, manifold, subtle, agile, clear, unstained and certain.” She is “not baneful” but “loving the good, keen, unhampered, beneficent, kindly, firm secure, tranquil, all-powerful, all-seeing and pervading all spirits” (7:22-23). Her presence is unimpeded:

For Wisdom is mobile beyond all motion, and she penetrates and pervades all things by reason of her purity. For she is an aura of the might of God and a pure effusion of the glory of the Almighty; therefore nought that is sullied enters into her. For she is the refulgence of eternal light, the spotless mirror of the power of God, the image of his goodness. And she, who is one, can do all things, and renews everything while herself perduring (7:24-27)

There is a close identity between the spirit of Wisdom and the spirit of the Lord-Yahweh. The author of the book of Wisdom does not seem to distinguish between Lady Wisdom as spirit (Wis. 7:7; 9:17) and Wisdom having the spirit that is qualified as holy, intelligent and unique (7:22-23). She is also hardly distinct from the spirit of the Lord

which dwells in and governs the human heart and fills the world (1;6-7). Furthermore, Wisdom and spirit do not appear to be distinguished from the divinity as they express the ways by which he makes himself present to the world and to humans.⁴⁷

In her creative role, she is described as the mother of all things who dispenses all good things with innumerable riches in her hands (7:11-12), and the artificer of all (7:22). In her might she reaches out to all things from one end to another and governs everything well (8:1). Her unique role in creation is further exemplified in the fact of her presence through all of creation, knowing all of the works of the Lord (9:9). Lady Wisdom directly participated in the understanding of God who defers to her the significant role of selection in the process of creation, and in fact, she is also described as craftswoman who produces all things.⁴⁸

Drawing on the work of other authors, Michael Kolarcik,⁴⁹ observes that in the Wisdom of Solomon, “creation, exodus and salvation are related as signs of God’s justice and goodness.” The author uses a common set of terms and images through which the three signs, creation, exodus and salvation, are related with the cosmos functioning as the constant in reference to the three signs. He goes further to state that “by attributing a creative and wholesome role to the cosmos in creation, in the exodus events, and in the ultimate judgment, the author points to the continuity of creation in the history of Israel’s faith.”⁵⁰ In Wisdom 6:22-10:21 we see that creation is presented as a parallel to salvation through Lady Wisdom. By means of the personification of Lady Wisdom, the

⁴⁷ Ibid. 143.

⁴⁸ Ibid. 144.

⁴⁹ Michael Kolarcik, “Creation and Salvation in the Book of Wisdom” in Richard J. Clifford and John J. Collins, (Eds.). *Creation in the Biblical Traditions*, (Washington, D.C.: Catholic Biblical Association of America, 1992), 98-99.

⁵⁰ Ibid. 98-99.

author connects God's original creation to his continuous recreation in salvation history. It is therefore clear that in Wisdom Literature, as we saw in the prophetic tradition, creation and salvation are inseparably linked together. God's divine work did not cease with creation. The same Yahweh God, who created from the very beginning, continues to be active in creation, recreating and working out the salvation of his people.

From this survey of creation texts in the Jewish First Testament we see a set of rich and diversified themes in the understanding of creation. Through the use of distinct literary forms and different religious insights, the creation texts reveal their primary purpose, namely, the power of Yahweh the creator and his relationship with his people, Israel. This theme rather than the question of how the universe actually originated is the focus of creation accounts in the Jewish First Testament, because, the biblical authors, like their neighbors, assumed that the universe was divinely created. These creation texts reflect the concerns and questions, the hopes and aspirations, and above all the beliefs of the people of Israel at that time.

A great deal of ink has been spilled to show the tension which exist between the creation accounts in the Jewish First Testament and the understanding of creation in contemporary scientific theories. However, Richard Clifford provides a great insight into this supposed tension in his ingenious analysis of the differences between these two perspectives. He attributes these differences to the understanding of the process of creation, the product or the emergent, the description or manner of reporting and the criterion of truth.⁵¹ Since the fourth chapter of this work shall focus on the relationship between creation in the Christian tradition and contemporary cosmology, there will be no

⁵¹ Richard J. Clifford, "Creation in the Jewish First Testament", in *Physics, Philosophy and Theology: A Common Quest for Understanding*. 155-156.

further elaboration of Clifford's insight here. Suffice it to say with Clifford that the understanding of creation in the Jewish First Testament is not necessarily in conflict with the contemporary scientific theories about the origin of the universe and how it evolved. Both reflect an understanding of the universe that has fundamental differences. The recognition of these differences as we compare these two perspectives will go a long way to diminish the tension between them.

These analyses conclude the first section of this work that focused on creation themes in the Jewish First Testament. The next section will examine the concept of creation in the Christian Second Testament where Jesus the Son of God becomes the central focus as the Person in and through whom creation comes into existence and experiences redemption.

1.3. The Theme of Creation in the Christian Second Testament

The creation accounts in the Jewish First Testament focus on Yahweh-God the creator and his relationship to his creatures. In a similar way, the accounts of creation in the Christian Second Testament focuses on Jesus, the Son of God, in and through whom all things were made and in whose name alone shall creatures attain salvation. In a manner similar to the Jewish First Testament, the emphasis of the concept of creation in the Christian Second Testament is not a historical account but a theological reflection on the centrality of the place of Jesus, the Son of God, in creation and redemption. Thus, the connection between creation and salvation in the prophetic tradition examined above is further developed in the concept of creation in the Christian Second Testament which centers around the saving work of Jesus in and through whom all things were made.

Although the theme of creation is found in many books of the Christian Second Testament, this section shall focus on the theme of creation in the Gospel of John as expressed in the *logos-Christology* of the prologue and in the concepts of *prototokos* (first-born) and *kenosis* (self-emptying) in the epistles to the Colossians and the Philippians respectively.

1.3.1. Creation in the Johannine Tradition

The form and character of the Gospel of John is different from the synoptic Gospels--- Matthew, Mark and Luke. It is a highly symbolic work with a much more sophisticated literary style used to convey the theological purpose of the evangelist. It is a product of a greater and deeper theological reflection that grew out of a different circle and tradition. We therefore see a different order that does not simply reproduce the stories narrated in the synoptic Gospels, but presents a rich theological exposition in different layers of meanings. Scripture scholars put the date of the Gospel of John during the 90s of the first century. Most scholars ascribe a significant amount of Gnostic elements to the Gospel of John. This is found in the form of gnostic motifs, terms and thoughts. However, Westermann observes that in the prologue, this gnostic element is limited to a small segment.⁵² A good example is the emphasis on the distinction between light and darkness (1: 5; 9). In this section I shall examine the prologue (1:1-18), which is the primary of locus of creation theme in John's Gospel. After this, I shall also briefly examine the section of John's Gospel called the Book of Signs (1:19-12:50) in which the creation theme is also present, although in a less explicit way.

⁵² Claus Westermann, *The Gospel of John: In the Light of the Old Testament*, translated by Siegfried S. Schatzmann (Massachusetts: Hendrickson Publishers Inc., 1998), 2-3.

1.3.2. The Prologue of John (1:1-18)

The theme of creation in the Gospel of John is most explicit in the prologue, the first eighteen verses of chapter one. The prologue is a poem or an ancient hymn that was incorporated by the evangelist and his disciples. In the prologue we have the main themes of the Gospel: the themes of life, light, truth, testimony, and the preexistence of Jesus Christ, the incarnate *Logos* who reveals God the Father. In John 1:1-3, the evangelist states that:

In the beginning was the Word, and the Word was with God, and the Word was God. He was in the beginning with God. All things came to be through him, and without him nothing came to be.

We can see right away the connection between the Johannine prologue and the creation account in the book of Genesis. Genesis 1:1 begins with the words: “In the beginning when God created the heavens and the earth...” . The Greek phrase, *Ev αρχη* -- “in the beginning”, which establishes the link with the creation text in the book of Genesis reaffirms the same ancient belief that creation came from the hands of God. Commenting on this relationship between the book of Genesis and the Gospel of John, Westermann states that, “like the whole Bible, the Gospel of John begins with creation by the Word. From Genesis 1 the prologue has taken up the concept that everything in creation was made by the Word. It is the creative Word that has become flesh (human) in Jesus.”⁵³ The term Word (*Logos*) is a combination of the theme of God’s dynamic creative word as illustrated in the book of Genesis, the personified mysterious Lady

⁵³ Ibid. 5

Wisdom in Wisdom Literature as the medium of God's creative activity (Prov. 8) and the ultimate intelligible source of reality as expressed in Greek philosophy.⁵⁴

In the ancient Greek world of that time, one of the big questions of the day was how to identify the basic stuff, the primary element of nature, that from which all other things came into existence. The evangelist recognized the need to reaffirm the old Jewish faith in the creator God over and against the position of the early Hellenistic philosophers who sought their answers in matter- air, water, fire and earth. And so, John used an early Christian hymn, the prologue, which affirms belief in God and his Son Jesus, the Word, who himself is God and in and through whom all things were created. After asserting the divinity of Jesus in the first two verses, the third verse states clearly "all things came to be through him, and without him nothing came to be". Jesus is not only the agent of creation, he is also a creator, a co-creator with God his Father. Not only was Jesus the cause of creation, he was the medium through which his father's will in creation was realized. He himself, the Word, was God. John took the time to emphasize this in direct contrast to the position of the Greek gnostic belief which states that the *Logos* was an emanation from the Absolute and that matter is the product of evil. This concept which was adopted by Christian Gnostics leaves Jesus in a subordinate position and causes contempt for matter. Rejecting this position, John reaffirms the divinity of Jesus as co-creator with God his Father.

In the prologue of John (1:1-13), we see again, the connection between creation and redemption. The same Word, (Jesus the Son of God) who was with God and who was God, in and through whom all creation came into being (1:1-3) is the true light, enlightening everyone, who came into the world so that through him, people might

⁵⁴ These analyses are made in the footnotes in *The Catholic Study Bible*, 148, Gospel of John.

become children of God (1:9-13). That same Word in and through whom creation came into being “became flesh and made his dwelling among us” (1:14) to effect God’s plan of salvation.

Although the main locus of the creation theme in the Gospel of John is the prologue (1:1-18), creation theme is not limited to the prologue. In a more latent way, creation themes could be identified in the section of John’s Gospel called the “Book of Signs” (1:19-12, 50). In this last section of John, I shall examine the creation themes present in the Book of Signs.

1.3.3 The Book of Signs (1:19-12:50)

The second major section of the Gospel of John after the prologue is called the Books of Signs σημεϊων (1:19-12:50). This is the collection of the accounts of Jesus’ miracles as recorded by John. This section is called the Book of Signs because in John’s Gospel, miracles are called signs. The famous scholar of the Gospel of John, Raymond Brown, observes that in the Gospel tradition, signs (or miracles as they are called in the Synoptic Gospels) demonstrate Jesus’ origin, identity, power and mission as Messiah (the anointed).⁵⁵ In the signs, Jesus demonstrates his power as the Son of God, over the forces of nature and the entire creation. In the signs, the same Word of God who was with God and who was God, in and through whom all creation came into being, demonstrated his continuous role as Lord and master of creation. Seven of these signs are identified in the Gospel of John: the changing of water into wine at the wedding in Cana (2:1-11); the healing of the royal official’s son in Capernaum (4:46-54); the cure of the paralyzed man

⁵⁵ Raymond Brown, *The Community of the Beloved Disciple* (New York: Mahwah, Paulist Press, 1979), 172.

at the Pool of Bethesda (5:1-7); the multiplication of the loaves (6:1-15); the walking on the water (6:16-21); the cure of the man born blind (9:1-40) and the raising of Lazarus (11:1-44). In these signs, we see manifestations of God's powerful presence in creation and human history in a new way in and through his son Jesus Christ.

The theme of creation and recreation are present in the signs as recorded by John the evangelist. In the first sign where water is transformed into wine, we see a replacement of the Jewish ceremonial washings, a symbol of the creative and transforming work of Jesus, in which something new is created. In the second sign, there is restoration of health in the royal official's son, and here again we see recreation. The theme of newness of life is again reflected in the third sign in which the sick man is cured at the pool of Bethesda. The fourth and fifth signs, the multiplication of the loaves and the walking on the waters of the sea of Galilee reflect the providing of manna in the desert (Ex.16:1-36) and the crossing of the Red Sea (Ex.13:17-31), both indicating deliverance in time of danger.⁵⁶ In the sixth sign the man born blind is given sight. It represents the victory of light over darkness. Jesus, the light of the world demonstrates his power as Son of God over creation. The climax of this comes in the raising of Lazarus, the seventh sign. Here the theme of recreation is clearly identified as new life is conferred on Lazarus.

In John's Gospel, we see again the connection between creation and salvation as reflected in the signs performed by Jesus. In fact, "the very word 'sign' recalls the Exodus tradition and the role of Moses, whom God empowered to work signs before

⁵⁶ Westermann, *The Gospel of John*, 13-17.

Pharaoh.”⁵⁷ The same God who created and delivered his people from slavery in Egypt is the same God who brings salvation through his son Jesus Christ.

1.3.4. Creation in the Pauline Tradition

The themes of creation and redemption are found running through the Pauline corpus. However, I shall limit my examination of these themes as articulated in the letters to the Colossians and Philippians where the concepts of πρωτοτοκος (firstborn) and κενωσις (self-emptying) bring together Paul’s teaching on creation and redemption.

1.3.5. Colossians

The authorship of the letter to the Colossians in the Lycus Valley in Asia Minor, is a hotly debated issue. Some scholars argue for Deutero-Pauline authorship while others attribute the authorship to Paul himself. Yet, others claim that the answer is probably somewhere in the middle. But there is a general consensus that the epistle was written at the time of Paul’s incarceration in Rome sometime between 56 and 62 AD.⁵⁸ The epistle was composed as a response to a crisis among the Christian community in Colossae at the time. There was a growing belief and trust in celestial and cosmic powers (“principalities and powers” 2: 15-18). The belief in these astral powers led to some cultic practices that were contrary to proper Christian practice. The author acknowledges the existence of these powers but only as angelic spirits of the Jewish tradition having no more than a preparatory and subordinate role. Within the great scheme of salvation history and in the

⁵⁷ D. Moody Smith, *New Testament Theology: The Theology of the Gospel of John* (Cambridge: Cambridge University Press, 1995), 108.

⁵⁸ Margaret Y. MacDonald, *Colossians and Ephesians* (Collegeville, Minnesota: The Liturgical Press, 2000), 6.

new order of creation, Christ is all in all --- pre-existent, pre-eminent, the firstborn (*prototokos*).

The particular text in the epistle to the Colossians that addresses the anteriority and pre-eminent place of Jesus Christ in creation is the ancient Christological hymn put in the very first chapter of the letter. The text opens like this:

He (Jesus Christ) is the image of the invisible God, the firstborn of all creation. For in him were created all things in heaven and on earth, the visible and invisible...all things were created through him for him. He is before all things...He is the beginning, the firstborn from the dead, that in all things he might be preeminent... (15–20)

The word "image" in the first line of the hymn refers to semblance but more so, it refers to complete likeness of Jesus to God the Father in a manner similar to the usage in 2 Cor. 4:4. This concept of Christ making known an unseen God is similar to that in John's Gospel as the prologue shows, (Jn. 1:18)⁵⁹. In his own analysis however, Cesar Alejandro Mora Paz focuses more on resemblance in the aspect of creative function when he observed that: "the entire hymn focuses on the relationship of Christ to the powers: Colossians should be read in the light of this concern. Christ is neither the image of God [only] because he is visible nor [only] because of traits he has in common with the Father such as incorruptibility, but [also] because of his active participation in the work of creation in line with the Wisdom writings (cf. Prov. 8: 22-31; Sir. 23: 3-9)."⁶⁰

In her exegesis, MacDonald gives a further insight into the meaning of the term "firstborn" (*prototokos*). She states that:

⁵⁹ Ibid. 58.

⁶⁰ Cesar Alejandro Mora Paz, "Colossians", in *The International Bible Commentary: A Catholic and Ecumenical Commentary for the Twenty-First Century*, 1701 (*The words "only" and "also" are my additions).

...the concept of firstborn is important in the Jewish First Testament (eg. Gen 48:18; Num 18:15). The term is employed in Luke's description of Mary giving birth to Jesus (Lk 2:7; cf. Matt 1:25). In some texts the term refers not only to birth order, but also to preeminence in rank as in the description of Davidic king in Psalm 89:2.⁶¹

Firstborn could therefore refer to rank or origin or birth. In the hymn, there is a clear emphasis on the preeminent place of Christ in the order of creation. Thus, even though the usage may appear as if Christ himself is part of the created elements among whom he is first, that is most likely not the case. The emphasis as the following verse indicates is that of Christ's supremacy, standing over, above and beyond the created order. As MacDonald again explains: the word, "For" (*hoti*) at the beginning of verse 16 means "because." And it is used to open a further explanation of why Christ is not one of the created elements but beyond and above creation, reigning supreme over all created things.⁶² However, Christ is also the medium of creation, since all things were created in and through him and for him (1: 16). To further explain the preeminent place of Christ in creation and to calm the fears of the Colossian community who were prone to believe in the cosmic powers, the author goes on to reassert Christ's supremacy over the visible and invisible, thrones and dominions, principalities and powers (1:16). The themes of pre-eminence and supremacy are reflected again in verse 17 where the author states that "he is before all things." This emphasis on the superiority of Christ over all created things is in keeping with the meaning of "firstborn". Verse 17 then concludes with the phrase, "...and in him all things hold together", which indicates that not only did creation come through Christ, he continues to hold creation in being, thus emphasizing the theme of

⁶¹ Margaret MacDonald, *Colossians and Ephesians*, 59.

⁶² *Ibid.* 59.

continuous creation and sustenance of creation. Christ remains the origin as well as the source of stability, coherence and unity in creation.

In verse 18 the word “beginning” used to designate Christ reminds us again about the use of the same word in the opening verses of the book of Genesis, the prologue of John’s Gospel and in Wisdom Literature (LXX Proverbs 8:23). In this letter to the Colossians, it is a further indication of the pre-eminence of Christ.

The epistle to the Colossians reflects themes that point out again, the inseparable link between the theme of creation and that of salvation. This is evident from the reference to Christ as “the firstborn from the dead” (1:18). This path to salvation is made clear through the ultimate sacrifice of Christ in his death and resurrection. The same concept is found in the epistles of St. Paul to the Corinthians and Romans: (1Cor15:20; Rom 2:29). The same Jesus who was with God and was God, in and through whom all things were created, is the same Christ the savior in and through whom creation shall be saved.

This hymn is likened to the hymn used by John in his prologue which we examined before and another hymn in the epistle to the Philippians which we shall examine after this. In all three hymns the emphasis is the pre-eminent role of Christ both in creation and redemption. In these hymns we also have a reflection of the theme of wisdom that we saw in the book of Proverbs.

1.3.6. Philippians

The epistle to the Philippians, widely attributed to Paul by scholars, was written to instruct the Christian community at Philippi to refrain from competitive self-assertion and

domination of others and to turn to a practice of unity and humility (1,27-2, 18). The hymn (2: 5-11), which is rich in creation theme is an insertion that interrupts the regular flow of the pastoral letter to the Philippians. Scholars are divided on the actual authorship of this Christological hymn, however, many believe that it pre-existed Paul's letter but he adapted it for his own theological purpose.

Ralph P. Martin observes that even though the authorship of the hymn is disputed, the compatibility of some of the themes to Pauline teaching is indisputable. These themes are found in the concept of Jesus as Lord of glory and Lord of history, and in the theme of Christ's self-emptying in obedience as second Adam by which he successfully reversed the disobedience of the first Adam.⁶³ In this hymn of six verses, we see an exhortation to growth, joy and peace in the life of the Philippians together as a Christian community, a theme that is also reflected in chapter 4:1-9. Although the subject of this hymn is doctrinal since it talks about the nature of Christ and his place in creation and redemption, Paul uses it within the context of ethical and pastoral instruction to the Christian community at Philippi. He presents Christ as a perfect example of humility in self-emptying, (*Kenosis*), and enjoins the community to learn self-sacrifice, obedience and humble behavior through imitating him.

The very first line of the hymn, "who though was in the form of God..." refers to the anteriority and pre-existence of Christ. It is in the context of Christ's pre-existence and pre-eminence that Paul developed his teaching on the place of Christ in creation as we saw in our examination of the letter to the Colossians. But the emphasis of this hymn is the redemption won by Christ through his self-emptying *Kenosis*: "Rather he emptied himself, taking the form of a servant...becoming obedient to death, even death on the

⁶³ Ralph P. Martin, *A Hymn of Christ* (Downers Grove, Illinois: InterVarsity Press, 1997), 59-60.

cross...” (7-8). Commenting on this letter, Pedro Ortiz observes that this Christological hymn (2, 6-11) is the most famous passage in the letter. The exaltation of Christ appears to be God’s way of responding to his voluntary experience of humiliation in self-emptying.⁶⁴ Some scholars read this text within the context of the Jewish First Testament and see an allusion to Adam in the Genesis story. Unlike Adam, Jesus, “though he was in the form of God ...” (Gn 26-27: [image and likeness of God]) did not count equality with God. This puts Jesus in contrast with Adam (Gn 3:5-6) who desired equality with God. From the standpoint of soteriology therefore, Jesus, “in taking our nature upon Him (Rom. 8:3) and fulfilling the role of the obedient last Adam as the perfect Man in whom the image of true manhood is seen, He reversed the baneful effect of what the first Adam did. So he is described as the ‘last Adam’ (1Cor. 15: 45); ‘the second Adam’ (1Cor 15:47) and the ‘new man’.”⁶⁵

As the ‘new man’, Jesus thus possesses the new image of humanity as God intended it from the very beginning. And it is through his death and exaltation ---“God greatly exalted him and bestowed on him the name that is above every other name” ----- that he redeems the entire creation and gains salvation for all both in heaven and on earth and under the earth.

The theme of soteriology is continued as it is reflected in the concept of *kenosis*. Christ Jesus who existed eternally with the Father in the heavenly abode, gave up that exalted position and surrendered the position of being the “Image of God”, and then humbled himself to assume the place of a servant. The taking on of human form, which further gives testimony to the self-emptying, is made concrete in the event of the

⁶⁴ Pedro Ortiz, “Philippians”, in *The International Bible Commentary: A Catholic and Ecumenical Commentary for the Twenty-First Century*, 1690-1691.

⁶⁵ Ralf P. Martin, *A Hymn of Christ*, 119.

incarnation. Martin states it like this: “He emptied Himself in that He took the servant’s form...and this necessarily involved an eclipsing of His glory as the divine Image...in order that He might come, in human flesh, as the Image of God incarnate.”⁶⁶ By the act of self-abasement, he fulfilled the role of the second and last Adam as he restored humankind and the entire creation to their original state before the fall. Jesus Christ then becomes deserving of adoration --- for to him every knee must bend, just as God is deserving of the glory that every tongue must confess (10-11).

In the Pauline corpus, as demonstrated in these two letters, the creative and redemptive roles of Jesus Christ are brought together. This is a further sign that creation and redemption are inseparably linked together. In his state as first-born (*prototokos*), he became the medium of creation and in his self – emptying (*kenosis*) and self-abasement, he gained salvation for all creation.

To conclude this section, it is observed that the creation accounts in the Jewish First Testament had, as their primary purpose, the expression of Israel’s faith in the one true God and his relationship with his creatures, particularly Israel, rather than the actual physical origin of the universe which is the concern of modern cosmology. Similarly, the creation accounts in the Christian Second Testament are theological reflections on the meaning of Christ particularly in his unique role in creation and redemption. Creation theology in the Christian Second Testament provides an interpretation of salvation that is closely linked with creation with such an emphasis that presents salvation as a renewal of the original event of creation through the saving presence of God in his Son Jesus Christ. Paul mentions this point also in his other epistles, for instance Romans, 8:18-25; 2 Corinthians, 5:17 and 1 Corinthians, 15: 45-50. This theme of new creation articulated in

⁶⁶ Ibid. 194.

the Pauline tradition (2 Cor. 5:17; Gal. 6:15) is very aptly summed up in the last book of the Christian Second Testament, the book of Revelation. In this book, John's vision of "a new heaven and a new earth" (Rev.21:1-4) which echoes that of the prophet Isaiah (65:17), underscores the eschatological dimension of creation. And this is the final goal of creation.

The later development of the theology of creation and the teaching of the Church on creation are rooted on the themes of creation in the Hebrew and Christian Second Testaments examined above. Based on their reflection on the Bible and the philosophical trends of the time, scholars developed more thorough theological concepts on creation which the Church tradition built upon in the formulation of official doctrines on creation. The next section will therefore address the theology of creation in the work of scholars and the Church tradition.

1.4. Creation Theology in the Tradition of the Church

Creation theologies in the tradition of the Catholic Church demonstrate a continuation of the same expression of faith articulated in the biblical tradition, namely, that Yahweh the creator is the source and end for creation (Jewish First Testament) and that this creative work of God is carried out in and through his Son Jesus (Christian Second Testament). While the Church continues to express its faith in the creator God as reflected in official statements of beliefs, creeds and doctrines on creation, it also address new questions that are raised about creation in subsequent periods of history. This section will be an examination of the concept of creation in the Catholic tradition in general, since the official position of the Church grew mostly out of it. However, it will pay

particular attention on the work of the theologians on creation that eventually shaped the teachings of the Church as formulated in the *Magisterium* of the Catholic Church while at the same identifying some of the councils in which they were formulated and decreed.

These will be treated under two sub-headings, namely:

- Creation in the Early Christian Era: 1st – 11th Centuries.
- Creation in the Church of the Later Middle Ages: The Councils of Lateran IV and Florence.

1.5. Creation in the Early Christian Era: 1st - 11th Centuries

The main focus of this section will be the examination of the teachings of the Church on creation from the patristic era, which runs roughly from the end of Christian biblical period to about the middle of the eighth century. Although reference will be made to the contribution of some individual theologians to creation theology in the Church, this section will focus more on the official position of the Roman Catholic Church as formulated in statements, decrees and pronouncements of the *magisterium* from the early Christian era in the first century to the middle ages.

1.5.1. Creation Theme in the Niceno-Cosmopolitan Creed

The Niceno-Constantinopolitan creed refers to the credal documents coming out of two related major councils of the Church, the Nicaean Council (325 AD) and a follow up council at Constantinople (381 AD). In these documents, we see a reflection of the first major official position of the Church on the theme of creation. Although the primary objective of these councils was to address the issue of the relationship between God the Father, God the Son and God the Holy Spirit, a good amount of time and space were also

given to the question of creation. The first article of the creed issued from these councils, for instance, focuses directly on the theme of creation. It reads: “We believe in one God, the Father Almighty, maker of heaven and earth, of all that is seen and unseen...”.

To have a good understanding of the place of the first article of the creed in our discussion on creation however, it is important to do a brief survey of the background theological current leading up to this teaching. In the patristic age, there were some major challenges to the Christian faith that needed to be addressed and stamped out. Among these challenges were, the Greek cosmology of the eternity of matter, the pagan pantheism, and the Gnostic teaching of dualism.

The ancient Greek cosmology and its religious and philosophical visions of the nature of the world were among the major challenges to Christian doctrine of creation in the patristic era. This was because the ancient Greeks believed that matter was eternal. This is evident from the Platonic idea of the eternity of matter, a position that is shared by Aristotle.⁶⁷ Contrary to the belief in God the creator as expressed in the biblical tradition, the Greeks perceived God more like an architect who ordered pre-existent matter rather than a creator. God’s role in creation, according to Greek cosmology, was therefore relegated to that of putting order into nature and setting in motion what was already in existence, the eternal matter. Secondly, in some aspects of the pagan culture of polytheism that was prevalent at the time, there was an inherent doctrine of pantheism in which matter was thought to have emanated from a divine substance which was identified with God. The third major concern of the Church in the patristic age, as I mentioned

⁶⁷ Jaroslav Pelikan, *The Emergence of the Catholic Tradition (100-600)*, vol. 1 of *The Christian Tradition: A History of the Development of Doctrine* (Chicago: University of Chicago Press, 1971), 36, and in Zahary Hayes, *The Gift of Being: A Theology of Creation*, (Collegeville, Minnesot.: The Liturgical Press, 1991), 42.

before, was Gnostic dualism. The Gnostics believed in a supreme God who created the spiritual invisible world as well as a lesser God to whom they attributed the creation of material reality. This lesser God was said to be the God of the Jewish First Testament, the demiurge and an enemy of the supreme God of Jesus Christ in the Christian Second Testament. In response to these positions, the Church came to greater clarity about her biblically grounded faith in God and creation.

During the second century, the doctrine of creation out of nothing, *creatio ex nihilo*, was first articulated by the Christian theologians in response to the Greek erroneous teaching on creation, the pagan belief of pantheism, and Gnostic dualism. This position was gradually developed in the works of theologians such as, Shephard of Hermas, Theophilus of Antioch, Irenaeus and Tertullian.⁶⁸ However, because of the great significance of the contributions of Irenaeus and Tertullian to the position of the Church in these matters, I shall examine their positions in some depth.

1.5.2. Irenaeus and Tertullian

Irenaeus was born in Smyrna in Asia Minor and lived at about AD 140 –202. He studied in Rome and became bishop of Lyon in the Southern part of France towards the end of the second century. Working in the tradition of the apologists, he formulated a theology which became a bridge between the Eastern and Western churches. In his work, *Against Heresies*, Irenaeus presents arguments in opposition to the Gnostic doctrine of dualism and the polytheistic pagan doctrine of pantheism. The Gnostic doctrine of creation in which the God of creation is portrayed as a demiurge has an inherent

⁶⁸ Ibid. 36-37

ontological dualism that posits spiritual reality as good and material reality as evil, while pantheism puts matter on a par with God.

Irenaeus, determined to defend the biblical faith against these false teachings, invoked the Scripture and teachings of the apostles in his apologetics. In his work, *Against Heresies*, he states that:

If...He (the Creator) made all things freely, and by His own power, and arranged and finished them, and His will is the substance of all things, then He is discovered to be the one only God who created all things, who alone is omnipotent, and who is the only Father founding and forming all things, visible and invisible, such as may be perceived by our senses and such as cannot, heavenly and earthly, “by the word of his power” (Heb. 1:3) and He has fitted and arranged all things by His wisdom ... He [is] the Creator, He the Lord of all; and there is no one besides Him.⁶⁹

By this argument, Irenaeus reaffirms the Christian position of the unicity of God the creator as expressed in the Jewish First Testament and the God of Jesus Christ in the Christian Second Testament. Consequently, he reaffirmed the continuity of the old dispensation and God’s plan of salvation thereby reestablishing the inseparable link between creation and redemption. Against the overly pessimistic position of Gnosticism towards matter, Irenaeus defends the goodness of creation and matter. He points to the doctrines of the incarnation, God taking on the sheer materiality of human nature, and of redemption as clear indications of the goodness of creation.⁷⁰ Due to his strong commitment to unity as opposed to the dualism of Gnostic philosophy, he presents creation within the context of the economy of salvation and argued that matter could not have had an independent existence apart from the God of Jesus in the Christian Second Testament.

⁶⁹ Irenaeus, *Against Heresies*, 3.8.6-7 in *The writings of Irenaeus*, translated by Alexander Roberts and W. H. Rambaut (Edinburgh: T and T Clark, 1880), 342-343.

⁷⁰ Irenaeus, *Against Heresies*, 2.30.9 (238); 3.4.2 (264); 4.20.2 (429).

Quintus Septimius Florens Tertullianus, as he was fully called, was a theologian from Carthage in North Africa who lived at about the years between 160 and 230 AD. His work, mostly in the area of apologetics, shaped a great deal of the theological vocabulary of the Latin, Western Church. Tertullian proposed the doctrine of *creatio ex nihilo* as an argument against the Gnostic position of the eternity of matter. For Tertullian, God had to have created the world, matter inclusive, out of nothing, because matter could not have existed before creation. The doctrine of creation out of nothing does not have a direct and explicit biblical background, except for those skimpy allusions in the second book of Maccabees and Paul's letter to the Romans (2 Maccabees, 7: 28, and Romans 4:17).⁷¹ However, based on these implicit references, Tertullian argues from the viewpoint of the logic of silence to the position of *creatio ex nihilo*. In his argument he states:

For I say that, though Scripture did not clearly proclaim that all things were made out of nothing--just as it does not say either that they were made out of matter--- there was not so great a need to declare that all things had been made out of nothing as there would have been, if they had been made out of matter.⁷²

In this text, Tertullian addresses Hermogenes's position whose belief, influenced by Platonism, led him to hold that God created all things out of pre-existent, "unborn" matter. He argues further that while the first possibility, that God created all things out of nothing, would have been understandable, the second, God created out of pre-existent

⁷¹ Some contemporary scholars believe that some texts in the Bible (eg. 2 Macc. 7:28; Rom. 4:17) are biblical basis for the doctrine of *creatio ex nihilo*. However, other scholars observe that although the texts appear like they refer to *creatio ex nihilo*, the biblical authors did not understand them in the ontological sense that they took on in later Christian usage. The original biblical authors may have used them in a sense similar to Genesis 1 where what was chaos was shaped into an orderly world. For further comments on this, see Zachary Hayes, *The Gift of Being: A Theology of Creation*, 41-59.

⁷² Tertullian, *The Treatise Against Hermogenes*, 22.2, translated by J. H. Wasznik (Westminster, Md.: The Newman Press, 1956), 4-9 & 55.

matter, would be doubtful unless it was explicitly stated as such.⁷³ In addition to this, Tertullian also argues for God's freedom and goodness in the work of creation. Against the concept of naturalism that posits the divine as necessary for explaining the natural process, Tertullian states that "the universe exists by the operation of God who made the earth by His power, prepared the world by His wisdom, and stretched out the heaven by His understanding."⁷⁴

Tertullian thus gave a solid philosophical and theological footing to the Christian belief in the creator God, his transcendence as well as his freedom in the act of creation, all of which would have been undermined by Greek cosmology, pagan pantheism, and naturalism that posits the divine as necessary for explaining the processes of nature.

From Irenaeus and Tertullian, we have a clear articulation of the doctrine of creation as part of an entire cosmic vision. In this grand cosmic vision, the world is dependent on a transcendent God who created freely and purposefully out of his divine will and power. It is a unified cosmological picture in which God the creator is presented as transcending the world rather than identified or equated with it, but at the same time, involved rather than remote from the world. This is because, the entire creation is both designed and directed according to divine will through the wisdom of God the creator. In the doctrine of *creatio ex nihilo*, this vision of God-world relationship is aptly and succinctly expressed.

In the philosophical and theological insights of Irenaeus and Tertullian, a fertile ground was prepared for the fourth century official formulation of creedal documents on creation at the two councils, the Nicæan and Constantinopolitan respectively. With the

⁷³ Tertullian, *The Treatise Against Hermogenes*, 21.4, 56.

⁷⁴ *Ibid.* 45.2, 84.

help of Irenaeus and Tertullian, the representatives of these councils were able to demonstrate that there were inherent errors in the Greek cosmology, the pagan doctrine of pantheism and the Gnostic dualism. Consequently, the councils formulated creedal statements on creation that reaffirmed faith in the unicity of God, the creator God who made heaven and earth and all things both visible and invisible. The ultimate source of the existence of both the world and all other creatures is God the creator. This continues to remain a religious heritage that is shared by both the eastern and western traditions right to the present day.

The church of the later part of the middle ages continued to address the challenges posed by the erroneous philosophies of pantheism and dualism. This is evident from the work of theologians such as Augustine, Aquinas and Bonaventure. In their theologies of creation, Augustine addressed the challenges from neo-Platonism and Manicheism, Aquinas reformed the pagan philosophy of Aristotle and Bonaventure developed the principle of exemplarism. The next section will therefore examine the teachings of these theologians on creation and how their contribution to understanding of creation and of God's relationship with his creatures.

1.6. Creation in the Church of the Later Middle Ages: Lateran IV and Florence

Having examined the development of the concept of creation in the early history of the Church, this section will go further to identify the works of some of the theologians in the later middle ages and how their insights continued to re-enforce the official

position and doctrine of the Church on creation as articulated in the documents of the Councils of Lateran IV (1215) and Florence (1442).

The challenge and threat of pantheism and dualism did not completely go away with the Nicean-Constantinopolitan creedal documents. Subsequent generations in the patristic age were forced to continue to confront these threats and challenges. But the renewed threats were no match to the responses that were made by the Christian community through her able theologian and leaders. Among such responses were those made by Augustine of Hippo, Thomas Aquinas and Bonaventure. Threats and challenges from heretical teachings such as pantheism and dualism, negative and unfortunate though they may have been, were nonetheless occasions for responses which shaped and refined theological thinking and expression in Christian history. The end result was a pool of rich and profound theological insights that subsequent Christian communities have continued to draw from. One of such insights was the development in the understanding of *creatio ex nihilo*, creation out of nothing, to include *creatio continua*, the continual involvement of God in creation, recreating and sustaining creation in being. Although the root of these insights could be traced to other sources, I shall limit this examination to Augustine of Hippo, Thomas Aquinas and Bonaventure whose works have been most significant in these areas.

1.6.1. Augustine Verses Neo-Platonism and Manicheanism

Augustine of Hippo (354-430) is described as one of the most honored authorities to whom western medieval theology looked for insight. As Leo Scheffczyk says, he was the person left with the task of giving “Western thought on creation its fullest and most

definite form”.⁷⁵ Most of his theological works, like his contemporaries, were born out of philosophical and theological controversies of his time. In the fifth century, Augustine had to deal with the continued challenge and threat posed by pantheism of Neo-Platonism and the dualism of the Manicheans to which, as his *Confessions* show, Augustine was actually involved earlier in his life. The influence of Neo-Platonism on Augustine is reflected in his philosophical and theological writings. For example, his concept of God as eternal, immutable and incomprehensible is traceable to Neo-Platonic ideas.⁷⁶ Furthermore, Augustine formulated a speculative theology that subscribes to the hierarchical order of the universe reminiscent of Neo-Platonism. Within the Augustinian schema, the universe is presented as a scale of beings, like a pyramid, reaching down from the Supreme God to creatures below, way down to nothingness, which is likened to formless matter.⁷⁷ However, to defend the doctrine of *creatio ex nihilo*, he rejects the idea of emanationist pantheism held by the Neo-Platonists. Emanationsism conflicts with the orthodox doctrine of creation because, if God made creatures directly out of himself, them, creation would be equal to God.⁷⁸ Emanationist doctrine undermines the transcendence and free creative act of God because it makes creation necessary and identical with God himself.

Besides the pantheism of Neo-Platonism, Augustine had to deal with the dualism of Manichaeism, a syncretistic religion to which he belonged as a youth. Like the Gnostics, the Manichaeans believed that the world was governed by two distinct and

⁷⁵ Leo Scheffczyk, *Creation and Providence*, trans. Richard Strachan (New York: Herder and Herder, 1970), 97.

⁷⁶ Augustine, *The Trinity*, 5.1.2 translated by Stephen McKenna (Washington, D.C: Catholic University of America Press, 1963), 175-176.

⁷⁷ Leo Scheffczyk, *Creation and Providence*, 99.

⁷⁸ Augustine, *The Confessions*, 12.7, translated by John K. Ryan, Garden City, N.Y.: Image Books, 1960), 308 & Leo Scheffczyk, *Creation and Providence*, 99.

ultimate principles: the principle of light and the principle of darkness to which they attributed good and evil respectively. Material reality in this religious tradition was considered to be evil and therefore looked upon with disdain. Augustine posed a vigorous argument against the Manichaeans in which he condemned their heresies.⁷⁹ First, he defends the teaching of Genesis against the Manicheans who, like the Gnostics, rejected the entire Jewish First Testament, and emphasized the goodness of creation which God brought into existence out of nothing and which he himself saw that it was good. In further defense of the goodness of creation, Augustine points to the vestiges of the Trinity found in creation, especially in the human body, the *outer man*.⁸⁰

The other great insight in Augustine's doctrine of creation is his interpretation of *creatio ex nihilo* to include *creatio continua* – God not only created out of nothing but continues to sustain creation in being. In his teaching about these two aspects of creation which he describes as “movements”, Augustine states: “one is the original creation when God made all creatures before resting from his work on the seventh day, and the other is the administration of creatures by which he works even now.”⁸¹ In this analysis, we see the inseparable link between *creatio ex nihilo* and *creatio continua*, as Augustine presents creation as being effected by divine agency via these two “movements in creation” --- the first of the actual moment of creation out of nothing and the second, his enduring and everlasting involvement in creation, recreating and sustaining creation in being.

⁷⁹Augustine, *A Commentary on Genesis: Two Books Against the Manicheans; The Literary Meaning of Genesis: An Unfinished Book*; and *The Literary Meaning of Genesis: A Commentary in Twelve Books*.

⁸⁰ Augustine, *The Trinity*, 11 (315-341).

⁸¹ Augustine, *The Literary Meaning of Genesis: A Commentary in Twelve Books* 5.11 trans. John Raymond Taylor (New York: Newman Press, 1982), vol. 1, 162.

This concept is further illustrated in Augustine's exegesis of the creation texts in the book of Genesis. Augustine firmly believed that the creation account of six days in the book of Genesis must not be interpreted literally. Creation was not a singular event in the past, completed and over with. God continues to be involved in creation, moving every thing by his hidden power as he sustains creation in being. In presenting his position that creation was not a singular event of the past completed in six days, Augustine developed the concept of "seed principles" which is traced to the work of Justin Martyr. In his analysis of this principle, Augustine observed that the Priestly creation account (Gen 1:1-31; 2:1-4a) was the first stage when most of the creatures were at their seminal (*seed principles*) or potential state. The second creation account by the Yahwists, (Gen 2: 4b-25) then refers to a larger stage in God's work of creation during which the individual creatures that existed only in their seminal form, started to make appearance and to develop gradually into their proper forms, each at its own appropriate time.⁸²

⁸² Ernan McMullin (ed) "Introduction: Evolution and Creation" in *Evolution and Creation* (Indiana: Notre Dame, University of Notre Dame Press, 1985), 11-12. Although Augustine was not aware of the theory of evolution as it is understood today, he does present an exegesis that indicates *gradual and incremental development*, a concept that lends itself to an interpretation along the line of evolutionary process. And so, this idea in Augustine's reading of Genesis which is also present in other Fathers like Basil the Great and his brother Gregory of Nyssa, and which some scholars have employed in defense of evolutionary process, will be developed in greater detail in the fourth Chapter of this dissertation.

The interpretation of nature in particular and of creation in general from the standpoint of gradual and incremental development is also affirmed by contemporary Church documents such as *Vatican II Documents* and the *Catechism of the Catholic Church (CCC)*. For instance, the second Vatican council states: "...Humankind substitutes a *dynamic* and more *evolutionary* concept of nature for a static one..." (GS. # 5), and in the CCC: "...With infinite wisdom and goodness, God freely willed to create a world 'in a state of journeying' towards its ultimate perfection. In God's plan, this *process of becoming* involves the appearance of certain things and the disappearance of others, the existence of the more perfect along side the less perfect, both constructive and destructive forces of nature..." (#310, Fourth Paragraph), 82. Although none of these statements is a direct and wholesale endorsement of scientific theories of evolution as such, they do subscribe to a worldview that affirms evolutionary process in nature and creation. (Italization is done by me)

The seed, says Augustine, is not an ordinary seed in a literal sense. It is like an invisible principle that is present but only in a hidden way waiting to emerge and develop into the actual being, just like a regular seed grows with time into a tree. All things were created by God in the beginning but only in potency, and they lie dormant like seeds awaiting the appropriate moment and right conditions to be actualized. This is however not to be interpreted to mean that God abandons the creatures at the stage of the “seed principles” to develop all by itself. To avoid this error, Augustine talks about “double potentiality”. In the first, the appearance of new forms from the seeds come naturally by its own powers at the appropriate time and under the right circumstance. In the second, however, God’s special intervention is required. Both aspects work together in God’s creative action.⁸³ Through this analysis therefore, Augustine preserves the concept of *creatio ex niilo*, as was the case in the first stage of creation and *creatio continua* as would be the case in the second stage.

1.6.2 Thomas Aquinas and the Philosophy of Aristotle

In the Middle Ages, one of the major challenges to the Christian doctrine of creation was Aristotle’s work on natural science. This came in the wake of newly discovered works of Aristotle made available in the Middle Ages. Major Western European Universities like Oxford and Paris, for instance, had Aristotle’s works readily taught to students. Soon, however, the incompatibility of Aristotelian concept of creation with the age-long Christian doctrine of creation became clear. This incompatibility, according to McMullin, lies in the fact that: “the freedom of God in his act of creation, fundamental to the Christian understanding, appeared to be excluded by the structure of

⁸³ Ibid., 13-14.

Aristotelian science,” because, “Aristotle’s world, after all, was not a created world. It depended on nothing other than itself for its existence. Aristotle’s science took the world as a *given*, and what was more, assumed its structure to be a necessary one.”⁸⁴ It would take the astuteness and gift of synthesis in a person like Thomas Aquinas (ca. 1224-1274) to put such a great challenge posed by Aristotelian natural science to rest.

Critics of Aquinas have observed that he baptized Aristotelian philosophy, but, it is important to remember that although Aquinas made use of ideas from the teachings of Aristotle, this was not a whole-sale endorsement of Aristotelian philosophy. Besides, Aquinas also drew on other sources such as Plato, Augustine and the Neo-Platonists as well as Maimonides, Averroes, and Avicenna in the Jewish and Islamic traditions. All of these philosophers have significant influence in the thought and teachings of Aquinas. However, it is to Aquinas’ ingenuity that his teaching on creation, influenced by the ideas from these sources, did not only remain faithful to the Christian doctrine, but developed and enriched it.

To begin with, Aquinas believes that *creation ex nihilo* is not only a correct doctrine but a truth of reason whose correctness can be proved by philosophical arguments.⁸⁵ Developing this position, Aquinas draws on two Aristotelian principles-- the doctrine of potency and act and the doctrine of causality--- in his argument which led him to re-establish the point that God is the source and sustainer of creation. In his analysis of the principle of causality, he arrived at the conclusion that “God causes all

⁸⁴ Ernan McMullin, “Natural Science and Belief in a Creator: Historical Notes,” in Robert J. Russell, William R. Stoeger, and George V. Coyne, (eds.), *Physics, Philosophy and Theology: A Common Quest for Understanding*, 59-60.

⁸⁵ Leo Scheffczyk, *Creation and Providence*, 145.

things without exception and accordingly creates out of nothing”.⁸⁶ Based on this same analysis of the principle of causality, he explains that creation out of nothing is an act of God, something different from any other kind of creation, something that God alone could do. A significant insight to this analysis is that according to Aquinas, God as first cause is an efficient cause. And as an efficient cause, God causes effects --- brings creatures into being, in such a way that this effect is brought to completion, yet, no change occurs from the level of nothingness to being. This explains why it is an act of God for it is God alone who can effectuate such a creative act. To further resolve this difficulty which could arise from the question of transition or change from the state of nothingness--- non-being, to being, Aquinas introduces the category of *relation* --- “creation becomes ontologically intelligible as a relation between Creator and creature.”⁸⁷ He also draws ideas from the Platonic schema of emanation and return, *exitus et reditus*, which he adapts to his concept of relation --- God as the source and the final goal of all creation. Aquinas’ schema of relation which he further illustrated by the concepts of *exitus et reditus*, provides a suitable explanation for *creatio continua* as well. He argues from the viewpoint of the contingent nature of creatures, as Scheffczyk puts it: “since all things are wholly of God’s making, Thomas concludes in strict logic that God must directly preserve all things in being.”⁸⁸ God did not just create and let creation function by itself. God continues to maintain a *relation* with creation which depends on him, an on-going relationship that alone guarantees the completion of the purpose of creation as expressed in the concept of *exitus et reditus* --- God as the source and final end of

⁸⁶ Ibid., 146-147.

⁸⁷ Ibid., 47 and in *Summa Theologiae*, 1, q.44-q45.

⁸⁸ Leo Scheffczyk, *Creation and Providence*, 148.

creation.⁸⁹ With a position like this, which Aquinas argued intelligently, he was able to identify the inherent error in Aristotle's doctrine of creation that posits the eternity and necessity of creation.

Furthermore, in Aquinas' doctrine on God, he maintains a good balance between the immanence and transcendence of God in relation to creation. He states that the transcendence of God maintains his Other-ness from creation, while his immanence demonstrates his continuous relation to creation but at the same time he avoids the error of pantheism which confuses God with creation.

Finally, Aquinas contributed in developing a solid foundation for an ecological theology in his sacramental view of material creation and this remains a major part of his legacy to the Roman Catholic tradition.⁹⁰ This sacramental view of material creation is clearly expressed in his *Summa Theologiae*:

... We should state that the distinctiveness and the plurality of things is because the first agent, who is God, intended them. For he brought things into existence so that his goodness might be communicated to creatures, and reenacted through them. And because one single creature was not enough, he produced many and diverse (creatures), so that what was wanting to one expression of divine goodness might be supplied by another, for goodness, which in God is single and uniform, in creatures is multiple and scattered. Hence the whole universe has less completely than one (creature) alone shares in and represents the divine goodness.⁹¹

In these words of Thomas Aquinas, we can hear the refrain in the creation account of Genesis "And God saw that it was good" echoed as he underscores the sacramental

⁸⁹ Aquinas's doctrine of *creatio continua* is found in *Summa Theologiae* 1,q.103, a.3.

⁹⁰ Clifford M. Anne, "Foundations for a Catholic Ecological Theology of God, in *And God Saw That It Was Good*", Drew Christiansen & Walter Grazer, eds., (Washington, D.C., United States Catholic Conference, 1996), 38-39.

⁹¹ *Summa Theologiae* 1a, q.47, a.1, translated by Thomas Gilby, OP, Vol. VIII (New York: Blackfriars in conjunction with McGraw Hill Book Co., 1967), 95.

character of every creature in the universe. For Aquinas, creation is a reflection of God and an overflow of his divine goodness.

1.6.3. Bonaventure and His Principle of Exemplarism

The teaching of St. Bonaventure (1221-1274) on creation is directly in the spirit of the Franciscan teaching on nature which originates from the spirituality of St. Francis of Assisi himself. Bonaventure, the Seraphic Doctor, developed his doctrine of creation based on his principle of exemplarism. In his work, *The Soul's Journey into God*, Bonaventure states:

For these (all of the sense world) creatures are shadows, echoes and pictures of that first, most powerful, most wise and most perfect Principle, of that eternal Source, Light and Fullness, of that efficient, exemplary and ordering Art. They are vestiges, representations, spectacles proposed to us and signs divinely given so that we can see God. These creatures I say, are exemplars or rather exemplifications...⁹²

Bonaventure's doctrine of exemplarism, according to Frederick Copleston, indicates that there is some degree of resemblance between creatures and God their creator. Bonaventure however distinguishes different kinds of semblance and this distinction is necessary in order not to fall into the trap of "pantheism on one hand" or "posit a completely independent world" on the other. Resemblance in one sense, according to Bonaventure, could mean the agreement of two things in a third object. In another sense, resemblance means the likeness of one thing to another without any agreement in a third object. And it is in this later sense that creatures resemble God their creator. The former sense must be avoided because it tends toward pantheism which is an

⁹²Bonaventure, *Bonaventure: The Soul's Journey. The Tree of Life. The Life of St. Francis*. Translated by Ewert Cousins (New York: Paulist Press, 1978), 60.

erroneous understanding of God's relationship to creatures. This aspect of Bonaventure's thought, leads Copleston to conclude that creatures do not share things in common with God in the sense of participating in the same divine nature in a univocal manner. For Bonaventure, a creature is only an imitation of God, and creatures are like God only by way of analogy.⁹³

Following the spirit of Franciscan theology, Bonaventure sought to identify vestiges of God in the world of creatures for he firmly believed that in nature, there are expressions, manifestations and images of God the creator. He makes a further distinction between the two levels of the concept of exemplarism, from the standpoint of God and from the standpoint of creature.

Every creature, says Bonaventure, is a *vestigium* of God, and the two types of analogy (that of *exemplatum* to the *exemplar* and that of proportionality) apply to every creature, the first in as much as every creature is the effect of God and is conformed to God through the divine idea, the second in as much as the creature also produces an effect, although not in the same way as God produces His effect...for the creature is not the total cause of its effect.⁹⁴

Within this principle of exemplarism, Copleston points out that there are also degrees or resemblance according to the nature of the creature. Bonaventure further observes that while all creatures are *vestigium Dei*, the semblance to God is closer in rational beings than in non-rational beings. Therefore, even though "all creatures are ordered to God", only "rational creatures are directed immediately to God...irrational creatures are directed to God mediately." By virtue of a greater degree of conformity to God, rational creatures alone can know, serve and praise God consciously. Bonaventure

⁹³Frederick Copleston, *A History of Philosophy, Vol. II: Medieval Philosophy* (New York: Doubleday Image Books, 1993) 266-267.

⁹⁴Ibid., 267.

concludes then that while all creatures are *vestigium Dei*, rational creatures which possess a higher level of semblance to God belong to the category of *imago Dei*. As creatures in the image of God, they resemble God in the possession of spiritual powers which enables them to grow gradually to be more and more like God their creator.⁹⁵

Although Bonaventure utilized the teaching of Aristotle, his doctrine of God (and consequently that of creation) differed from the transcendent and self-enclosed unmoved Mover of Aristotle which dominated the Aristotelian tradition.⁹⁶ His creation theology, in the spirit of St. Francis, put him in the Augustinian tradition, and was therefore influenced by Augustine's teachings.⁹⁷ By emphasizing the sacred nature of creation as vestiges of God the creator, Bonaventure, like St. Francis of Assisi,⁹⁸ developed a theology that led to a spirituality of mystical union with God. And just as St. Francis approached God through Christ, seeing all things concretely in the light of the divine Word, so too did Bonaventure insist that Christian philosophy must come to see the world and all other creatures in relation to the creative Word.⁹⁹

By emphasizing that creatures are *vestigium* or *umbra Dei*, a point we also saw in Aquinas although to a lesser degree, Bonaventure is credited with developing a solid foundation of an ecological theology that is greatly needed to address today's ecological

⁹⁵ Ibid. 267-268.

⁹⁶ Bonaventure accepted some elements of Aristotle's Natural Philosophy, however, he rejected his metaphysics because it conflicted with revelation. For more information on this, see, Copleston, *History of Philosophy, Volume II*, 245 -249.

⁹⁷ Ibid., 244-245. Bonaventure was also influenced by Augustine who, in his work on the Trinity, had developed a teaching of *vestigia* of the Trinity in all of creation but in humankind as reflected in their faculties of soul/mind, memory, intellect (or understanding) and will (especially, love of God).

⁹⁸ The personal life and spirituality of St. Francis culminated in mystical union with God. In that same Franciscan spirit, Bonaventure who was himself, a Franciscan, developed a theology based on the understanding of creation as *vestigium/umbra Dei*, therefore leading to the same mystical union with God through creation, his handiwork.

⁹⁹ Ibid. 242.

crisis. Creatures must be considered and treated not only as things but as beings that are sacred because they manifest the glory and nature of God.

Bonaventure sought to bridge the gap between God and the world by strengthening the bonds between the creator and creatures while at the same time recognizing the essential difference between them. By so doing he lessens the gap between God and the world and combats the mistaken idea of a world independent from God.

While these great theologians¹⁰⁰ painstakingly worked out the details of creation theology, ecclesiastical authorities convened councils at which the insights of theologians were discussed and put into solemn decrees with sanctions attached. Two of such councils, although prior to the works of Aquinas and Bonaventure, were the fourth Lateran Council and the Council of Florence, and these will be examined in the next segment which concludes this section of creation theology in the early and medieval Church.

1.6.4. The Councils: Lateran IV (1215) and Florence (1442)

The fourth Lateran Council is, in canon law, referred to as “the Great Council” or “the Great Lateran Council” because it is the most important ecclesiastical assembly of the Middle Ages marking the peak of papal authority and ecclesiastical life. This is evident from the great number of attendance and the presence of an equally high ranking ecclesiastical authority figures under the pontificate of Pope Innocent III (1198-1216),

¹⁰⁰ In general, the teaching of theologians and the insights from them are discussed at Church Councils and some of these go into the formulation of Church doctrines where they assume official position. But in this particular case, the Fourth Lateran Council was held before the writings of Aquinas and Bonaventure.

who in his opening address to the council said among other things that he wanted to see “heresies extirpated.”¹⁰¹

From the point of view of the doctrine of creation, the fourth Lateran Council marked the end of the effect of the residual dualistic heresies of the Manicheans that were carried on by the Cartharists and Albigensens. At this council, these heresies were summarily condemned and the Church’s official position re-enforced. Against the heretical position that matter is evil and created out of nothing by the devil, the council upheld the goodness of creation by the one true God. The first canon expresses orthodox belief:

We firmly believe and openly confess that there is only one true God...the one principle of the universe, Creator of all things visible and invisible, spiritual and corporeal, who from the beginning of time and by His omnipotent power made from nothing creatures both spiritual and corporeal.¹⁰²

Over two hundred years later, the Council of Florence (1442) again addressed the heresy of dualism in creation. Although this council was called primarily to address the issue of reuniting the East and the West, it was also an occasion to banish the darkness of all heresies and to reaffirm the orthodox position of the doctrine of creation. It was at this council that the threat of the Manicheian heresy of dualism and other heresies against the doctrine of creation were finally put to rest. In the Council of Florence’s decree for the Jacobites, the orthodox position of the Church was reaffirmed:

Most firmly it believes, professes and preaches that the one true God, Father, Son and holy Spirit, is the creator of all things that are, visible and invisible, who, when he willed it, made from his own goodness all creatures, both spiritual corporeal, good indeed

¹⁰¹ H. J. Schroeder, *Disciplinary Decrees of the General Councils: Texts, Translations and Commentary* (St. Louis: B. Herder, 1937), 236.

¹⁰² H. J. Schroeder, 237-238. It is important to note that the Fourth Lateran Council documents and teachings influences Thomas Aquinas’ theology of creation.

because they are made by the supreme good, but mutable because they are made from nothing; and it asserts that there is no nature of evil because every nature, in so far as it is a nature, is good...¹⁰³

The council went on to anathematize Manicheanism for its dualism that posits two principles, good and evil, one for visible things and the other for invisible things, one as God of the New Testament and the other for the Old Testament. Contrary to the position of the heresy of pantheism, the council also emphasized the freedom of God with respect to creation and the temporality of creation.

The last two sections examined the theme of creation in the Bible as well as in the work of theologians and the official teachings of the Church right through to the Middle ages. From the biblical worldview, the place of Yahweh-God the creator is firmly established as articulated in the Jewish First Testament, while the Christian Second Testament emphasized the centrality of Jesus the Son of God as the Person in and through whom creation came into existence and in whom creation experience redemption. Based on reflection on the biblical concept of creation and the philosophical currents of the time, scholars in the early history of the Church to the Middle Ages developed the theologies of creation that became the official position and doctrine of the Church on creation.

1.7. Conclusions

By way of conclusion, I shall identify some of the key points of this chapter which I will summarize and highlight the major creation themes in the Jewish First

¹⁰³ Norman P. Turner, SJ., *Decrees of the Ecumenical Councils, Vol. 1 Nicaea I-Lateran V* (London: Sheed and Ward & Washington, DC: Georgetown University Press, 1990), 571-572.

Testament and Christian Second Testament and creation theology in the early Christian era down to the Middle Ages.

From the above analysis, one can conclude that the Scriptures do not present a single view of the created world; neither do we have a clear and distinct physical cosmology as it is understood today. This is because the main emphasis of the biblical authors was not a scientific analysis of how the universe came to be, but to express the belief of the chosen people in Yahweh God as creator and sustainer of the universe. The biblical creation narratives arise from a worldview, which like the rest of antiquity, portrays a rather static world which serves as a stage on which the dynamism of the history of salvation, in which God created and saved his people, was enacted.

The major themes that run through the Jewish First Testament and Christian Second Testament identify the place of God in creation and how this reflects on the life and faith of the Jews and Christians. First and foremost, there is a firm and abiding belief in Yahweh God as a good, loving, caring, compassionate and faithful creator who is the ultimate source and summit of creation. It follows therefore that creation is fundamentally good and with a goal and destiny. Along with the theme of goodness in creation is the intelligibility in creation. Creation came for a reason and is guided by reason. Thus the element of intelligence is manifested in the purpose and goal of creation. Coming from God the creator, creation is set on a journey that will eventually lead back to the same Creator-God --- *extus-reditus*.

In both the Jewish First Testament and Christian Second Testament, there is a belief that although God created everything good, the effect of evil in creation is also real. This evil, originating from the fall of Adam and Eve, affects the entire creation and

human beings in particular through demonic powers operating in the world. However, a strong message of hope runs through the Scriptures, especially the Wisdom Literature in the Jewish First Testament and Christological themes in the Christian Second Testament. In these biblical works we learn that there is God who makes himself available to human beings and whom we can reach through a spiritual journey. The emphasis of the Christian Second Testament is therefore on the place of Jesus Christ the Son of God in creation, for in Christ creation reaches its climax as it finds its eschatological fulfillment. From the perspective of Scripture, creation finds its purpose and meaning by serving as the locus for fulfilling the covenant between God and humanity which finds its highest realization in Christ. Through creation, faith in the absolute power of the one true God is made more secure bringing believers closer to God as the absolute ground of all reality.

This same theme of faith in the absolute power of God as the ground for all reality is carried into the early Christian era where it finds its expression in the developed doctrines of *creatio ex nihilo* and *creation continua*. In *creatio ex nihilo* and *creation continua*, we can discern a *gradual developmental process* as God brings “something” (creation) out of “nothing” and continues to guide creation toward its goal. Although the origin of the concepts of *creatio ex nihilo* and *creatio continua* are traceable to the Jewish First Testament and the Christian Second Testament, the actual formulation into well defined doctrines had to wait for the appropriate time in the Christian era. The fact that God created out of nothing indicates that creation did not have to be. Creation is not a necessary being. Creation came as a pure gift out of the love of God the creator, and this also demonstrates the *mystery* and *sacred* nature of creation.

The doctrine of *creatio ex nihilo* underscores the immediate relation between creation and the Creator. As the Hebrew word, *bara*, rightly indicates, to create in the strict sense of the term, is an act of God. God alone in his absolute and infinite power can really create, strictly speaking. Therefore, to be a creature is to exist in absolute dependence on the loving and faithful Creator God. *Creatio continua* emphasizes the fact that God's creative act is not an event that took place simply in the past and over with. God continues to be involved in creation while at the same time leaving it free as it *unfolds* by way of *incremental development* and *moves* towards its final goal which is union with God the Creator. From the point of view of creation theology therefore we see a clear denial of the position that creation has no meaning or purpose. Contrary to this erroneous view, creation theology affirms the place of a loving and purposeful Creator God in and through whom creation finds its meaning. The same order which operated in creation from the very beginning continues to guide and direct creation under the principle of unity. This is demonstrated in the *interaction, dynamic interconnection* and *interdependence* that is manifested among the different creatures in the world. From the ecological perspective, these themes are further reinforced in the theologies of Bonaventure and Aquinas who conceive of creation as vestiges of God and sacrament of God's presence in the universe. While acknowledging the special position of humankind as *imago Dei*, these theologies emphasize the concept of inter-being, the interconnection and interdependence among all creatures in the universe.

The teaching on creation in the Bible and in the work of theologians as analyzed above continued to be part of the major theological currents that shaped the official doctrine of the Church right through to the Church Councils and up to the present day.

However, in each generation, these teachings of the Church are re-examined and re-formulated to give it new meanings to respond adequately to new philosophical ideas and scientific discoveries.

From the point of view of this dissertation the relevance of this first chapter is underscored in the idea of gradual and incremental development in creation implicit in the creation theologies of Augustine, Basil the Great and Gregory of Nyssa, as well as in the *exitus-reditus* schema in Thomas Aquinas. While acknowledging that there is an aspect of mystery in God's creative work, the insights of these theologians provide a solid basis for contemporary creation theology.

The Christian doctrines of *creation-ex-nihilo* and *creation-continua*, developed in this chapter, underscore the fact of the total dependence of creation on God who is their origin and sustainer. The logical follow up of this concept is that of unity of creation in God their common origin, hence the rationale for the position of dynamic interconnection and interrelation of creatures in the universe.¹⁰⁴ These themes resonate with the major theological concepts that are relevant to contemporary theology of creation which is being developed in this dissertation. Furthermore, the insights of Bonaventure and Aquinas in which creation is understood as *vestigium/ umbra* Dei and sacrament of God's presence in the universe, as indicated before, provide a powerful foundation for

¹⁰⁴ In his analysis of the doctrines of *creatio-ex-nihilo* and *creatio-continua*, Arthur Peacocke observes that: "The scientific perspective of a cosmos in development introduces a dynamic element into our understanding of God's relation to the cosmos which was, even if obscured, always implicit in the Hebrew conception of a "living God", dynamic in action". *Creation and the World of Science: The Reshaping of Belief*, First Published in 1979 (Oxford, England: Oxford University Press, 2004), 80.

Furthermore, the dynamic process and interrelation in creation is affirmed in Church teachings as affirmed in Vatican II documents which states: "...Humankind substitutes a *dynamic* and more *evolutionary* concept of nature for a static one..." (GS. # 5), and in the Catechism of the Catholic Church (CCC): "...With infinite wisdom and goodness, God freely willed to create a world 'in a state of journeying' towards its ultimate perfection. In God's plan, this *process of becoming* involves the appearance of certain things and the disappearance of others, the existence of the more perfect along side the less perfect, both constructive and destructive forces of nature..." (#310, Fourth Paragraph), 82.

ecological theology that is equally relevant to this study. These themes highlighted above will be developed in subsequent chapters.

CHAPTER TWO

SCIENTIFIC THEORIES OF EVOLUTION

Introduction

Having addressed Christian theologies of creation in Chapter One, this chapter will examine scientific theories of evolution¹ and identify some of their implications for and challenges to the Christian doctrine of creation. This is important because no contemporary theology of creation can ignore scientific theories of evolution. Today, the relevance of understanding the relationship between scientific theories of evolution and creation theology is particularly crucial because of the modern debate between adherents of creationism,² especially biblical literalists and biological evolution. Commenting on

¹ Evolution in general refers to a process of development, formation or growth, usually from lower forms to more developed and higher ones, by way of a cumulative change over a long period of time. According to *The Oxford English Dictionary* (1933), the word “evolution” comes from the Latin, *evolvere*, to unfold, or to open out, similar to the “unrolling of a book.” The word first appeared in English language at about the year 1647 and became widely used in reference to ideas of progression from lower or simpler forms but not necessarily in a biological connotation. As a technical biological term, the word evolution started to be used at about the year 1670 to describe the process of change and maturation in insects. At the time Darwin started to write *The Origin of Species*, he avoided the use of the term evolution and chose “descent with modification” instead. It was not until the 1873 edition of *The Origin of Species* that Darwin started to use the term evolution directly. For more information on this, see Francisco J. Ayala, “The Evolution of Life: An Overview,” in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert J. Russell, William R. Stoeger, S.J., and Francisco J. Ayala (Vatican City State: Vatican Observatory Publications/Berkeley, California: Center for Theology and Natural Sciences, 1998), 22. In this chapter, “Scientific Theories of Evolution,” ideas and theories of evolution in general will be examined but the main areas of concentration are biological evolution as articulated by Charles Darwin and the Big Bang cosmology that was later developed providing a model for explaining the origin and history of the universe as an evolving cosmos.

² In their book, *Evolution from Creation to New Creation*, Ted Peters and Martinez Hewlett make an analysis of the use of the term “Creationism” by identifying three different ways it is used. The first is a more general usage where the term “Creationism” refers to a deistic or theistic belief that God is the creator of the natural world. Creationists hold that the world is entirely dependent on God for its origin and sustenance because it is not self-originating or self-sustaining. Secondly, creationism is used to mean that God created each human soul anew either at conception or somewhere between the moment of conception and birth. Finally, creationism refers to that school of thought that denies evolution, especially the Darwinian theory of evolution. This school of thought has two versions: Scientific creationism or creation science that uses supposed scientific arguments to establish the necessity for belief in God’s existence and his place as creator and sustainer of the world; and Biblical creationism that upholds the absolute authority of the Bible, relies on literal interpretation of the Bible and believes in the primacy of the Bible over and above any other source of knowledge. For more information on this, see Ted Peters and Martinez Hewlett,

this relationship, the Russian-American geneticist and evolutionist, Theodosius Dobzhansky, in his article, “Nothing in Biology Makes Sense Except in the Light of Evolution,” observes that evolutionary doctrine does not clash with faith, therefore the conflicts that arise are only because symbols are misconstrued.³

Theories of evolution, and in particular Darwinian theory of evolution, have been the center of controversy between Christian creation faith rooted in the Bible and the new paradigm for doing science that is associated with the Darwinian theory since the middle of the 19th century. This controversy is however not reflected in the doctrine of creation of the Patristic and Medieval era examined in the last section of Chapter One, because the Darwinian theory of evolution has very little directly to do with their theologies of creation. The early Fathers and the Medieval conciliar documents focused primarily on the question of the ultimate origin of creation and the place of God as Creator in their creation theologies. Therefore, they developed the doctrine of *creatio ex-nihilo*, a metaphysical argument to counter erroneous philosophical positions regarding the relationship of God to the cosmos rather than a response to observational science, since empirical observation did not feature strongly in the study of the natural world until the Enlightenment.

Charles Robert Darwin (1809-1882) is considered to be the founder of modern evolution, and rightly so. His grandfather, Erasmus Darwin, also held and developed ideas of evolution, therefore had some influence on Charles Darwin. With the intention to

Evolution from Creation to New Creation: Conflict, Conversation, and Convergence (Nashville: Abingdon Press, 2003), 70-96.

³ A Russian-American geneticist and evolutionist, Theodosius Dobzhansky, argues that evolution is not in conflict with religious faith. He observes that these “imaginary, insoluble conflicts” arise because “symbols are construed to mean what they are not intended to mean.” For more on Dobzhansky’s argument, see his article: “Nothing in Biology Makes Sense Except in the Light of Evolution,” *American Biology Teacher*, 35 (March, 1973), 125-129.

study medicine, Charles Darwin entered the University of Edinburgh but later left for Cambridge University to study to be a clergyman and a naturalist.⁴ While at Cambridge, Darwin studied the works of William Paley who developed the analogy of a watchmaker in his natural theology in which he argues for the existence of God based on the order and magnificence of the natural world.⁵ After graduating, Darwin served as a naturalist aboard the HMS Beagle on a trip round the world and did intensive study and research that eventually led him to develop his theory of evolution. A controversial book based on this research, *The Origin of Species by Means of Natural Selection* was published in 1859. In it Darwin puts forward his famous theory of evolution through the mechanism of natural selection and argues for the origin of all living things by “descent with modification.” In 1871, eleven years later, an even more controversial book, *The Descent of Man and Selection in Relation to Sex*, was published in which Darwin provides an evolutionary account for the origin of human beings as well.

Darwin’s theory of biological evolution is the most well known theory of evolution but it was not the first. It is therefore relevant to begin this analysis with an examination of the history of ideas of evolution among the early Greeks. After this, the

⁴ Reports about the early life of Darwin testify to his fascination with nature, a desire which grew even more as demonstrated in his continued habit of collecting plants, insects, and geological specimens. Darwin would later remark that his time at Cambridge was “sadly wasted” for “no pursuit at Cambridge was followed with so much eagerness” or gave him “so much pleasure as collecting beetles.” But it turned out that the time in Cambridge was not altogether wasted because his studies there continued to stir up in him “a burning zeal to add even the most humble contribution to the noble structure of Natural Science.” William E. Phipps, *Darwin’s Religious Odyssey* (Harrisburgh: Trinity International Press, 2002)1-13.

⁵ William Paley (1743-1805) was a renowned theologian who developed the famous “watchmaker” analogy which remains a master piece in natural theology till date. In this book, Paley argued intelligibly for the existence of God from observing the design in nature and the orderly arrangement in the natural world. Most religious thinkers at that time, like Paley, were highly impressed with the remarkable manner by which organisms adapt to their environment, and this gave them sufficient reason to believe that an intelligent and designing deity was behind it all. Darwin, the young student at Cambridge then, was equally deeply impressed by this “natural theology” based on the argument that nature could lead us to God just as much as the Bible does. Darwin’s theory of evolution would however lead him and countless others to reject William Paley’s natural theology.

section on scientific theories of evolution proper will be treated but in a chronological order rather than in the order in which scientific theories were first proposed. Thus Big Bang cosmology will be treated prior to biological evolution to provide the evolutionary framework for the origin and history of the universe as an evolving cosmos. The treatment of the Big Bang will be followed with an examination of biological evolution with particular focus on the works of Charles Darwin. The last section will identify the challenges posed to creation theologies by scientific theories of evolution presented within the context of the issue of conflict and debate between creation and evolution, which is a reflection of the modern conflict between science and religion/theology. The classic example of this conflict is the event of the shift from a geocentric to a heliocentric worldview in the famous Copernican revolution and the fallout from it. However, this is only briefly mentioned because of the scope of this study. This will then be followed with the conclusion.

2.1. Notions of Evolution Among the Early Greeks

All cultures of the world in one way or another provide some explanation for the origin of the world and of life --- plants, animals and humans, and often other creatures. The concept of evolution as an explanation for the origin of things is traceable to the ancient Greek naturalists and cosmologists who, in their usual acumen, developed ideas that prefigured and likely influenced some of modern theories of evolution.⁶

Among the early Greek naturalists, Thales (ca. 624-546 BCE) was the first to suggest that all living things originated from water. His contemporary, Anaximander (ca.

⁶ Desmond King-Hele, *Erasmus Darwin* (New York, N.Y.: Charles Scribner's Sons, 1963), 63.

610-546 BCE) believed in the aquatic origin of life but went further to suggest that the process of origination was by spontaneous generation, thus became the first to introduce the concept of *abiogenesis*.⁷ On the whole, Anaximander sought to trace the origin of things back to the Infinite, that which has no boundaries or limits in terms of space and time. The Infinite is before all worlds and to whose bosom all things will return.⁸

Building his theory on the concept of cyclical transformation in the cosmos, Heraclitus (ca. 545-475 BCE) declared that everything is in perpetual movement and change but at the same time consisting of a uniform whole. Empedocles (ca. 492-432 BCE) took the notion of evolution to the next level by suggesting that nature produces by development from lower and less perfect to higher and more perfect forms through a long gradual process of interaction of forces of nature in the cosmos, eventually giving rise to organisms.⁹ He is also credited with introducing the concept of adaptation in the process of development.¹⁰ Building on the ideas of his predecessors, Anaxagoras (ca. 500-428 BCE) taught that adaptation in nature is directed by reason, mind or intelligence, *nous*, guiding the development towards its goal.¹¹

⁷ Henry F. Osborn, *From the Greeks to Darwin: The Development of the Evolutionary Idea Through Twenty-Four Centuries* (New York, N.Y.: Charles Scribner's Sons, 1922), 99.

⁸ Thomas D'Arcy, "Natural Science", in *The Legacy of Greece*, edited by R.W. Livingstone (Oxford, England: Clarendon Press, 1924), 137.

⁹ Michael Ruse, *The Evolution-Creation Struggle* (Cambridge, Massachusetts: Harvard University Press, 2005), 11. Ruse observes that a few pre-Socratics supposed that some kind of proto-evolution took place. He cites the example of Empedocles and the atomists (such as Democritus) who "thought that pieces of body cohered by chance and eventually became fully functioning organisms." 11. He also makes an interesting remark that some of the great Greek philosophers, including the physician Galen, thought that it was false philosophy to suppose that functioning organisms could emerge that way: "Not even infinite space and time would yield complete functioning organisms." One must therefore suppose that some "principle of ordering, some kind of intelligence" is responsible for the creation of life: "The organic world had a designer ---- it could not have come about through blind adherence to physical laws." And Ruse concludes that "such was the legacy of the Greeks, and the Christian world bought into it completely." 11.

¹⁰ Henry F. Osborn, *From the Greeks to Darwin*, 54-59.

¹¹ *Ibid.*, 59-60.

Although these early naturalists and cosmologists contributed to the notion of evolution, it was in the insights of Aristotle (384-322 BCE) that a major breakthrough came in the development of the idea of evolution. Aristotle's way of reasoning and interpretation of nature is based more on the principle of induction, starting from observation of particular examples of things and making generalizations from them. This was a radical departure from the deductive method of Plato who believed that knowledge is based on contemplation of perfect Forms. From the general principles based on contemplating these perfect Forms, one would then reason to particular examples in the visible world below.¹²

Aristotle's major contribution to thought on evolution is in his idea of internal perfecting principle inherent in nature. In his analysis of the principle of causality, Aristotle in his work, *Physics*, identifies four causes: the *material cause*, for instance, is the actual material or matter used to build a house; the *efficient cause* would be the builder of the house; the *formal cause* is the plan or form of the house in the mind of the builder which guides him in the work of building; and the *final cause* is the end or purpose of the building project, a house for shelter.¹³ Based on this understanding of nature and causality, Aristotle argued that Intelligence and plan are behind development and purpose or goal in nature. Nature responds to that inbuilt internal perfecting principle that moves it towards its goal under the control of the unmoved first Mover.¹⁴

¹² Ibid. 77.

¹³ Michael V. Wedin, *Aristotle*, in Robert Audi, ed., *The Cambridge Dictionary of Philosophy*, Second Edition (New York, N.Y.: Cambridge University Press, 1999), 47. See also Terence Irwin and Gail Fine (eds.), *Aristotle* (Indianapolis, Cambridge: Hackett Publishing Company, Inc., 1995), 102-114.

¹⁴ Aristotle, *Physics*, II, VII, VIII; *Metaphysics* V, VI. See also Wesley J. Wildman, "Evaluating the Teleological Argument for Divine Action," in *Evolutionary and Molecular Biology: Scientific Perspectives in Divine Action*, edited by Robert John Russell, R. William Stoeger, and Francisco J. Ayala, 120-121.

In his understanding and interpretation of nature, Aristotle argues for an ascending gradation of nature and progressive development.¹⁵ He proposes that the lowest stage in the gradation of nature is the inorganic stage. By way of direct metamorphosis, the inorganic stage passes on to the organic stage as matter is transformed into life, and from this stage plants and animals later developed. The highest point of this ascending gradation in this great chain of being is the level of human life. This “chain” could be interpreted to imply an evolutionary process.¹⁶ Aristotle’s concept of nature is therefore anthropocentric for he believed that humankind is the flower of nature, the one towards whom all the developments in nature has been tending. Humankind is the crown, end, purpose and final cause of nature.¹⁷

Aristotle felt compelled to assume that nature is governed by intelligence and plan because of the marvelous adaptation in the arrangement of things in the world. The consistency, perfection and regularity in nature led Aristotle to believe that intelligence is behind it all, because, nothing that follows a regular pattern can be a result of accident. In response to this internal perfecting tendency, nature develops from the level of potentiality to actuality as less perfect things grow into more perfect ones.¹⁸ The

¹⁵ Aristotle, *Physics*, I. See also, Terence Irwin and Gail Fine(eds.), *Aristotle*. Book I on “Coming to Be and Perishing” (De Generatione Et Corruptione) gives detailed analysis if the process of change in generation and perishing of organisms. 146-168.

¹⁶ Arthur O. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge: Harvard University Press, 1936), Chapters 6-8. Lovejoy titled his book, *The Great Chain of Being*, the phrase used to describe the principle of continuity in Aristotle’s concept of the nature of organic beings. Lovejoy develops Aristotle’s idea further drawing attention to the possibility of organisms can be arranged in a continuous line from the lowest and simplest to the highest and most complex. This concept is sometimes illustrated in these terms: “from monad to man,” or “from worm to angel.” Michael Ruse remarks that: “in itself, the chain was not evolutionary ---- it was more a fixed ladder than a moving escalator --- but it was pointed in the right direction, for those who were so inclined.” *The Evolution-Creation Struggle*, 29. However, I would argue that judging from the way Aristotle makes the analysis of development of organisms from lower to higher forms responding to the inbuilt perfecting principle in nature, evolutionary process can be inferred, although the term “evolution” itself is not used directly.

¹⁷ Henry F. Osborn, *From the Greeks to Darwin*, 81-82.

¹⁸ *Ibid.* 79-87

development from potency to act follows a process of movement that Aristotle analyzes in his work, *Physics*. This analysis falls into four categories:

1. *Substantial movement*, for instance as observed in origin and decay or development and degeneration.
2. *Qualitative movement*, as observed in addition or subtraction, gain or loss of parts or things.
3. *Quantitative movement*, the process of metamorphosis which leads to transition of one thing to another.
4. *Local movement*, which is the change of place from one location to another.¹⁹

In this analysis of the concept of movement, Aristotle laid the foundation of the four essential features of evolution as a process. However, Osborn is quick to observe that there is no clear evidence that Aristotle applied this concept directly to the development of organisms from one stage to another as articulated in modern theories of evolution.²⁰

The insights of the early Greeks are highly commendable. However, it is important to realize that their theories were largely speculative and less scientific in the sense of the modern understanding of the term. They displayed a genius that was philosophical, lucid and logical, providing a foundation for modern science, nonetheless short of the standard for science in modern day terms.²¹ Real scientific research in evolution was left to later generations with the major breakthrough coming in the 19th and 20th centuries during which evolutionary science was taken to the next level. One of these

¹⁹ Ibid. 79-82; cf., *Aristotle*, edited by Terence Irwin and Gail Fine. In Book III of *Physics*, Aristotle makes an analysis of the concept of motion and the different processes involved with it. 120-126.

²⁰ Ibid. 79-80

²¹ Alfred North Whitehead, *Science and the Modern World* (New York, N.Y.: The Free Press, 1925), 7. Whitehead makes an exception by saying that to some extent the works of Aristotle and Archimedes, and a few other researches in astronomy by some of the early Greeks could count as science.

areas of breakthrough was in the Big Bang cosmology that provides an evolutionary framework for a long history of a universe that has developed through expansion from twelve to fifteen billion years.

2.2. Scientific Theories of Evolution

From the point of view of chronological sequence, the study of biological evolution, focusing on the origin of life and of human life especially as articulated in the works of Charles Darwin, came before the theory of the origin of the universe, known as “Big Bang” cosmology. However, in the logical order of occurrence, the origin of the universe comes before the origin of life and human life. Therefore, this section will follow the logical historical order by first examining the Big Bang cosmology of the 20th century that provides a model for the history and development of the universe as an evolving cosmos. Treatment of the Big Bang will then be followed with the examination of biological evolution. The section on biological evolution will focus primarily on Charles Darwin’s theory. However, it is relevant to begin by identifying some of the forerunners of Charles Darwin, such as Erasmus Darwin, Jean-Baptist de Lamarck, and Charles Lyell because of the influence of their ideas on subsequent theories of evolution. The examination of the works of Charles Darwin laid out in *The Origin of Species* and *The Descent of Man* will then be examined in detail.

2.2.1. The Evolution of the Universe: Big Bang Cosmology

One of the questions that has and continues to captivate the human mind is whether or not the universe has boundaries in time and space. One theory in response to

this question states that the universe has always existed thus postulating the eternity of the universe. Another response argues that the universe has boundaries and a beginning in space and time. From the point of view of cosmology, what seems to be a modern and most widely accepted response to this question is found in the Big Bang theory, made possible by new and improved telescopes.

Edwin Hubble (1889-1953) who developed a powerful telescope is among the scientists whose insights contributed to the development of the Big Bang theory. In a breakthrough report published in 1929, he demonstrated that the universe is expanding and evolving.²² Hubble therefore put an end to the position of classical Newtonian physics that the universe is static, fixed and completed, a position that dominated cosmological thinking for over four centuries.

Hubble's discovery was a further confirmation of study and research based on the insights from the nascent theories of relativity of Albert Einstein (1879-1955) that led scientists to arrive at a solution that postulated an expanding universe.²³ The significance of Hubble's discoveries was not immediately grasped by many scientists. A Belgian

²² Edwin Powell Hubble (1889-1953), an American Astronomer who developed some powerful telescopes that he used in his research and study. In 1929, while examining the "red shift" of light from distant nebulae, he observed that the galaxies outside our Milky Way are receding from us in all directions. From this observation, Hubble developed his theory which says that the speed of recession of nebulae is directly proportional to its distance from us. This suggests that objects in space, and space itself is expanding. By way of extrapolation backward in time, astronomers therefore postulate that the universe seems to be expanding from an initial point of singularity and common origin about fifteen billion years ago. Ian G. Barbour, *and Science: Historical and Contemporary Issues* (San Francisco: Harper Collins, 1997), 195. See also, Mark William Worthing, *God, Creation and Contemporary Physics* (Minneapolis: August Fortress, 1996), 27-28.

²³ Albert Einstein (1879-1955) was a German physicist who lived in America late in his life. He was the founder of the theories of relativity --- special and general relativity. In a layman's language, the theories of relativity basically state that the concept of motion should be understand and defined relative to a frame of reference, for example, the observer. It also states that both time and space are relative not absolute concepts. Einstein's theories led to equations that gave rise to some conclusions among which is an expanding universe. For more information on this, see: John Polkinghorne, *Science and Theology: An Introduction* (Minneapolis: Fortress Press, 1998), 46-47; and Ian G. Barbour, *Religion and Science* (San Francisco: Harper Collins, 1997), 177-181.

Jesuit priest, George Henri Lemaître (1894-1966) working at the Vatican Observatory, however recognized the implication.²⁴ If the universe is expanding, then, it must have been smaller in the past. Extrapolating backward in time, there had to have been a period when it was at its smallest possible size, the “primeval atom.” This is because an expanding universe suggests an initial moment or point where expansion began. The phenomenon of an expanding universe, developed by various scientists,²⁵ therefore formed the basis of modern cosmological theories, the most popular and acceptable one being the Big Bang theory.

In a nutshell, the Big Bang theory states that about twelve to fifteen billion years ago, the universe originated from a violent explosion at a point of infinite compression or initial singularity, an extremely dense concentration of materials. For an incomprehensibly small fraction of a second during this explosion, the universe was an infinitely hot and dense fireball. From this moment of explosion, the process of expansion began pushing out the fabric of space and time. Following this phase, there was a development of fundamental energy and particles such as quarks, electrons,

²⁴ Don O’Leary, *Roman Catholicism and Modern Science: A History* (New York, N.Y.: Continuum International Publishing Group Inc., 2006), 161-162. O’Leary observes that even Albert Einstein was somehow reluctant initially to give up the view that the universe is eternal and unchanging, but due to the brilliant and meticulous presentation of his theory of the “primeval atom,” Lemaître, head of the Pontifical Academy of Sciences from 1960 to the time of his death in 1966, convinced him that the universe had a beginning in time, 162.

²⁵ In 1940, George Gamow, building on the insights of Lemaître, developed his own theory of an expanding and contracting universe, using the term “Big Squeeze” or “Big Crunch” to describe the collapsing and compression of matter, thus, suggesting an oscillating universe. Fred Hoyle, who was committed to the “Steady State Theory” is believed to have dubbed Gamow’s model of an expanding universe “Big Bang” in a rather derogatory way, but ever since then this metaphor has come to be used to describe the theory. Gamow’s theory in which he made major predictions about radiation from the very hot early stages of the universe following the moment of explosion were further confirmed in the works of Arno Penzias and Robert Wilson, radio astronomers working at an AT&T Bell Laboratory. The discovery of the cosmic background radiation by these astronomers therefore became a further confirmation of an expanding universe and the Big Bang theory. For more information on this see, Mark William Worthing, *God, Creation, and Contemporary Physics* (Minneapolis: Augsburg Fortress Press, 1996), 28, 96, 187; See also, James S. Trefil, *The Movement of Creation: Big Bang Physics from Before the First Millisecond to the Present Universe* (New York: Scribner’s, 1983), 26-29.

photons, neutrinos and other less familiar particles. Through the process of cooling and condensation that followed the initial explosion, (the Big Bang), it is believed that protons and neutrons started to develop leading to the formation of the nuclei of simple elements of atoms which were mostly hydrogen and helium. Matter, as we know it today, only started to be formed after the temperature became conducive for it. Through the forces of gravity acting on the primordial gasses, galaxies and early stars started to emerge with heavier elements being formed in the stars. About 4.6 to 4.5 billion years ago, the Sun and other planets including the Earth were formed. This brief history of the origin of the universe as laid out in the Big Bang theory that has now become the most widely accepted cosmological position about how the universe came to be.²⁶ Although scientist have not yet worked out the details of the event of the explosion of the primeval atom, especially the development within the first few minutes, the Big Bang cosmology clearly supports the theory of an expanding and evolving universe.²⁷

The Big Bang theory is however not without challenge. One of the major challenges came with the development of an alternative position by astronomers who wanted to address the problem of a beginning by postulating an infinite span of time and

²⁶ Ian G. Barbour, *Religion and Science* (San Francisco: Harper Collins, 1997), 194-196.

²⁷ *Ibid.*, 197. Part of this difficulty that scientists have with working out the complete detail of the event of the initial explosion is because the first few minutes of the Big Bang deals with a condition of matter and energy that is further away from any state of matter and energy that can be duplicated in laboratory experiments. Secondly, scientists are of the opinion that it is difficult to measure with accuracy the behavior of atoms at their simplest forms especially in terms of their position and momentum. This difficulty is not just a result of temporary human ignorance but also and more because of indeterminacy in nature itself: Werner Heisenberg (1901 -1972). The Heisenberg's Uncertainty Principle therefore states that "the more accurately we determine the position of an electron, the less accurately we can determine its momentum and vice versa." For more information on this see Ian G. Barbour, *Religion and Science*, 170-171. In the glossary definition Barbour states the Principle of Uncertainty or Indeterminacy as "a property of nature if uncertainty in the prediction of quantum events is ascribed to the presence of a range of potentialities and the observance of the exact laws in nature itself, rather than to the limitations of our knowledge of nature." Ian. G. Barbour, *Religion and Science*, 358.

space. The proposed theory is called the “Steady State Theory.”²⁸ Scientists committed to this theory argue that the universe has no beginning or end in time as they postulate a situation where hydrogen atoms come into existence slowly and continuously through an infinite time and space. The universe is always expanding but it maintains a constant average density. Thus, matter is being continuously created to form new stars and galaxies as the old ones disappear from sight due to distance and velocity of recession.

Furthermore, scientists who believe that the universe goes through cycles of expansion and compression advocate the “Big Crunch” or “Big Squeeze” theory thus suggesting that it is not impossible that the universe is oscillating between eras of expansion and contraction, thus proposing an oscillating cosmos. In other words, before this present era of expansion following the explosion, there could have been an era of contraction, a “Big Crunch,” which led to the Big Bang. Whatever existed in a previous expansion, which then started to contract leading to a Big Crunch, would have been totally wiped out by this fireball as this cycle is started all over again. However, it is important to note that the Big Crunch theory is at best a hypothesis. In recent years we have also witnessed the development of the String Theory, which appears to be the latest in the line of hypothesis on the origin of the universe.²⁹

²⁸ Some scientist of atheistic mindset for example, Fred Hoyle, Hermann Bondi, and Thomas Gold, repudiated the Big Bang theory and proposed an alternative theory called “The Steady State Theory.” This theory states that the universe did not go through any expansion or contraction but maintained a uniform and steady condition in which matter was being continuously generated to fill the space caused by cosmic expansion. Ian G. Barbour, *Religion and Science*, 198-199; Anne Clifford, “Postmodern Scientific Cosmology and the Christian God of Creation” in *Horizons*, 21/1 (1994), 67. See also footnote 9. Fred Hoyle is believed to have continued to defend “The Steady State Theory’ long after most of his colleagues had abandoned it not only on scientific grounds but to support his atheistic mindset. For him, the Big Bang theory supports the theory of creation in time and all the religious implications. Barbour, *Religion and Science*, 198-199; Don O’Leary, *Roman Catholicism and Modern Science*, 163.

²⁹ The String Theory is a model of physics which suggests that the fundamental constituents of reality are strings of energy that serve as the building blocks out of which the world eventually emerged. This theory is thus different from the Standard Model of particle physics in which the fundamental building blocks out of which the world is made are elementary particles called quarks and leptons. The String

This brief examination of the Big Bang cosmology is significant because it helps to identify some of the areas where scientific theories of evolution challenge creation theologies. For instance, from a purely scientific perspective, some scientists of atheistic mindset argue the Big Bang theory demonstrates that the universe came into existence as a result of chance and random interaction of mechanical forces following the explosion at that initial moment of singularity. It is therefore not necessary to invoke God to explain the universe. This position stands in contrast to the central belief in creation theologies that the universe is created deliberately and sustained by a loving, purposeful intelligent being, God the creator. The world, as we experience it, is essentially intelligible, awesome and coherent. It is good, orderly and beautiful, operating under a properly organized pattern that demonstrates a purpose and an end. The world is dependant on a loving, personal God, a creator who made it and sustains it in existence. And that this Creator-God is sovereign and free, one who transcends creation and operates by purpose and will.³⁰

The responses to the Big Bang cosmology have been many and varied. Some of these responses are reactions from individuals or groups of people that seem to show an undue eagerness to reconcile the findings of science with biblical teachings. Other responses come from those who are concerned about the danger of relying on scientific theories to support Christian doctrines and caution against endorsement of scientific theories, especially, the Big Bang cosmology. The Big Bang theory was thus received in

Theory is the latest attempt to provide a complete, unified and consistent description of the fundamental structure of the universe. For more information see, Paul Lagassé, (ed.), *The Columbia Encyclopedia*, Sixth Edition (New York: Columbia University Press, 2000), 2732.

³⁰ Ian G. Barbour, *Religion and Science* (San Francisco: Harper Collins, 1997), 202-203. This is the position of Christian theologies of creation developed in the first chapter of this dissertation.

both the scientific and religious communities, negatively by some and positively by others, for different reasons ranging from scientific, political and religious.

One of the rather interesting reactions to the Big Bang cosmology came in the late twentieth century from a famous astronomer, Robert Jastrow, who was also an avowed agnostic. Jastrow surprisingly made an observation suggesting that the Big Bang is a confirmation of the biblical creation accounts, especially, the first chapter of the book of Genesis. In a June issue of *New York Times*, an article by Jastrow, a staff of NASA, titled “Found God?” depicts theologians as “delighted [that] the astronomical evidence leads to a biblical view of the origin of the world.” He concludes his article with a statement that sums up his vision about all this:

At this moment it seems as though science will never be able to raise the curtain on the mystery of creation. For the scientist who has lived by his faith in the faith of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries.³¹

Among the individuals and groups who welcomed the Big Bang theory were some theologians and high ranking officials of the Roman Catholic Church. After a long period of tension and conflicts between theologians and astronomers in the previous centuries, some of these started to develop a common ground based on the idea that the universe has a beginning. According to adherents of this position, the idea of a beginning is suggested

³¹ Robert Jastro, *God and the Astronomers* (New York: W.W. Norton, 1978), 116. It is however important to note that this quotation from Jastrow used to conclude his book is widely quoted to support biblical creationism. But then, this must be understood within the context of Jastrow’s whole position, because, Jastrow also speculates that the Big Bang may have been one of a series of cosmic explosions that alternate with cosmic collapses --- Big Crunch. If the Big Bang represents a moment in the history of an oscillating universe, then, it does not seem to be a moment of absolute creation which biblical creationists associate with the first chapter of Genesis. When Jastrow entertains the idea that our universe might be followed by “a second Creation” and then after a collapse by “still another Creation,” he seems to be no longer using the word “Creation” in the sense that Christians usually associate with the first chapter of Genesis.

in the Big Bang theory, which claims that there was an initial point of singularity at which an explosion started a process of expansion that eventually gave birth to the universe. The point of radiation of infinite density right after the Big Bang is identified with the Genesis creation account which states: “Let there be light...,” since pure light is radiation. Reacting to this development therefore, Pope Pius XII said that the Big Bang theory supports the biblical concept of creation as laid down in the book of Genesis. He stated:

Contemporary Science...has succeeded in bearing witness to the august instant of primordial Fiat Lux, when along with matter there burst forth from nothing a sea of light and radiation ... Thus with that concreteness which is characteristic of physical proofs, modern science has confirmed the contingency of the universe and also of the well-founded deduction to the epoch when the world came forth from the hands of the Creator.³²

However, others have cautioned about being overly excited with the Big Bang cosmology and the suggestion that the moment of initial singularity and the explosion of the primeval atom corresponds to the “In the beginning” and “let there be light” of the first chapter of the book of Genesis. Reacting to Pope Pius XII remark about the Big Bang theory, Abbe George Lemaître, a key architect of contemporary cosmology,³³ cautioned against undue endorsement of the Big Bang theory. As head of the Pontifical Academy of Sciences, Lemaître found it necessary to repudiate the Pope’s endorsement of the

³² Pope Pius XII, *Acta Apostolicae Sedis* 44 (Vatican City State: Tipografia Poliglotta Vaticana, 1952), 41-42, quoted in George V. Coyne, “Evolution and the Human Person: The Pope in Dialogue,” in *Evolutionary and Molecular Biology: Scientific Perspectives in Divine Action*, edited by Robert John Russell, R. William Stoeger, and Francisco J. Ayala, 13. Also in “Modern Science and the Existence of God” in *The Catholic Mind* (March: 1952), 182-192.

³³ As noted above, Abbe Lemaître, of the Pontifical Academy of Sciences (1960–1966) contributed to the formation of a theory of an initial singularity for the universe as we know it. He held that religion and science were of distinct sectors of knowledge, therefore, his theory of the primeval atom “must not be mixed up with metaphysical and religious questions...” For more, see G.B. Marini-Bettolo, *Outlines of the Activity of the Pontifical Academy of Sciences 1936-1986* (Vatican City: Pontificia Academia Scientiarum, 1986), 34.

findings of Big Bang cosmology and the theological implications because he believed in the distinction between faith and science. He insisted that his theory of “primeval atom”

must not be mixed up with metaphysical or religious questions. It leaves the materialist free to deny any Supreme Being...It does not include any familiarity with God on the part of the believer, which matches Isaiah’s words when he spoke of the “hidden God” even from the beginning of creation.³⁴

Lemaître was consistent in maintaining that science and religion are distinct sectors of knowledge. As president of the Pontifical Academy of Sciences, he saw it as his duty to make this clear to the Pope.³⁵ It is observed that Lemaître was successful in convincing Pope Pius XII on this because the Pope made no specific reference to scientific results from the Big Bang cosmology in any subsequent address and never again did he use the Big Bang as basis for explaining philosophical, metaphysical or religious positions.³⁶

Further reactions to Pope Pius XII’s endorsement of the Big Bang theory are found in the observation of contemporary scientists and theologians. Some of them argue that about “the how” of creation, theology is agnostic and that it is irrelevant to theology whether Big Bang wins at the end of the day or not.³⁷ In a similar way, others caution against using God to explain gaps that are later filled by new discoveries in science. There is wisdom in these words of caution because scientists are currently working on theories that may turn out to provide better and more adequate explanations to the origin of the universe than the Big Bang cosmology.³⁸

³⁴ G.B. Marini-Bettolo, *Outlines of the Activity of the Pontifical Academy of Sciences, 1936-1986*, 34.

³⁵ Don O’Leary, *Roman Catholicism and Modern Science*, 165.

³⁶ George V. Coyne, S.J., “Evolution and the Human Person: The Pope in Dialogue,” in *Evolutionary and Molecular Biology: Scientific Perspectives in Divine Action*, 13.

³⁷ Arthur Peacocke, *Creation and the World of Science* (Oxford: Clarendon Press, 1979), 1-49.

³⁸ Anne M. Clifford, “Postmodern Scientific Cosmology and the Christian God of Creation,” 71.

From the point of view of positing the Big Bang theory as a theory that supports the concept of creation having a beginning in time, others caution against this position because the Big Bang does not, strictly speaking, prove a beginning in time even if it actually occurred. This is because, as the theory of oscillating universe states, there may have been a period of contraction and compression which preceded the moment of explosion followed by expansion. This suggests a possibility of an infinitely repeatable cycle of an oscillating universe. Besides, the Big Bang theory describes the explosion, expansion, and evolution of the universe from the moment of initial singularity but does not directly refer to a beginning in time.³⁹ Furthermore, to use the Big Bang theory as justification for belief in a Creator God and creation in time is not encouraging because the authors of the creation accounts in the book of Genesis were not primarily concerned with an absolute origin or beginning of the universe. God in Genesis brings order out of chaos (when God created the heavens and the earth, the earth was a formless wasteland, Gen. 1:1). Christian Creation theology rooted in Scripture is primarily concerned with demonstrating that the world is not coeternal with Yahweh-God who, as its Creator, is the sustainer of the universe. The world and all that is contained in it are totally dependent on him.⁴⁰

³⁹ Ernan McMullin, "How Should Cosmology Relate to Theology?" in *The Sciences and Theology in the Twentieth Century*, edited by Arthur R. Peacocke (Notre Dame: IN: Notre Dame University Press, 1981), 53, n.25. See also, Anne M. Clifford, Postmodern Scientific Cosmology and the Christian God of Creation, in *Horizons*, 71.

⁴⁰ Christian theology of creation is based on both Scripture and the theological developments in the history of the Church. In theology of creation the two concepts, *creatio-ex-nihilo* and *creatio-continua*, have been the main aspects of the doctrine of creation in the Christian tradition. These two concepts were examined in the first chapter of this dissertation. This theme is also developed by Anne M. Clifford in "Postmodern Scientific Cosmology and the Christian God of Creation," 71-83. In comparing the metaphoric nature of the Big Bang theory and creation-ex-nihilo, Clifford says: "It is important not to fall too easily into a facile meta-theological concordism that glosses over their differences" and the limitations that they have as metaphors. The Big Bang "metaphor does not describe an absolute beginning and the ultimate cause" and *creatio-ex-nihilo* is a doctrine that primarily addresses the problem of philosophical theories, for example, dualism and pantheism. *Ex-nihilo* is therefore metaphysical in nature and more a

From the stand point of science, some critics observe that the Big Bang theory is not science in the strict sense of the term because it lacks sufficient evidence that is testable and provable by pure scientific method.⁴¹ These critics categorize the Big Bang as “myth,” albeit scientific myth. Like other well known myths --- the Indian myth of cyclic universe, Chinese cosmic egg, the biblical myth of creation in six days--- the Big Bang is wonderful and admirable, but a myth nonetheless.⁴² This critique can be appreciated more considering the fact that scientists cannot directly access and analyze the event (no longer than a fraction of a second) of initial singularity and explosion that followed. All that is accessible and testable by pure scientific method is the evidence of an expanding universe from which scientists extrapolate back in time and deduce the initial moment of explosion on which the Big Bang theory is based. Besides, there are limits to what can be discovered or known by way of extrapolations and in the case of the Big Bang theory there are questions yet to be answered.⁴³

The relevance of Big Bang cosmology to this study, besides providing a scientific account of the origin of the universe, is that it accounts for an expanding and evolving process of the universe and of dynamic interrelatedness of space-time, matter-energy, cosmic forces and all existents in creation as originating from that common source of primeval atom and moment of initial singularity. The concept of dynamic relatedness is equally evident in the theory of general relativity of Albert Einstein referred to earlier, because this theory demonstrates that the universe is composed of a nexus of complex

Christian confession of faith in the Creator-God who freely created without dependency on pre-existing, co-eternal matter, and on whom the entire creation totally depends for existence. 76.

⁴¹ Hannes Alfvén, “Cosmology: Myth or Science,” in *Cosmology, History and Theology*, edited by Wolfgang Yourgrau and Allen D. Breck (New York, N.Y.:Plenum Press, 1977), 13-14.

⁴² *Ibid*, 13-14.

⁴³ Charles W. Misner, “Cosmology and Theology” in *Cosmology, History and Theology*, 88.

interconnections and relations that has no absolute observational standpoint.

Interconnection and interrelation are central this study because they form the basis on which to build an authentic and viable theology of creation which is the goal of this dissertation.

While the Big Bang model provides an explanation for the nature of the universe as an expanding and evolving cosmos, biological evolution takes this to the next level by providing a natural explanation for the nature and development of life in the universe. Biological evolution will therefore be addressed in the next sub-section with the treatment of the works of the forerunners of Charles Darwin and a particular focus on the Darwinian theory of evolution. To situate this however, it is appropriate to make a brief reference to origin of life forms following the formation of the Earth in the aftermath of Big Bang.

2.2.2. Biological Evolution

Through the process of cooling and condensation that followed the Big Bang, protons and neutrons started to develop leading to the formation of the nuclei of simple elements of atoms which were mostly hydrogen and helium. Matter as we know it today only started to develop after the temperature became conducive for it to be formed. This process continued until the formation of the solar system and the emergence of the planet Earth which is estimated to be about 4.6 to 4.5 billion years ago.⁴⁴ In the course of time, bacteria life started to evolve on earth. In the study of rock formations, scientists discovered remains of communities of microbes which date far back to more than three

⁴⁴ Paul Lagasse, ed., *The Columbia Encyclopedia*, Sixth Edition, 852-853.

billion years.⁴⁵ Studies show that by three and half billion years ago, there developed communities of bacteria that had begun to spread through out the Earth leading to the formation of the first ecosystems. The simple cells of these ecosystems then formed the beginnings of the early patterns of life on Earth. Providing a full account of the evolution of life forms during the first three billion yeas of the existence of the Earth is not required for our current study. However, attention to Charles Darwin's theory of evolution is required, because it would become, and still remains for many, the center of a storm of controversy with regard to the relations of science and theology.

From the survey of ideas of evolution among the early Greeks in the first section of this dissertation, it is clear that evolution is not an entirely new concept, however, the modern history of scientific theories of evolution only started in the 18th century. During this period, a few of the theories of evolution proposed had some influence on Charles Darwin, therefore, it is relevant to begin this section on biological evolution with a review of some of the pre-Darwinian evolutionists whose theories of evolution made considerable impact on later research and studies in evolution.

2.2.3. Pre-Darwinian Theories of Evolution

Among the theories of evolution that predated Charles Darwin, there were some that were significant to him because they influenced his ideas laid out in his theory of evolution. These are the works of:

- Erasmus Darwin (1731-1802), Charles Darwin's grandfather
- Jean-Baptist de Lamarck (1744-1829)

⁴⁵ Denis Edwards, *The God of Evolution* (Mahwah, New Jersey: Paulist Press, 1999), 4.

- Charles Lyell (1797-1875)

Erasmus Darwin was a renowned and accomplished physician, botanist, naturalist, and poet. Among his publications, the one that is most relevant to this study is his work on medicine and animal life called *Zoonomia* (The Laws of Organic Life), published in the year 1794. Dr. Darwin's ideas of evolution are considered to be well advanced for his time. These ideas are laid out in chapter thirty-nine of his work, *Zoonomia*, under the title, "Of Generation", where Dr. Darwin demonstrates the various stages of development as he argues that life evolved from a single "living filament."⁴⁶ Darwin also observes that animals undergo transformations from the early stages of their lives to the point of their death. These transformations are caused by their exertions as they respond in desire for pleasure or aversion to pain. He cites many examples of cases of transformations as animals respond to basic needs and desires such as thirst, hunger, lust and security. New behaviors and habits are learned which modify their structures that are then transmitted to their offspring.⁴⁷

⁴⁶ In chapter 39 of *Zoonomia* under the title, "Of Generation", Dr. Darwin demonstrates the various stages of development. In larval animals, like butterflies and frogs, their metamorphosis are seen after birth as they gradually develop into mature stage: the painted wings of the butterfly from the crawling caterpillar, or the frog from a tadpole. Secondly, when breeders work on plants and animals, changes are introduced as a result of domestication and selective breeding. He cites examples of horses raised to carry burdens or run races, and dogs, like the bulldog, cultivated for strength and courage, or, greyhound for its swiftness. Thirdly, Dr. Darwin believed that changes could occur in some species as a result of environmental factors acting on the parents of these species. Over a period of time these develop into a variety if not another specie. He cites an example of a widely held believe at the time that if dogs have their tails clipped, they produce tail-less puppies. The fourth consideration is where Dr. Darwin identifies great similarities in the structures of animals which are made for certain functions in their lives. A careful examination of certain structures in animals from the mouse and bat to the elephant and whale indicate that they originate from a similar living filament. This filament has developed into hands for human beings, claws for tigers and eagles and hoofs for cows and swine. The similarity in the functions that these structures serve in these animals indicate the common purpose and common origin of the filament for these structures. For more information on this, see Erasmus Darwin, *Zoonomia*, Vol.1 (London: J. Johnson, 1794), 490-505.

⁴⁷ Erasmus Darwin, *Zoonomia*, Vol.1 (London: J. Johnson, 1794), 490-505. See also, Desmond King-Hele, *Erasmus Darwin* (New York, N.Y.: Charles Scribner's Sons, 1963), 67-71.

Dr. Darwin's ideas of evolution are equally articulated in a poetic form in his work titled, *Temple Of Nature*. In this poem Dr. Darwin states:

Ere Time began, from flaming chaos hurled
Rose the bright spheres, which form the circling world;
Earths from each sun with quick explosions burst,
And second planets issued from the first...
Hence without parents, by spontaneous birth,
Rise the first specks of animated earth.
Organic life began beneath the waves
Was born and nurs'd in ocean's pearly caves
First from minute unseen by spheric glass
Moved on the mud, or pierced the watery mass;
These, as successive generations bloom,
New powers acquire and larger limbs assume;
Whence countless groups of vegetation spring
And breathing realms of fin and feet and wing.⁴⁸

Although Dr. Darwin made some contributions to the development of the theories of evolution as articulated in his works, these ideas were not systematically developed in a strict scientific sense. Therefore they had only a limited influence on subsequent theories of evolution.⁴⁹ However, Dr. Darwin is credited among other things, for his emphasis on the concept of "inherent activity" which, according to him, "The Great First Cause" provided from the very beginning, "with the power of acquiring new parts ... new propensities." Through this "inherent activity" nature is endowed with the "faculty of continuing to improve" from one generation to the next "world without end."⁵⁰ Dr. Darwin's work therefore prefigured and influenced, at least in part, subsequent theories

⁴⁸ Erasmus Darwin, *The Temple of Nature*, Vol. 1 (London: J. Johnson, 1803), 395-302. See also, Desmond King-Hele, *Erasmus Darwin*, 73. Commenting on the insight about evolution in *The Temple of Nature*, Henry F. Osborn observes that here we have a significant improvement on the ideas of evolution from those expressed by Dr. Darwin in his works, *Zoonomia* and *Botanic Garden*, although these are speculative. For more information on this observation, see Henry F. Osborn, *From The Greeks to Darwin*, 203-204.

⁴⁹ Francisco J. Ayala, "The Evolution of Life: An Overview" in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert John Russell, William R. Stoeger, S.J., and Francisco J. Ayala, 23.

⁵⁰ Erasmus Darwin, *Zoonomia*, Vol. 1, 505.

of evolution.⁵¹ And in this work, we have a theory of evolution that was, to a certain degree, a challenge to the age-long belief in the fixity of species, but it was in the work of John Baptist Lamarck that this challenge became more pronounced.⁵²

The second major forerunner of Charles Darwin was Jean-Baptiste de Lamarck, a French biologist/naturalist whose ideas of evolution are propounded in his major work, *Philosophie Zoologique* (Zoological Philosophy), published in the year, 1809. This work contains Lamarck's theory of transmutation by which he developed the concept that he calls "tendency to progression." This is a principle which holds that creation is in a state of constant advancement as it responds in accordance to the "innate tendency to evolve towards increasing complexity of structure."⁵³ Thus, along the same line of thought as Dr. Darwin, Lamarck believed that nature is endowed with an innate quality that empowers organisms to continue to improve by successive generation. This process is not observable because it is slow and spreads over a long period of time, but fossil records provide a good account of them. At the end of this process, having passed through all the stages of progression down through history, is humankind.⁵⁴

Lamarck's theory postulates the principle of "spontaneous generation,"⁵⁵ by which he explains the origin of life through a process he calls, "vital movements" of

⁵¹ Desmond King-Hele, *Erasmus Darwin*, 83-90. King-Hele is however of the opinion that Charles Darwin did not give enough credit to his grandfather for his contribution to his theory of evolution and for his influence on him.

⁵² Ted Peters and Martinez Hewlett, *Evolution from Creation to New Creation: Conflict, Conversation and Convergence* (Nashville: Abingdon Press, 2003), 37.

⁵³ Jean-Baptist de Lamarck, *Zoological Philosophy* (Originally Published in 1914). Translated with introduction by Hugh Elliot (New York: Hefner Publishing Company, 1963), xxxiii. Lamarck devotes the longest chapter of this work, chapter four of part one, to demonstrating this concept of gradual process of development or progression towards increased complexity.

⁵⁴ Henry F. Osborn, *From the Greeks to Darwin*, 232-237.

⁵⁵ Jean-Baptist de Lamarck, *Zoological Philosophy*, 236-248. Lamarck devotes the fourth chapter of part two of his work to demonstrating his principle of spontaneous generation. In this section he also makes a detailed analysis of the origin of life through the process of "vital movement." Hugh Elliot in his introduction to *Zoological Philosophy* observes that "Lamarck regarded life as synonymous with "vital movements." Introduction, lxxiii.

essential fluids. Through the same spontaneous generation, species are transformed into more advanced and sophisticated ones. This progression made towards perfection of organization is a development in the direction of human organization.⁵⁶ Lamarck saw spontaneous generation as ongoing, advancing towards a more perfect state as organisms become more and more complex. This ongoing movement towards a more perfect state is guided towards a purpose as demonstrated in the kind of characteristics that organisms developed over time and the kind of functions that these features serve. Lamarck believed in a goal-oriented evolution, thus developed a theory of evolution that is teleological.

Among the reasons for which Lamarck developed his theory was to counter the age-long belief in the fixity of species, because at this time, it was almost universally believed that at the beginning of the universe, species had been made by special acts of creation.⁵⁷ He argues that species are subject to change and alteration as a result of environmental factors and other conditions. All species, including the human species are descendant from other species. This position then became a major challenge to “special creation,” an important doctrine for Christian Natural Theology.

A main component of the theory of evolution proposed by Lamarck, as articulated in his second law of nature, is that acquired traits and characteristics are inherited by subsequent generations.⁵⁸ Lamarck’s work is so identified with this law of nature that the

⁵⁶ Ibid., xxxvii.

⁵⁷ Jean-Baptist de Lamarck, *Zoological Philosophy*, xxx . The third chapter of part one (35-46) is devoted to arguments against the fixity of species and the factors or conditions for mutability of species.

⁵⁸ Ibid., 113. Lamarck’s second law states: “All the acquisitions or losses wrought by nature or individuals, through the influence of the environment in which their race has long been placed, and hence through the influence of the predominant use or permanent disuse of any organ; all these are preserved by reproduction to the new individuals which arise, provided that the acquired modifications are common to both sexes, or at least to the individuals which produce the young.” Lamarck maintained that organs in animals develop through habitual use and that this acquired modification is then inherited by subsequent generations. One of the popular examples used is that by stretching to reach leaves, originally short-necked giraffe ancestors in subsequent generations of offspring would gradually develop longer necks.

theory became known as Lamarckianism.⁵⁹ This theory of inheritance of acquired traits and characteristics became a subject of controversies leading to the denunciation of the work of Lamarck by critics after scientific research and experiment proved him wrong.⁶⁰ In spite of this error in his theory, Lamarck did indeed develop and improve on the work of Dr. Darwin.⁶¹ He, therefore remains one of the contributors to the development of the theory of evolution that had some influence on subsequent evolutionists.

The third and last of the pre-Darwinian theories of evolution being examined in this section is in the work of an English geologist, Charles Lyell, who in his book, *Principle of Geology*, demonstrated that the physical features of the Earth are the result of major geological processes taking place over immense periods of time, thus refuting the popular belief at the time that the creation of the world was only a few thousand years.

⁵⁹ As the laws clearly point out, Lamarck believes that animals pass on to their offspring the psychological traits and changes that they had undergone and developed in their own life time in response to their survival needs. He gives the example of the long legs and webbed feet of wading birds which is a feature developed from an inherited trait from their ancestor's to enable them hunt fish in the water. The legs became longer over time as they stretched so that they would keep dry as they hunted for fish. Similarly, they stretched their toes to stay afloat while hunting fish as the long legs waded deeper. The skin between the toes stretched and eventually develop web to prevent them from sinking into the water. These characteristics developed rather unconsciously over time are then passed on to subsequent generations. On the other hand, when a particular organ developed previously falls into disuse, it would begin to shrink and diminish over time until they finally wither and disappear. He uses this to explain why snakes do not have legs any more. This principle developed by Lamarck is articulated in his first law of nature which states: "In every animal which has not passed the limit of its development, a more frequent and continuous use of any organ gradually strengthens, develops and enlarges that organ, and gives it a power proportional to the length of time it has been so used; while the permanent disuse of any organ imperceptibly weakens and deteriorates it, and progressively diminishes its functional capacity, until it finally disappears." *Zoological Philosophy*, 113.

⁶⁰ Ian G. Barbour, *Religion and Science* (San Francisco: Harper Collins, 1997), 50. Critics accuse Lamarck of changing his positions sometimes and of "total lack of experimental evidence." Jacques Roger, "The Mechanistic Conception of Life" in *God and Nature: Historical Essays on the Encounter Between Christianity and Science*, edited by David C. Lindberg and Roland L. Numbers (California: University of California Press, 1986), 291. Some others sympathetic to Lamarck, for example, Hugh Elliot who wrote the introduction to *Zoological Philosophy*, cited before, thinks it is unfair to reduce Lamarck's work to that one principle of "inheritance of acquired characteristics" and denounce him for that reason (xxii-xxiii). Desmond King-Hele even believes that there is a chance that some aspects of Lamarck's principle of "inheritance of acquired characteristics" might become orthodox with the development of science in future. This view is expressed on page 76 of his book *Erasmus Darwin*, already cited, and he also makes references to others who hold the same judgment in his footnote number 25.

⁶¹ Desmond King-Hele, *Erasmus Darwin*, 93.

Before Lyell, the prevailing theory of geology had been that of catastrophism. Catastrophism⁶² was the age-long geological theory that postulates a sequence of universal calamities, such as earthquake or flood, that annihilate all creatures between which God creates new species to fill the Earth all over again. The last of these catastrophes was the Noachian deluge described in the book of Genesis. Contrary to this popular geological theory, Lyell advocated the theory of uniformitarianism,⁶³ because he was determined to make a distinction between geological research and the interpretation of Scripture, and thought it as part of his mission to liberate the science of geology from Mosaic cosmogony.⁶⁴ Furthermore, uniformitarianism demonstrates the formation of fossils of the rocks strata at a uniform rate over a vast period of time, thereby postulating a theory that corresponds with the biological history of the development of new species.

In the second volume of his work, *Principles of Geology*, Lyell demonstrates the theory of variation and mutation of species.⁶⁵ However, he argues that there are limits to

⁶² Catastrophism is a geological theory that certain vast geological changes of the Earth were caused by calamities like earthquake or flood, the last of which was the Noachian deluge. (Some scientists, however, invoke the impacts of meteorite or comet to explain cases of mass extinction). Charles Lyell observed that the Stoics fully adopted the system of catastrophes and postulated two version of it. The first kind is *Cataclysm*, the destruction by deluge (flood geology) in which the entire human race, animals and plants and all that nature produced would be annihilated. The second version called, *Ecpyrosis*, or conflagration, was the universal catastrophe that would dissolve the entire globe. For more information on this, see, Charles Lyell, *Principles of Geology*, Vol. 1 (Originally Published in 1830) (Chicago: The University of Chicago Press, 1990), 5-10. Lyell considered it part of his mission as a geologist to free the science of geology from Mosaic cosmogony.

⁶³ Uniformitarianism is a theory of geology advocated by Charles Lyell that postulates “more correspondence between the physical constitution of the globe, and more uniformity in the laws regulating the changes of its surface, from the most remote eras to the present..” For more on this theory, see Charles Lyell, *Principles of Geology*, already cited, 85-90. The uniformitarian model underscores the belief in the natural process operating today in the structure of the Earth is of a same pattern with the past and will be in the future. Uniformitarianism is usually opposed to episodic jumps of saltations in geological history and makes no allowance for divine intervention. However, it is important to remark that Lyell believed that God operates in the world but not by miraculous acts, especially in the non-human sphere.

⁶⁴ Charles Lyell, *Principles of Geology*, Introduction in volume 1 by Martin J.S. Rudwick, xvii.

⁶⁵ Lyell however disagrees with Lamarck in his account of evolving life forms. Lamarck had argued that all the species of animals were produced by nature in a progressive succession starting with the least perfect to the most perfect leading gradually to an increasing complexity on organization. The proposal of Lamarck that in gradual modification of species organisms did not become extinct was rejected

the degree of change or variation of species, especially from the parent type, whether this is due to human domestication, hybridization or ecological changes,⁶⁶ because, as he puts it, there is no evidence for “the indefinite capacity of varying from the original type.”⁶⁷ Lyell, in a rather vague and indirect way, proposes that species are natural units whose production and extinction are due to unknown but natural causes.⁶⁸

Besides the fact that all three forerunners of Charles Darwin influenced the development of his theory of evolution in subsequent generations, all three scientists proposed theories of evolution that challenge the traditional Christian doctrine of special creation, the fixity of species and the dignity of the human person as a unique creature made in the image and likeness of God. However, it was in the wake of Charles Darwin’s *The Origin of Species* and *The Descent of Man* that controversies over the challenge of theories of evolution on the Christian doctrine of creation reached a level that was never before experienced.

2.2.4. Darwinian Theory of Evolution in *The Origin of Species*

As previously noted, in 1859, Charles Darwin (1809-1882) published his major work, *On the Origin of Species by Means of Natural Selection*. It is a book that has and continues to have great influence on nearly every contemporary field of scientific and

by Lyell because it did not fit the geological data. For more information on this, see, Anne M. Clifford, “Darwin’s Revolution in *The Origin of Species*” in *Evolutionary and Molecular Biology*, 290-291.

⁶⁶ Ibid., vol. 2, 36-38; xxxi. Lyell disputes Lamarck’s explanation of the process of variation or mutation of species which, according to Lamarck, is a transmutation that takes place by way of an imperceptibly slow process over a long period of time.

⁶⁷ Ibid., vol. 2, 64-65.

⁶⁸ Ibid., vol. 2, 24-26; Introduction, xxxi-xxxv. Martin J.S. Rudwick did however observe that Lyell’s treatment of the actual origin of species is vague, indirect and unsatisfactory, referring to it as “weak evidence on the origin of species---” (xxxiv). His study and research were more directed to “the process which regulate the continued existence and survival (or extinction) of species after their original appearance.” (xxxiii). His goal was to move away from the catastrophic explanation of the Earth’s condition and diluvial geology and to emphasize his commitment to uniformitarianism.

philosophical study: biology, sociology, psychology, theology, literature, law and other fields of intellectual pursuit. Darwin's introduction to this book puts across right away his position on the question of the origin of species based on his observations during the voyage to South America. The introduction opens with these words:

When on board H.M.S. 'Beagle', as a naturalist, I was much struck with certain facts in the distribution of the inhabitants of South America, and in the geological relations of the present to the past inhabitants of that continent. These facts seemed to me to throw some light on the origin of species – that "mystery of mysteries", as it has been called by one of our greatest philosophers.⁶⁹

The light thrown on the mystery of mysteries, according to Darwin, would be demonstrated in his theory of evolution based on *natural selection*.⁷⁰

In a nutshell, Darwin's theory consists of these basic themes. All forms of life evolve over the course of time by way of gradual modification from a common life source or ancestor. These species of living organisms are mutable: they come into existence, undergo changes and in the course of time, they die individually or in groups. Living organisms increase at such a rate that the resources of the earth could not sustain if they are not checked. This multiplication of living things is controlled by forces within and outside of these organisms. The control mechanism includes the struggle for existence within living organisms and the survival of the fittest among them. Living organisms tend to vary in all the parts, organs and functions of life and these variations are passed on by inheritance which also leads to the emergence of new species. These factors put together explain the principle of natural selection by which favorable

⁶⁹ Charles Darwin, *The Origin of Species by Means of Natural Selection*, 1st edition, 1859 (New York: Barnes & Nobles, 2004), 11.

⁷⁰ Natural Selection, the principle that drives Darwinian evolution, operates when certain species adapt better to their environment because of some inheritable variations which gives them some advantage over other species therefore better able to survive, reproduce and more represented in subsequent generations.

variations and the organisms that possess them survive while unfavorable variations and those possessing them are eliminated.

One of the many challenges that Darwin had to grapple with in the development of his theory was to find a mechanism by which new species emerged over the course of time. In an attempt to explain the emergence of new species Darwin drew on the theory of population of Thomas Malthus in which he suggested that while human growth was by way of arithmetic progression, the means of supporting life grow by geometrical progression.⁷¹ Applying this same principle to his theory, Darwin proposed the inevitability of struggle among numerous offspring for the limited amount of resources to sustain their lives. In this struggle, nature would then select the strong. The strong that are “naturally selected” would survive while the weak would simply die off.⁷² As Darwin states:

In the next chapter, the struggle for existence among all organic beings through out the world, which inevitably follows from the high geometrical ratio of their increase, will be considered. This is the doctrine of Malthus applied to the whole animal and vegetable kingdoms. As many more individuals off each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be *naturally selected*. From the strong principle of inheritance, any selected variety will tend to propagate its new and modified form.⁷³

⁷¹ Thomas R. Malthus, *An Essay of the Principle of Population and a Summary View of the Principles of Population* (England: Penguin Books, 1970), 71, 73. Reverend Malthus’ theory of population is developed in chapter two of his book, but introduced earlier in the first chapter where he states: “Assuming then m postulate as granted, I say, that the power of population is definitely greater than the power in the earth too produce subsistence for man. Population, when unchecked,, increases in a geometrical ratio. Subsistence increases only in an arithmetical ration. A slight acquaintance with numbers will shew the immensity of the first power in comparison of the second.” (71).

⁷² Charles Darwin, *The Origin of Species by Means of Natural Selection*, 1st edition, 1859 (New York: Barnes & Nobles, 2004) 74-114.

⁷³ *Ibid.*, 14.

A similar point is made by Darwin in one of his letters in which he states:

Being well-prepared to appreciate the struggle for existence which everywhere goes on, from the long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved and unfavorable ones to be destroyed. The result of this would be the formation of new species. Here, again, I had at last got a theory by which to work.⁷⁴

Although the concept of evolution predates Charles Darwin as the survey of the works of his forerunners demonstrate, the idea of natural selection as a mechanism for evolution is a brain child of Charles Darwin and it is in this that he made his major contribution to the development of the understanding of evolution. The importance of the principle of natural selection in evolution will therefore be examined in greater detail in the next sub-section.

2.2.5. Natural Selection: Darwin's Mechanism Of Evolution

The research and study that Darwin did during his five years circumnavigation of the Earth on M.H.S. Beagle (1831-1836) led him to wonder and raise questions about the origin and nature of species and the relationship that exists between species (inter-species) and among the organisms within each species (intra-species). The data gathered on the South American Islands of Galapagos were particularly important because Darwin found on these individual Islands different variations in species that seemed to have been a result of adaptations to the distinct environmental conditions of their particular Islands. Reflecting on these discoveries therefore, Darwin questioned whether each of these species was designed individually and created separately or was there some natural mechanism of adaptation responsible for the variations in the species of these separate

⁷⁴ Francis Darwin, ed., *Life and Letters of Charles Darwin* (New York: D. Appleton, 1887), 1: 68; Also cited in Ian G. Barbour, *Religion and Science*, 336.

Islands? At the back of his mind was the position developed by William Paley (1743-1805) in his natural theology where he argued from the observation of the magnificent design in nature to a grand intelligent designer, which he explained using his watchmaker analogy. In his natural theology, Paley equally postulated that each species was distinctly and specially created by God. Darwin could not reconcile the explanation of the origin and nature of species within the context of the principle of an unbroken chain of causality designed by God from all eternity articulated in natural theology with the discoveries made during his travels.

Although Darwin was impressed by and accepted Paley's work because of the clear and methodic way by which he accounted for the adaptations of species to their environment, his discoveries on the South American Islands of Galapagos aroused insurmountable questions that would eventually lead him to abandon Paley's natural theology for his theory of natural selection. It is in the development of the theory of natural selection, co-discovered although independently with Darwin by Alfred Russel Wallace (1823-1913),⁷⁵ that Darwin made his greatest contribution to the theory of evolution.

In the first three chapters of his book, *The Origin of Species*, Darwin addresses the issues of variation/mutation and heritability, the overpopulation and overcrowding that results from these and eventually the struggle for existence because of limitation of

⁷⁵ An English biologist/naturalist, Alfred Russel Wallace (1823-1913) also, in independent research, discovered the principle of natural selection. However, he did not believe that natural selection could explain human intelligence and the workings of the brain. William E. Phipps, *Darwin's Religious Odyssey*, 107; and Ian G. Barbour, *Religion and Science*, 53; 60. Wallace gave greater emphasis to distinctive human characteristics and suggested that the human brain could not be explained by evolution by natural selection. Barbour observes that in general, while Darwin was less willing to acknowledge the uniqueness of certain distinctive characteristics in human beings in relation to animals like apes, Wallace cited examples of the level of intelligence in humans and their ability to communicate by use of language as special characteristics. This position taken by Wallace did however, discredit and undermine the principle of natural selection that he co-discovered.

resources. Through this struggle, those variations that are best adapted to the conditions survive and succeed while others diminish and eventually perish. With this analysis, the stage is set for Darwin to introduce his novel theory, the mechanism of evolution by natural selection. This mechanism is explained in this rather long quote:

If during the long course of ages and under varying conditions of life, organic beings vary at all in the several parts of their organization, and I think this cannot be disputed; if there be, owing to the high geometrical powers of increase of each species, at some age, season, or year, a severe struggle for life, and this certainly cannot be disputed; then, considering the infinite complexity of the relations of all organic beings to each other and to their conditions of existence, causing an infinite diversity in structure, constitution, and habits, to be advantageous to them, I think it would be a most extraordinary fact if not no variation ever had occurred useful to each being's own welfare, in the same way as so many variations have occurred useful to man. But if variations useful to any organic being do occur, assuredly individuals thus characterized will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they will tend to produce offspring similarly characterized. This principle of preservation, I have called, for the sake of brevity, Natural Selection.⁷⁶

Darwin also demonstrated that farmers make alterations in plants and animals by using artificial breeding methods to enhance certain desired characteristics to achieve their goals, breeding more plants and animals with the desired variants – artificial selection.⁷⁷ He reasoned from this demonstration to the way nature operates in the mechanism of selection --- natural selection. These variants are transmitted to the offspring who inherit these natural characteristics--- heritability. It is a common phenomenon that plants and animals naturally develop new variants in their

⁷⁶ Charles Darwin, *Origin of Species*, 111-112.

⁷⁷ *Ibid.*, 17-45. The first chapter is devoted to “Variation under Domestication” in which Darwin demonstrated how variation can be artificially induced by breeders. From that analysis he reasons to how nature selects by the principle natural selection which he begins to introduce in chapter two, “Variation under Nature.” The third chapter focuses on the struggle for existence and in chapter four the theory of natural selection is put forward.

characteristics from time to time. The variants that are beneficial to the plants and animals occur from time to time. These variants are useful to the plants and animals because they increase their chances for survival and numerical growth through procreation. It follows that over time, the plants and animals with more useful natural variants will multiply from one generation to the other more than those with less useful or harmful variants. The multiplication of plants and animals with more useful variants take place at the expense of those with less useful or harmful variants such that over a long period of time those with more useful variants increase progressively while the ones with less useful or harmful variants progressively diminish, and sometimes extinction occurs as a result of this. As Darwin himself puts it: “Over the generations, beneficial variations will be preserved and multiplied; injurious or less beneficial variations will be eliminated.”⁷⁸ A good example commonly used is that a fast animal captures more prey and therefore has better chances of survival and procreation than slower animals. In a similar way, a tree with wider leaves captures more rays of the sun for photosynthesis and growth, thus have better chances of survival in a particular environment and under certain conditions than tiny-leaved plants.

Drawing on the insight of Thomas Malthus, Darwin therefore reasoned that a situation such as this would inevitably create competition in which people struggle for survival over the limited resources. Nature thus provides a mechanism that controls population in which individuals compete for limited means of sustenance. Through this mechanism, only organisms that have useful variants suitable to their environment are able to survive and produce healthy offspring who in turn populate the next generation, where favorable variations are preserved while unfavorable ones go extinct.

⁷⁸ Ibid., 75; 111-112.

In his research and study, Darwin accumulated a great deal of evidence to demonstrate that variations/mutations occur frequently and could be inherited. However, a major problem with Darwin's explanation of variation/mutation in the process of natural selection was to identify the actual cause of variations/mutations and how the first step of this process occurred.⁷⁹ Darwin could only explain the process of variation/mutations as he makes reference to "unknown laws of variation." This problem about what actually causes variations/mutations and how these first occurred came to be resolved only after the research and study of Gregor Mendel in which he identified the fundamental principles of the theory of heredity that eventually led to the discovery of the gene --- Mendelian genetics.⁸⁰ After this, evolutionary biologists started to identify the cause of variation and mutation with the presence and function of genes in heredity, as Francisco J. Ayala puts it:

Natural selection implies that some genes and genetic combinations are transmitted to the following generations on the average more frequently than their alternates. Such genetic units will become more common in every subsequent generation and their alternates less common. Natural selection is a statistical bias in the relative rate of reproduction of alternative genetic units.⁸¹

The process of natural selection has these essential characteristics: genetic variation within a population; an environmental condition that favors some of these variations more than others; adaptation to the existing environmental conditions; and the differential reproduction of the individuals who happen to have these favored

⁷⁹ Francisco J. Ayala, *Darwin's Gift to Science and Religion* (Washington, D.C.: John Henry Press, 2007), 53-54.

⁸⁰ Gregor Johann Mendel (1822-1884) was an Augustinian Monk and botanist whose research and study led to discovery of "units of hereditary transmissions" that were later identified as genes in chromosomes, and more recently, further identified as segments of DNA (Deoxyribonucleic Acid). Mendel's discoveries were however unknown to Darwin.

⁸¹ Francisco J. Ayala, "Darwin's Devolution: Design Without Designer" in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 104-105. This development is further explained in Ayala's new book, *Darwin's Gift to Science and Religion*, 53-59.

variations.⁸² One of the classic examples of natural selection used to illustrate this phenomenon is the introduction of rabbits into the island continent of Australia. Rabbits were not native to Australia but introduced into the continent by an English immigrant, Thomas Austin, who brought in twelve pairs of rabbits in the year 1859.⁸³ In spite of a few predators and human hunters, the rabbits, having a high rate of fecundity, reproduced profusely and before long, there were rabbits everywhere. Within a few years the population of rabbits on the continent had grown so much that rabbits became a major pest problem on the island. The negative effects became so widespread that something had to be done to keep the growing number of rabbits under control.

A decision was made by the officials to address the problem and in 1950 they artificially introduce a virus to the continent from Great Britain that would not be harmful to native Australian animals but fatal to rabbits. The virus produced myxomatosis, a highly infectious viral disease that caused rabbit fever, leading to a fairly rapid death rate and reduction of the rabbit population. It turned out that while a great number of the rabbits were killed, some survived and continued to reproduce. As the rabbit population rebounded, myxomatosis was introduced again but this time the results were not as successful as the first instance. Many rabbits did die, but a larger percentage survived and continued to reproduce. Eventually, it became clear that the myxomatosis virus was no longer effective in reducing rabbit population on the continent in any significant way.

This example demonstrates that the Australian rabbit population consisted of individual rabbits with varied genetic make-up that enabled them to withstand the lethal effects of the virus that causes myxomatosis. The individual rabbits with the naturally

⁸² Eugene C. Scott, *Evolution Vs. Creationism, An Introduction* (Los Angeles, California: University of California Press, 2004), 35-36.

⁸³ *Ibid.*, 35-37.

favorable variation of gene survived the rabbit fever and reproduced therefore giving rise to an offspring that adapted better to the existing conditions of the environment and therefore more resistant to myxomatosis. The offspring of rabbits with favorable variations developed greater resistance to the viral disease thereby reproduced more than the offspring of those rabbits with unfavorable variations of genes with the result that more myxomatosis-resistant rabbits were produced and these in turn left more traits or copies of their gene in future generation of rabbits. Eventually the rabbit population of Australia consisted of individuals that were more likely to have the useful variation, and when myxomatosis was reintroduced, fewer and fewer rabbits were killed from the viral disease.

One of the important lessons from the above illustration is that natural selection, contrary to the opinion of some critics, is not purely based on chance. Among such critics was John Hershel who erroneously interpreted natural selection as a process based purely on chance and accident and described it as “a law of higgledy-piggledy.”⁸⁴ In a remote sense, one could argue for some elements of chance because of the randomness of the process of mutation and the “opportunistic” process involved in natural selection.⁸⁵ A good example as illustrated above is the fact that some individuals of the rabbit population were of a natural genetic variation that made them resistant to the lethal myxomatosis virus. But more than chance is the fact that natural selection, besides the fact of genetic pre-history, is also based on the process of adaptive differential reproduction, because the individual rabbits that developed resistance to myxomatosis and therefore survived to pass on their genetic traits to the next generation of rabbits

⁸⁴ Ernst Mayer, *One Long Argument*, 49.

⁸⁵ Francisco J. Ayala, “Darwin’s Devolution: Design Without Designer” in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 107.

adapted better to the existing environmental conditions. This example indicates how natural selection plays an active and positive role in the creative process.

2.2.6. Natural Selection and the Creative Process

Although natural selection serves as a “purifying process” by preserving useful mutations and eliminating harmful ones, it is more than just a purifier. To say that natural selection purifies is to emphasize only a negative function, because over and above the work of purification, natural selection serves as a creative process for “it generates novelty by increasing the probability of otherwise extremely improbable genetic combinations.”⁸⁶ Ayala uses the example of single-celled bacteria, *Escherichia coli*, to illustrate this point.⁸⁷ *Escherichia coli* live in the colon of human beings and other mammals. An experiment aimed at reproducing the bacteria in a culture was set up with a water solution of sugar in a small test-tube. For this experiment to work, the strains of *Escherichia coli* require that amino acid histidine be provided with the sugar solution. Having made the culture solution with histidine (the amino acid that is required by the bacteria in order to grow and reproduce) in a test-tube, a few of the bacteria were introduced. Within a period of two days, a rapid multiplication of the bacteria gave rise to a number between 20 and 30 billion. A drop of streptomycin antibiotic is introduced into the culture solution and most of the bacteria died off, leaving not very many survivors. However, after a day or two, the bacteria population in the culture solution would rebound teeming once again with billions of bacteria. Ayala goes on to explain that spontaneous genetic mutation that causes resistance to antibiotic streptomycin among bacteria in normal circumstance happens randomly at the rate of 1 in 100 million bacteria

⁸⁶ Francisco J. Ayala, *Darwin's Gift to Science and Religion*, 59.

⁸⁷ *Ibid.*, 60-61.

cells. Within the context of an experiment in a culture solution with bacteria of about 20-30 million, there is reasonable expectation that about 200 to 300 will be resistant. When antibiotic streptomycin is added to the culture, only the bacteria cells that are resistant will survive. The process of reproduction among the surviving 200 to 300 bacteria will give rise to about 20 billion bacteria if given the window period allowance of one to two days for the necessary number of cell divisions. All of this new batch of bacteria will be resistant to antibiotic streptomycin.

Ayala further argues that a second step of this experiment put in reverse would yield the same result. In this case the streptomycin-resistant bacteria are moved into a culture solution in a test-tube with streptomycin but this time without the amino acid that is required for growth and reproduction (histidine). At the beginning of this reverse experiment, most of the streptomycin-resistant bacteria will fail to reproduce and begin to die off because of the absence of histidine. However, after a day or two, a period of time necessary for cell divisions, the culture solution will start teeming with billions of bacteria again. This result is made possible because among the bacteria cells that need amino acid histidine to grow and reproduce, there is a spontaneous development of mutants, even without histidine, happening at the rate of about 4 in 100 million bacteria. If this reverse experiment has 20 to 30 billion bacteria, about 1,000 of them will adapt to the existing condition without histidine and start to grow and reproduce until the available space is occupied.

These two sets of experiments, the original and the reverse, demonstrate clearly how the process of natural selection actively enhances the survival bacteria, first by producing streptomycin-resistant bacteria and in the reverse experiment by producing

bacteria adaptive to a condition without histidine. And so, Ayala concludes that in ordinary day-to-day circumstances at the end of a long process of evolution there will be organisms that exhibit features “designed” for its survival.

Evolution by natural selection is an incremental process of development which often involves a combination of genes happening over long period of time with the result that organisms are produced that are better adapted to the conditions and better able to survive and reproduce. This process eventually gives rise to more and more offspring, with each new generation becoming better and more sophisticated. This is illustrated in the example of the development of the human eye.⁸⁸ Ayala argues that the human eye did not appear suddenly through a random process in the present perfect form that we have it. Rather, the formation of the human eye underwent different stages of development requiring the integration of many steps of favorable mutations before it finally arrived at this present form. Our ancestors, for over half a million years have had some kind of organs that have always been sensitive to light and helped with some kind of vision. Better perception of light and better vision became more and more important to subsequent organisms to survive and to reproduce effectively. With the passage of time, the process of natural selection accordingly worked in favor of certain genes and through the operation of gene combination and incremental development better functioning vision of the eye was produced. Ayala however is quick to add that in the strict sense, natural selection all by itself is not a creative process because it does not provide the raw materials necessary for creation. However, natural selection could be considered to be a creative process because it causes favorable mutations to multiply and accumulate over multiple generations to the whole species. By multiplying and accumulating different

⁸⁸ Ibid., 65.

favorable mutations over eons of time, natural selection plays an active role in the creative process. Evolution is therefore not just an unfolding development of new forms from old materials; rather, it is a process whereby new forms result from a creative synthesis of old and new, giving rise to novelty, in ways that are often unpredictable.

Although natural selection plays a significant role in the creative process, it does not have a particularly well defined and specific goal because it has no foresight and does not operate according to some set of preconceived plan.⁸⁹ The mechanism of natural selection is a natural process that operates through the interaction of physical, chemical, and biological entities in nature. Natural selection makes use of factors such as environmental condition, the preexisting constitution of the organisms and the randomly arising mutations, but does not control these factors. There is therefore an element of chance in the process of evolution by natural selection, especially in the mutations that give rise to hereditary variation which natural selection works with. However, natural selection counteracts this random process by preserving the useful variations and eliminating harmful ones thereby determining the evolutionary process. It is in this that the interplay of chance and necessity (randomness and determinism) drives evolution by natural selection toward its goal.⁹⁰

Having demonstrated that natural selection is responsible for development and mutation of species, Darwin takes the next step by applying the same theory to the origin of human species and this he lays out in an even more controversial book, *The Descent of Man*. This book and the controversy that ensued will be examined in the next sub-section.

⁸⁹ Francisco J. Ayala, "Darwin's Devolution: Design Without Designer," 107.

⁹⁰ Ibid., 107-109; Francisco J. Ayala, *Darwin's Gift to Science and Religion*, 76-78.

2.2.7. The Evolution of Humankind in *The Descent of Man*

The details of human pre-history to some extent is still a subject of debate, however, there is a fairly solid agreement about the major stages of the origin and development of humankind.⁹¹ In his analysis of the origin and development of humankind, Richard Leakey identifies four main stages. The first, according to Leakey started in Africa about seven million years ago. At this stage some apelike species started to evolve. These apelike structures developed an upright bipedal mode of movement. This style of walking was a major biological step forward as the apelike structures developed a more advanced pelvis, arrangement of muscles and significant changes in bone structure which resulted in better movement of the limbs. However, the resemblance to human beings of these bipedal apelike creatures seemed to be mostly in the area of mobility. The shape of their skulls as well as the jaw area and teeth were still far different from hominoids, especially those that emerged after three million years ago. The second stage of the origin and development came between five million to two million years ago with the proliferation of bipedal species. This led to the development of various hominoids, significant among which was the group *Australopithecus Africanus* (Southern Ape from Africa) out of which came a more graceful and robust group called *Australopithecus Robustus*.⁹² Between three million to two million years ago, the third stage of human pre-history evolved with a species that developed a considerably large brain. Among this species is the group called *Homo Habilis*, thus becoming the first to be

⁹¹ Richard Leakey, *The Origin of Humankind* (New York, N.Y.: Basic Books, 1994), xv.

⁹² Ian G. Barbour in his analysis of human origins attests to this when he said that “Evidence from molecular biology and from fossil discoveries indicates that human beings and modern African apes are descended from common ancestors. African chimpanzees and gorillas share more than 99 percent of their DNA with that of human beings (which would be comparable to the genetic kinship of horses and zebras or of dogs and foxes).” 253.

classified under the genus, *Homo*. The species of *Homo* continued to grow and multiply while the other species died out gradually. About two million years ago, the species, *Homo Erectus* evolved and this became the first hominid to develop skills like the use of fire, make stone tools, run like human beings and hunt for food. *Homo Erectus* had a much larger brain and a more developed athletic body, thus became the first to wander beyond the region of Africa. A significant development of the *Homo Erectus* in the process of human evolution was the community self-consciousness that was characteristic of this stage. However, the degree of this level of development remains obscure and a subject of debate among anthropologists. Leakey testifies to this in his observation:

We don't know definitely whether *Homo Erectus* possessed a degree of spoken language, but several lines of evidence suggest this. And we don't know, and probably never will know whether this species experienced a degree of self awareness, a humanlike consciousness, but my guess is that it did. Needless to say, language and consciousness, which are among the most prized features of *Homo Sapiens*, leave no trace in the pre-historic record.⁹³

Finally, about two million to one million years ago, the fourth stage of human origin and development, the *Homo Sapiens* evolved. This is the modern human being fully equipped with self-consciousness, artistic imagination, aesthetic ability, spiritual sentiment and capacity for technological innovations. However, there is still a debate among anthropologists about specific details of the emergence of *Homo Sapiens* in human evolutionary history.

In the last section of his book, *On the Origin of Species*, Darwin looks forward to the second major and more controversial work and so he states: "...light would be thrown

⁹³ Richard Leakey, *The Origin of Humankind*, xiv; For more information on this see also Denis Edwards, *God of Evolution* (Mahwah, NJ.: Paulist Press, 1999), 56-60.

on the origin of man and his history.”⁹⁴ This hope was fulfilled in his second major work, *The Descent of Man and Selection in Relation to Sex*, (1871). In this book, Darwin addressed two main questions: 1) Is natural selection the only process by which evolution works? 2) What has evolution got to say about the origin of humankind? And so he states in the Introduction: “The sole object of this work is to consider, firstly, whether man, like every other species, is descended from some pre-existing form; secondly, the manner of his development, and thirdly, the value of the differences between the so called races of man.”⁹⁵ *The Descent of Man*, like *The Origin of Species*, is divided into three main parts. In the first part, “The Origin and Descent of Man from Lower Forms,” Darwin makes the case for the beginning and descent of humankind from lower forms. The second part, “Sexual Selection,” analyzes the principle of sexual selection with details about secondary sexual characters in lower classes of the animal kingdom and in mammals. In the third and final part, “Sexual Selection in Relation to Man and Conclusion,” he makes an analysis of this principle of sexual selection as it applies to the human species.

Darwin concludes by reiterating his position that the human race evolved from lower animals but acknowledges the difficulty that this view might pose to some people. He draws attention to the fact that civilization itself developed from the stage of savagery, a fact of history that is accepted by everybody. He argues then that people should therefore have no problem accepting that the entire human race evolved from native and primitive forms.⁹⁶ Darwin’s idea was also informed by his encounter with the

⁹⁴ Charles Darwin, *The Origin of Species*, 383.

⁹⁵ Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, 1st edition, 1871(New York: Barnes & Nobles, 2004), XX.

⁹⁶ It is important to note however that about two years before Darwin published the *Origin of Species*, a scientific paper on the first Neanderthal humans came out describing a stage where human beings were heavily built, crude and dull-witted. For more information on this, see Ian Tattersall, *The*

natives of Tierra del Fuego of South and Central America, whom he met during his famous voyage of the *Beagle*. He describes them in these words:

These men were absolutely naked and bedaubed with paint, their long hair was tangled, their mouths frothed with excitement and their expression was wild, startled and distrustful and of wiled expression. They possessed hardly any arts, and like wild animals lived on what they could catch; they had no government and were merciless to any one not of their own small tribe.⁹⁷

Darwin believed that modern civilization developed from native and primitive races such as these just as the human race evolved from lower forms of life. Darwin believed that the race he called “savages” were the equivalence of the Stone Age ancestors of those he called the higher races, and this was a dominant belief of his time. The book ends on a hopeful and humbling note as Darwin states that the fact that we have come this far from our ancestors gives us hope for the future but then, we must never forget that “Man still bears in his bodily frame the indelible stamp of his lowly origin.”⁹⁸

Although Darwin did not directly intend to cause any controversies, his theory of evolution generated a great deal of debate and up to this day remains for many people a troubling revolution in the history and development of ideas. Criticisms of Darwinian evolution come from religious, philosophical, and scientific communities. However, it is fair to say that a good deal of the criticism of evolution is based on either a lack of in depth knowledge of Darwin’s work or a misinterpretation of his ideas based on secondary sources. From the point of view of theology, evolution presents a positive challenge to rethink certain aspects of traditional Christian doctrine and It is in the light of this that the

Human Odyssey, Four Million Years of Human Evolution (New York: Prentice Hall General Reference, 1993),125.

⁹⁷ Charles Darwin, *The Descent of Man*, 562-563.

⁹⁸ Charles Darwin, *The Descent of Man*, 563.

next section will treat the relationship between scientific theories of evolution and creation theologies.

2.3. Challenges of Scientific Theories of Evolution to Creation

Theologies

The Darwinian theory of evolution was developed in a worldview that held the *Natural Theology* of William Paley in high esteem. Darwin himself was highly impressed by the detailed and methodic way by which Paley accounted for the adaptation of species to the environments.⁹⁹ Arguing from the order in nature and adaptation of organisms to their environment, Paley postulated that design is evidently at work in the creation of each species for its own geographic location. This design points to a divine designer who is purposeful and deliberate in his design. Developing his watchmaker¹⁰⁰ analogy and using the example of the complexity of the structure of the human eye, Paley therefore concluded that creation required a supernatural designer with supreme intelligence who

⁹⁹ In his personal reflection, Darwin observed that his course of study at Cambridge required studying and passing examination on the works of William Paley. Reflecting on this experience he said: "I did not at that time (1830-1831) trouble myself about Paley's premises; and taking these on trust I was charmed and convinced by the long line of argumentation," in *Charles Darwin, The Autobiography of Charles Darwin, with Two Appendices*, edited by Francis Darwin (Reprint, London: Watta & Co., 1929), 22. See also Anne M. Clifford, "Darwin's Revolution in *The Origin of Species*," in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 287, footnote 25.

¹⁰⁰ The watchmaker analogy of William Paley states: "Suppose I found a watch upon the ground, and it should be inquired how the watch happened to be in that place... When we come to inspect the watch, we perceive that its several parts are framed and put together for a purpose... This mechanism being observed, the influence, we think, is inevitable; that the watch must have had a maker, that there must have existed, at some time and some place or another, an artificer or artificers who formed it for the purpose we find it actually to answer..." (*Natural Theology*, 1-2)

specially created different species with specific purposes in mind, thus reaffirming the argument for teleology in creation.¹⁰¹

It is against this background that the various criticisms of Darwinian evolution should be examined because Darwinian theory initiated a new paradigm for the study of nature that shifted from the method in Paley's *Natural Theology* to an observation-based discipline that became known as "natural science." By developing a theory which demonstrates that species evolved through natural selection, Darwin challenged the validity of natural theology as an account for living species on Earth based on scientific method of observation. The belief in "special creation" and the fixity of species had dominated religious, philosophical and scientific thought for centuries and it was difficult for adherents to accept a new position that accounts for species from by a natural process.¹⁰² Furthermore, the challenge of Darwinian evolution was interpreted by some other people as a direct rejection of biblical faith and in particular the Genesis creation

¹⁰¹ A series of treatises called the *Bridgewater Treatises* were eight volumes commissioned by Reverend Francis Henry Egerton, eighth Earl of Bridgewater, in honor of Lord Bridgewater were inspired by Paley's *Natural Theology*. In these treatises, Paley's mechanism, --- Special Creation--- was promoted and further developed to demonstrate how God's design was manifested in new scientific findings. Anne M. Clifford, "Darwin's Revolution in *The Origin of Species*," in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 283, footnote 9, and 289, footnote 37.

¹⁰² A popular philosophical position that dominated for centuries was Essentialism. Essentialism, rooted in metaphysical beliefs traceable to Platonic philosophy, held that objects have essences and observable things are more or less copies/imitations of their real essences existing somewhere else. Essentialism became a metaphysical position that supported the fixity of species and therefore an ideological opposition to Darwin's account for the creation of species by natural selection. Even Charles Lyell, who had an essentialist mindset, had difficulty with evolutionary account for the nature of species. For Lyell nature is made up of constant types each of which was created at a definite time. "There are fixed limits beyond which descendants from common parents can never deviate from a certain type." (*Principles of Geology*, Vol. 1, xxxi and Vol. 2, 19-32.) For essentialists therefore, species can only originate suddenly by way of major mutation or saltation but not by evolution. For more information on this, see Ernst Mayr, *One Long Argument: Charles Darwin and the Genesis of Modern Evolutionary Thought* (Massachusetts: Harvard University Press, 1991), 40-44. Furthermore Essentialism is also deterministic in nature. Determinism, and equally popular philosophical position, includes belief in universal laws on which the whole of philosophy of science rests. The order and harmony of the created universe operating under fixed universal laws could not be reconciled with Darwinian evolution. For more information on this, see Mayer, *One Long Argument*, 48-50. From the perspectives of essentialism and determinism therefore, evolution especially on the major macro level of cross over of species is not possible because bacteria have always and will always be bacteria, dogs have always and will always be dogs, gorillas have always and will always be gorillas and humans have always and will always be humans.

accounts used to support “special creation.”¹⁰³ This mindset is a product of Protestantism in which the emphasis placed on *Sola Scriptura* became the basis for embracing biblical literalism which these individuals and groups of people believed honored the biblical word as God’s direct word and, therefore, not something to be tampered with. However, in *The Origin of Species*, Darwin did not reject the authority of the Bible or the doctrine of creation. His theory opposed the position of natural theologians that was built on a limited body of scientific observation and a highly rationalistic Christian theism.¹⁰⁴

Some critics also observe that theories of evolution challenge the position of God as creator of the universe, in the case of Big Bang cosmology, or of organisms, with regard to biological evolution. Contrary to this observation however, one could argue that the Big Bang cosmology makes no reference to how the “primeval atom” of the Big Bang came to be and thus leaves open the place of God. In the same way, one could argue that Darwinian evolution does not challenge the place of God in creation. Darwin’s theory only rejected the designer or watchmaker God of William Paley, which presents God as one who exercises absolute control and radical sovereignty over a universe that is completely static and passive.¹⁰⁵

The challenge of Darwinian evolution is compounded by the fact that the principle of natural selection is applied to humanity in his work, *The Descent of Man*,

¹⁰³ It is however important to remark that “special creation” of natural theology did not, as a rule, reject minor micro-level adaptations, for example, a development in which moths change color as smoke generated from industries blackened tree trunks. What the “special creation” component of natural theology did reject is major macro-level evolution that resulted in new species such as humans and chimpanzees from a common ancient primate ancestor.

¹⁰⁴ Anne M. Clifford, “Darwin’s Revolution in *The Origin of Species*,” in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 299.

¹⁰⁵ *Ibid.*, 299-300.

where Darwin accounts for the human species by natural process.¹⁰⁶ Critics question that if humans, and especially the human soul,¹⁰⁷ came into existence, not by a special act of God, but by natural process of evolution, then how is the dignity of the human person as *imago Dei* to be preserved? This observation spills over into the moral aspect where the implication of using natural process of evolution to account for human origin could result in a breakdown of moral responsibility and accountability to a Creator.¹⁰⁸ Furthermore,

¹⁰⁶ Applying the same theory of evolution, Darwin, in his work, *The Descent of Man*, goes further to demonstrate that gradual modification over time of anthropoid ancestors by the process of natural selection explains the origin and development of humankind. Through observation of the close semblance of ape-like creatures like gorillas and human beings in their anatomical structures, Darwin demonstrates how upright posture, large brain size, and other distinctive changes in human structure might have been produced in the course of evolution.(3-19). Darwin insisted that even unique characteristics of human beings such as moral and mental faculties are different from animal capacities only in degree rather than in kind, because, animals have feelings and communications skills albeit in rudimentary forms. (80-106)

¹⁰⁷ In ecclesiastical teachings the Church authority allows for discussion of human origin within the context of evolution only with reference to their body but this allowance does not include the human soul. As Pope Pius XII indicates, “If the human body takes its origin from pre-existent living matter, the spiritual soul is immediately created by God.” For further information on this, see Encyclical, *Humani Generis*, AAS 42 (1950), 575. However, Pope John Paul II who took the question of evolution from ecclesiastical viewpoint to a whole new level by stating: “that evolution is no longer a mere hypothesis” (*L’Osservatore Romano*, 23 October, 1996), struggles as he ponders the question of “ontological difference” or “ontological discontinuity” that comes with making allowance for the human body within the process of evolution but not the human soul. The Holy Father then goes on to suggest that from the epistemological point of view, this seemingly ontologically different positions could be reconciled. “Consideration of the method used in the various branches of knowledge makes it possible to reconcile two points of view which would seem irreconcilable. The sciences of observation describe and measure the multiple manifestations of life with increasing precision and correlate them with the time line. The moment of transition to the spiritual cannot be the object of this kind of observation, which nevertheless can discover at the experimental level a series of very valuable signs including what is specific to the human being.” (John Paul II, “Message to the Pontifical Academy of Sciences” (October, 22, 1996), published in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 3-8. (#6, 6). The Holy Father thus leaves the discussion open with the hope that further research and study in both theology and the observational/empirical sciences will help to shed more light on the question of evolution/creation of the human soul.

One of the attempts to resolve this seeming impasse is provided by Zoltan Alszegehy, S.J., who suggests that divine action be conceived as God’s creative work in humankind in their entirety – physical and spiritual. He observes that divine action “works through all the generations of living beings, so that everyone shares in this special but continuous action in the great work of universal evolution. For more information on this, see, “Development in the Doctrinal Formulations of the Church Concerning the Theory of Evolution,” in *Concilium* 6 (1967): 17; also published in *The Evolving World and Theology* edited by Johannes Metz (New York: Paulist Press, 1967), 25-33.

¹⁰⁸ Peter Wilders, “Evolution: End of the Story?,” *Christian Order*, (April, 1990), 235. Wilders states: “If members of civilized society consider themselves as the product of blind random chance mutations, they could hardly be expected to believe they were the special creation of God. It follows quite logically, that they could not reasonably feel themselves subject to the commands of their Creator, if that creator was time, coupled with chemicals and natural selection. If nobody owns them, they are free to make

critics observes that another aspect of the Christian doctrine that stands challenged by Darwinian evolution is the doctrine of Original Sin which appears to be rendered meaning- less if the human phenomenon is accountable by natural process of evolution. However, it is important to note that while the theories of evolution are perceived as a threat to traditional Christian doctrine in the aspects cited above, more scholars, and members of the Church authority are beginning to see these less as a threat and more as an opportunity to rethink and reinterpret traditional Christian doctrines as we continue to open ourselves to the deep mysteries of our Christian faith. It is in the light of this that Pope John Paul II advocated for dialogue between religion and science. A good example is his address at the event of the commemoration of the three hundred years of the publication of Isaac Newton's *Philosophia Naturalis Principia Mathematica*. During this event, John Paul II, who had called for dialogue between science and religion, asked the Vatican Observatory to hold a conference on the relationship of the culture of religion and the culture of science.¹⁰⁹ John Paul II observed that the anniversary was an opportunity to investigate multiple areas of relationship between theology, philosophy, and natural science, and identify those areas of common ground that will help enrich our knowledge of the truth. Drawing on the experience of history, he points out that just as Thomas Aquinas used the insights of Aristotelian philosophy to formulate Christian doctrines, the insights of science today can help in the theological enterprise to have a

their own rules. Without any absolute authority to guide their moral decisions, they are only constrained by a relative authority, that of the State, whose rules they influence by their vote. Those rules would usually be the result of consensus, and would reflect the wish of the majority. Without any Christian ethic to influence the State...laws against divorce, pornography, homosexuality, abortion and suicide would be expected to be removed from the statute book. To reduce pressure upon the health services, a limited movement towards euthanasia would take place. In fact, all the social and moral phenomena we see in our society today would be expected."

¹⁰⁹ Robert J. Russell, William R. Stoeger, S.J., and George V. Coyne, S.J., (eds.), *Physics, Philosophy and Theology* (Vatican City State: Vatican Observatory Foundation, 1997), 11.

better understanding of the relationship between nature, humanity and God. Presenting a positive view of this dialogue between science and religion, John Paul II further observes that:

If the cosmologies of the ancient Near Eastern world could be purified and assimilated into the first chapters of Genesis, might contemporary cosmology have some thing to offer to our reflection upon creation?" Does an evolutionary perspective bring any light to bear upon theological anthropology, the meaning of the human person as an *imago Dei*, the problem of Christology – and even upon the development of doctrine itself?¹¹⁰

The significance of the observation of John Paul II can be appreciated in the light of the development of conflict between science and religion as has been witnessed in history, the classic example being the case of the Copernican Revolution¹¹¹ and the condemnation of Galileo's support for a heliocentric universe and the contemporary examples of Creation Science and Intelligent Design seeking to counteract Darwinian evolution theories.

¹¹⁰ Ibid., M11.

¹¹¹ Nicholaus Copernicus (1473-1543), a Polish mathematician and astronomer is considered to be the founder of modern astronomy. His scientific research and discoveries led to the shift from a geocentric worldview (the Earth as center of the universe) to the heliocentric worldview (the Sun as center of the universe) in what has become know as the famous "Copernican Revolution". Copernicus' work was developed by Galileo Galilei (1564-1642), an Italian astronomer, natural philosopher and physicist, who demonstrated the proof of heliocentrism. In the year 1633, the Church condemned the work of Galileo in a controversy that has gone down in history as a classic case of conflict between science and religion in Christianity. For more information on this, see, Phil Dowe, *Galileo, Darwin and Harking: The Interplay of Science, Reason, and Religion* (Grand Rapids, Michigan: William B. Eerdmans Publishing Cpmpany, 2005), 13-16, 29-39; and, Mark William Worthing, *God, Creation and Contemporary Physics* (Minneapolis: Augsburg Fortress Press, 1996), 9-12, 11-13.

Just as the Copernican revolution generated controversy about the position of the Earth in the universe, the Darwinian revolution became the eye of the storm in the controversy over the origin and nature of species and the place of humankind in the universe. Comparing the two revolutions, Francisco J. Ayala observes that Darwin's theory of evolution completes Copernicus' heliocentric astronomy. He refuses to subscribe to the negative view of critics who reduce the works of Copernicus and Darwin to mere acts of displacement: one, of the Earth from its previously accepted locus as center of the universe and the other, of humankind from their exulted and special position as centre of life on Earth. Contrary to this negative view, Ayala insists that the legacy of the Copernican and Darwinian revolutions is "that they ushered in the beginning of science in the modern sense of the word. These two revolutions may jointly be seen as the one Scientific Revolution, with two stages, the Copernican and the Darwinian". *Darwin's Gift to Science and Religion*, 38-43.

Supporting the position of his predecessor, John Paul II, the current Pope, Benedict XVI has affirmed that the theory of evolution does not require denying God. In his address to the people, among whom there were over 400 priests, at Auronzo di Cadore in Italy, on July 27, 2007, the Pope rejects the position that puts creation and evolution in conflict with each other as if: “Whoever believes the Creator cannot think about evolution and whoever affirms evolution must exclude God”. Contrary to this position of conflict which he calls an absurdity, the Pope observes that the insights from scientific evolution are important in the common quest for the whole truth. However, he points out that we need to go beyond science for answers to great philosophical questions, such as: “Where does everything come from? And how does everything take a path that ultimately leads to the person?”¹¹²

2.4. Conclusions

By way of summary and conclusion to this chapter, its major points are reiterated. The second chapter of this dissertation, “Scientific Theories of Evolution” began by drawing attention to evolution as treated in classical Greek philosophy, the “science” of its era. Early Greek cosmologists and philosophers who proposed elements of evolutionary thought are relevant to this study, because they show that theories of cosmological and biological evolution were not conceived in a vacuum but were influenced, at least in part, by pre-modern ideas.

Having set the context of evolution in the history of ideas, modern scientific theories of evolution – the Big Bang cosmology and biological evolution with particular

¹¹² ZENIT, The World Seen From Rome --- 2007-07-27.”Pontiff: Evolution Does Not Exclude a Creator”, Pope Benedict XVI’s address to priests of the dioceses of Belluno Feltre and Treviso at Auronzo di Carore in Italy --- July, 27, 2007.

focus on Darwinian evolution – were given attention. The challenge that evolutionary science appears to pose to biblically rooted creation faith was also given attention.

At this juncture it is important to take note of major themes of the Big Bang cosmology and biological evolution that have relevance for this study. The Big Bang theory that attempts to explain the origin and structure of the universe rests on the talents of many individual and scientific communities over the course of 150 years of study and research. The Big Bang theory, like other cosmological theories before it, has received opposition. In part, this is because, although the research and observations of eminent scholars led them to this conclusion, the Big Bang theory still has some unanswered questions to grapple with. However, the Big Bang theory makes some assumptions that are relevant to this study because, it encompasses among other themes, three related cosmic processes that deserve to be highlighted.

First, the Big Bang theory identifies evolution as a process at work at the macro-physical level. This is clear from the fact that the theory conceives of the universe as evolving from an initial singularity of an extremely hot density, the size of an atom. The explosion that ensued set a process of expansion in motion initiating various levels of expansion that eventually gave birth to the universe. And it is this evolutionary process which is pivotal to the Big Bang cosmology that makes the theory an interesting and relevant concept in this study. In particular, it resonates with the concept of *Incremental Development* as articulated in the concluding section of Chapter One. *Incremental Development* is a theme of importance to the thesis of this study.

Secondly, the Big Bang cosmology demonstrates the *dynamic inter-relatedness*, *inter-connection* and of the *inter-dependence* of the various components of the cosmos,

which again, is a theme central to the thesis of this study. The dynamic relatedness of nature is also demonstrated in the theories of relativity which is one of the foundational theories of the Big Bang cosmology. This position is therefore a departure from the worldview of classical physics which Isaac Newton (1642-1727) held and developed. In classical physics Newtonian physics, space and time are considered to be absolute and separate concepts. By analogy, space is like a big empty container. In this container, every object has a definite place or location. Time is the same for all observers since it passes in a uniform and universal manner. The dimensions and weight of an object are intrinsic, unchanging, and objective properties all of which are independent of the observer. The present moment, “now,” is therefore shared by all objects simultaneously in space in the universe. The Newtonian mindset and all of classical physics were products of a worldview where everything was thought to be fixed, static, complete, and finished from the hands of the Maker. Albert Einstein (1879-1955) challenged this theory and the worldview it supported by proposing a theory of relativity which suggests that space and time are inseparable and should be understood in relative not absolute terms. The metaphysical implication of the theories of relativity, therefore, is that not only are space and time inseparable but also the entire universe is dynamic, interconnected and interrelated. Albert Einstein’s theories of special and general relativity demonstrate this concept, and his insights led many scientists to come to a conclusion that the universe is indeed a complex of relations in which there is no absolute observational standpoint.¹¹³

¹¹³ Ian Barbour, *Religion and Science*, 165-184; 177-181.

From the point of view of biology, the concept of dynamic relatedness is evident in ecological studies and demonstrated in the phenomena of the “web of life.”¹¹⁴ A further implication that is of great relevance to this study is that in line with the mindset of theory or relativity, evolution suggests that things were not made complete, fixed and finished, as articulated in pre-Darwinian doctrine of “Special Creation,” but evolved over time. This position has now come to replace the old understanding of the universe as composed of discrete objects or materials existing more or less independently of each other within the absolutes of space and time. Thus what we see here is that evolution is not just an unfolding of new forms of objects from old materials but a dynamic process where new forms emerge from a synthesis of the old and new in ways that are often unpredictable and *mysterious*.

The reality of dynamic inter-relatedness is also present at the level of the cosmic forces that maintained the universe in a delicate balance from the very beginning – “fine-tuned.” The forces of gravity maintain a balance between the cosmic forces by pulling together the elements of matter that were driven apart at the point of initial expansion. If the expansion had been stronger at the initial stage, then matter would likely have been driven apart too quickly leaving no time for condensation into the stars and galaxies. On the other hand, if the forces of contraction had been stronger, then the universe would have collapsed before the stars and galaxies had the time to form. This delicate balance

¹¹⁴ Ibid., 177-181. Commenting further on the theme of interconnection and interrelation, Barbour has this to say: “Cosmology joins evolutionary biology, molecular biology and ecology in showing the interdependence of all things. We are part of an ongoing community of being; we are kin to all creatures, past and present. From astrophysics we know about our indebtedness to a common legacy of physical events. The chemical elements in your hand and in your brain were forged in the furnaces of stars. The cosmos is all of a piece. It is multileveled; each new higher level was built on lower levels from the past. Humanity is the most advanced form of life we know, but it is fully part of a wider process in space and time”. Ian G. Barbour, *Religion and Science*, 215.

between the forces of expansion and contraction show that dynamic mutual relatedness of cosmic forces.¹¹⁵

Thirdly, the Big Bang theory encompasses a concept of indeterminacy and uncertainty which suggests the idea of mystery in creation that is also a relevant theme in this study. The Principle of Uncertainty¹¹⁶ was developed by Werner Heisenberg (1901-1972) who built on the work of Max Planck (1858-1947) the founder of the quantum theory. In his work, Heisenberg developed a principle which demonstrates that in the sub-atomic particles, the variables of position and momentum can be measured only with a limited degree of accuracy because of the level of uncertainty involved, especially at the earliest stages of the universe when it was only about the size of an atom. Heisenberg's findings demonstrate that there is a certain degree of limitation in our knowledge of the sub-atomic world that we are unable to overcome thus making judgments of absolute certainty very difficult if not altogether impossible, at least for now. However, these findings also indicate that there is a certain level of inherent uncertainty in nature itself that makes the completely accurate knowledge and judgment of it inaccessible to scientists regardless of whatever level of perfection of human ability. In this regard,

¹¹⁵ A theory has been developed to account for these dynamics, known as the "*Anthropic Principle*." This theory exceeds the boundaries of this study. However, what Ian Barbour says about the Anthropic Principle is worth noting: "The assertion that the physical constants of the early universe were delicately balanced, or 'fine-tuned'; if they had had even slightly different values, carbon-based life and our presence as intelligent observers would not have been possible." Ian G. Barbour, *Religion and Science*, 357; & 204.

¹¹⁶ In the Principle of Uncertainty, developed by Warner Heisenberg, he argues that it is impossible for a person to know with complete accuracy the position of a particle and its velocity at the same time. This is because, the more accurately we are able to know the position of a sub-atomic particle, by repeated experiment, the less likely we know its velocity or momentum and vice versa. In fact, some physicists hold that this uncertainty is not due to temporary ignorance that we hope to overcome soon, but a fundamental limitation inherent in the study of atoms which prevents the exact knowledge of the atomic domain. The concept of uncertainty which found in the work of both Werner Heisenberg and Neils Bohr is introduced by the process of observation as well as our unavoidable conceptual or inherent experimental limitations. For further information on the Principle of Uncertainty, see John Polkinghorne, *Science and Theology*, 25-48; and Ian G. Barbour, *Religion and Science*, 170-173

research in Quantum Physics led to the development of a theory, quantum theory,¹¹⁷ which states that it is not possible to fully understand and analyze the behavior of individual atoms especially in the area of prior causes and this level of impossibility is higher with regard to the original atom of the universe, leaving a lot of room for predictions of probability. The Principle of Uncertainty is of particular relevance to this study because it underscores the inevitability of the reality of *mystery in creation* arising from the uncertainty and indeterminacy inherent in nature itself. This is an important insight with regard to the conclusions of this dissertation because it raises an interesting epistemological question, but more so because it suggests strongly the inevitable place of the divine in creation and the manner by which creation unfolds.

Finally, although a great deal of objection to Darwin's theory of evolution has been expressed down through the years, as it is criticized as being anti-religion and anti-God, a careful reading of Darwin's works would indicate that this criticism is a unfair and one-sided. From the observations made by some of those who knew Darwin personally and by analyzing some of the concessions he seems willing to make in his works, it appears that his theory is not, in itself, directly atheistic. A good example of this is found in the penultimate paragraph of *The Origin of Species*:

To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual. When I view all things not as special creations, but as a lineal descendants of some few beings which

¹¹⁷ Quantum theory is "a theory first formulated in the 1920s in which the properties of atoms and sub-atomic particles are represented by wave functions and mathematical operations that allow prediction of the probability but not the exact value of observable events." Ian G. Barbour, *Religion and Science*, 359. The theory is based on Max Plank's law of radiation which states that changes of energy in molecules and atoms take place only in small and discrete quantities. Each of these changes of energy in atoms and molecules is an integral multiple of a fundamental quantity of quantum.

lived long before the first bed of the Cambrian system was deposited [several hundred million years ago], they seem to me to become ennobled... We may feel certain that the ordinary succession by generation has never once been broken, and that no cataclysm has desolated the whole world. Hence we may look with some confidence to a secure future of great length. And as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection.¹¹⁸

Darwin goes further to suggest that part of the reason evolutionary law was impressed upon nature by God himself is to cause the production and extinction of species in creation. This position is stated in the last chapter of *The Origin of Species* where Darwin writes:

There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, while this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved.¹¹⁹

Darwin thought that to hold on to the idea of special creation and the immutability of species was to belittle God and not recognize his greatness and almighty nature. The God who makes things make themselves is greater than a God who just make things directly by himself.¹²⁰ In his autobiography, he states that:

Another source of conviction in the existence of God, connected with the reason and not with the feelings,... follows from the extreme difficulty or rater impossibility of conceiving this immense and wonderful universe, including man with his capacity for looking far backwards and far into futurity, as the result of blind chance or necessity. When thus reflecting, I feel compelled to look to a First Cause having an intelligent mind in some degree analogous to that of man; and deserve to be called a Theist. This conclusion was strong in my mind about the time, as far as I can

¹¹⁸ Charles Darwin, *The Origin of Species by Means of Natural Selection*, 383.

¹¹⁹ *Ibid.*, 384.

¹²⁰ William E. Phipps, *Darwin's Religious Odyssey*, 75.

remember, when I wrote *The Origin of Species*; and it is since that time that it has very gradually with many fluctuations become weaker.¹²¹

Without doubt, Darwin's theory of evolution is a challenge to some aspects of traditional Christian doctrine especially the concept of "special creation" of each species directly by God, and the unique status of humankind as *imago Dei*. However, Darwin's theory of evolution, in general, consists of positive aspects of great potential to enrich our understanding of creation. These great insights from Darwin demonstrate clearly that his theory could serve as an asset to developing a true and authentic understanding of creation, rather than a threat to Christian doctrine. This explains why the most fruitful approach to the discussion on the relationship between scientific evolution and the traditional Christian concept of creation is to adopt a model that builds on the common grounds and areas of compatibility between science/evolution and religion/creation, as recommended in the dominant models of relationship.¹²² This is the only way to develop a viable and authentic theology of creation – theistic evolution, which is the goal of this dissertation and this will be addressed in the fourth chapter.

¹²¹ Nora Barlow, *The Autobiography of Charles Darwin* (New York: Harcourt, 1958), 92-93.

¹²² The models developed by scholars to address the question of relating science with religion generally consists of four main ways: conflict; contrast/independence; contact/dialogue; and confirmation/integration; The fourth model, which is being applied in this dissertation, basically argues that not only are science and religion compatible, but that they endorse and support each other. This model is called "Integration" by Ian G. Barbour, and "Confirmation" by John Haught, however, the meanings they attach to these two concepts are not completely the same. Barbour goes deeper than Haught by suggesting some kind of union or fusion, an integration that glosses over the differences between science and religion, which he suggests should be developed using ideas from process philosophy as a metaphysical system for this integration towards what he calls a "systematic synthesis." The insights of the third and fourth models will be applied in chapter four of this dissertation: "Towards a Theology of Evolution". For more information on this, see Barbour, *Religion and Science*, 77-105, 243-24249; John Haught, *Science and Religion: From Conflict to Conversation*, 3-4; and Zachary Hayes, *The Gift of Being: A Theology of Creation* (Collegeville, Minnesota: The Liturgical Press, 2001),18-22.

CHAPTER THREE

AFRICAN COSMOGONIES

Introduction

The first two chapters of this dissertation addressed the question of the origin of the universe, Earth's life forms and of human life in particular, as developed in the Judeo-Christian tradition and in the scientific community. But one might ask: Is the question of origins limited to these two traditions alone? In every culture of the world people had to grapple with the question of origins in one form or another. This third chapter shall therefore focus on how this question is addressed in traditional societies with particular reference to African culture, hence the title, "African Cosmogonies."¹

In assessing the relevance of African cosmogonies, questions such as these come to mind: What contributions have traditional societies to make to the discussion on the origin of the universe, life and human life? With the rich and well documented information on origins in the Judeo-Christian tradition and the scientific community, what other insight is there to be gained from traditional cultures? One of the fascinating phenomena in the study of origins is that every culture of the world has addressed the question of origins and has developed its own response to it. What is even more interesting is the fact that in some cases, without external influence, cultures have addressed the question of origins and have come to conclusions similar to those found in other cultures and traditions.

¹ The word "Cosmogony" comes from two Greek words: *Kosmos*, which means universe or the world, and *Gignestia* which means to be born. Cosmogonies here refer to African traditional understanding of the birth/origin of the world and creatures in the world as well as how the world functions. This is articulated in modes such as myth, folk tales, proverbs, wise sayings and symbols.

This is true for the peoples of the continent of Africa. The presentation of how Africans have responded to the question of origins will follow this outline: The first section will be a general introduction to African Traditional Religion (A.T.R.)² and philosophy because it is from these that African cosmogonies emerged. The second section will be a briefly introduction to African cosmogonies from a general point of view. The third section will review a selected number of creations myths from different parts of Africa to identify the various creation themes that are relevant to this study. In the fourth section, an analysis of these creations myths will be undertaken. The fifth section will address the concept of *inter-being* in Africa as illustrated in the relationship between cosmogonies and communities. Then the chapter will end with conclusions.

² There is an ongoing debate about whether to refer to African Traditional Religion (A.T.R) in singular, *without* an *S*, or in plural *with* an *S* – African Traditional Religion or African Traditional Religions. This debate is championed by two prominent African scholars. John S. Mbiti is among those who hold that A.T.R. should be referred to in plural, stating: “We speak of African traditional religions in plural because there are about three thousand African peoples (tribes), and each has its own religious system.” (*African Religions and Philosophy* (London: Heinemann, 1969), 1). Mbiti argues that traditional religions in Africa are tribal not universal with each tribe limited to the version that evolved within that tribal group which always reflects their own identity. One tribe cannot propagate her traditional religion in another tribe and there is no cross-proselytizing or converting from one traditional religion to the other. Furthermore, A.T.R. has no well defined and formulated set of dogmas or sacred scripture written down that all Africans abide by. Finally, these traditional religions are not branches of one historic movement nor do they have a common origin, but of different environmental and historic experiences as each individual, family, clan or community takes on the religious ideas that are developed within the traditional religion of the tribe. Among the opposing group is another eminent scholar, E. Bolaji Idowu, who argues that because A.T.R. is the faith of a people with a common cultural identity, religious beliefs and the same racial background, it should be referred to in the singular. He argues further that although there are different versions of A.T.R., they have strong similarities that make them basically the same. Above all, there is a common cohesive factor in A.T.R. which is the concept of the living God, therefore, “it is on this ground especially -- this identical concept-- that we can speak of A.T.R. in the singular”. (*African Traditional Religion: A Definition* (London: SCM Press Ltd., 1973), 104). More and more scholars argue for the use of singular in referring to A.T.R. based on the fact that it is part of the culture and philosophy of the same people of the same racial background, not withstanding the differences that exist between the ways that A.T. R. is practiced among the various African tribes. Some of such scholars are J.V. Taylor, Aylward Shorter and Emefie Ikegah-Metuh. I am inclined to agree with the arguments in favor of referring to A.T.R. in the singular, therefore, all references to A.T.R. in this work will be in the singular. For more information on the arguments on both sides, see, Emefie Ikenga-Metuh, *Comparative Studies of African Traditional Religions* (Nigeria: IMICO Publishers, 1987), 17-21.

3.1. African Traditional Religion (A.T.R.) and Philosophy

In this brief introduction to African culture, with emphasis on its philosophy and religion, a comprehensive analysis cannot be undertaken. Therefore, this treatment will be limited to a simple exposition of A.T.R. with particular focus on those areas that are related to the concept of creation as a necessary background for understanding African cosmogonies. This examination is therefore limited to a few of the major tenets of A.T.R. such as, the nature of God; creation, the handiwork of God; and the place of humankind in creation. This general introduction to African Traditional Religion (A.T.R.) and Philosophy will therefore follow this outline:

- God in African Traditional Religion and Philosophy
- Creation in African Traditional Religion and Philosophy
- Humankind in African Traditional Religion and Philosophy

3.1.1. God in African Traditional Religion and Philosophy

A concept of God is fundamental in African traditional religion, (A.T.R.). To Africans, the existence of God is taken for granted, because, they believe that the concept of God is innate. Testimony to the belief that some sense of God is innate in each person is found in the proverb of Ashanti people of Ghana, “no one shows a child the Supreme Being.” In other words, everybody has a concept of God almost by instinct and even a child has a rudimentary concept of God. Although, in African culture the concepts of God are generally presented with a great deal of awe and wonder these concepts are expressed in titles, myths, proverbs, ejaculatory statements, prayers and songs, stories, and folk tales

as well as in religious rites and ceremonies. For Africans in general, God is the Supreme Being who is the origin and source of sustenance of all things. God brings all things into existence. He puts “being” in a person or thing so that he/she/it has existence. He is the great and the almighty creator who begins all things and brings all things to the end.

The nature of God in African belief is found in the various qualities attributed to him. Basically, these divine attributes correspond to those postulated in other religions. The omnipotence of God is expressed in the titles, God almighty and all-powerful, the eternal one. Other titles are: creator/maker, allotter, giver of rain and sunshine, the beginner of the forest, the one “who gives and rots,” maker of souls and father of the placenta. The omnipresence of God is found in expressions such as “the one who exists by himself,” “the one who is met everywhere,” and “the great ocean whose head-dress is the horizon,” while his omniscience comes forth in assertions such as “the wise one,” “the all-seeing one,” “the one who brings round the seasons.”³ Geoffery Parrinder also argues that:

These attributes imply the transcendence of God and to some extent his immanence. God is always creator and ruler, the beyond all thanks, the ancient of days who is from the first, the everlasting who has no limits, and he who alone is full of abundance ... God is also mysterious and nobody can understand him, he creates and destroys, he gives and takes away. God is invisible, infinite and unchangeable. God is both the creator and the principle of unity that holds everything together. He is the source and essence of force, *Ntu*, which inspires the whole vital organism.⁴

Although the concept of God is expressed in various names and titles given to him in different African languages, this section will be limited to a brief analysis of those names and titles that identify God as creator, origin/originator or source of being, causer

³ Geoffery Parrinder, *Religion in Africa* (Baltimore/Maryland: Penguin Books, 1969), 40.

⁴ *Ibid.*, 40-41; and in Emefie Ikenga-Methu, *Comparative Studies in African Traditional Religions*, 95-98.

and maker. This limitation is logical since these attributes are more clearly used in creation myths and African cosmogonies. In these attributes God is mostly identified in his creative nature and role. He is therefore depicted as Creator of all things, Moulder, Originator, Constructor, Begetter, Bearer, Fashioner, Carpenter, Architect and Potter.⁵ This analysis of names and titles is arranged according to the various countries and the language from which they come.

In the region of West Africa, the Yoruba people of Nigeria have many names for God, but the most famous ones are *Olodumare*, which means “the supreme head who is unchanging and has the fullness of all things,” and *Olorun*, “the owner or Lord of heaven.” The Igbo people of Nigeria call him *Chukwu* (from *Chi* – Source of Being and *Ukwu* –Great). Other famous names for God among the Igbo people is *Chineke*, “the one who creates” and *Osebuluwa*, which means literally, “the immense being who carries or sustains the world.” Among the Idoma people of Nigeria, God is called *Owoicho* (from *Owo* Supreme Deity, and *Icho* – Up/ Sky); *Omanchala*, which means Almighty; *Ondu*, which means Lord-Ruler, or Lord- Owner, or Lord -Maker.

The Basa people of Camaroon call God *Hilolombi*, which means “He who creates from root, one who procreates or brings forth with the connotation of the idea of first cause.”⁶ The Akan people of Ghana call him, the one who procreates or brings forth for the root. This name also has the connotation of first ancestor. Among the Ngombe people of the Republic of Congo, the most common name for God is *Akongo* which means “Supreme Being.” Another derivation of this name is *Mobonde Akongo*, which means “Creator God.”

⁵John Mbiti, *Introduction to African Religion* (Botswana: Heinemann Educational Publishers, 1991), 49.

⁶Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 95.

The Nuer people of Sudan call God *Nhialic* and a derivative of this name is *Nhialic Aciek*, which literally means “God the Creator.” Another name for God is *Abradi*, one who creates from root or causes to sprout. The Koalib people of the Nuba mountains region have two prominent names for God: *Bel Epti*, which means “He who causes to appear or to grow” and *Eleme*, which means, “the one who fashions or moulds.”

Among the Tutsi and Hutu people of Rwanda and Burundi, the name for the Supreme Being is *Imana*, which means “the maker of all things.” The derivative of this is *Imana-Rugaba*, “the Supreme Being who is the doer or giver of all things.” The Zulu people of South Africa have among other names for God, *Umvelinquangi*, which can be translated as “the one who was before everything else.” A derivative of this name is *Uzivelele*, which means he who came of himself into being. And in Swahili language, the name *Mu’umba* could be translated as creator from root or one who brings to being by moulding.⁷ God’s eternity is beautifully expressed in a famous song among the Pygmies of Congo which opens with these words:

In the beginning was God
Today is God
Tomorrow will be God...⁸

In addition to this central concept of God common to all Africans, we can also talk about a multi-faceted concept of God among African people. This is because each ethnic group has a concept of God that takes its emphasis from the nature of the people, as well as the customs and structure of their life. The historical, cultural, social, and geographical background of every ethnic or tribal sect in Africa is reflected in their image or concept of God. Thus, while the basic concepts of God are common, there are nuances

⁷ For further readings about the names of God see John Mbiti, *Introduction to African Religion*, 47-48; and Emefie Ikenga-Methu, *Comparative Studies in African Traditional Religion*, 85-99.

⁸ John Mbiti, *African Religion and Philosophy*, 34; *Introduction to African Religion*, 59.

to the general notion of God that is shaped by the experience of each sect or group of people in Africa. For instance, among the Yoruba people of Nigeria, the socio-political structure of the land contributes to some variation in their concept of God. This phenomenon is expressed by E. Bolaji Idowu who states

Among the Yoruba and the Edo where the society is highly organized and carefully graded on a hierarchical basis, deity is conceived as the supreme king of theocratic world with heavenly ministers appointed over each department of his realm. Among the Ibos on the other hand, the divine ministerial system is not as elaborate because society is not as homogenous as among the Yoruba. Among the Nupe, the divine ministers are rather few and, except in one or two cases, their nature is not clearly defined; while among the Birom and the Tiv, the ministerial system almost not in existence at all.⁹

In most of Africa, God is conceived in masculine terms, but there are, albeit isolated cases, where God is conceived in feminine terms. For example, among the Ewe speaking people of Ghana in West Africa, *Mawu*, or in particular, *Nana Buluku*, “the ancient Deity” is thought and spoken of in feminine terms.¹⁰ In the South Nuba of Sudan, there is a matrilineal system of descent. Among this people God is referred to as “the Great Mother.” When the people pray, for instance, beside a dying person, they say, “Our God who has brought us into this world, may *she* take you.”¹¹

The concept of God in African thought is not expressed only in abstract and transcendent terms but with moral and immanent qualities as well.¹² Although God is

⁹ E. Bolaji Idowu, *African Traditional Religion: A Definition* (Nigeria: SCM Press Ltd., 1973), 148.

¹⁰ *Ibid.*, 148; See also Geoffrey Parrinder, *Religion in Africa*, 41.

¹¹ Edwin W. Smith, ed., *African Ideas of God* (London: Edinburgh House Press, 1950), 215. The italicization of the word *she* is mine doing for emphasis.

¹² From the point of view of God’s mode of operation in creation, African Traditional Religion, (A.T.R.) uses the concept of “vital force” to describe the nature of God and how he relates with the universe. However, God as “vital force” is not an impersonal God. As vital force, God still maintains the personal attributes of a loving, caring and providing Father. Vital Force is therefore an aspect of the nature

supremely great and almighty, mysterious and inscrutable, God is also loving and caring, kindly-disposed, a comforter and provider, and a merciful rewarder towards his creatures. Although God demands justice and could become angry, God is full of mercy and pity. He is the father of babies and a great friend, one on whom everybody can trust and rely upon. Among the Akan people of Ghana, a famous title for God states that he is “the one on whom men lean and do not fall.”¹³

In African traditional religion one of the ways that God manifests himself is through his handiwork. Africans have a profound awareness of the presence of God in creation.¹⁴ The concept of creation is therefore of primary importance in any analysis of the tenets of African traditional religion, and this will be addressed in the next section.

3.1.2. Creation in African Traditional Religion and Philosophy

The most obvious attribute of God in African culture as indicated in analysis of the names and titles above is that of creator. The fact that creation is the handiwork of God is taken for granted in African thought. It is therefore not surprising that the concept of God, as stated above, is expressed in names and titles that emphasize his creative role, Originator, Moulder, Potter, Maker, Fashioner, Bearer, Inventor, Begetter, and above all,

of God that is diffused in creation and in which creation shares according to their kind. This phenomenon is further analyzed in chapter four.

¹³ Geoffery Parrinder, *Religion in Africa*, 41.

¹⁴ The awareness of the fact that God the creator is reflected in his handiwork is fundamental to A.T.R. Africans see God in creation in a very profound way. This phenomenon was, unfortunately, misconstrued by a good number of early anthropologists, sociologists and scholars of religion. A.T.R. was therefore wrongly identified as heathenism, fetishism and animism. Some other scholars called it another version of pantheism. However, modern scholars who have had first hand experience of A.T.R. have come up with a better understanding of it. A good number of these scholars are now in agreement that although there may be some elements of animism or fetishism in A.T.R., it would be inaccurate to define it in those terms, because a close examination shows that what it really is, is a form of pan-en-theism.

the Creator.¹⁵ God's creative role is not just a function but part of who he is as God, the one who is the origin and sustainer of all creation, and who continues to hold creation in being. Parrinder puts it this way:

The nature and attributes of God come from his primary function as creator. Not only did he make the world, but he establishes the laws of society and the existence of justice depends upon obedience to him. Creation is not only in the past; the divine work is continued in sustaining the universe...¹⁶

The African world-view basically identifies two realms of creation: the visible world and the invisible world. The visible world includes among other things, the earth and all the inhabitants of the earth both living and non-living (human beings, plants and animals, land, sky, sea and air). The invisible world includes the heavenly realm, the dwelling place of the Supreme Being, co-creators and deities, and is usually thought to be located somewhere in the sky and the "Spirit Land." These too are the dwelling places of the ancestors, the spirits and disembodied beings (spirits) who dwell somewhere below the surface ground. However, Ikenga-Metuh is quick to remind us that this division is only for the convenience of analysis, because, in the African thought pattern, there is really no demarcation between the visible and the invisible worlds. This is because of interrelation and interaction between the visible and the invisible worlds. Both realms are interconnected and overlap, so much so that one is perceived as a photo-copy of the other, as the spiritual and material aspects of one reality.¹⁷ In a similar way, J.V. Taylor also testifies to this interrelationship and interdependence when he states:

Not only is there less separation between subject and object, between self and non-self, but fundamentally, all things share the same nature and the same interaction, one upon another... the

¹⁵John Mbiti, *African Religion and Philosophy*, 39-41.

¹⁶Geoffery Parrinder, *Religion in Africa*, 41.

¹⁷Emefie Ikenga-Methu, *Comparative Studies in African Traditional Religion*, 61.

living, the dead and the first ancestors, from the stone to the divinities, a hierarchy of power but not of being, for all are one, all are here, all are now.¹⁸

It is important to note, however, that Taylor's observation is only an emphasis on the interrelation and interaction between the two realms and should not to be interpreted as confusion of beings, because, the African thought pattern recognizes the distinction between the spiritual and the corporeal world. This point is mostly aptly expressed by Nkurunziza when he reflects on Bantu religious thought patterns:

The two dimensions, visible and invisible are not mutually exclusive, they are not opposed to each other. The Bantu organic universe is an intuitive unity without confusion of both the visible and the invisible world; the visible world is continuous with the invisible world. It is a wholeness and a living unity of both the spiritual and the physical world. The visible planet on which man lives is inconceivable without the infiltrating power of the spiritual world.¹⁹

The concept of unity between the physical and the spiritual is seen in the fact that in the African worldview deities are believed to dwell in natural phenomena like mountains, rivers, forests, sky or the Moon and Sun, with which they are usually associated.²⁰ Among many ethnic and tribal groups in Africa, the ancestors are believed to continue to hover around their homes and their people participating in their own way in important family matters. People are sometimes thought to be possessed by spirits, while invisible spirits sometimes take on visible appearances. Human beings through prayers, sacrifices and the casting of spells, can influence the deities and spirits who in turn intervene in human activities by bringing good fortune to devotees and misfortune to

¹⁸ J. V. Taylor, *The Primal Vision: Christian Presence Amid African Religion* (London: SCM Press, 1963), 72.

¹⁹ Deusdedit R.K. Nkurunziza, *Bantu Philosophy of Life In The Light Of the Christian Message* (Germany Frankfurt: Peter Land Press, 1989), 52.

²⁰ Emefie Ikenga-Methu, *Comparative Studies in African Traditional Religion*, 62.

dissenters. In a similar way, the concept of unity is most aptly expressed by Mbiti where he states:

The physical and the spiritual are but one dimension of the same universe. These dimensions dove-tail into each other to the extent that at times and in places one is apparently more real than, but not exclusive of the other.²¹

Within the two realms of creation --- the invisible spiritual and the visible physical worlds --- we have all beings under the control and leadership of the Supreme Being who made and sustains all beings in existence. Regardless of the nature and grade of each of the beings within the hierarchy of being, there is a constant and ongoing interrelation and interaction between them, albeit, at different levels. This interaction and interrelation is initiated by the Supreme Being himself who is the origin and sustainer of creation. Among the Yoruba people of Nigeria, a popular myth of the origin of *Olodumare*, God, illustrates this essential communion between God and the universe. Idowu gives an account of this in his work on the Yoruba creation myth. According to this account, the primordial being was a large boa. From it was born *Olodumare*, whose original name was *Olodu*. He was extremely strong and good to the point that that the earth was not able to bear those qualities. Therefore *Olodu* withdrew to heaven where those qualities continued to develop. But before he withdrew, *Olodu* made a covenant with the boa, his parent, that they would not forget each other, and that they would be in touch from time to time. He concludes this account by stating: "The rainbow which occurs in the sky is the sign of the age-long covenant and communion between *Olodu* and the boa, a sign that the covenant remains for ever."²²

²¹ John Mbiti, *African Religion and Philosophy*, 57.

²² E. Bolaji Idowu, *Olodumare: God in Yoruba Belief* (New York: Frederick Praeger, 1963), 35.

The principle of unity among the beings both in the spiritual and physical world, according to Placid Temples, is the *force vital*. The analysis of vital force in Bantu philosophy according to Temples depicts an active, alive and dynamic phenomenon.²³ Being is essentially active as it is constantly being acted upon while at the same time acting on and affecting other beings in the universe. All beings, including the inanimate such as stone and metals, are in an active and dynamic relationship with each other for no being is completely static. To be entirely static, not acting on or being acted upon is to be non-being. There is no existence in such a case. There is therefore an ontological relationship between beings, regardless of what level they may be, and this relationship transcends their physical, biological or chemical components. This interaction through the medium of the vital force brings about growth or diminishment depending on how they act upon each other, because being is alive and active, hence the concept of *force vital* in the work of Temples. The analysis of Bantu philosophy shows that it is God who endows creation with this vital force that comes from God himself.

Above all force is God, Spirit and Creator...It is he who has force, power in himself. He gives existence, power of survival and of increase, to other forces...After him came the first fathers of men, founders of the different clans...They constitute the most important chain binding men to God...After these first parents came the head of the tribe following their order of primogeniture. They form a chain, through the links of which the forces of the elders exercise their vitalizing influence on the living generation...After the category of human forces come the other forces, animal, vegetable and mineral.²⁴

Being (*Ntu*) in Bantu philosophy possesses an internal animating and dynamic force in and through which this interaction and interrelation operates as it brings

²³ Placid Temples, *Bantu Philosophy* (Paris: Presence Africaine, 1969), 33-47.; See also Emefie Ikenga-Methu, *Comparative Studies in African Traditional Religion*, 75-79.

²⁴ Placid Temples, *Bantu Philosophy*, 46; See also Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 76.

reinforcement or weakening in the beings that are affected.²⁵ It is this same internal animating cosmic force that operates in the being in the process of growth as well as in death. The entire creation is bound together by this cosmic force while depending all the time, on the Supreme Being, their creator, who himself is the source of this cosmic force. To this phenomenon, Temples again gives credence to this where he states:

It is a metaphysical causality which binds the creature to the Creator. The relationship of the creature to the Creator is constant...the creature is by his nature permanently dependent upon his Creator for existence and means of survival ... The sage “per excellence” is God, Who knows every being, Who comprehends the nature and quality of the energy of each ... God is Force, possessing energy in himself, the mover of all other forces. He knows all forces, their ordering, their dependence, their potential and their mutual interactions. He knows therefore the cause of every event.²⁶

In African traditional religion (A.T.R.), humankind is considered to be the crown of creation. The chain of command is from God to humankind and humanity is mandated to control and supervise the activities of the rest of creation, but at the same time, they remain an integral part of creation. The important and central place of humankind in creation will therefore be addressed in the next section.

3.1. 3. Humankind in African Traditional Religion and Philosophy

The final section of the brief analysis of A.T.R. is on the place of humankind in creation and how he responds to his creator. Parrinder again gives us an idea of this:

African psychology sees in man a living power, the greatest of all created beings. Though he is not the strongest, man is able by his intelligence, like the hare in popular African fables, to outwit those who are physically more powerful. His power is both physical and mental, and the coordination of the two makes him a full man. But

²⁵ Emezie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 77-79.

²⁶ Placid Temples, *Bantu Philosophy*, 39; 47.

man is dependent on God, and on powers greater than himself, and so religion is essential to his well being...²⁷

Most African creation stories state that human beings were created by God and that they hold a central position in creation. One group of these creation stories hold that humankind was first created in pairs (male/female or husband/wife) from the sky and then lowered down to the earth. Some versions of these myths introduce the idea of how these first human beings became ancestors. We have examples of such creation stories in Uganda, Kenya, Nigeria, Sudan and Zambia among other places in the African continent.²⁸ Most creation stories in Africa however state that humankind was created by God on the face of the earth. Here again there are many versions. Some of these hold that God created human beings from clay to create, hence the titles, Moulder and Potter that are given to God.²⁹ Other versions state that God created human beings out of water or marshes. There are examples of these versions in the Eastern and Southern Africa.³⁰ These creation stories also talk about the close relationship that God had with human beings at the beginning and how he retreated into the sky out of annoyance over bad behavior on the part of human beings. God however decided to maintain a good relationship with human beings, providing for them, protecting them, and directing their destiny.

Humankind in African thought does not exist in isolation but in an ongoing interaction and interrelation with other beings in the universe. Humankind is like a living

²⁷ Geoffery Parrinder, *Religion in Africa*, 28.

²⁸ John Mbiti., *Introduction to African Religion*, 83-86; See also Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 145-158.

²⁹ It is not clear how much of these versions of creation myths in which God is said to create human being from clay are influenced by external ideas, for instance, the Genesis creation accounts. Sociologists, anthropologists and scholars of religion are divided on how much of African creation myths that talk about God creating humans out of clay are based on external influence and how much of them are original.

³⁰ John Mbiti, *Introduction to African Religion*, 83-84.

force with the capacity for active and ongoing communion with other living forces operating in the universe. Every human being is a nexus of interconnected and interacting forces that are linked in a network of relationships in the universe. It is therefore believed that natural objects and phenomena are directly involved in human life as they affect, either positively or negatively, the day-to-day activities of the human community.³¹

Temples also points this out when he notes that “man is not suspended in the air. He lives on the land where he finds himself to be the sovereign life force, ruling the land and all that lives in it: man, animal, or plant.”³²

Humankind, in African thought, is considered to be the center of creation. It is sometimes believed that the world is created for humankind. The superior position of humankind is based on the fact that humankind controls the vital force scattered through out creation. Human beings, unlike other creatures, have the power to control and manipulate other forces in creation. Secondly, the life force in human beings is considered to be of a superior kind in comparison to those in other creatures. And this special life principle enables human beings to live on in the realm of the ancestors after they die.³³ All of these are made possible because human beings share, in a more direct way, the life force in the Supreme Being.³⁴ It is not surprising therefore that the world is perceived, to a great extent, in terms of its usefulness, or lack of it, to human beings. Other creatures are put into categories in terms of how useful they are to human beings. For instance, in some cultures in Africa, plants and animals are divided into edible and

³¹ Deusededit R.K. Nkurunziza, *Bantu Philosophy of Life In The Light Of The Christian Message* (Germany, Frankfurt: Peter Land Press, 1989), 152-155.

³² Placid Temples, *Bantu Philosophy*, 62.

³³ Deusededit R.K. Nkurunziza, 145-146.

³⁴ *Ibid.*, 147.

non-edible groups, and in other cases they are classified in terms of the protective, medicinal and religious roles or other functions that they perform in human life.³⁵

In the African worldview, the Supreme Being relates to people through other intermediary beings like deities, divinities and spirits. These beings dwell in many places among natural objects such as the sun, moon, ocean/rivers, mountains and forests. Human beings therefore use this belief as the basis for their worship of the Supreme Being as well as a way to control and manipulate them for their own purpose. A good example of this is where people who live near water (a lake or stream, or river or ocean) believe that divinities and spirits dwell in the water. Prayers, offerings and sacrifices are made at the banks of lakes, stream, rivers or the ocean to communicate with the divinities and spirits who are believed to dwell in them. These prayers, offerings and sacrifices are made for various purposes such as safe crossing of the water in a canoe, or successful fishing, or as an appeasement in times of natural calamities like flooding.³⁶ By offering such sacrifices and prayers, there is a feeling of confidence and security, a feeling of peaceful and harmonious relationship with the water and the spirits and divinities which dwell therein. In some communities, there is a belief that lightening and thunder are caused by the spirits. A belief such as this would make the people offer prayers and sacrifices asking for a peaceful relationship with the spirits for fear of being struck by thunder and lightening.

The desire to maintain a peaceful and harmonious relationship with the rest of creation is the basis of the sense of obligation for responsible stewardship of creation that Africans have. There is in every African culture, certain unwritten guidelines of how to deal with the land, air, water and vegetation because there is a strong belief that any

³⁵ John Mbiti, *Introduction to African Religion*, 43.

³⁶ *Ibid.*, 43.

misuse or abuse of nature directly incurs the wrath of the spirits and divinities who dwell in them and consequently a bad omen for human beings.³⁷ Through worship therefore, Africans maintain a good, peaceful and harmonious relationship with the Supreme Being who created them as well as maintain the important unity that must exist between beings in the visible and invisible realms of creation.

This brief introduction to African traditional religion and philosophy therefore lays a good foundation for the understanding of African cosmogonies because African mythology is a product of African culture including their religious beliefs and philosophical positions. Thus it provides a good setting for examination of African cosmogonies which will be addressed in the next section.

3.2. Introduction to African Cosmogonies

African cosmogonies are products of African traditional culture, philosophy and religion, all of which are inseparably linked together. In Africa, the people and their culture, including their religious beliefs and philosophical positions are all aspects of the same reality. As Mbiti expresses, “Africans are notoriously religious ... Religion permeates into all the departments of life so fully that it is not easy or possible always to isolate its.”³⁸ In the traditional African society, the concept of atheism is totally foreign. Thus it not an issue, because the existence of God is considered to be a given. Furthermore, African culture supports the people’s religiosity.

To understand African cosmogonies, therefore, it was necessary to examine the basic tenets of African Traditional Religion (A.T.R.), which was addressed in the last

³⁷Ibid., 44.

³⁸John Mbiti, *African Religion and Philosophy*, 2nd Edition (Botswana: Heinemann Educational Publishers, 1989), 1.

section, and how deeply they are woven into the fabric of the people's culture, especially the philosophy and religion out of which the cosmogonies emerged. Ikenga-Metuh testifies to this when he said that:

Cosmogonic myths are very fertile source materials for traditional African religious beliefs....African cosmogonies not only provide the symbolic categories by which Africans understand the organization of their universe, but also suggest patterns by which they try to maintain the balance and the harmony of the world through ritual. By defining the nature and powers of beings in the universe and their relationships, they suggest rituals by which man tries to relate with them and the universe as a whole. Cosmogonies are therefore an invaluable source of African religious beliefs and practices.³⁹

With this brief introduction to African cosmogonies, that points out the relationship between A.T.R. and the cosmogonies, the stage is set to examine some examples of creation myths that are selected from different parts of Africa, because they represent the various themes in African mythology that are relevant to this study.

3.2.1. Examples of Creation Myths in Africa

African cosmogonies have been identified to be very fertile sources of materials for African religious beliefs. A survey of a good number of African myths show that the creative principle is at the center of African mythology, and this creative principle in most cases is identified with God the Supreme Being and the first human being formed out of his creative power. It is therefore not surprising that most African cosmogonies devote a great deal of space to myths about the creation of humankind. However, creation myths are not limited to how human beings were created. African creations myths go beyond that to speculate about the creation of the universe and other elements in nature

³⁹ Emezie Ikenga-Methu, *Comparative Studies in African Traditional Religions* (Nigeria: IMICO Publishers, 1987), 41.

such as the sun, moon, stars and the ocean. Commenting on the unique nature of creation myths, Marie-Louise Von Franz had this to say:

Creation myths are of a different class from other myths---hero myths or fairy tales for instance -- for when they are told there is always a certain *solemnity* that gives them a central importance; they convey a mood which implies that what is said will concern the basic things of existence, something more than is contained in other myths. Therefore one can say that as far as the feeling and emotional mood which accompanies them is concerned, creation myths are the deepest and most important of all myths. In primitive religions the telling of the creation myth forms an essential teaching in the *ritual of initiation*. They are told to the young initiates as the most important part of the tribal tradition.⁴⁰

The role of God as the all-mighty creator is paramount in African cosmogonies. Creation myths are replete with glories and praises for God as Africans express awe and marvel at the enormity and beauty of creation laid out around them. However, the concept of *creatio ex nihilo* is only implied rather than explicit in most African cosmogonies.⁴¹ A good number of the creation myths ascribe creation directly to divine will and intention. Others emphasize the role of co-creators, divinities, deities, and spirits who are subordinate to the Supreme God and take orders from him. They also help in the work of creation. In this brief survey, six examples of African cosmogonies and creation myths selected from various geographical and cultural backgrounds in Africa – West, East, South, Central and Southern parts – will be examined. This will be followed with an analysis of basic themes and common characteristics of these creation stories with the aim of identifying their significance and contribution to our understanding of creation as the handiwork of God and the discussion of the topic of origins in general.

⁴⁰ Marie-Louise Von Franz, *Creation Myths* (New York: Spring Publication, 1972), 5.

⁴¹ Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 42.

3.2.2. Creation Myth of the Dogon People

The Dogon people are primarily an agricultural people who live in the Mali and Upper Volta area (now Burkina Faso in North Africa). The Dogon creation myth is particularly relevant to this study because it portrays the idea of incremental development in the different stages of creation beginning from the egg out of which the rest of creation comes forth. Secondly, it underscores the concepts of interconnection, interrelation and interdependence among existents in creation all of which are themes that are central to this study and of great importance to the understanding of creation from the African perspective.

The Dogon people were perceived to be so primitive that even their neighbors thought that they had no sophisticated religious beliefs. A French ethnologist, Marcel Griaule, did a detailed research of the Dogon mythology during his many years of work among the people. One of the most remarkable creation accounts recorded by Griaule from the Dogon people is the one which *Ogotemmel*, the wise man, was delegated to reveal to the people. This myth has different versions, some long, others short, but the basic structure, meaning and lessons are the same.⁴²

Most of the versions agree on the fact that in the beginning, *Amma*, the Supreme Being existed all by himself, dependent on nothing but himself alone. His shape was something like an oval egg consisting of four major elements, fire, air, earth and water.⁴³ In one of the popular versions of cosmogony, the Dogon concept of creation identifies various stages of sacred development each of which culminates in the utterance of a

⁴² Griaule Marcel, *Conversation with Ogotemmel* (London: Oxford Press, 1965); See also Barbara C. Sproul, *Primal Myths* (San Francisco: HarperCollins, 1991), 49.

⁴³ Benjamin C. Ray, *African Religions* (New Jersey: Prentice-Hall Inc., 1976), 24-32.

sacred “word” or revelation. The first of these stages is the stage of the creation of nature. At this stage, a language is expressed which is in the form of sounds of graces that cover the nakedness of the earth. This is a simple but eloquent language. This first stage represents the creation of the earth by *Amma* (God). The second stage is symbolized by weaving. This is an attempt to redeem humankind and restore the social order that was disrupted. The utterance of this sacred word caused human beings to leave their caves and form communities, living with each other in a normal human social environment. This stage represents the frustration of *Amma* at the initial refusal of the earth to mate with him that led to the disruption of the normal order and the need for restoration. At the third stage, there is a two-fold revelation: first, there is a sacred granary which is a paradigm of earthly granaries, but even more so this revelation is a pattern of the world order of creation on the cosmic plane. On the personal level, it is also a pattern of digestive system in individuals; and the second is the drum which is a symbol of verbal language and culture as well as a primary method of communication. This stage represents the perfect birth of the divine creatures of water and light, the *Nummo* twins. The twins then purified the earth and ordered the creation of eight ancestors. These ancestors are later expelled from the heavens to the earth after which order is restored in both the natural and social realms.

A closely related version to this myth places the locus for the process of creation in the egg of the universe (*Aduno Tal*). There is an internal activity within this egg that leads to a division of the placenta into two, each containing a pair of the twin *Nommo*. The *Nommo* twins are believed to have emanated from the Supreme Being, (*Amma*) who existed from the beginning. The *Nommo* twins were equipped each with two spiritual

principles of the opposite sex, consisting of a pair in each of them, thus forming the ideal number, eight. The moment of disorder came when the male *Nommo* in one placenta came out before the time appointed by *Amma*, and with a torn piece of the placenta flew from the heavens into the earth with the intension of creating a world of his own. An impure and solitary earth was then created by this being called *Yuruga* after which he came back to the heavens to take the female placenta but to his disappointment, *Amma* had already given her away to the other pair. Frustrated and disappointed, *Yuruga* came back to the earth, created his own placenta and started to procreate incomplete offspring produced through incestuous relationships. Although *Amma* was unhappy about this development, instead of destroying the disordered and disrupted universe, he decided to restore order and normalcy in it. This he did by killing the *Nommo* of the other half of the egg and sprinkled her blood over the face of the earth. By so doing, *Amma* regained control of the universe and restored order. After that, he forgave the rebellious *Nommo*, restored him to life and put him in-charge of the universe. *Amma* then worked on the other *Nommo* and from him, created four other twin *Nommo* (making the divine number eight again) the offspring of which became the ancestors of the Dogon people. Having equipped these offspring with all that they needed to populate the earth and sustain the human race, *Amma* lowered them from the heavens to the earth on an arch. The arch became the symbol of measurement of time, space and seasons. *Nommo* used the great skills given him by *Amma* to establish community, social life and to organize society. But unfortunately, a sad chapter had already been created as death was introduced as a result of the rebellious act of *Yuruga*.⁴⁴

⁴⁴ Emezie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 43-44; Griaule, Marcel. & Dieterlen, Germaine, "The Dogon People" in *African Worlds*, Forde Daryll, ed. (London:Oxford

A seed-based version of this Cosmogony envisages a development which starts in the smallest cultivated seed described as the “little thing” (*Kize Uzi*). Within this smallest cultivated seed is an internal activity in form of a vibration causing a zigzag movement that divides the seed into seven parts as the matter unfolds. At the seventh division, the sheet enveloping the seed bursts. The internal zigzag movement within the seed represents the alternating conflict of opposites, which reflects the principle of “twin-ness” that leads to the procreation and proliferation of life. The seven segments and the seed itself symbolize the divine octet (eight divine beings) according to which the universe is organized. The bursting of the seed symbolizes the disorder and incompleteness of the universe and of creation in general.⁴⁵

3.2.3. Creation Myth of the Bambara People

The Bambara people live around the area of Mali in North Africa and are neighbors to the Dogon people. The creation myth of the Bambara people gives an account of how at the beginning there was nothing but the original *Gla*, an empty void. A voice came from this void one day expressing the desire to create. This being then duplicates itself by producing its own copy that he joins to himself. This union gave rise to raw matter in its rustic and unorganized form. Next, the spirit, *Yo*, was created. *Yo* becomes the mind, the consciousness that does the thinking and governs the universe. *Faro* was the next to be created. *Faro* was created from *Yo*, and through *Faro* the earth was made. *Faro* eventually became the god of the earth and water which were put under his control. The first woman created grew to become a jealous person who caused a great

University Press, 1954), 83-89.

⁴⁵ Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 43-44.

deal of disorder. But through the efficient work of *Faro*, order was restored again. This was however not the end of trouble since the tree of life (*Balanza*) wheeling excessive power caused disruption in the first creation. This tree had to be eliminated and a new creation was formed. This new creation was a reorganization of the universe in which a definite distinction was planned out between the different creatures, plants, animals and human beings. Among the human beings, community and proper social order was introduced where people were taught working techniques and family organization.⁴⁶

This creation myth is relevant because it portrays the elements of awe and mystery in creation as it comes forth through a voice from a void. The concept of interconnection and interrelation is also demonstrated since the whole of creation is portrayed as coming forth from a common source.

3.2.4. Creation Myth of the Bushongo (Bakuba) People

The Bushongo or Bakuba is an ethnic group among the Bantu people of the Congo (Zaire) in South Central Africa. They occupy the area around the Congo River. Among this people is a creation myth that is interesting because it perceives creation in terms of generation described in a language that portrays the elements of awe and mystery. At the beginning is the Supreme Being, *Bumba* who is all by himself in the dark and watery chaos. Under a terrible pain one day, he vomits the powers of the world. First, the sun is vomited. The heat from the sun then dries up the primordial waters as they recede to form oceans and rivers while dry land emerges. After this, *Bumba* vomits the moon and the stars. At the next stage, he is in pain again and vomits nine different

⁴⁶ Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 43; See also Secretariat for Non-Christian Religions, *Meeting African Religions*, Vatican, Rome, (1969).

creatures which are prototypes of their offspring. Among these creatures were: *Koy Bumba* (the Leopard), *Pongo Bumba* (the Eagle), Ganda Bumba (the Crocodile), Yo (a fish), Kono Bumba (the tortoise), *Tsetse Bumba* (the lightening), *Nyanya Bumba* (the heron), *Budi Bumba* (the goat). Each of these creatures with the power given them by *Bumba* makes other beings of their kind. Finally, *Bumba* created human beings. Many people were created but only one was white like *Bumba*.⁴⁷ He was called, *Loko Yima*. The creatures continued the work of creation and made other creatures like themselves to populate the earth. Lightening (*Tsetse*), however, became stubborn and unruly and had to be banished from the earth. But every once in a while she would come back to strike the earth to cause havoc. With lightening gone, human beings were therefore left without fire. *Bumba* came to their help by teaching them how to make fire from the tress. This creation myth closes with a remark that makes allusion to the glory and wonder of creation:

When the last of the work of creation was finished, *Bumba* walked through the peaceful villages and said to the people, “Behold these wonders. They belong to you.” Thus from *Bumba*, the Creator and First Ancestor, came forth all the wonders that we see and hold and use and all the brotherhood of beasts and man.⁴⁸

3.2.5. Creation Myth of the Fang People

The Fang people of Gabon live in the south western part of Africa. In one of the famous Fang creations myths, there is a belief that at the beginning of creation there was *Nzame* (God), all by himself, before any creatures came into existence. *Nzame* had two other divine beings which came into existence through him, *Mbere* and *Nkwa*. *Nzame*

⁴⁷ A good number of commentators wonder how much influence of European mindset is involved in the creation myth that depicts the creation of the white person, *Loko Yima*, to be like *Bumba* the Supreme Being and creator himself. For more information of this see Barbara C. Sproul, *Primal Myths* (San Francisco: HarperCollins, 1991), 44.

⁴⁸ Barbara C. Sproul, *Primal Myths* (San Francisco: HarperCollins, 1991), 44-45.

made the heavens and the earth and reserved the heavens for himself. After this, he continued the work of creation, making the sun, moon, stars, animals and plants. Using the help of his co-creators, *Mbere* and *Nkwa*, they made human beings like themselves. Human beings were endowed with abundance of life, force and beauty. The first man was named *Fam*, and he was put in-charge of creation. This position of authority was misused by *Fam* who out of pride became rebellious. *Fam* became so full of himself that he refused to obey or worship *Nzame*. He scorned *Nzame* and made derogatory remarks about him. Some of these remarks are put in form of a song, one of which goes like this: “God on high, man on earth...God is God, man is man, every one in his house, everyone for himself.” In anger, *Nzame* dispatched thunder and fire to destroy the world. But because he already conferred the gift of immortality to the first man, *Fam*, his life was spared. *Fam* still lives and wonders about in an unknown place, although with a burnt body. To restore order to the world, *Nzame* again conferred with his two co-creators, *Mbere* and *Nkwa* and together they recreated the world. The new man from this new creation was called *Sekume*. *Nzame* made a wife for him called *Mbongwe*. Being made of body (*Gnoul*) and spirit (*Nsissim*), the spirit survives at the time of death and lives on. The spirit is believed to have a special place in the eye, and the shiny spot in the eye is where he dwells.⁴⁹ In this creation myth the unity and interrelationship in creation is again portrayed as all creatures are perceived to originate from a common source.

⁴⁹ Ulli Beier, *The Origin of Life and Death: African Creation Myths* (Nigeria: Heineman Press, 1960), 18; See also Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 45.

3.2.6. Creation Myth of the Abaluyia People

The Abaluyia people of Kenya in East Africa have a myth which states that the world was created by the Supreme Being, *Wele Xakaba*, who is the all mighty and giver of all things. He first made his own dwelling place in the heavens and supported it with pillars to hold it up and prevent it from falling. After this, he created two beings, *Wele Muxove* and *Wele Murumwa* to act as his assistants and co-creators. Continuing his work of creation, he then made the sun, moon and the stars and other heavenly bodies that he fixed up in the sky. *Wele Xakaba* made the clouds charging it with the function of producing the rain and the rainbow to stop rain when this is necessary. It took about two days to complete the creation of the heavens. The process of creation is as fast as lightening and mysterious, as it defies total comprehension.

The next phase of creation was the earth which *Wele Xakaba* made primarily to provide a place of work for his assistants as well as a dwelling place for other creatures. On the earth there are mountains, valleys and plains. *Wele Xakaba* then created the first human being who he named *Mwambu*. He proceeded to make a wife for him named *Sela*, then, he put them on the earth to enjoy the fruits of his creation. He made plants and animals of all kinds while providing water in forms of river and oceans on earth. He instructed human beings to eat of the plants and animals, but to stay away from crawling animals and scavenger birds. A young buffalo was given to the *Mwambu* and *Sela*, the man and woman, so that they could raise it as a domestic animal. With the help of *Wele Xakaba*, the couple was blessed with two children, a boy and a girl. These in turn had their own children hence the beginning of increase in human population on earth. After six days of work, creation was complete and *Wele Xakaba* decided to rest on the seventh

day because it was considered a bad day.⁵⁰ This creation myth, like others, attributes creation to the Supreme Being and also portrays the elements of awe and mystery as well as the interrelationship that exists in creation.

There are noticeable parallels between some of these creation myths and those of others cultures around the world especially the Middle East and in particular, the biblical creation accounts. However, the extent of external influence on African creation myths is a subject of debate among scholars.

3.2.7. Creation Myth of the Bushman and Hottentots Peoples

The Bushman and the Hottentots of the southern part of Africa are people generally of short stature who have a complex language and rich mythology. There were among the first group of indigenous people that encountered the immigrant Dutch settlers (c. 1650 A.D.)⁵¹ who invaded their land, tortured and killed off their people.

The creation myths of both the Bushman and Hottentots show a belief in the existence of both good and evil forces at war in creation. The Bushman, for example, believe in a good creator god called *Kang*, *Khu* or *Thora*, depending on the specific tribe, as well as the evil deity called *Gauna* or *Gaw*, which means god of the evil, wicked and dead spirits. The evil god is responsible for all the troubles in the world. Among the Hottentots, the equivalence of *Kang*, the good creator, is *Tsui* or *Goab*, while the evil god is *Gaunab*, which means lord of the dark heaven.⁵² The good creator god is the first being who gave orders and created all things in the heavens and the earth. He functions like a

⁵⁰ Wagner G, "The Abaluyia of Kavirondo," *African Worlds*, Forde Daryll, ed. (London: Oxford University Press, 1954), 28; See also Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 45-46.

⁵¹ Barbara C. Sproul, *Primal Myths* (San Francisco: HarperCollins, 1991), 34.

⁵² *Ibid.*, 31-35.

great magician and organizer. He engages in battles with the evil god and triumphs over him. Even when he suffers anything close to defeat or death, he is reborn through a miraculous self regenerative power.

Both creation myths from the Bushman and Hottentots describe the conflict and warfare between the good creator god and the evil creator god. Although the good creator god eventually triumphs over the evil creator god, the effects of his evil works continue to be felt in creation. The significance of these creations myths is that in them we find some explanation for the problem of evil in the world. Another interesting aspect of this awareness of conflict between the forces of good and evil is that it is a reflection of the personal experience of the Bushman and Hottentots. It is therefore a reflection of an experience of evil in general as it exists in the world and the particular experience of evil that they suffered in the hands of foreign Dutch immigrants who invaded their land, tortured and killed off their people.

Myths in general are among the ways by which people of traditional cultures of the world respond to fundamental questions of existence such as: “Who are we? Where are we? Where do we come from? And where are we going? However, it is in creation myths that the most basic answers to these fundamental questions are found. For the Bushman and Hottentots, and indeed for all Africans, creation myths are not just ways of expressing their understanding of origins, but also a medium through which to make sense of their particular life experience, reflect on their identity as a people and their existence as human beings created by the Supreme Maker. This is demonstrated in the fact that the Bushman and Hottentots are able to relate to belief in the presence of conflict between good and evil forces in the world in a personal way, and be consoled in the hope

that eventually, the forces of evil will be defeated by the forces of good. In the same way that the forces of good eventually triumph over the forces of evil in the cosmic struggle, the Bushman and Hottentots believe that they too will eventually triumph in their struggle with the evil that befalls them in their life experience.

The creation myths examined above are selected from various parts of Africa in order to present the different but related aspects of the concept of creation from the African worldview. Having examined these samples of creation mythology from different parts of Africa, the next section will be an analysis of these myths with the view to identifying the major themes therein and how these themes define African cosmogonies and their contribution to the discussion on the question of origins.

3.3. An Analysis and Evaluation of African Cosmogonies

Most of the creation myths follow a similar structural pattern that demonstrates a rich system of interrelation and interaction between natural order, social realm and personal life all of which are centered around God, the Supreme Being, who creates and sustains all creation in being. African mythology is therefore a reflection of the African worldview in which the individual, although acknowledged as uniquely important, has his or her identity bound up with the community of human beings and of other creatures all of which are tied up in a relationship of total dependence on the Supreme Being, their creator and provider. It is a unity that guarantees harmony, order and peace in the entire cosmos under the all mighty power and control of God the creator.

African cosmogonies, like most cosmogonies around the world, attempt to address the basic questions of how the universe came to be, the origin of humankind and

other creatures in the universe and the beginning of social and ritual structures in the society, as well as the origin and presence of evil in the world as demonstrated in the creation myths among the Bushman and Hottentots of Southern Africa. In the sample of African cosmogonies given above, the origin of the universe is traced to the divine being, a personal principle who is the first cause and from whom all other creatures derive their origin and existence. This divine, personal and creative principle is identified with the Supreme Being who is called different names in the examples of creation myths above. The Dogon call him *Amma*, the Boshongo call him *Bumba*, the Fang call him *Nzame*, the Abaluyia call him *Wele Xakaba*, while the Bushman and Hottentots call him *Kang* and *Tsui* respectively. In the Bambara myth, this creative principle is identified with a voice, *Gal*, which is the source of creation and mind/consciousness. Without going into details about the origin and nature of the Supreme Being himself, these creation myths acknowledge him and the First Cause. He is the creator and originator of everything that exists, the universe, the lesser divinities/deities, plants, animals and especially human beings. Not only is he the ultimate source of all existence, he continues to sustain them in being and provides for them. This is clear from the examples of creation myths given above.

The Bambara myth acknowledges that the spirit (*Yo*), matter and *Faro*, the creator of the world and water deity, all came through the work of the creative principle, conceptualized as “The Voice.” Similarly, in the Dogon cosmogony, all the creatures including *Nummo* the divine being and the *Nummo* who became the founding ancestor of the Dogon people all originated from *Amma*, the creative principle. Even after the rebellious *Nummo* created the impure and infertile earth, it was *Amma* who restored order

into creation and purified it. In the same way, both the Fang and the Abaluyia strongly affirm that the heavens and the earth, the divinities/deities, human beings, plants and animals, including the two divine assistants, all took their origin from *Nzame* and *Wele Xakaba*, the creative principles. Ikenga-Metuh thus comes to the conclusion that:

The creative principle, is therefore as far as can be derived from the myths, the first cause and the supreme principles from which all other realities know to man trace their origin. He has precedence over all other beings, both in time and perfection. He depends on no other being for its existence but all other beings derive their existence from him. In view of these facts, such creative principle in African myths, has often been called the Supreme Being and identified with the Christian concept of God.⁵³

The concepts of mystery, awe and wonder are strongly affirmed in African cosmogonies. This is also clear from the example of creation myths given above. The Buhsongo myth that gives an account of “how *Bumba* vomits the world” concludes with a remark that after *Bumba* finished the work of creation, he walked through the peaceful villages and he said, “Behold these wonders. They belong to you.” Similarly, the Abaluyia creation myth explicitly says that the act of creation takes place in a mysterious way. The idea of wonder and mystery in creation calls to mind the fact that although different kinds of study and research can be done on the topic of creation using the intelligence given by the creator himself, there is only so much we can understand about creation, because the human mind can only go so far. In the African worldview, the line between the physical world and the spiritual world is so blurred that it sometimes appears to be non-existent. The physical world is thought to be a carbon-copy of the spiritual world from where all things are controlled. The African through worship pays allegiance

⁵³ Emefie Ikenga-Metuh, *Comparative Studies in African Traditional Religion*, 48.

to his creator, but also acknowledges the mystery of creation and he/she stands in awe and wonder marveling at the great works of the Supreme Being.

In most of the creation myths, the principle of polar oppositions is maintained and appreciated as part of the normal process for interrelation and interaction that opens the way for further creative works. This example is clearly demonstrated in the Dogon creation myth that gives an account of the internal vibrating activity within the seed giving rise to the seven segments, the twin eggs and the twin placenta that in turn produced twin *Nummo*. Most creation myths in Africa are replete with the concept of growth from rudimentary stages to higher forms. This is symbolized in the “seed” and the “egg”, the beginning stages that latter develops gradually into the full grown state of their being. The process of growth is that of incremental development, a form of evolutionary development from a lower stage to a higher stage. Every stage of this development, in the African mindset, is under the control and direction of the Supreme Being who creates and sustains all creatures in existence.

3.4. Cosmogony and Community in the African Concept of *Inter-Being*

Although the African worldview posits two realms, the invisible and the visible, these are not two separate and independent entities. They are aspects of one and the same reality comprising basically, the heavens and the heavenly bodies in the invisible world, and creatures of the visible world down below. The basis of interconnection and interrelation between these two realms is their common participation in the Supreme Vital force of the creator in which every creature shares according to their kind, thereby forming a dynamic and ontological relationship among creatures --- *inter-being*. Placid

Temples makes an analysis of the concept of inter-being based on his study of African philosophy from which he observed that:

The concept of separated beings...entirely independent of one another, is foreign to Bantu thought. Bantu holds that created beings preserve a bond one with another, an intimate ontological relationship comparable with the causal tie that binds creature and Creator. For the Bantu, there is *interaction of being with being*, that is to say, of force with force. Transcending the mechanical, chemical and psychological interactions, they see a relationship of forces which we should call ontological...⁵⁴

From the social perspective, the concept of inter-being is equally demonstrated in the interrelationship and interconnection in the African society that is comprised of both the living and the living-dead⁵⁵. In the analysis of the African concept of inter-being, some scholars apply the organic model of the relationship between parts of an organism and argue that “the whole African society, living and living-dead, is a living network of relations almost like that between the various parts of an organism.”⁵⁶ Based on the analogy of a living body these scholars argue that just as it is the case when one part of the body is hurting, the whole body suffers, so too, whatever affects one member of the African family, clan, tribe or community affects all the members in a profound way. Furthermore, the sickness of one member of a clan, tribe or community takes on a wider dimension as it is interpreted as a violation of the norms or rules that govern both the invisible spiritual world and the visible physical world. This analogy is a clear indication

⁵⁴ Placid Temples, *Bantu Philosophy*, 39-40. Italisization of “interaction of being with being” is done by me.

⁵⁵ They are called “the living-dead” instead of “the dead” because of the active presence of the deceased members of the society who continue to be involved in the lives of people especially of their families and clans. It is a way of showing recognition of the fact that even though they are physically dead, they continue to be part of us and our lives.

⁵⁶ Ernest Ruah and K.C. Anyanwu, *African Philosophy* (Rome: Catholic Book Agency, 1984), 143.

that the African worldview of reality is that of dynamism and animation rather than a mechanical and static world.⁵⁷

A good illustration of the African concept of inter-being is found in the *Idoma*⁵⁸ culture in which the spiritual and physical entities operate as one unified whole. As it is the case with other Africans, the *Idoma* people are born into an already existing defined traditional religious system with its beliefs and rituals. Every *Idoma* person, like all Africans, thus automatically assumes the religious system of the people⁵⁹, and this was the norm until the advent of Christianity in the late 1800s. *Owoicho*,⁶⁰ the Supreme Being (God), is the source of vital force and from him, it is diffused in the rest of creation. Although *Idoma* people recognize *Owoicho* as a loving and caring God who is present to them and watches over them always, the awesome nature of God is so profound that he is conceived as one that cannot be approached directly and should not be addressed directly. This immensity of the Supreme Being is captured in another name for God, *Omanchala*, which literally means, almighty and supremely great. Furthermore, because *Owoicho* is believed to have his main dwelling place in the heavens, he is conceived as being physically distant from them and unreachable in a direct way. Therefore, the *Idoma*

⁵⁷ Emezie Ikenga-Metuh, *Comparative Studies of African Traditional Religions*, 75. Ikenga-Metuh observes that in contrast to the pre-Enlightenment concept of a mechanical and static world, the African worldview has always been a dynamic and animated universe.

⁵⁸ The name *Idoma* which literally means, “begotten by Idom,” refers to the people of the second largest ethnic group in Benue State in the middle-belt part of Nigeria. The *Idoma* population is about 1,684, 880 and they occupy a land area of about 13, 015 square kilometers. The name of the language spoken by *Idoma* people is also called *Idoma*, and it belongs to the Kwa language family. For more information on this, confer Armstrong, R. G., “The *Idoma* Speaking People” in Forde, D., (ed), *Peoples of the Niger-Benue Confluence* (London: Hazel Watson & Viney Ltd., 1955), 1-22. See also, E. O. Erim, *The Idoma Nationality, 1600-1900* (Enugu: Fourth Dimension Publishing Company Ltd., 1981), 1-12.

⁵⁹ This was the case before the advent of Christianity in the late 1800s. Dr. Innocent A. Eje, *The Role of Basic Christian Communities in Evangelization: With Particular Reference to Ss. Peter and Paul Idoma Basic Christian Community in Kaduna City of Nigeria* (unpublished doctoral dissertation from the Pontifical Lateran University, Rome, 1989).

⁶⁰ *Owoicho*, the *Idoma* name for God, comes from two words, *Owo*, which literally means “the essence of being” or “being itself”, and *Icho*, which literally means, “above” or “up”. *Owoicho* therefore means the Supreme Being who dwells up above in the heavens.

people, like other Africans, employ the use of intermediaries in forces of nature to communicate with *Owoicho* because he is also believed to dwell in these elements of nature. These elements of nature therefore assume a sacred status because the Supreme Being, deities and ancestors dwell in them. One of such intermediaries is land itself (or Earth) --- *Idoma* land (*Aje*)⁶¹. Aside from the fact that land is sacred, it is conceived of as special gift from God that must be religiously guarded with respect and dignity. Land is also depicted in a feminine attribute of mother (mother-land or mother-Earth), and compared to motherhood from the standpoint of fecundity. Just as a male seed fertilizes the female ovum leading to reproduction, so too a plant's seed is put in the Earth to produce new plants and as a mother nurses a baby in her womb, so too mother- Earth "nurses" the seed planted in it and prepares it for germination.⁶²

In different parts of *Idoma* land, a cult is built around the land (*Aje*) --- sacred land --- and worship and rituals are organized as the people communicate with *Owoicho* through the sacred land⁶³. Worship of God through the land is part of normal religious act of response to the divine but also a way of maintaining a peaceful and harmonious relationship with *Owoicho* as well as all creatures in both the visible and invisible

⁶¹ *Aje* literally means "Land" or "Earth". Every community, clan or family has a portion of land that is allotted to them. This portion of land is considered to be a sacred gift from *Owoicho* and is religiously guarded. Heads of families share the land and use it for farming or building. In African Traditional Religion (A.T.R.) there is an special annual ritual/ceremony, usually during the harvest season, in which the god of the land is worshipped. It is a way of expressing gratitude to God for the gift of land and for the produce of the land. For more information on this, confer John Mbiti, *Introduction to African Traditional Religion*, 60-69; and, E. O.Erim, *The Idoma Nationality, 1600-1900* (Enugu: Fourth Dimension Publishing Company Ltd., 1981), 97-101.

⁶² Ameh A. Ejeh, "Ecology and Religion: Towards An Environmental Theology", 55-58. Unpublished thesis for Bachelors in Divinity (B.D., 1990), from the Pontifical Urbanian University, Rome, through St. Augustine's Major Seminary, Jos, Nigeria.

⁶³ A good example of worship of *Owoicho* through the sacred land is found among Owukpa people, an ethnic group in Western (En'One) part of *Idoma*. While the worship of God through the sacred land was a normal religious ritual, it was also a way of maintaining order, peace, and harmony between the spiritual and physical realms.

worlds.⁶⁴ If a person fell sick, for instance, the immediate natural cause of the illness would be addressed and native medicine applied for treatment. However, there is always a supernatural cause for illness. To address this, a diviner/soothsayer, priest or native doctor is invited to interpret the supernatural cause of the illness and recommend a solution. In most cases illness is conceived as a result of a violation of the relationship that exists between the sick person and other creatures in the spiritual realm or physical realm or with *Owoicho* the Supreme Being himself. A person incurs the wrath of the spirit if she/he breaks the law or taboo, violates a moral code or commits a crime or misdemeanor against the land itself, for example, through unlawful manipulation of the forces of nature. In cases such as these, the spirit of the land would hold such person or group of persons responsible. But more importantly is the fact that any of these unacceptable acts would disrupt the harmonious relationship thereby breaking down the inter-being --- interconnection and interrelationship that exists between the spiritual and the physical worlds. It therefore becomes necessary to appease the spirits or *Owoicho* himself through sacrifices and rituals to restore peace and harmony in those involved, the community and to creation. Because healing is equally conceived as having both physical and spiritual dimensions, a spiritual solution must be sought in addition to the physical treatment given to the sick person. Spiritual solutions include remedial acts such as making sacrifice to the “gods” of the family, clan or community and carrying out the terms of the punishment meted out to the individual or groups that are the perpetrators.

⁶⁴ This is part of the basic idea behind worship as understood in all of African Traditional Religion (A.T.R). Different parts of Africa and different communities of Africa have a special element of nature through which they worship God. Such elements of nature include, rivers/ocean, sun, moon, sky, mountains and forests. For more information on this, confer John Mbiti, *Introduction to African Traditional Religion*, 60-69.

In a more direct way, cosmogonies and communities are related through the appropriation of creation myths in ways that reflect elements of value and cherished individuals in the history of the community, clan or tribe. Thus, while creation myths maintain similar themes across the board in most of Africa, each community, ethnic group or tribe would have some nuances to them to reflect an ethnic, clan or tribal figure depicted as playing a vital role in creation. It is a way of enhancing ethnic or tribal pride and a spirit of patriotism that is passed on from one generation to the next. Examples of such nuances are found in creation myths among *Idoma* people in which some of their ancestors are depicted as playing significant roles at the time of creation to serve humanity. In one of the creation myths, an ancestor was the first to bring fire from the Sun to the Earth; in another myth, another ancestor was the first to dig a hole in the ground from which water came; and in yet another myth, an ancestor was believed to have been directed by the spirit to go into the forest to collect herbs that were eventually used for healing sick people in the community. These creation myths are told in such a way that the dangers of going to the Sun to bring fire to the Earth, or digging a hole deep enough for water to come out, or braving one's way through the dangerous forest to collect herbs are emphasized. Part of the goal of such creation myths is to emphasize the importance of making sacrifices for the community thereby training the younger generation to emulate such ancestors in their service to the community in particular and the society in general. In every family, or clan, elders who are good at story telling are appointed to train the younger ones in the importance of developing virtues and other moral values. Included in these virtues is that of respect for the elderly, the feeble and other vulnerable members of the community. These lessons are communicated orally

through myths, stories, proverbs and songs from one generation to the next. Simply put, every person grows up in the consciousness that she/he exists as community and that her/his life is characterized by giving and receiving in the community. Mulago expresses this concept in this way:

The life of the individual is grasped as it is shared. The member of the tribe, the clan, the family, knows that he/she does not live to himself/herself, but within the community. He/she knows that apart from the community he/she would no longer have the means of existence. In particular, he/she knows that his/her life is a participation in his/her forefather's life, and that its preservation and strengthening depend continually on them.⁶⁵

The relationship between community and cosmogony is therefore a good illustration of the philosophy of inter-being in Africa. At the center of this inter-play is the Supreme Being, the source of vital force, which is the principle that governs inter-being. In the visible realm, humankind is the pivot that controls the rotation and operation of the vital force because she/he shares in the vital force at a degree higher than all creatures in the visible world. However, humankind is equally affected by the vital force that exists in others both in the visible and invisible world. Nkurunziza again puts it clearly:

...God's dynamic creative power is concretely manifested in the visible universe; it is the principle of the relationship between humankind and the world around them: the sun, the moon, the stars, the land and all the animals, each of these constitutes its own dynamic power which affects the life of humankind-in-community⁶⁶

⁶⁵ Musharhamina Gwa Chilaka Mulago, "Vital Participation: The Cohesive Principle of Bantu Community," in *Biblical Revelation and African Beliefs* edited by K.A. Dickson and P. Ellingworth (London: Longman, 1969), 139.

⁶⁶ Deusdedit R.K. Nkurunziza, *Bantu Philosophy of Life in the Light of the Christian Message: A Basis for an African Vitalistic Theology*, 52.

The treatment of the African concept of inter-being illustrated in the relationship between cosmogony and community brings the chapter to a close. The notion of inter-being is relevant because it provides a solid foundation for ecology that is part of the issues being addressed in this dissertation.

3.5. Conclusions

In most African traditional societies, the actual origin of the universe is a matter of little speculation. For some reason, it is thought to be enough to know that God is the creator and originator of the universe. In African mythology therefore, there is little or no preoccupation with the details of the origin of the universe purely from the philosophical perspective. The other reason for this could be that in traditional African societies, more time and attention is given to practical day-to-day issues that are thought to be woven into the eternal plan of God the creator, originator and sustainer of the universe. A survey of African mythology shows that there is more information about the origin of humankind, how God created other beings in the world, and the beginning of social and ritual institutions, and less attention to issues like the origin of the Supreme Being himself. It is therefore common to see myth and history overlap as Africans find meaning for their existence always in relation to God their creator and final destiny.

Furthermore, a good examination of creation myths in Africa, as we have seen in the examples above, shows that there is no preoccupation with deep philosophical analysis of the origin and nature of the creative and personal principle identified with the Supreme Being. The Abaluyia myth simply says that *Wele Xakaba*, the giver of all things, created the world while in the Fang myth, *Nzame* is the beginning of all things. In

the same way the Dogon cosmogony states that *Amma* was there at the beginning but does not go into detail about how *Amma* himself came into existence. It is therefore clear that some of the questions that preoccupy the minds of Western philosophers and theologians about the origin of the creative principle with regard to its nature as “uncaused cause” or “self-existent being” remain largely unanswered in African mythology.

Some of the creation myths show the influence of ideas from the Eastern and Western cultures. In the Bushongo myth, “Bumba vomits the world.” The myth says that *Bumba*, while creating human beings made one of them white like himself. In this creation myth, the white skin is identified with the color of the creator. This, according to Sproul, is a result of European influence.⁶⁷ Another example of external influence in some of African creation myths is the influence of Christianity found in creation myths of “paradise lost” or the withdrawal of God from the world. The difference however is that while in the Genesis creation accounts, Adam and Eve are expelled from the garden of Eden, in African cosmogonies, it is God who, out of frustration and anger, withdraws from the world. Both however blame this on human misbehavior and disobedience. Parallels between the Genesis account and many African creation myths are discernable as we see familiar patterns of creation, disobedience/rebellion, then disruption of creation and restoration. However it is sometimes difficult to tell if all of these are as a result of external influence from one culture to the other or that some of these patterns show a more or less natural universal way that creation is perceived across the board regardless of geographical location or cultural background. What is even more interesting, especially with regard to African creations myths, is the fact that these creation accounts

⁶⁷ Barbara C. Sproul, *Primal Myths* (San Francisco: HarperCollins, 1991), 44.

were transmitted through oral tradition, from one generation to another, long before the advent of the Europeans. Therefore they pre-date written traditions in the Western world.

A major contribution of African cosmogonies to the rich tradition of stories of creation around the world is the African worldview of unity and harmony in creation. From the ontological perspective, the unity and harmony in creation is based on what, in Bantu philosophy, is understood as the concept of “organic universe.” As Nkurunziza aptly states this point in his observation:

The Bantu organic universe is an intuitive unity without confusion of both the visible and the invisible world; the visible world is continuous with the invisible world. It is a wholeness and a unity of both the spiritual and physical world. The visible planet on which man lives is inconceivable without the infiltrating power of the invisible world.⁶⁸

It is on the basis of these that the African worldview of unity and harmony of beings is conceived --- inter-being. One of the goals of interaction and interrelation of beings is to maintain a balance in creation as well as unity and peace. For Africans, therefore, cosmogony and community go together. The positive outcome of this mindset is that it creates a condition that leads to mutual strengthening of beings in the world, which in turn enhances growth of life and community. In the African worldview of the organic universe, every being, animate, inanimate, or spirit, affects and is affected by every other being. The well being of one creature is reflected in all other creatures just as a weakness or lack of good condition in one being affects all other beings in the universe. This explains why a major factor in the mode of existence, according to Africans, is participation and profound communion with the universe, as a way of ensuring a life of

⁶⁸ Deusededit R.K. Nkurunziza, *Bantu Philosophy of Life In The Light Of The Christian Message* (Germany, Frankfurt: Peter Land, 1989), 52.

peace and harmony with humanity, nature, spirits, divinities/deities and ultimately with God the creator.⁶⁹

This concept is equally at the center of worship (including oracle consultation and divination) through which humankind maintains an ongoing communication of peace and harmony with all creatures, animate and inanimate, ancestors (and all the dead), spirits, lesser divinities/deities, and with the Supreme Being himself. This is because one's life force depends on the life forces of other persons and other beings, including those of the ancestors and, ultimately, God. Once again, this is a matter of communion and communication, because "the present world is closely connected with the world after death, and one lives in close contact with ones ancestors and other spirits."⁷⁰ Human participation and solidarity, not only with God, the ancestors and other spirits, but also with other creatures in the universe, are essential aspects for the enhancement of life. Charles Nyamiti emphasizes this point when he observed that humankind, in the African worldview, is believed to be intimately related not only to fellow human beings but also to other creatures in the universe. While the universe is conceived as an organic whole

⁶⁹ The emphasis on themes of harmony, relationality and communion, and the appreciation of them as central to the concept of reality may seem new in modern Western thought but the idea of interconnection and interrelatedness of things in general, has always been part of the worldview of many traditional societies around the globe. The idea that things are generally connected and related, either directly or remotely, is present among native American Indians, African and Asian cultures and other traditional cultures around the world. This is the basic theme behind the work of scholars as articulated in the book, *Indigenous Traditions and Ecology: The Inter-being of Cosmology and Community*. As the subtitle of this book suggests, the scholars researched the concept of "inter-being" as understood by traditional societies in their worldview -- a relational concept of reality—and applied it to the problem of ecology. For further discussion on this topic consult John A. Grim, ed., *Indigenous Traditions and Ecology: The Inter-being of Cosmology and Community* (Cambridge Massachusetts: Harvard University, 2001). It is important however to add here that although the concept of interconnection and interrelatedness always existed in traditional societies around the world it was not put in the context of highly sophisticated philosophical analysis as it is being analyzed in scholarly interchange and discuss today. In this dissertation I have chosen to address the concept of "inter-being" from the perspective of African tradition, as an example, because this is my background and therefore the one that I am most familiar with). This example of the concept of "inter-being" ---- interconnection and interrelation of things, as an insight from African worldview, will be developed in chapter four where I make a proposal for a theology of evolution.

⁷⁰ Charles Nyamiti, *The Scope of African Theology* (Kampala: Gaba Publications, 1973), 20-21

made up of supra-sensible or mystical correlation among those who dwell in it and participate in its activities. These participations and relationships intricately woven throughout creation are what give meaning to life.

One form of existence, when considered in isolation without relations to other forms or beings, is seen as incomplete and inauthentic. Things are conceived as symbols of each other. Symbols, on their part, not only unify the objects they symbolize, but also believed to participate somehow in the reality which they express.⁷¹

The analysis of creation myths in A.T.R. provides yet another perspective to the discussion of the origin of the universe, Earth's life forms and of human life. Although the perspective of African cosmogonies is of great relevance to this discussion, it is only one topic of interest, therefore, it must be considered in relation to the insights of Christian creation theologies addressed in Chapter One and scientific theories of evolution analyzed in Chapter Two.

Aside from the fact of personal familiarity, the choice of African cosmogonies as an example of cosmogonies from traditional societies in the world is because a good analysis of African cosmogonies demonstrates how they identify some of the key elements that are relevant to this study. First, the seed-based/egg-based cosmogonies such as the Dogon creation myths, indicate that creation follows a developmental process which reveals the evolutionary pattern inherent in creation. Secondly, the wonder of creation is revealed in the awesome nature of the universe, of earth's life forms and of human life, in particular, all of which point to the element of mystery which reminds us that after all is said and done, there are aspects of creation that will always remain beyond human comprehension. African cosmogonies use myths, symbols, proverbs, songs and

⁷¹ Ibid., 20-21

parables to express this mystery of creation. Finally and most importantly, African cosmogonies demonstrate that there is a chain of interconnection, interdependence and interaction through out creation with God the creator as the beginning and the end of it all.

One of the methods being applied in this study is “comparative-dialogic” by which the three perspectives on the question of origins --- scientific evolution, creation theologies and African cosmogonies --- are being compared and made to dialogue with each other. The goal is to identify the areas of common ground and compatibility in these three perspectives on the question of origins and build on them to develop a theology of creation. The treatment of African cosmogonies completes the three perspectives thereby paving the way for developing an authentic and viable theology of creation, which will be addressed in the next chapter, hence the title “Towards a Theology of Evolution”.

CHAPTER FOUR

TOWARDS A THEOLOGY OF EVOLUTION

Introduction

In the last three chapters, the question of the origin of the universe and of humankind was examined and analyzed from the perspectives of Christian tradition, scientific theories of evolution, and African cosmogonies respectively. This chapter will synthesize the major themes of the first three chapters with the view of developing a proposal for an authentic and viable theology of evolution.

From the perspective of the models of relationship between science and religion, it is noted that the “conflict” model insists that science and religion are fundamentally incompatible, and therefore in conflict with each other.¹ A second model, commonly entitled “contrast” or “independence,” holds that science and religion have different objectives and methodologies and therefore must be allowed to go their separate ways. However, a third and fourth models, “contact/dialogue” and “confirmation/integration” advocate a recognition and development of the common grounds and areas of compatibility between science and religion. This dissertation holds that the third and fourth positions are the most appropriate for a theology with a focus on the relationship

¹ In the “General Introduction” to this dissertation, the “Models of Relating Science with Religion” (the world of science with the world of religion) are examined in detail. The sources used in treatment of these models are as follows: Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues*, 77-105, 243-24249; John F. Haught, *Science and Religion: From Conflict to Conversation*, 3-4; and Zachary Hayes, *The Gift of Being: A Theology of Creation*, 18-22.

The relevance of the treatment of models of relationship is that the position of a model such as “conflict” raises some important questions: How do scientists conceive of their own methods? Are scientific methods claiming that it is only through scientific research that we have access to reality? It also hinges on how biblical literalists conceive of God. Is God a totally transcendent deity who intervened to create each species individually? Both of these extremes are problematic. The models of contact/dialogue and confirmation/integration therefore seek to avoid these extremes by developing areas of compatibility, common grounds and middle grounds, hence their importance in the development of a theology of evolution.

between creation and evolution. Contact/dialogue and confirmation/integration have much to offer to an authentic and viable theology of evolution.

The main position of this dissertation, which will be developed more fully in this chapter, is that evolution is the mechanism of divine creativity. Put simply, God creates through the process of evolution. The theology of evolution proposed in this study rejects the “conflict” and “independence” models of relationship. Based on the insights from the contact/dialogue and confirmation/integration models of the theology-science relationship, this chapter will therefore develop a theology of evolution based on the position stated above. Hence, what is proposed is a form of “theistic evolution” that captures conceptually what is meant by “divine creativity.”² To provide backing for this proposal, it is necessary to address the following major questions:

1. How is God the creator to be understood in the context of evolution and within the framework of an evolving universe?
2. What understanding of creation fits into the framework of theistic evolution?
3. What is the place of humankind in the whole drama of an evolving universe?

As these questions are addressed in the three parts of this section, the basic themes for the development of a theology of evolution will be identified based on the understanding of

² In the book, *Evolution From Creation To New Creation* (Nashville: Abingdon Press, 2003), 115-117. Ted Peters and Martinez Hewlett make an analysis of the different nuances in the use of the term “theistic evolution”. However, the general usage falls under the umbrella of any understanding of creation that identifies common grounds between scientific theories of evolution and Christian faith, and reconciles the insights from both aspects for a better and richer understanding of God and the universe and all that is contained in it. It is in this understanding of affirming divine creativity and divine providence in evolutionary history that the term “theistic evolution” is used in this dissertation. This is what I like to call *Creaevolution* -- coined from the words “creation” and “evolution”--- a word that includes every letter from the two original words, creation and evolution. The verb would be “to *creaevolute*.”

the concept of God as a Trinitarian communion with mutual relations. Further, the evolving universe as a *vestigium Dei* and humankind as *imago Dei* and created co-creator will be explored.

4.1 God, the Creator, in the Theology of Evolution

In general, one of the assumptions coming from the scientific theories of evolution, according to some critics, is that the universe, humankind and all of creation are a result of sheer mechanical, accidental and purposeless processes. However, this assumption is not entirely accurate. This position is therefore incompatible with not only the idea of meaning, goal/teleology and ultimate purpose, but also with the view of a loving, gracious and gratuitous Creator-God, the source and origin of the universe. In contrast to this position, theology of evolution firmly insists that the Creator-God is the beginning and the end of evolution. Therefore, proposing that evolution is “theistic” is appropriate.

The worldview of contemporary science as developed in chapter two pointed out that it is the consensus among scientists that the universe evolved over the last thirteen to fifteen billion years from the moment of initial explosion, the Big Bang. Following this, life forms started to evolve over the last three and a half billion years by means of genetic mutation and natural selection. This position is different from that proposed in the Bible, especially the initial chapters of Genesis that hold that an all-loving and purposeful Creator-God created the world. This of course is a topic addressed in this study’s first chapter. There are people who hold that there is no need to be concerned

about the relationship between these two positions. This category of people fall under two main groups. On the one hand, we have a good number of scientifically minded people who are so convinced of the findings of scientific theories of evolution that they believe it rules out any need for a Creator-God. Such people are reductionistic materialists. On the other hand, we have those who take the biblical creation accounts so literally that they completely exclude any insights that might come from theories of evolution. Such people are Christian fundamentalists.

These two oppositional approaches are challenged by “contact/dialogue” and “integration/confirmation” conceptions of the theology- science relationship that insist we must identify the common grounds and hold together the insights of both positions for a better understanding of how the universe, and all life forms, including human life, came into existence. To take this position requires a theological framework and an understanding of God, which demonstrates that it is reasonable, enlightening and logical to hold the insights from the Christian tradition, from scientific theories, and from other traditions (for example, African Cosmogonies addressed in Chapter three) together in a unified view. In an attempt to reach this goal, questions such as these will be addressed: How can we conceive of the Judeo-Christian God within the process of evolution and in an evolutionary worldview? What kind of theology of God is faithful to the biblical concept of God, scientific theories of evolution and African cosmogonies and is capable of integrating the insights of all three dimensions? ³

³ Because the principles being applied here to work out this synthesis between creation theology (chapter one), scientific theories of evolution (chapter two) and African cosmogonies (chapter three), as indicated before, are those of contact/dialogue and confirmation/integration, in each section, a segment on “evolutionary and process thought” is examined, to highlight the insights of Pierre Teilhard de Chardin (1881-1955) and Alfred North Whitehead (1861-1947). Teilhard, in his epic vision, remains the most thoroughgoing and painstaking individual who presents a landmark and revolutionary synthesis of science and religion (scientific theories of evolution and Christian theologies of creation) marking him

To address these questions therefore, it is necessary to identify some of the attributes of God that will make a theology of God within an evolutionary worldview appropriate.

A) A God of evolution will have to be, first and foremost, a triune God of communion who exists in mutual relations, and this will be the focus of the first part of this section.

B) Secondly, a God of evolution will have to be a God that is conceived within the context of reality defined not only by the term “being” but also “becoming” as developed in process and evolutionary thought, and this will be addressed in the second part of this section.

C) Thirdly, a God of evolution will have to be a God understood within the concept of the metaphor of Supreme Vital Force⁴ -- the life and animating force that is the source and sustainer of existence of being— as articulated in African philosophy, which brings in the insight from the perspective of indigenous societies.

4.1.1. God as Three-Persons- in Mutual Relations

The understanding of God captured by the concepts of communion and Persons–in-mutual-relation are among the pivotal symbols of God at the center of the Christian faith as expressed in the theology of the Trinity. These concepts form the most powerful traditional symbol in Christianity and therefore have enormous significance and consequence for the understanding of God, God’s relationship with the universe, and the well-being and destiny of creation. Because of this, it is important to begin this section

out as champion of champions in articulating the principles of contact/dialogue and confirmation/integration.

⁴ “Vital force” here is understood in the sense of a metaphor as developed by Placid Temples to explain the African understanding of “the basic concept of the ultimate nature of being”. The same understanding is then applied to African concept of God and how he functions in relation to the universe. Placid Temples, *Bantu Philosophy*, translated by A. Rubbens (Paris: Presence Africaine, 1969), 8.

with a brief analysis of the use of the symbol “person”⁵ and the debate surrounding its application, especially in relation to the concept of the three Persons in the Trinity. This analysis will then help to situate the position of this chapter in the use of the term “person” and its application in the concept of “Persons” in the Trinity with focus on the themes of communion and relationality.

One of the major challenges of the theology of the Trinity down through the ages is to understand the term “person” as used in the Trinity without interpreting it in ways that might lead to heresies such as tritheism – three Gods instead of three persons in one God, or modalism – that the three Persons in God is only an intellectual abstraction, a distinction existing only in the mind.⁶ Because of the long standing debate in both philosophy and theology about the meaning of the term “person” and the weaknesses that arise from it being erroneously interpreted, especially in relation to the Trinity, some scholars, such as Karl Rahner, Karl Barth, and Nicholas Lash for example, have expressed dissatisfaction over the use of the term, as Barth and Lash among others call for replacement of the term.⁷

⁵ The use of the term “person” with reference to God as Trinity is traceable to Tertullian (c.155-c.240) who coined the language “one substance in three persons” but lacked consistency in his choice and use of terms for the three in God. *Against Praxeas*, [PL2, 167 0D]. See John D. Zizioulas, *Being As Communion* (New York: St. Vladimir’s Seminary Press, 1993), 36-37.

⁶ Gerald O’Collins, SJ and Edward G. Farrugia, SJ. *A Concise Dictionary of Theology* (New York/New Jersey: Mahwah, Paulist Press, 2000), 162, 275.

⁷ Rahner observes that God is the ultimate self-consciousness with an absolute subjectivity that exists in three distinct ways, the: “one self-communication of the one God occurs in three different manners of given-ness”. He did not call for removal of the term “person”, from Trinitarian discourse but suggests that the terminology, “three distinct manners of subsisting” be used in conjunction with it, so that it “may serve the purpose of overcoming the false opinion [of] what is meant by “person””. Karl Rahner, *The Trinity*, translated by Joseph Donceel (New York: Herder and Herder, 1970), 109-115. Barth on the other hand calls for replacement of the word “person” and suggests an alternative formulation of the “three modes of being” in God. He observes that this is the equivalence of the ancient Greek formula, *tropos hyparxeos*, which means, relation of origin. Karl Barth, *Church Dogmatics* (Edinburgh: T&T Clark, 1975), 1:359. & Nicholas Nash, *Believing Three Ways in One God* (London: SMC Press, 1992), 31.

Due to the scope of this dissertation, however, it is not necessary to go into the details of the arguments for and against the retention of the term “person” in the Trinity. This analysis shall therefore be limited to the concern about the use of the term “person” as it relates to the argument for the themes that are being developed in this work, namely communion and relationality. The main concern of this chapter in this regard is that the term “person” in its traditional usage might be interpreted in ways that weaken the themes of communion and relationality that are central to any authentic understanding of the theology of the Trinity, and consequently, the theology of evolution. It is therefore important at this point to identify some of the positions presented in this debate on the use of the term “person” in the Trinity. Two main groups of scholars are identified. The first group of scholars expresses dissatisfaction for the use of the term, and some among this group argue for its replacement, while the second group of scholars argues for the retention of the term.

Nicholas Lash is among the scholars who argue for the replacement of the term “person.” In his argument, he states:

Not only does the concept of “person” misleadingly give the impression of telling us something about God which we would not otherwise have known, but the information that it seems to give is false. For us a person is an *individual agent*, a conscious center of memory and choice, of action, reflection and decision. But when we say that there are, in God, “three Persons”, we do not mean that God has, as it were, three minds, three memories, three wills.⁸

Like Lash, Elizabeth Johnson also expresses serious concern about the use of the term “person”. She states:

Person is perhaps the least convenient of labels but it is highly inadequate, in fact, improper... To say that God is three “persons” inevitably gives rise to the picture of God as three distinct people

⁸ Nicholas Lash, *Believing Three Ways in One God* (London: SMC Press), 32.

with separated consciousness who are [only] personally interrelated and somehow one. Tritheism is endemic.⁹

While Johnson does not seem to directly advocate the replacement of the term “person” as Nicholas Lash does, it is evident that she is dissatisfied with the use of the term because of the danger of the heresy of tritheism, but, more importantly, from the point of view of this work, she is concerned that the term “person” suggests individual and “separate consciousness” that leaves little or no room for the themes of communion and relationality in the Trinitarian Godhead. Nicholas Lash on the other hand minces no words as he calls for outright replacement of the term “person”. Again, like Johnson, the concern of Lash seems to include the danger of interpreting the term “person” as an “individual agent” that does little or no justice to the themes of communion and relationality in the Trinitarian Godhead.

The second group of scholars, William Hill and Walter Kasper, for example, argue for the retention of the term “person” in the Trinity.¹⁰ Among this group of scholars is William Hill who counters the argument of those who say that the evolving understanding of the term “person” from studies in fields such as psychology and philosophical anthropology has rendered the term grossly inadequate to convey the desired meaning in the context of the Trinity. Against this position, Hill insists that the opposite is in fact the case. He believes that because of new research into the understanding of the term “person” in psychology and philosophical anthropology, the meaning of the term has also evolved and become richer as it reveals deeper meanings

⁹ Elizabeth Johnson, *She Who Is: The Mystery of God in Feminist Theological Discourse* ([New York: Crossroad, 1992), 203. (The word *only* in bracket is my addition). See also, Elizabeth Johnson, “Trinity: Let the Symbol Sing Again”, In *Theology Today* 34, no. 3 (1997), 304-305.

¹⁰ William Hill, *The Three-Personed God: Trinity as a Mystery of Salvation* (Washington: Catholic University of America Press, 1982), 222 & Walter Kasper, *The God of Jesus Christ*, translated by Matthew J. O’Connell (New York: Crossroad, 1991), 288.

than previously conceived. ¹¹Listing the merits of the use of the term “person,” Hill states that it demonstrates an “extension of consciousness of self and others,” a “greater emphasis on relationality” and a “focus on intersubjectivity”.¹² These are important examples of the continued relevance of the term “person,” because it is more expressive of the depth and truth of the mystery of the triune God.

Among the most ardent supporters of the term “person”, however is Walter Kasper. In his argument in favor of retaining the term “person”, Kasper states:

Person is the highest category we have at our disposal. We can predicate the category in an analogous way...The category of person has three positive values. As a person, God is subject and is utterly and irreplaceably unique...The concept of person precludes any reduction of God to a function ... It gives expression to the glory and the holiness of God... When we define God, the reality that determines everything as personal, we are also defining being as a whole. *The ultimate and highest reality is not substance but relation ... The meaning of being is to be found in self-communicating love.*¹³

In spite of the debate and the apparent dissatisfaction in the use of the term “person” among certain scholars, the term, as Hill, Kasper and others argue, remains essential to the understanding of the Trinity, especially within the concepts of communion and relationality, that are essential for the appreciation of the place of God in an evolving universe and for any viable and authentic theology of evolution. It is from this point of view that the use of the term “person” remains the central concept in this section as the themes of communion and relationality in God are developed.

The logical starting point for a treatment of God as Trinity is the Patristic period. Even though there are some references to God as triune in the Christian Second

¹¹ William Hill, *The Three-Personed God: Trinity as a Mystery of Salvation*, 255.

¹² *Ibid.*, 255.

¹³ Walter Kasper, *The God of Jesus Christ*, 154-156. Italization is mine.

Testament, the Church owes her faith in a Trinitarian theology of God to the enormous contribution of the rich tradition developed by Greek theologians around the concept of “person.” For although the use of the term “person” with reference to the three in God is attributed to Tertullian in the second century, it is the Cappadocian Fathers in the fourth century who played a major role in Christian Trinitarian theology where an understanding of “persons in God” is concerned. It is therefore fitting for John D. Zizioulas to testify to the contribution of Greek theology to Trinitarian theology with these words: “With a rare creativity worthy of the Greek spirit they gave history the concept of the person with an absoluteness which still moves modern man...”¹⁴ This “rare creativity” demonstrated in the theology of the Greek Christian tradition in explaining the relationship of the three Persons in one God, is built around the concepts of the Greek terms, *Perichoresis* (περιχώρησις) and *Koinonia* (Κοινωνία).¹⁵

4.1.2. Communion and Relationality in God in the Greek Christian Tradition

The Christian tradition has always upheld a rich and comprehensive concept of God, a God who is not just a self-sacrificing and self-emptying God but also a God of mutual Trinitarian love who engages in a reciprocal give-and-take relationship. A theology of God that is compatible with an evolutionary worldview is one that emphasizes the Trinitarian vision of God as a God of communion in love and a God of mutual relations. Among the important legacies of the Greek Christian tradition to the

¹⁴John D. Zizioulas, *Being As Communion*, 35.

¹⁵ *Perichoresis* (περιχώρησις) is a Greek term used by Gregory of Nazianzus (329-389) but acquired its full technical meaning with John Damascene (ca.675-ca. 749). It refers to the mutual and reciprocal presence, a dynamic mutual interpenetration and interrelationship, the indwelling and being-in-one-another of the Trinitarian Persons. (Gerald O’Collins, and Edward Farrugia, *A Concise Dictionary of Theology*, 199). In a similar way, the Greek word, *Koinonia* (Κοινωνία) conveys the profoundly rich meaning of communion, interrelationship and fellowship as they exist between the three Persons in one God, Father Son, and Holy Spirit.

understanding of God is the development of the themes of communion and relationality in the divine Godhead. This fact accounts for the choice of this example in the development of this section.

The life of communion and mutual relations in God is not confined to the divine God-head alone but made available to creation and to humankind in particular in the mystery of creation and more profoundly in the mystery of the incarnation in and through which humanity is taken up in the life of God himself. This important insight is expressed in these words:

The life of God ---precisely because God is triune---does not belong to God alone. God who dwells in an inaccessible light and eternal glory comes to us in the face of Christ and the divinity of the Holy Spirit. Because of God's outreach to the creature, God is said to be essentially relational, ecstatic, fecund, alive as passionate love. Divine life is therefore also our life. The heart of Christian life is to be united with the God of Jesus Christ by means of communion with one another.¹⁶

In their quest for a better understanding of the relationship between the three Persons in one God (Father, Son, Holy Spirit) the Greek Christian tradition employed the use of two important terms, *perichoresis* and *koinonia*, --- the dynamic mutual interrelationship and communion between the three Persons. These two terms not only enrich our understanding of the three persons in one God, but they also convey, in a profound and meaningful way, the concepts of communion and relationality in the divine Godhead that are essential to the development of a theology of evolution. Commenting on the importance of the term *perichoresis* in the understanding of communion and

¹⁶ Catherine Mowry LaCugna, *God For Us: The Trinity and Christian Life* (San Francisco: HarperCollins Publishers, 1991), 1.

relationality in the Godhead as developed by the Greek theologians, Catherine M. LaCugna had this to say:

...In the eight century, the Greek theologian, John Damascene used the term *perichoresis* to highlight the dynamic and vital character of each divine person in the other two. The idea of *perichoresis* emerged as a substitute for the earlier patristic notion that the unity of God belongs to the person of God the Father. When the doctrine of the Father's monarchy was attenuated by the Cappadocian doctrine of intradivine relations, the idea of *perichoresis* took its place.¹⁷

The Cappadocian Fathers,¹⁸ argued against the heresies of their time, such as Arianism, by defending the unity, equality and mutual relationship that exists between the three Persons in one God --- Father, Son and Holy Spirit. Building on the Greek philosophical concept of category of relations, the Cappadocian Fathers developed an orthodox theology of divine relations to explain how the Father, Son and Holy Spirit are related to each other, without falling into the heresy of subordination. Richard McBrien puts it like this:

The essence of the Cappadocian doctrine of God...is that the one God exists simultaneously in three ways of being or hypostases. Each of the divine hypostases, or Persons, is the *ousia* or essence of God; these Persons are distinguished from one another only by their relationship to one another, and those relationships are determined, in turn, by their origins. Thus, the Father is different from the Son in that the Father is unbegotten, while the Son is begotten by a process of generation; the Son is different from the Spirit in that the Son is generated while the Spirit proceeds from the Father [through the Son].¹⁹

A further clarification of the relationship between the three Persons in one God is given by John Damascene who makes a good summary of his position on the relationship

¹⁷ Catherine Mowry LaCugna, *God For Us*, 270.

¹⁸ The Cappadocian Fathers were Basil the Great (c.330-379), his brother, Gregory of Nyssa (c.335-395) and his friend, Gregory of Nazianzus (c.329-389).

¹⁹ Richard McBrien, *Catholicism*, New Edition, (San Francisco: HarperCollins Publishers, 1994), 292.

between the three Persons in one God, by stating that the three subsistences [i.e., the three Persons] dwell together and are established firmly in one another. They are inseparable and they cannot part from one another. They keep to their separate courses within one another, without coalescing or mingling, but cleaving to each other. The Son is in the Father and the Spirit. In the same way the Spirit is in the Father and the Son. Similarly, the Father is in the Son and the Spirit. However, there is no coalescence or commingling or confusion. Among them, there is one and the same motion: for there is one impulse and one motion of the three subsistences, which is not to be observed in any created nature.²⁰

The concept of *perichoresis* therefore suggests a circle of divine love in *koinonia* --- the intimate communion of reciprocal relations that defines the being of the three divine Persons. This is a communion in which unity and diversity are directly related to each other rather than being opposed to one another. *Perichoresis* and *Koinonia* indicate a type of relationship in which individuality and diversity find full expression in the very communion of the Trinitarian Persons. It underscores a relationship in which the three Persons, being-in-one-another, enjoy a dynamic union and shared life.

Regarding the importance of the concept of *perichoresis*, Elizabeth Johnson argues that the Trinity:

...constitutes the permanent, active, divine *koinonia*, and therefore serves as an excellent model for free human interaction in society. This interaction of human beings in

²⁰ John of Damascus, *Trinity in his Exposition of the Orthodox Faith* OF 1.14; *Exposition of the Orthodox Faith*, trans. S. D. F. Salmond, in *The Nicene and Post-Nicene Fathers*, Second Series, eds. Philip Schaff and Henry Wace, vol. 9 (Grand Rapids: Eerdmans, repr. 1989), 1.14.

freedom is then a reflection of the life of the Trinity where all three distinct Persons exist in each other in an exuberant movement of equal relations.²¹

The themes of communion and relationality in the divine Godhead as articulated by the early Greek theologians not only enrich our understanding of the relationship among the three Persons in one God, but also and more importantly, help to situate the central theme of this chapter – a theology of evolution. This is because the relational view of God is an important point of contact with the evolutionary mechanism of the universe, addressed in chapter two, in which reality as a whole is understood within the context of interconnected and interdependent relational process.²² Because God is the source of being and the creator of the universe, which is the position articulated in chapter one,²³ communion and relationality that exist in the Godhead is carried over into the very being of his handiwork, creation – the evolving universe and all that is contained in it. Denis Edwards puts it like this:

²¹ Elizabeth Johnson, *She Who Is*, 220.

²² Denis Edwards, *The God of Evolution: A Trinitarian Theology* (New York/Mahwah, N.J: 1999), 24-25. The second chapter of this dissertation developed the insight of Big Bang cosmology which holds that the origin of the universe and all that is contained in it is traceable to the moment of initial singularity of the explosion about fifteen billion years ago, thus affirming the interconnection and interrelatedness of all things. In a similar way, biological evolution, also addressed in chapter two, affirms the interconnection, interrelation and interdependence of all life with higher and more complex life forms evolving from lower and simpler life forms. The interrelatedness in the cosmos is therefore a reflection of communion and relationality in the divine Godhead.

²³ The first chapter, “Christian Theologies of Creation,” developed the position and belief in Yahweh God as creator and redeemer based on the Hebrew and Christian Bibles and the teachings of theologians and the Church. In this first chapter a deliberate emphasis is placed on the inseparable connection between creation and redemption, because the goal and fulfillment of creation is in the act of redemption. Guided by the principles of contact/dialogue and confirmation/integration, the same principles being applied in this chapter, Ted Peters and Martinez Hewlett argue that, for any theology of evolution to be complete, it must include redemption: “Evolutionary history gives evidence that this creation is still underway, not yet complete, not yet what God in Genesis would deem ‘very good’. Creation requires redemption”. *Evolution from Creation to New Creation*, (Nashville: Abingdon Press, 2003) 158-160. Redemption completes creation/evolution (creaevolution). Evolutionary history therefore looks up to that moment of completion, that final moment which Teilhard de Chardin calls *Omega Point*.

If the essence of God is relational, if the very foundation of all being is relational, if everything that is springs from Persons-in-Relation, then I would argue that this points toward a fundamental understanding of created reality which might be called an ontology of “being-in-relation.” In such an understanding of reality, not only is God Persons-in-Relation, but each creature can be understood as being-in-relation.²⁴

It is this understanding of God within the concepts of communion and mutual relations that fits into an evolutionary worldview, and therefore forms the basis of an authentic and viable theology of evolution.

In concluding this section therefore, the basic theme of this discussion is iterated. The concepts of communion and relationality in the divine Godhead developed by the theologians of the Greek tradition took on a more philosophical dimension in what is referred to as a revolution in the understanding of being.²⁵ The understanding of being as a whole takes on a more relational, interconnected and dynamic meaning than previously appreciated. This new appreciation of the concept of being that gives an additional appreciation to the understanding of God and his relation to creation, will therefore be addressed in the next section using examples of the works of John Zizioulas, Catherine Mowry LaCugna, and Richard of St. Victor.

²⁴ Denis Edwards, *The God of Evolution: A Trinitarian Theology*, 27- 28. Denis Edwards reminds us that this position is also found in the works of Walter Kasper, *God of Jesus*, trans. Matthew J. O’Connell, (New York: Crossroad, 1991)290 & 320; and Colin Gunton, *The Promise of Trinitarian Theology*, (Edinburgh: T&T Clark, 1991)142-161. Much earlier, Augustine used the term *relations* in his analysis of the Trinity. “Although to be the Father and to be the Son are two different things, still there is no difference in their substance, because the names, Father and Son, do not refer to the substance but to the relation, and the relation is not accident because it is not changeable.” *De Trinitate*, 5.5.6 (PL, 42, 914.). Furthermore, Augustine states: “Whatever in that divine and exalted sublimity is said in reference to Himself is said according to the substance; but what is said in reference to something else does not refer to a substance but to a relationship.” *De Trinitate*, 5.8.7 (PL42, 915); also 5.11.12 (PL 42, 918). See also LaCugna, *God For Us: The Trinity and Christian Life*, 83-91.

²⁵ John D. Zizioulas, *Being As Communion*, 36.

4.1.3. Relationality and Communion as Bases for a God of Evolution

In the Scholastic philosophical tradition, the ultimate principle of reality is “substance.” However, with the development of thought, especially in philosophy and theology, came the gradual realization of the inadequacies of this assertion. Part of this is because the concept of substance tends to confine reality to a fixed, determined, static and solitary condition. Real or true being within the concept of substance is understood as one in the solitary sense. Multiplicity or plurality in being is therefore looked upon as less being, as moving toward non-being. The dissatisfaction over the definition of reality within the concept of substance, especially as it is used in theological discourse, led to a new insight into the nature of reality that is now understood within the concept of relation, because this ontology conceives of being not just as solitary substance but within the context of relation and communion.

In philosophical theology, some scholars²⁶ developed the concept of relation as an ontological basis of reality thereby departing from the traditional Western metaphysics of substance and replacing it with “a strikingly modern conception of reality as a dynamic network of dispositional forces and habits” operating together in a common nexus of relations. This ontology is applied to the Trinity thereby introducing the principle of “dynamism into the very being of God”, a dynamism that is “exercised through the inner

²⁶ Jonathan Edwards (1703-1758) was an American philosopher and theologian who was also a Pastor. Edwards who was third president of Princeton University deeply influenced Congregational and Presbyterian theology in America. “The most innovative element in Edwards’ dynamic perspective on reality is that it is a dispositional conception. Dispositions and habits . . . can mediate between being and becoming, permanence and process. The mediating capacity of Edwards’ ontology functions in his philosophical ontology, enabling him to reaffirm in the strongest possible terms his theological tradition within a thoroughly modern philosophical framework”. Sang Hyun Lee, *The Philosophical Theology of Jonathan Edwards*, (Princeton, New Jersey: Princeton University Press, 1988), 4. Edwards is therefore considered one of the great scholars in philosophical theology who contributed to the shift in emphasis from the traditional Western Metaphysics of relation and form to the ontology of relations.

Trinitarian relationships”.²⁷ This position is supported by other scholars who observe that relationality is inherent in the doctrines of the Incarnation and Trinity, therefore, not a new concept for Christian theology.²⁸

The ontology of relations is equally developed in the work of John D. Zizioulas who built on the insight of the Cappadocian Fathers who made a breakthrough by applying the concept of relations to the three Persons in the Trinitarian Godhead.²⁹ The appreciation of the importance of this breakthrough is seen in the fact that it is called a “philosophical landmark, a revolution in Greek philosophy.”³⁰ Accordingly, this section will conclude with a brief review of the contribution of the following theologians: The Orthodox theologian, John D. Zizioulas who drew on the insight of the Cappadocian Fathers; Catherine Mowry LaCugna, who in turn drew on Zizioulas, is important here because of her insight from the feminist and liberation perspectives, and emphasis on redemption; and Richard of St. Victor, because he introduced a new dimension to the discussion of the ontology of relations by addressing it from the perspective of communal relationship of love and friendship in the life of the triune God.

²⁷ Sang Hyun Lee, *The Philosophical Theology of Jonathan Edwards*, (Princeton, New Jersey: Princeton University Press, 1988), 3-14.

²⁸ F. LeRon Schults, *Reforming Theological Anthropology: After the Philosophical Turn of Relationality* (Cambridge, UK: B.Eerdmans Publishing Company, 2003), 11. Schults, who addresses the theme of relationality primarily from the perspective of theological anthropology, observes that the concept of relation is not entirely new but in traditional philosophical discourse, substance was privileged over relation. He attributes the beginning of the turn to relationality to the works of philosophers such as Jonathan Edwards (1703-1758), and later, Immanuel Kant (1724-1804) and George W.F. Hegel (1770-1831) whose ideas contributed to the new appreciation of relationality as an explanatory category. 11-36. As Schults suggests in the introduction to his book, theological discourse played a major role in the shift of emphasis from a substance-based ontology to a relation-based ontology. In this dissertation, I am developing the relation-based ontology because I believe it is the best ontological model for understanding the concepts of God, creation and humankind, and consequently the theology of evolution.

²⁹ John D. Zizioulas, drawing on the insight of the Cappadocian Fathers, moves away from the “ontological monism” of ancient Greek thought and develops this new “ontology of relation” as it is applied to the concept of “person” in the introduction and first chapter of his book, *Being as Communion*, [New York: St Vladimir’s Seminary Press, 1985] 29 & 15-65. He credits the Cappadocian Fathers with this insight to the understanding of “person” --- person as relational and in communion.

³⁰ John D. Zizioulas, *Being as Communion*, 36.

In developing this position, Zizioulas insists that contrary to the understanding of being in the Scholastic tradition, it is communion rather than substance that is the fundamental ontological concept, the very basis of being --ontology. This argument, according to Zizioulas, is based on the nature of God himself, the source of being. God's being is communion. This communion is not just a notion added to the divine substance or something that follows it, but a "primordial ontological concept." Emphasizing this same point he states again, "The substance of God, 'God', has no ontological content, no true being, apart from communion."³¹ John D. Zizioulas situates his theological work within the context of the human quest for a better and fuller meaning of person and personal identity in the modern world. This existential quest of humanity for the meaning of person is addressed in the first chapter of his work, *Being and Communion*, which is titled, "Personhood and Being." To situate the discussion of this theme, he then makes an analysis of the concept of reality, in which he turns around the ancient Greek thought which states that being is substance, by developing the idea that in the final analysis, the "oneness" of being is not in the solitary sense, but a "oneness" that is ultimately inclusive – encompassing all other aspects of being, thereby making room for multiplicity and plurality in being that is relational. This relationality is traced back to God the creator and applied to the concept of "Persons" in the Trinitarian Godhead by the Cappadocian Fathers who taught that "the being of God is a relational being." And this became the basis for Zizioulas' work on the ontology of relations.

According to Zizioulas, the original insight behind this ontology of relations is traceable to the experience of the Eucharistic communities of the early Church. Coming

³¹ Ibid., 17. See also, John Zizioulas, "The Doctrine of the Holy Trinity: The Significance of the Cappadocian Contribution", in Christopher Schwobel (ed), *Trinitarian Theology Today* (Edinburgh, T&T Clark, 1995), 44-60.

together in worship and prayer around the Eucharistic table gave the members of the community a special experience of God's presence that would otherwise have not been felt if each member was alone by him/herself.³² It is a different experience when one encounters God as an individual from a situation where this encounter with God is experienced within a community of believers in worship and prayer. This experience is made even more profound by the interpersonal love and relationship among the members of the community. That same ecclesial experience inspired the Greek Fathers³³ leading them to develop and articulate this ontology of relations, in that the Fathers "approached the being of God through the experience of the ecclesial community, of *ecclesial being*." Commenting further on the importance of this community experience, Zizioulas observes that: "this experience revealed something very important: The being of God could be known only through personal relationship and personal love. Being means life, and life means *communion*."³⁴ Because God is a being that exists in communion and mutual relationship of love, it is no surprise that any profound and meaningful experience of him is possible only in and through a community. Communality and relationality as the ultimate principles of being exist in God in the most perfect way and forms the basis of

³² John D. Zizioulas, *Being as Communion*, 16-17.

³³ *Ibid.*, 16. Zizioulas used the term "Fathers" here to include not just the Cappadocian Fathers, Basil the Great, Gregory of Nazianzus, and Gregory of Nyssa, but Athanasius of Alexandria as well, all of whom worked to develop the doctrine of the Trinity, 17. The Greek Fathers developed their theology of the Trinity based on reflection on the concept of God in the Bible, the communal/ecclesial experience and the philosophical principles from the Greek worldview. But then, it is important to note that the concept of the Trinity as such, developed in the 4th century, does not exist directly in Scripture. However, scholars such as Richard McBrien observe that while it is not justified theologically to suggest that the Hebrew Bible contains Trinitarian teachings, the manner in which certain divine forces such as the *spirit* of God, the *word* of God, and the *wisdom* of God are used not merely as intermediate powers between God and the world, albeit distinct from God himself, provide the possibility for later understanding of God as triune. McBrien, *Catholicism*, 278-283. In the Christian Bible, the doctrine of the Trinity, as such, does not exist either. What we have is the identification of Jesus and the Holy Spirit with God that formed a basis for later development of the doctrine of the Trinity in the 4th century. Some of the references to the three Persons: Father, Son and Holy Spirit, in the Gospels, for example in Matt. 28: 19-20, according to some Scripture scholars were probably later additions.

³⁴ *Ibid.*, 16.

being in creatures, albeit in a less perfect way, because God is the creator and the source of being in creatures.

Having examined the contribution of Zizioulas, this brief survey will shift to include the insight of Catherine LaCugna who makes an equally important contribution, first, by introducing the feminist and liberation perspectives into the discussion of the ontology of relations, and secondly, by emphasizing the redemptive aspect of the theology of the Trinity. LaCugna situates her theology of the Trinity within the context of the economy of salvation, stating that “the proper subject matter of the doctrine of the Trinity is the encounter between the divine and the human persons in the economy of redemption.”³⁵ Creation is the work of the triune God. But creation, as it is, is not complete. This is also affirmed by the insight from evolutionary worldview, therefore serves as a point of contact and dialogue between theology and scientific evolution. The point of completion of the work of creation is at the pole of redemption. It is the redemptive work of the Trinity, working in communion of mutual relationship, which completes the work of creation. And to this, LaCugna draws attention.

From the perspective of feminist and liberation theologies, LaCugna raises this concern:

... While every human being is created in the image of a personal God, and while from a theological perspective persons-in-communion may be a *vestigium trinitatis*, the vital analysis of liberation theologies – especially feminist and Latin American- shows that not every configuration of person-in-relation images God. Indeed, many do not and many structured societies destroy or inhibit full personhood. Many societies are, in a word, antithetical to divine life.³⁶

³⁵ Catherine M. LaCugna, *God for Us*, 304-305.

³⁶ Catherine M. LaCugna, *God For Us*, 266. In this, LaCugna draws on the insight of Augustine who taught in *De Trinitate* that creatures are *vestigium trinitatis*.

This important critique of the social order, as LaCugna observes, is not developed in the work of Zizioulas.³⁷

The creation account in the book of Genesis, addressed in the first chapter of this dissertation, clearly affirms that God created human beings, male and female, in his image and likeness (1:27). The practice of sexism, racism and classism that exist today shows a result of deviation from the original plan of God. In sexism, the male dominated society creates an environment that does not allow females to live out their full potential as people made in the image and likeness of God. Similarly, the identification of a particular creed, race or class of people in the society as normative leaves little or no room for the segment of people outside this group to actualize their potential as people created in the image and likeness of God. If relations are ontological, prior to individual or particular entities, then any act against the community and relational life characterized by love is a violation of the very nature of being and the intension of the author of being who is God. This calls for a change of the attitude of “lording-over” or “power-over” that is exhibited by certain segments of people in the society.

The last of the three theologians being examined in this section is Richard of St. Victor (d. 1173). The significance of Richard’s contribution is that he introduced another dimension to the discussion of the ontology of relations by addressing it from the perspective of communal relationship of love and friendship in the life of the triune God.

Drawing on the theme of communion of love in the Trinity, Richard of St. Victor builds on the concept of mutual love of friends and interpersonal love in human experience as a way of understanding the communal relationship of love of the triune God. In human experience the self-transcending love of friendship is a high point of

³⁷ Ibid., 266.

human relationship. This is because the fullness of love and friendship, according to Richard, goes beyond the limitations of self-love, and reaches out in friendship to the other, the beloved. Real friendship and genuine relationship go from the self to the other. Relationality is underscored in the movement from the self to the other. Richard then argues that this concept of friendship and relationality present in human experience is a reflection of what exists in the Trinitarian Godhead in whom this relationality is grounded. Since God is supreme in love, goodness, happiness and glory, there must be in God the supreme and full expression of this self-transcending and mutual love. Such fullness of self-transcending love that exists among the three Persons must be radically and eternally equal and mutual. While this interpersonal, self-transcending and loving relationship is limited and imperfect in human experience, in the Trinity it exists in its perfection and fullness.³⁸

From this examination we can see how Richard demonstrates that the use of person “transposes the analogy between God and the creature from the static domain of nature to the more dynamic sphere of communication, from individual self-knowledge and self-love to interpersonal exchange.”³⁹ Another significance of this insight of Richard of St. Victor lies in the fact that he brings the discussion on the ontology of relations to a basic human level of friendship, love and interpersonal relationships, themes that are of great importance in social sciences. It therefore serves as a significant point of contact/dialogue between science and religion, because the insights of social sciences and

³⁸Richard used this argument to support the existence of three Persons in one God. He states that if there is any kind of mutual love in God, then, obviously there must exist in God more than one or two Persons to include a third Person. This concept he calls *condilectus*. Richard of St. Victor, *The Twelve Patriarchs, The Mystical Ark, Book Three of the Trinity*, translation by Grover A. Zinn (New York: Paulist Press, 1979), Book III. See also Denis Edwards, *God of Evolution*, 21-23; 131.

³⁹William Hill, *The Three-Personed God*, 225-234.

religion together lead to a better understanding human nature in relation to God, and of reality in general. Furthermore, these insights serve to correct the mistake that is sometimes made when theology, especially Trinitarian theology, is removed from daily human experience. Richard of St. Victor reminds us that basic human experience in the areas of love, friendship and interpersonal relationships can serve as a window through which we understand the life of the Trinity.

Another contribution of this discussion to the development of a theology of evolution is that the relational category of the concept of person in this new ontology stands to challenge and to correct the individualistic tradition that has dominated Western theological thought for many decades. Part of the consequence of this individualistic mindset is seen in the ecological crisis as humankind fails to appreciate the significance of the interconnection and interrelation between them and the rest of creation. An ontology of relation helps to underscore the intrinsic connection and relation that exists not only between human beings, or among life forms, but all of creation, animate and inanimate alike, that reflect the life of God the creator who exists in a communion of love and mutual relations.

From the point of view of the principles of dialogue and confirmation being applied in this study, it is important to note that the relational view of God is a significant point of confirmation with science which also understands reality as an interdependent and interconnected relational process. In biology, for example, things are interconnected and interrelated at many levels such as cell, organism and ecosystem. In astronomy, there is interconnection and interrelation in the planetary community (planetary system) as the

origin of everything is traced back to the “primeval atom” of the Big Bang cosmology.⁴⁰ In a similar way, scientists acknowledge that “all living things on Earth share a common biochemistry.”⁴¹

One of the widely accepted examples of interconnection, interrelation and interdependence in nature from biology is the theory of the origin of mitochondria and their place in human life as demonstrated from the research of Lynn Margulis. Mitochondria are minute bodies that exist in the cells that make up the human body. They exist in thousands and hundreds of thousands in each human body cell and serve as storage for energy from where they are released in a controlled way whenever the need arises. Cell biologists found out from their research that the ancestors of mitochondria are prokaryotic cells (cells without a nucleus) such as bacteria. These bacteria date back to about two billion years of existence on earth, but still dominate life on earth today (Ape-like species that developed into humans is dated to be about seven millions years ago, but modern humans evolved only about 200,000 years ago). The offspring of these bacteria in communion with other bacteria dwell in larger eukaryotic cells (cells with a nucleus) that make up the human body.⁴² This is one of many other examples that show why the evolution of life is understood in interrelated and interconnected terms. Examples such as these support the argument that relationality in God is reflected in his handiwork --- the universe and all that is contained in it. The importance of points of contact such as these is affirmed by Patricia

⁴⁰ Denis Edwards, *God of Evolution*, 24-25.

⁴¹ Tarry M. Gray, “Biochemistry and Evolution”, in *Perspectives on an Evolving Creation*, edited by Kieth B. Miller (Michigan: Grand Rapids, William B. Eerdmans Publishing Company) 259-260. Gray goes on to give more examples of interconnection and interrelation in science, for instance, about genetic code, he says, “with a handful of exceptions all organisms share the same genetic code.” 263.

⁴² Richard Dawkins, *River out of Eden: A Darwinian View of Life* (London: Phoenix, 1995) 52. see also Denis Edwards, *God of Evolution*, 24-25.

Fox in these words: “I also want to suggest that contemporary scientific and philosophical understandings of interrelatedness of all created entities create a contemporary climate within which the Mystery of God as Trinity can be received in ways that have literally not been possible before in the history of Christianity.”⁴³

Because of significant points of contact between science and religion as demonstrated in the examples above, it is important for theology of evolution to recognize and reject any trend toward putting evolution and creation in conflict with each other. Since truth does not contradict itself, humanity must rely on the truths of science and religion, in the models of contact/dialogue and confirmation/integration, for a better understanding of the nature of reality, which alone will lead to the satisfaction of their existential quest.

The examination of the works of these theologians mentioned above, brings this section to its conclusion. The importance of the discussion of the ontology of relations is that it affirms that communion is the most fundamental level of being. It is communion that makes things be. Nothing exists without communion. Existence is intrinsically and inseparably tied up with communion. Reality springs from God himself who is communion, Persons-in-Relations. Because God the creator is being in communion, all being following the pattern of their creator, exists as a communion. We cannot conceive of anything as existing only by itself because there can be no true being without communion.⁴⁴ The God of communion, in a dynamic and mutual co-existence in which relationality is central as analyzed above, is the God that fits into the idea of theistic

⁴³ Patricia A. Fox, *God as Communion: John Zizioulas, Elizabeth Johnson, and the Retrieval of the Symbol of the Triune God* (Collegeville, Minnesota: The Liturgical Press, 2001), viii.

⁴⁴ John Zizioulas, *Being as Communion*, 17-18.

evolution. This is the God that theology of evolution seeks to have. As Denis Edwards states:

The God of Trinitarian theology is a God of mutual and equal relations. When such a God creates a universe it is not surprising that it turns out to be a radically relational and interdependent one. When life unfolds through the process of evolution, it emerges in patterns of interconnectedness and interdependence that fits with the way God is.⁴⁵

The other major area of thought where the ontology of relations is evident is process and evolutionary thought. The important insight of process and evolutionary thought is seen in the fact that here also, reality is conceived as being essentially interconnected and interrelated, and therefore bringing yet another significant contribution to the understanding of reality. This in turn provides an additional insight into our understanding of God, creation, and how God relates to the universe. It therefore forms a basis for a theology of evolution from the perspective of process and evolutionary thought. This will be addressed in the next section.

4.1.4. The Concept of God in Evolutionary and Process Thought

In line with the principles of contact/dialogue and confirmation/integration being applied in this chapter to work out a proposal for an authentic and viable theology of evolution, this section on “evolutionary and process thought”⁴⁶ is relevant. This is

⁴⁵ Denis Edwards, *God of Evolution*, 28.

⁴⁶ The basic principle behind process and evolutionary thought is the application of an evolutionary worldview, as opposed to a static worldview, to the understanding of reality. This principle in the tradition of Charles Darwin and Alfred North Whitehead is being applied to theology as developed in the works of scholars such as Pierre Teilhard de Chardin and Charles Hartshorne, to better understand the nature of God, creation, and how God relates to the cosmos (evolutionary and process theology). The application of the basic principles of scientific theories of evolution to theology, as it is done in evolutionary and process thought, is based on a firm belief that these are compatible. The contact/dialogue and confirmation/integration models of relationship between science and religion, being applied in this

because it offers a good opportunity to draw on the works of Teilhard de Chardin (1881-1955) who remains the most thoroughgoing and painstaking individual to develop a synthesis between scientific theories of evolution and Christian theologies of creation, and the great insights of Alfred North Whitehead (1861-1947), both of whom were guided by the same principles of contact/dialogue and confirmation/integration.

From the perspective of evolutionary thought, Pierre Teilhard de Chardin presents an important example of a unified vision of the cosmos and of reality within the context of evolution. This drama of evolution has moved through the stage of matter (geosphere) to life (biosphere) and now to the level of mind (noosphere), the present level which is that of self-conscious thinking creatures. As the process of evolution unfolds, it will eventually arrive at the grand convergence of consciousness in what he calls the “Omega Point”. Teilhard identifies the “Omega Point” as the ultimate end and goal of the evolutionary process in the cosmic Christ, “Christ the Evolver”.⁴⁷

Rejecting the separation of the sacred and secular realms, Teilhard defends a divine creativity immanent in the whole of natural order. He argues that just as the universe is undergoing the process of cosmic expansion, so too, is it engaged in a process of intensification and organized complexity towards the culminating point, Omega. Christ is present throughout the physical universe exerting a force that draws all things towards a developing and converging unity. The whole of history is an ascent of the entire world as it moves through the process of evolution to its consummation of both the natural and the supernatural order. Teilhard sees Jesus Christ of revelation as this point of

chapter, are equally based on the firm belief that science and religion are compatible, hence the relevance of the insights from process and evolutionary thought.

⁴⁷ Teilhard de Chardin, *Christianity and Evolution* (New York: William Collins Sons & Co. Ltd. and Harcourt Brace Jovanovich, Inc., 1971), 142-147.

convergence, the true Omega Point. The goal and point of convergence of the process of evolution is in Christ, the same Christ who rose from the dead and who will come again at the *parousia*. For Teilhard, therefore, the risen Christ is the driving force – “Christ the evolver,” as he works hand in hand with “Prime-Mover-God” to guide the process of evolution.⁴⁸ Jesus Christ actuates the energies of the universe in the process of evolution and directs it toward its goal.⁴⁹

From this standpoint, Teilhard argues that the purpose of the incarnation is not primarily that of a “remedial” work – to correct the event of the Fall of Adam and Eve and atone for human sin, but more of a “constructive” (reconstruction and re-creation) work – to unite all reality, bring everything into one in Christ, and all of creation into union with God.⁵⁰ In other words, the incarnation was part of God’s original plan through which Christ, the alpha and the omega, would then bring the process of evolution to its logical completion.⁵¹ Drawing heavily on Pauline teaching, therefore, he sees redemption not just from an individual/personal or social/communal perspective but also as a cosmic event. Creation and redemption are thus understood from this single evolutionary process that culminates in Christ at the Omega Point, all of which are under the guidance of God himself, and this Teilhard expresses like this: “The universe fulfilling itself in a synthesis of centers in perfect conformity with the laws of union, God, the Center of centers, in that final vision the Christian dogma culminates. And so exactly, so perfectly does this coincide with the Omega Point...”⁵² This is because, “God is not conceivable...except in

⁴⁸ Ibid., 240.

⁴⁹ Ibid., 142-147.

⁵⁰ Ibid., 145-146. See also Teilhard de Chardin, *The Phenomenon of Man* (New York: Harper & Row 1959), 291-299; and Ian Barbour, *Religions and Science*, 248.

⁵¹ N.M. Wildiers, “Cosmology And Christology”, in *Process Theology*, edited by Ewert H. Cousins, (New York, Newman Press, 1971), 269-282.

⁵² Teilhard de Chardin, *The Phenomenon of Man*, 294.

so far as he coincides with...but without being lost in, the center of convergence of cosmogonies.”⁵³

For process thought, the starting point from which to understand the nature of reality is to conceive it as *becoming* rather than *being*. According to Alfred North Whitehead, transition and dynamic activity are more fundamental than substance and permanence. The basic components of reality are not the static and unchanging particles that are merely eternally rearranged, which is the position of the atomists, but an interrelated dynamic of events. Based on this understanding of reality, Whitehead proposes a concept of God that is different from the traditional concept of God found in Christianity such as, God as a monarch, a moralist and an unmoved mover. Against these traditional concepts of God, Whitehead insists on a concept of divinity in which God is depicted as having a *primordial* and a *consequent* nature. He identifies three characteristics of God in relation to nature: God is the primordial ground of order in nature – (origin/beginning of possibilities, events and things); the ground of novelty – (the result/effect at the end – continually emerging new events, things and possibilities); and the consequent nature of God --- (that God himself is influenced and effected by these events and things).⁵⁴ Whitehead holds that although God is everlasting and does not perish, God is affected by the world. God’s basic purposes are not subject to change, but God is not totally self-sufficient and impassible. Although not totally within the temporal order, God is not devoid of temporality. In Whitehead’s understanding of God, divine immanence is more strongly emphasized than divine transcendence.⁵⁵ Nothing comes into being apart from God for God has a direct relationship to each and every creature as

⁵³ Teilhard de Chardin, *Christianity and Evolution*, 239.

⁵⁴ Alfred North Whitehead, *Process and Reality* (New York, The Free Press, 1978), 346 -351.

⁵⁵ Ian G. Barbour, *Religion and Science*, 295.

an omnipresent being, while at the same time granting freedom and independence to creatures who exercise self-creative abilities in their own way.⁵⁶

Among the differences between the teachings of Whitehead and Teilhard is the fact that Whitehead does not subscribe to the whole idea of *Omega Point* which is central to the thought of Teilhard. This theme of hope as demonstrated in the eschatological dimension of Teilhard's thought is therefore missing from Whitehead. Secondly, Whitehead suggests that divine limitation in omnipotence and omniscience is metaphysically required because God necessarily suffers limitation. Teilhard on the other hand sees the limitation in God in divine omnipotence and omniscience as self imposed. God is all powerful and all knowing but willingly gives up some of these divine powers to accommodate the gifts of freedom and autonomy granted to creation. Any limitation on the part of God is therefore a free decision by God but not necessitated by any force outside of him. God makes this decision to self-limit so that the universe can equally freely practice self-replication and self-organization. Whitehead therefore departs more than Teilhard from the traditional understanding of God. Teilhard's concept of God is more personal, therefore closer to the biblical idea of Yahweh-God, but in Whitehead, we have God depicted as more of a philosophical principle of cosmic creativity.

Furthermore, Whitehead does not agree with the concept of *creatio ex nihilo*, but

⁵⁶ The self-creative, or self-engineering ability in nature is affirmed by other theologians as well. Karl Rahner (1904-1984), for instance, talks about the capacity for self-transcendence that is intrinsic to nature, found in both material and spiritual things. He suggests that this intrinsic quality in matter makes it develop toward spirit by itself. Human beings are a product of the self-transcendence of matter that came before. The evolutionary development from matter to life and life to self-consciousness is made possible only because nature is endowed with the capacity for self-transcendence. "Christology within an Evolutionary World," in *Theological Investigations V* (Baltimore: Helicon Press, 1966), 157-92; "Natural Science and Reasonable Faith," in *Theological Investigations XXI* (New York: Crossroad, 1988), 16-55; *Foundations of Christian Faith* (New York: Seabury Press, 1978), 179- 189. Rahner, however, moves this discussion a step further by giving it a Christological meaning. He suggests that in Jesus we find the absolute guarantee that the ultimate self-transcendence of the whole of creation into God will succeed, because Jesus is the self-transcendence of the universe into God the creator. 189.

Teilhard does agree with a qualified version of the doctrine. However, both subscribe to the themes of continuing creation and a unified system.⁵⁷ These differences notwithstanding, both Teilhard and Whitehead, as the analysis of their works above show, strongly emphasize the interconnection, interrelation and interdependence in nature. Furthermore, they both underscore the fact that reality, including divine reality, must be understood primarily from the perspectives of process and evolutionary thought, and this explains why the insights of both scholars are of great relevance to this work.

One of the scholars who drew heavily on Whitehead's ideas for his work was Charles Hartshorne. His contribution is relevant because, first, he fleshes out Whitehead's treatment of God. Secondly, he re-affirms relatedness in the divine Godhead. This is evident in his theology where he advocates a dipolar concept of God – *dipolar theism*. He argues that traditional Christian concept of God is one-sided with exclusive focus on the attributes of God that emphasize permanence, being, eternity, necessity and self-sufficiency. Along side these attributes, Hartshorne argues that change, becoming, temporality, contingency and relatedness are equally present in the nature of God. However, these attributes are present in God in different ways such that there is no contradiction.⁵⁸

The key word that describes God's way of relating to and acting in the world is *persuasion*. God does not force or compel or coerce but persuades and guides creation to its goal through the power of love. Through persuasive love, God lures the world into

⁵⁷ Ian Barbour, "Teilhard's Process Metaphysics" in *Process Theology*, edited by Ewert H. Cousins, 338-339.

⁵⁸ Charles Hartshorne, *The Divine Relativity* (New Haven: Yale University Press, 1948), 86-92; *Reality as Social Process: Studies in Metaphysics and Religion* (Boston: The Beacon Press, 1953), 29-43. One possible way to understand these attributes of God, and avoid the apparent contradiction therein is that: God is permanence, being, eternity, necessity and self sufficient in himself, but is change, becoming, temporal, contingent and relative in relations to creation, his handiwork.

new forms of realization. Because of the gift of freedom granted to creation, God does not determine ahead of time, the outcome of events or violate the self-creative ability with which nature is endowed. Barbour puts it like this: “The power of love consists in its ability to evoke a response while yet respecting the integrity of the other. Thus causality within interpersonal relationships, rather than mechanical force, seems to provide the basic analogy of God’s relations to the world.”⁵⁹

From the point of view of the principles of contact/dialogue and confirmation/integration that are evident in process and evolutionary thought, the additional insights of Arthur Peacocke and John F. Haught are of great importance in this discussion. As a physical bio-chemist and systematic theologian, Peacocke develops his work based on the principles of contact and confirmation between science and religion. One of such examples is his analysis of the concept of freedom as expressed in the self-organizing and self-replicating mechanism present in nature as scientific theories of evolution affirm. This is similar to the position of creation theology, which affirms that God makes things in such a way that they can continue to make themselves under divine guidance and direction – *creatio continua*. Peacocke, therefore observes that there is a significant point of contact between the mode of divine creativity as evident in *creatio continua* and the evolutionary process demonstrated in the self-replicating and self-organizing character in nature.⁶⁰

⁵⁹ Ian G. Barbour, *Religion and Science*, 295.

⁶⁰ Arthur Peacocke, *God and the New Biology* (San Francisco: Harper, 1986), xx. See also “Biological Evolution: A Positive Theological Appraisal.” in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by J.S. Russell, W. Stoeger, and F. Ayala (Vatican Observatory Publications & Berkely: Center for Theological and the Natural Sciences, 1998), 359. See also: Ted Peters & Martinez Hewlett, *Evolution from Creation to New Creation* (Nashville: Abingdon Press, 2003), 136.

Along the same line of thinking, evolutionary and process thought help us to understand that chance (or randomness) and indeterminacy in evolution⁶¹ are not opposed to the mode of divine creativity. John F. Haught, a systematic theologian inspired by evolutionary and process thought, gives credence to this point by affirming that God is a loving God who is intimately related to the world nonetheless leaves it free to operate, while he continues to be involved by guiding it through persuasive love to its goal. And because God operates through persuasive love rather than by force or coercion, creation enjoys freedom and autonomy. Therefore, it is only reasonable to expect randomness and indeterminacy. The gifts of freedom and autonomy granted creation by God the creator necessarily include the allowance for indeterminacy and randomness. This is yet another point of dialogue and confirmation between creation theology and scientific theories of evolution, because it demonstrates that chance and indeterminacy in the process of evolution are compatible with the mode of divine creativity understood within the concept of persuasive love.⁶²

The emphasis on the themes of relationality and communion and the appreciation of them as central to the concept of reality may be new in Western thought but the idea of interconnection and interrelatedness of things in general, has always been part of the worldview of many traditional societies around the globe. The idea that things are

⁶¹ Chance (or randomness) and Indeterminacy understood here in the general sense to denote the presence of a range of possibilities and uncertainty, and the absence of exact laws and order found in the mode of operation in nature that is due not to limitations in human knowledge of nature but to the very composition of nature itself. Some proponents of scientific theories of evolution, unfortunately, seem to suggest that the presence of chance and indeterminacy in nature as scientific theories of evolution affirm, point to the lack of directionality and teleology in nature and the absence of God's hand in creation. Scholars such as the American philosopher, Daniel Dennett, Stephen Jay Gould, an American evolutionary biologist/paleontologist and the British zoologist, Richard Dawkins are among those who tend to argue in this direction. However, Haught and Barbour are among scholars who disagree with this negative position.

⁶² Ian Barbour, *Science and Religion: From Conflict to Conversation* (New Jersey: Mahwah, Paulist Press, 1995), 61.

generally connected and related, either directly or indirectly, is present among native American Indians, and Asian and African cultures (addressed in chapter three of this dissertation) and other traditional cultures around the world. This is the basic theme behind the work of scholars as articulated in the book, *Indigenous Traditions and Ecology: The Inter-being of Cosmology and Community*. As the sub-title of this book suggests, the scholars researched the concept of “inter-being” as understood by traditional societies in their worldview -- a relational concept of reality—and applied it to the problem of ecology.⁶³ A good example of the concept of “inter-being” – interconnection and interrelation of things, is present in the African tradition. The next sub-section will therefore introduce the concept of God in African thought as articulated in the model of *vital force* – a life force that exists in its fullness and most perfect form in God but diffused in the rest of creation in varying degrees according on the nature of the creature.

4.1.5. God as Supreme Vital Force in African Traditional Religion and Philosophy

Obviously the idea of the Trinity is not present in traditional African concept of God. However, the attributes of God in African Traditional Religion (ATR), addressed in chapter three of this dissertation, emphasize his nature as Source of being, Source of life or Life itself, Maker, Creator, Originator, Begetter. In ATR God is a Supreme

⁶³ John A. Grim (ed.), *Indigenous Traditions and Ecology: The Inter-being of Cosmology and Community* (Cambridge Massachusetts: Harvard University, 2001). It is important however to add here that although the concept of interconnection and interrelatedness always existed in traditional societies around the world it was not put in the context of highly sophisticated philosophical analysis as it is being done in scholarly interchange and discuss today. In this dissertation I have chosen to address the concept of “interbeing” from the perspective of African tradition, as an example, because this is my background and therefore the one that I am most familiar with.

Being who is a dynamic life source – Vital Force.⁶⁴ In particular, he is the source and essence of a vital force.⁶⁵ This concept is clearly expressed in the different names and attributes of God in ATR. In Bantu philosophy, like in all of African philosophy, the concept of God as the Supreme Vital Force is central because:

Bantu philosophy of life affirms the reality of God who is conceived as the source of life and power in the organic universe. *Imana* (God) is not conceived in abstract terms but in relation to life; he is the living one (*Niyonzima*) who gives life (*Ubuzima*). He is the source of all life (*Soko Yjubugingo*) and he is also the sustainer of life (*Amagara*). *Imana* (God) is not seen to be (just the) source of life, but life itself. *Imana* communicates life because he is life itself...⁶⁶

This concept of God as the Supreme Vital Force is at the heart of ATR as it is expressed in *Ntu* Philosophy called, *Ntuism*⁶⁷ In his research of African philosophy, Placid Temples developed his work based on the African concept of vital force. “God is force, possessing energy in himself, the mover of all other forces. He knows all

⁶⁴The concept of vital force used in ordinary language took on a technical meaning when the French naturalist, Jean-Baptist de Lamarck used it in his work, *Philosophie Zoologique* (first edition, 1829). In this work, Lamarck proposed a theory of evolution in which he argued that living things evolve to become more complex over time because of the presence of “vital forces” in them. These “vital forces” within creatures also help them to adapt to their environments. Through this process of adaptation, acquired or inherited traits are subsequently passed on to future generations. Charles Darwin, however, argued against this position, and so, in his own theory, he proposed an evolution through the process of *natural selection*.

In this dissertation, however, the use of the term “vital force” has a little bit different meaning. Placid Temples, a Belgian priest anthropologist, who worked in Africa for decades, developed the term *force vital* as a metaphor to articulate the African concept of being. In his book, *Bantu Philosophy*, the “Note by the English translator”, states this clearly: “There are often linguistic problems of terminology. One concerns the selection of the word to be used to translate the French “la force” and “force vital” used to denote the Bantu basic concept of the ultimate nature of being, as we should call it.” However, one could argue that to the degree that Lamarck’s understanding of “force vital” includes some element of “life force” or “animating principle”, there are some similarities with the interpretation of the concept of “force vital” in Temples. For more information on this see Placid Temples, *Bantu Philosophy* (Belgium/Congo: Presence Africaine, 1959), 8. This meaning as used by Placid Temples was further developed to include the African understanding of the being of God himself in whom “vital force” exists in its fullest and most perfect form. God, the creator, is the *Supreme Force Vital*. His vital force is subsequently diffused in creation where creatures possess it at different degrees and varying levels depending on their kind.

⁶⁵ Geoffery Parrinder, *Religion in Africa* (Penguin Books, Baltimore Maryland, 1969), 40-41.

⁶⁶ Deusdedit R.K Nkurunziza, *Bantu Philosophy of Life in the Light of the Christian Message: A Basis for an African Vitalistic Theology* (Peter Lang, Frankfurt am Main, 1989), 134.

⁶⁷ Emefie Ikengah-Metuh, *Comparative Studies in African Traditional Religions* (Onitsha, Nigeria: IMICO Publishers, 1987), 75.

forces, their ordering, their dependence, their potential and their mutual interactions ...”⁶⁸ This is again emphasized in these words: “Above all force is God, Spirit and Creator...It is he who has force, power in himself. He gives existence, power of survival and increase to other forces...God is the supreme, complete perfect force.”⁶⁹ Vital force depicts an active, alive and dynamic phenomenon. It possesses an internal animating and dynamic force with God himself as the origin and source. From God, this vital force radiates through into other beings as they are created and sustained by God the Supreme Vital Force. Based on this concept of God, one can understand how the entire creation, responding to the lure and persuasion of the Supreme Vital Force, evolves into existence and continues to unfold under his guidance.

The ATR attribute of God as the dynamic Vital Force forms part of the essential characteristics proper to the concept of God within the framework of a theology of evolution. This is because, through the same vital force radiating from God himself, God sustains creation in being as the process of evolution unfolds while at the same time keeping creation from devolution to non-being. This is reminiscent of the concept of *creatio-continua* in Christian theology.

Besides serving as an additional contribution from insights of traditional societies, the concept of reality as vital force diffused in creation, once again, reinforces the general concept of interrelatedness and interconnection of the universe and all that is contained it. Because God the Supreme Vital Force is the creator of the universe, God’s nature is reflected in his handiwork – creation. It is no surprise therefore that the same vital force in God is diffused in creation, his handiwork, albeit, in a different degree and

⁶⁸ Placid Temples, *Bantu Philosophy* (Belgium/Congo: Presence Africaine, 1959), 46-47.

⁶⁹Ibid., 65.

at a different level. Creation reflects God the creator and the manner of this reflection and how God operates in creation therefore becomes the subject of the next section, “creation in the theology of evolution.”

The insight of the concept of vital force in African worldview lies in the fact that it is a form of pan-en-theism that contributes to a better understanding and appreciation of the nature of God and how God relates to the world.⁷⁰ The ATR concept of vital force shows how God is distinct from creation, yet, penetrates creation in such a way that his vital force diffused in creation guides it toward its ultimate goal. It is this understanding of how God relates with and operates in the universe that provides a proper concept of creation from the point of view of a theology of evolution.

In this first section of the chapter, the question of what kind of God fits into a theology of evolution was addressed. Three attributes were identified in the three subsections above, namely: a God of evolution is a God of communion in mutual relation of Persons; a God of evolution must be understood within the context of reality defined not just by the term “being” but also “becoming”; and finally, a God of evolution must be understood within the context of the A.T.R. model of vital force.

Because creation reflects God the Creator, it is not surprising then that these attributes in God form basic characteristics of the universe, the handiwork of God. The next section will therefore address creation and [will](#) make the case for the reflection of

⁷⁰ A good number of “armchair” anthropologists depicted African Traditional Religion (ATR) as pantheism because, not having a first hand experience of how ATR is practiced, they thought Africans identified God with the universe. Unfortunately, some missionaries bought into this idea of “armchair” anthropologists. However, many of the missionaries, Rev. Fr. Placid Temples [a Belgian priest-anthropologist] being a good example, made a correct assessment of the African concept of God as articulated in the concept of “vital force” – a metaphor in which the nature of God in ATR is understood as pan-en-theism rather than pantheism. Today we know better, thanks to the work of the likes of Placid Temples. We know that in ATR, everything *is in* God (pan-en-theism), rather than everything *is* God (pantheism).

divine attributes in the universe, identified in the characteristics of communion/relationality, process/becoming. These elements are proper to an evolving creation and divine vital force, which constitute the nature of the cosmos.

4.2. Creation in the Theology of Evolution

In making the case for the reflection of divine attributes in the cosmos, this section will identify and analyze different theologies of creation that affirm God's presence in the universe, as reflected in attributes of communion/relationality, process/becoming and vital force in creation. It is in this analysis that the second question of this chapter is addressed: What kind of understanding of creation fits into the framework of a theology of evolution? This is because, although different theological models have been proposed to explain the mode of divine presence and operation in the world, a theological model that would most adequately fit with the understanding of creation in the context of theistic evolution is one which puts emphasis on a concept of creation that includes attention to communion and relationality, process/becoming and vital force.

Such a concept of creation proposed above has relevance for creation from the perspective of theology of evolution as it is treated in the analysis of *Vestigium Dei* developed in the works of St. Bonaventure [1221-1274], as Sacrament of God's presence in the Cosmos, in the works of St. Thomas Aquinas [1225-1274], and the Organic Model in the work of Sallie McFague. In the first part of this section, therefore, creation theologies from these traditions will be examined. The second part of the section will address creation within the context of process and evolutionary thought – an evolving

cosmos, with particular reference to the works of Teilhard de Chardin and Alfred North Whitehead. The final part of this section will address creation from the point of view of the ATR model of vital force.

4.2.1. Creation as *Vestigium Dei* and Sacrament of God's Presence in the Cosmos

The importance of Bonaventure's contribution lays in the fact that, coming from the traditions of St. Francis of Assisi whose spirituality is profoundly rich in creation themes, he articulates a creation theology that is of great significance from the point of view of ecology. Bonaventure provides a rich resource for a contemporary theology of creation in his conception of creation as existing by way of exemplary causality, a pattern or model of the creator himself. From this standpoint, all creatures are understood as revelatory signs of God the creator. For Bonaventure, then, the universe is like a book whose words and pages reveal God the creator.

From this we may gather that the universe is like a book reflecting, representing and describing its Maker, the Trinity, at three different levels of expression: as a trace (*vestigium*), 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.⁷¹

Bonaventure also makes an analysis of the dynamic fruitfulness of divine goodness. Goodness is self-communicative and self-diffusive, and if that is the case, then, divine goodness which is the highest good will be most radically self-diffusive and

⁷¹ Bonaventure, *Breviloquium*, 2.12. Trans. Jose de Vinck, *The Works of Bonaventure II: The Breviloquium* (Parterson, N.J.: St. Anthony Guild, 1963), 104. See also Denis Edwards, *Jesus The Wisdom of God* (Eugene, Oregon: Wiph & Stock Publishers/Orbis, 1995), 193. It is important to note that earlier on, Augustine, in his *De Trinitate*, had taught that creation are vestiges of the Trinity. One could argue, therefore, that since Bonaventure developed the Platonic- Augustinian tradition in his work, he was, at least in part, influenced by the insights of St. Augustine (Copleston, *A History of Philosophy, Volume II*, 244-245, 256).

fecund. From this standpoint, he sees the first Person of the blessed Trinity as the *Fontalis Plenitudo* (Fountain Fullness), and creation as *vestigium Dei* (vestiges of God) and the free overflow of the fecundity of the divine Trinitarian love.⁷² Bonaventure's theology of creation is built on the experience of God's action in the economy of salvation and in creation. Creation is an expression of divine goodness but this free divine self-expression that overflows into creation is itself a reflection of a far greater self-expression within the life of the Trinity itself.

For the diffusion that occurred in time in the creation of the world is no more than a pivot or point in comparison with the immensity of the eternal goodness. From this one is led to think of another and greater diffusion --- that in which the diffusing one communicates to another total substance and nature.⁷³

The dynamism, self-expression and fecundity that we see in creation, according to Bonaventure, are pointers to the life of the Trinity itself in whom these attributes exist in the most perfect and boundless form.

Thomas Aquinas stands out among the Scholastics as one whose work is most significantly influenced by insights from philosophy. Drawing on the works of many philosophers, Aristotle in particular, he enriched his theological work based on faith and sound philosophical principles. A good example is his development of the principles of causality – *primary* and *secondary* – to explain how God operates in creation. On the primary level, God is directly involved while on the secondary level, God merely guides

⁷² Philotheus Boehner, *St. Bonaventure's Itinerarium Mentis in Deum*, With and Introduction, Translation and Commentary (St. Bonaventure, NY.: The Franciscan Institute, 1956), 5.2; 6.2.

⁷³ *Ibid.* 6.2. See also, Denis Edwards, Jesus *The Wisdom of God*, 102.

and directs creation. He remains involved on both levels, one directly, the other indirectly.⁷⁴

Arguing against the Gnostic tendencies present in Christianity, Aquinas developed a theology of creation that affirms the goodness of all creation, material and spiritual things alike, and of God's place as the origin of creation. Based on the concept of relations, Aquinas argues that God has real relation to the world and that each creature is related to God, the creator, according to its status. From the point of view of the creature, it is a *real* relationship of total dependence of creature on Creator by which the creature is sustained in being. However, from the side of God, it is only a *logical* relationship between God as creator and his handiwork, the creatures.⁷⁵ Through this relationship God sustains creation as he guides it to its ultimate end.⁷⁶ Furthermore, Thomas Aquinas maintains a good balance between the immanence and transcendence of God in relation to creation. He argues that God's transcendence is maintained in his Other-ness from creation, while his immanence demonstrates his continuous relation to creation but at the same time he avoids the error of pantheism, which confuses God with creation and identifies creation with God.

⁷⁴ Aquinas draws on the insight of Aristotle to develop his teaching on how God creates and how he relates with creation. The principle of causality --- primary and secondary--- is then used to further explain *creatio-ex-nihilo* and *creation-continua*. As First Cause, God is the source of existence of everything, but at the secondary level, he remains involved and guides creation as creatures participate in the work of creation. For more information on this, see Frederick Copleston, *A History of Philosophy: Volume II, Medieval Philosophy* (Westminster, Maryland: The Newman Press, 1960), 3630374. Zachary Hayes also developed this idea in his book, *The Gift of Being* (Collegeville, Minnesota: The Liturgical Press, 2001), 50.

⁷⁵ Thomas Aquinas, *Summa Theologiae*, 1.13.7; 1.28.1; 1.45.3 ad 1, translated by Thomas Gilby, OP. Vol. VIII (New York: Blackfriars in conjunction with McGraw Hill Book Co., 1967), 95.

⁷⁶ *Ibid.*, 1,q.103, a.3.

Finally, a major part of Aquinas' legacy to the theology of creation is his emphasis on the sacramental character of material creation. For Aquinas, a rock, or flower or a human being points to its cause and origin, God himself.

This sacramental view of material creation is clearly expressed in his *Summa Theologiae*:

We should state that the distinctiveness and the plurality of things is because the first agent, who is God, intended them. For he brought things into existence so that his goodness might be communicated to creatures, and reenacted through them. And because one single creature was not enough, he produced many and diverse [creatures], so that what was wanting to one expression of divine goodness might be supplied by another, for goodness, which in God is single and uniform, in creatures is multiple and scattered. Hence the whole universe less completely than one [creature] alone shares in and represents the divine goodness.⁷⁷

In these words of Thomas Aquinas, we can hear the refrain in the creation account of Genesis "And God saw that it was good" echoed as he underscores the sacramental character of every creature in the universe. For Aquinas, creation is a reflection of God and an overflow of his divine goodness. In this insight lies a major contribution of Aquinas' work which forms a basis for an ecological theology.⁷⁸

Aquinas' thought is more significantly influenced by philosophical concepts than that of Bonaventure, while Bonaventure's analysis of creation as *vestigium Dei* lends itself more towards an ecological interpretation than Aquinas'. However, it must be acknowledged that the insights of both theological positions, in a significant way, form a basis for an ecological theology. This is evident from the fact that both Aquinas and Bonaventure conceive creation as a sacrament of God's presence in the cosmos and as vestiges of God and creation respectively. They therefore challenge the lack of respect for

⁷⁷Ibid., 1a, q.47, a.1.

⁷⁸ Clifford M. Anne, "Foundations for a Catholic Ecological Theology of God, in *And God Saw That It Was Good: Catholic Theology and the Environment*, edited by Drew Christiansen & Walter Grazer (Washington, D.C., United States Catholic Conference, Inc., 1996), 38-39.

creation in our world today which results in ecological crisis. Because creatures are vestiges of God and a sacrament of God's presence in the cosmos, an abuse of creation, in a indirect way, shows a lack of respect for the One who brought creation into being, God himself. The awareness of this, underscored in the theologies of creation of both Aquinas and Bonaventure, is also demonstrated in the model of creation as the body of God, and this will be treated in the next sub-section.

4.2.2. Creation as the Body of God

Over the centuries, different models have been used to explain the nature of the universe and how creation operates. Prominent among these models is the organic model in which the universe is conceptualized as the body of God. The organic model has a biological origin where it is used to describe forms, methods and patterns found in living systems such as the organization of cells, populations, communities and eco-systems.⁷⁹

In her development of the organic model, Sallie McFague makes an analysis of how creation embodies God and how God operates in creation.⁸⁰ She situates her version of the organic model within the context of "the common creation story," (or, to be exact,

⁷⁹ The biological origin of the model of the universe as body of God is one example of how a model from science can be developed to illuminate a religious phenomenon. This again reminds us of the importance of identifying points of contact between science and religion and to use the insights from these points of contact and integration to better enrich our understanding of God, creation and how God operates in the universe.

Elizabeth Johnson identifies another dimension of the analogy of the universe as the body of God from the aspect of human physiology. She compares the idea of the universe as existing in God to the experience of a pregnant woman in whose womb a baby is formed, therefore, an analogy that mothers can relate to. This she expressed by saying that; "To be so structured that you have room inside yourself for another to dwell is quintessentially a female experience." From the stand point of the one dwelling in the womb, she reminds us that we can all identify with this because every human being: "has lived and moved and had their being inside a woman, for the better part of the year it took for them to be knit together." *She Who Is*, 234-235.

⁸⁰ Sallie McFague, *The Body of God: An Ecological Theology* (Minneapolis: Fortress Press, 1993), 35. McFague however tries to distance herself from what she describes as "serious liabilities" of the classic organic model, for example, the androcentric and dualistic (spirit/body) overtones. Then, she goes on to develop a more inclusive version of the organic model. And this is the model that is relevant to this study.

one version of the common creation story). This is a story of how the universe began about fifteen billion years ago then evolved into hundred billion galaxies. This story therefore indicates that everything that exists from the very first galaxies to the tiny fragile beginning of life have a common origin and a common story. To use her words: “at some level and in a remote or intimate way, everything is related to everything else. We are distant relatives of the stars and kissing cousins with the oceans, plants and other creatures of the earth.”⁸¹

The organic model most aptly explains the common creation story in which the unity and diversity as well as the interconnection, interaction and interrelationship in creation is revealed. In conceptualizing the world as the body of God, the body in this context is not limited to one segment of people in the society in terms of gender, race or creed, nor is it limited to human beings. It is a radical concept of God as encompassing all of creation, animate and inanimate alike. Among the positive attributes of this model is that it goes beyond and corrects the ontological dualism of matter and spirit in which matter is depicted as evil and the spirit as good. It is a model that avoids the error of pantheism because the basic idea in the model of the world as the body of God is to underscore pan-en-theism, everything in God, rather than pantheism which identifies the universe with God.⁸² Furthermore, it is a model that maintains a healthy balance between the immanence of God in the world and his transcendence above the world. From the point of view of evolution, the organic model is useful because it identifies the self-

⁸¹ Ibid., 27. The theme of unity in spite of diversity in creation addressed by McFague in her work is an echo of Christian concept of creation as expressed in the *Catechism of the Catholic Church* where this point is emphasized: “God wills the interdependence of creatures. The sun and the moon, the cedar and the little flower, the eagle and the sparrow: the spectacle of their countless diversities and inequalities tells us that no creature is self-sufficient. Creatures exist only in dependence on each other, to complete each other, in the service of each other.” (CCC. Part One, *Parag. 340*, 88.

⁸² Sallie McFague, *Models of God* (Philadelphia: Fortress Press, 1987), 71-72.

replicating and self-organizing characteristics in living cells as identical with the way the universe operates. And most of all, it is a model that emphasizes how God loves, cares and participates intimately in every aspect of creation and how creation responds to God's guidance by way of persuasive love through the evolutionary process as the universe unfolds and moves toward its goal. Because "if the entire universe, all that is and has been, is God's body, then God acts in and through the incredibly complex physical and historical-cultural evolutionary process that began eons ago".⁸³ This evolutionary process in creation will be the focus of the next sub-section: "Creation in Process and Evolutionary Thought".

4.2.3. Creation in Evolutionary and Process Thought

The concept of creation in process thought is based on the understanding of God in God's primordial nature – the source of order and novelty in creation, and in the consequent nature – how God is affected by creation. From this standpoint, process and evolutionary thought see creation as continually responding to the mechanisms of order and novelty as it unfolds and grows into the future. Process and evolutionary thought argue that God did not create a world that is content with maintaining the *status quo*, but a world that is open to new possibilities and responds to new creation. In their analysis of the cosmic phenomenon, the proponents of process and evolutionary thought disagree with certain philosophical assumptions in radical mechanistic materialism that seems to view matter as passive and mindless and nature as deterministic and impersonal

⁸³ Ibid., 73.

mechanism.⁸⁴ Against this mechanistic interpretation of nature, they argue that even at the fundamental constituents of the cosmos, at the level of matter, nature is endowed with some degree of feeling, somewhat like an inner sense or “mind,”⁸⁵ that would allow them to freely respond to possibilities through the persuasive presence of God as creation evolves. This response to new possibilities is effected within the context of the interconnection and interrelation between things existing in the cosmos. The nature of the universe and the way it functions is described by Whitehead within the context of what he calls the *philosophy of organism* to highlight the interconnection and interrelatedness that characterizes this mechanism.⁸⁶

The pattern of evolution shows that there is no straightforward and direct movement in creation because evolution operates by way of chance/ randomness as well as lawfulness through the interplay of chaos and order in the unfolding of the evolutionary process. As creation responds freely to new possibilities, there is trial and error which is somewhat chaotic and sometimes inevitably results in a negative outcome-ontic evil. But at the same time, there is a general order and lawfulness in the direction of evolution under divine guidance as creation, freely responding to God’s persuasive love, moves toward its ultimate goal.⁸⁷ From the point of view of theistic evolution therefore, the traditional Judeo-Christian understanding of how God created the world is not in

⁸⁴ Ian Barbour, *Religions and Science*, 34-36. See also Gary B. Deason, “Reformation Theology and the Mechanistic Concept of Nature”, in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, edited by David C. Lindberg and Roland L. Numbers (Berkeley: Californian: University of California Press, 1986), 168.

⁸⁵ It is important to note however that for Whitehead the term “mind” is used in an atypical sense. For him “mind” means the complex mental operations involved in the constitution of an actual entity. These mental operations do not necessarily involve consciousness. See Alfred North Whitehead, *Process and Reality an Essay in Cosmology*, edited by David Ray Griffin and Donald W. Sherburne (New York, N.Y.: The Free Press, 1978), 214.

⁸⁶ Whitehead, *Process and Reality*, 110-129.

⁸⁷ This is more or less a Christian appropriation of process thought because in process thought there is no explicit concept of purpose and ultimate goal as they are understood from the Christian perspective.

conflict with scientific evolution because God creates through the process of evolution.

And on this Denis Edwards offers this reflection:

For the theologian, the story of the universe, as it is told by contemporary science, can be understood as the way in which God creates. God creates a universe with initial conditions of physical constants which are fine-tuned so that life and consciousness might emerge. Long before life made its first appearance, the universe was already set on a course in which life and consciousness could evolve. The Creator is understood as influencing the process not only through its laws and initial conditions, but also through engagement with the process at every point in the relationship. It is this continual creation which enables the universe to exist and to unfold. It is this ongoing creative activity of God that enables life to emerge and to evolve through the process of natural selection... God is now pictured as involved creatively in an open-ended process that involves both randomness and lawfulness. It may well be that this kind of process is the best way to create a universe. It is certainly the way to create the kind of universe we have -- open ended process and randomness are intrinsic to the universe we inhabit.⁸⁸

The significance of the point made by Edwards in this rather long quote is that the *anthropic principle*, “fine-tuning”, that he refers to is equally an important point of contact/dialogue between evolution and creation.⁸⁹

Because all creatures share in the capacity for self transcendence that is built into the cosmos, they operate by way of interaction and interdependence as creation moves toward its ultimate goal. From the point of view of a Christian appropriation of process

⁸⁸ Denis Edwards, *God of Evolution*, 49-50.

⁸⁹ *Anthropic Principle* is the principle in evolutionary science which states that the physical components of the early universe were balanced in a delicate manner or “fine-tuned” to create a proper condition necessary for life. Because if this balance of the physical components was altered, life in general and in particular human life would not have come into existence. Of the two versions of *anthropic principle*, the strong (SAP) and the weak (WAP), there is a consensus among scientists that the SAP is based on a weak data. However, it remains a possible area of contact/dialogue between science/evolution and religion/creation. To this effect, Haught says: “We are willing to concede that the SAP is not conventionally acceptable science, and that scientists have every reason for being suspicious of its teleological nature. But we cannot brush it aside as though it has nothing to offer... The SAP asks us to consider the possibility that there is a *globally* mind-oriented impetus at work in the cosmos, one that scientific abstraction, intoxicated as it is by the reductionist need to interpret mind in terms of mindless matter, has no room for in its own picture of the universe” (138). John Haught, *Science and Religion, From Conflict to Conversation* (New Jersey: Mahwah, Paulist Press, 1995), 135-139.

and evolutionary thought therefore, the world is fundamentally relational, as it comes into existence in a new way at every stage of development, recreating itself from its past, all the while responding to divine persuasive love.

From the perspective of the principles of contact/dialogue and confirmation/integration, the insights of John F. Haught and Arthur Peacocke are again of importance. Haught reminds us that part of the lesson of the Big Bang cosmology is that it suggests that the universe has a beginning, thus a finite universe. If the universe is finite, then this also suggests that it is contingent. If the universe is finite and contingent, it means that we need to look beyond the cosmos itself for explanations for its existence in the first place.

To say that something is contingent means that there is no necessity for its having come into existence at all – or for its being the way it is – as there may have been if matter were eternal or infinite. This particular universe, even science seems to imply, need not be here. But since it is here, the question legitimately arises as to *why* it exists if it did not have to. And once we have asked this question, we have already brought science into contact with theology.⁹⁰

In an attempt to address both the *how* and *why* questions identified by Haught in the quotation above, science and religion are inevitably brought into contact and dialogue with each other. The result of such contact and dialogue is a better and more complete understanding of the nature of the universe and all that is contained in it.

From the point of view of theology, the beginning and contingency of the universe is a given. God created the world, the book of Genesis says emphatically, and

⁹⁰ John F. Haught, *Science and Religion: From Conflict to Conversation* (New Jersey: Mahwah, Paulist Press, 1995), 115.

the world is dependent on God. The astrophysicist, Robert Jastro,⁹¹ quickly made the connection between the finite and contingent nature of the universe as suggested by Big Bang cosmology to the Genesis creation account, and many other scientists agree that this is an important point of contact, although some others caution against getting too excited too quickly in a rush to baptize the Big Bang cosmology. Ian Barbour and John Polkinghorne and Arthur Peacocke are among the scholars who offer some caution in this regard.

Commenting further on this theme, Arthur Peacocke suggests that rather than see scientific theories of evolution and creation theology as opposed to each other, they should be perceived as serving to help reinforce our understanding of certain theological concepts. He observes that in trying to figure out beginnings including the origin of time and space, we may or may not be able to infer the actual point of the Big Bang or what happened at the other side of this critical point of initial singularity. But whatever is eventually identified by scientists the basic tenet of the doctrine of creation would not be affected because “that concerns the relationship of all the created order, including time itself, to their Creator --- their Sustainer and Preserver.”⁹²

These insights of John Haught and Arthur Peacocke from the perspective of contact and confirmation bring this sub-section to a close. The final part of this section, as indicated above, will address creation as an aspect of vital force from the perspective

⁹¹ Although Jastro and some others got excited about Big Bang and the possible connection to the Genesis creation accounts, many others warn against baptizing the Big Bang cosmology and this point is addresses in chapter two of this dissertation. For Jastro’s viewpoint see Robert Jastro, *God and the Astronomers* (New York: W.W Norton, 1978), 116, for a call to caution about this see Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues*, San Francisco: Harper Collins Publisher, 1997)198 -199; John Polkinghorn, *One World: The Iteration of Science and Theology* (New Jersey: Princeton University Press, 1986), 66.

⁹² Arthur R. Peacocke, *Creation and the World of Science*, First Published in 1979 (Oxford, England: Oxford University Press, 2004), 79.

of ATR. This is relevant because it offers a perspective of traditional societies in their contribution to the understanding of creation and how God operates in the universe as demonstrated in the model of vital force.

4.2.4. Creation as Vital Force in African Traditional Religion and Philosophy

The model of God as divine Vital Force is a basic concept in African Traditional Religion (ATR) as illustrated in the third chapter of this dissertation, “African Cosmogonies”. This vital Force exists in God in its fullest and most perfect form, since God is the Supreme Vital Force. God’s vital force is communicated to creation as each creature participates in the nature of God according to its kind. This is a form of pan-en-theism where God allows his divine nature to be diffused in creation such that creatures share in the attributes of God Himself.⁹³

In the African worldview, two realms of creation are identified, namely: the invisible world which includes the heavens, spirits, deities and other heavenly bodies and the visible world, which is like a photo-copy of the invisible world. Beings in the invisible and spiritual world are archetypes of beings in the visible and temporal world. These two aspects of creation are not separate and independent entities. They are aspects of the same reality because the visible and the invisible worlds form a composite unity, an organic whole, as it is aptly expressed in the Bantu concept of organic universe.⁹⁴ J.V. Taylor acknowledges this theme of interdependence and interrelationship in the African worldview when he stated that: “Not only is there less separation between subject and object, between self and non-self, but fundamentally, all things share the same nature

⁹³Placid Temples, *Bantu Philosophy* (Belgium/Congo: Presence Africaine, 1959), 65.

⁹⁴Deusdedit R.K. Nkurunziza, *Bantu Philosophy of Life in the Light of the Christian Message* (Frankfurt: Peter Lang, 1989) .52+

and the same interaction, one upon the other...from the stone to the divinities... for all are one...”⁹⁵

In the universe, creatures exist and function in response to the Supreme Vital Force in whose vital force they participate, each according to the status of its being. These creatures exist and function in a network of relationships. No creature exists in isolation nor do they operate independently of each other: “Nothing moves in the universe of forces without influencing others by its movement. The world of forces is held like a spider’s web of which no single thread can be caused to vibrate without shaking the whole network.”⁹⁶ In the African world view therefore, every creature exists and functions under the guidance and direction of the Supreme Vital Force who continually diffuses his vital force in creation as it is guided toward its goal. Creation has a common goal and that necessitates the harmony that exists among beings in creation. Through this harmonious relationship, the interaction and interdependence among beings in creation, a good balance in the distribution and use of the vital force is maintained. This leads to mutual strengthening and enhancement in the growth and development of beings as creatures function in a network of dynamic relationship.

This vital force diffused throughout creation, consists of an inherent vital dynamism which operates within every creature and among creatures in a network of relationship. This phenomenon is consistent with the general notion of being in African philosophy in which being is essentially active and dynamic. In African philosophy, the concepts of vital force and dynamism are inseparably bound to the concept of being.⁹⁷ And this goes further to explain the ontological interconnection and interrelationship that

⁹⁵ J. V. Taylor, *The Primal Vision* (London: SCM Press, 1969), 64.

⁹⁶ Placid Temples, *Bantu Philosophy*, 67.

⁹⁷ *Ibid.*, 34-36.

exists among beings in creation --- inter-being--- as they affect and are affected by the vital forces within and around them. Again Temples expresses this concept in these words:

This concept of separate beings, of substance (to use the Scholastic term again) which find themselves side by side, entirely independent one of another, is foreign to Bantu thought. Bantu holds that created beings preserve a bond one with another, and intimate ontological relationship comparable with the causal tie which binds creature and Creator. For the Bantu, there is interaction of being with being, that is to say, of force with force. Transcending the mechanical, chemical and psychological interactions, they see a relationship of forces which we should call ontological. In the created force (a contingent being) the Bantu sees a causal action emanating from the very nature of that created force and influencing other forces. One force will reinforce or weaken another.⁹⁸

This network of interaction of forces in creation operates in a structured and orderly manner in the African world view of organic universe. There is therefore an order of hierarchy of vital forces diffused from the Supreme Vital Force. Rational beings (which include spirits, humans and the living-dead) come first in the order of participation and in possession of the vital force. They are then followed by animals, vegetation and minerals, each participating in the Supreme Vital Force according to the degree or level of its being.⁹⁹ Every creature in each of these categories plays a significant role in the orderly and fruitful management of the organic universe as they affect and are affected by one another in a co-existence that is characterized by mutual interdependence and interrelationship.

The philosophy of *interbeing* – being-in-relation – in the African worldview, as reflected in the analysis of the works cited above, serves as an important lesson from the

⁹⁸ Ibid., 39-40.

⁹⁹ Ibid., 41-42.

point of view of the ecological crisis. This is because, the kind of mindset necessary to check the ecological crisis is that which understands and appreciates the fact that creation is essentially relational – the principle of *inter-being*. And this includes what some scholars call social ecology.¹⁰⁰ The understanding of the ecological problem is not restricted to damage done to land, water and air alone, but includes all aspects of exclusion, discrimination and marginalization on the basis of gender, race, color or creed.

The interconnection, interrelation and interdependence in creation make it function as a unified whole. What affects one aspect of creation therefore affects other aspects, consequently, any negative impact from this stands in the way of the fulfillment of the goal of creation. The African worldview of *inter-being* therefore helps to underscore the fact that ecological crisis is not just an isolated incident of a damage done to land, water or air in certain parts of the world, but a violation of the nature of being in general, and an interference in the fulfillment of the purpose of creation.¹⁰¹ The successful realization of this purpose of creation depends in part on the role of humankind in the universe. As an integral part of the cosmos, the place and role of humanity in an evolving creation cannot be underestimated. This is because of the unique position that humankind occupies as a being created in the image and likeness of God.

¹⁰⁰ Leonardo Boff, *Ecology and Liberation* (New York: Maryknoll, Orbis Books, 1996), 26-27. In this book Boff makes an analysis of the issue of ecology in which he includes the problems of exclusion, discrimination and marginalization on the basis of gender, race, and creed. Maryknoll, 26-27.

¹⁰¹ The reference to purpose and goal of creation introduces the eschatological dimension from the point of view of ecology, a good example of which is that developed by Jurgen Moltmann. In his work, *The Way of Jesus Christ: Christology in Messianic Dimensions*, he develops an ecological Christology where he insists that Christology must go beyond focusing on human beings alone and be put in the framework of nature, to include the rest of creation. Drawing on the theme of cosmic Christology in the letters to the Colossians and Ephesians, he reminds us that even from the first century, Christ's redemptive mission was understood as including the entire cosmos. In our time, we must revive that same first century spirit articulated by St. Paul as we formulate a suitable ecological theology that confronts Christ the redeemer with the natural world that has now been contaminated and condemned to death by human beings. *The Way of Jesus Christ: Christology in Messianic Dimensions* (London: SCM, 1990), 274-312.

The third and final section of this chapter will therefore address the nature, place and role of humanity in creation and the special responsibility of humankind as created co-creator.

4.3. Humankind in the Theology of Evolution

Having addressed the concept of God and the nature of the universe within the framework of evolution, the third and final question to be addressed in this chapter is: What is the place of humankind in the whole drama of an evolving universe? The question of human existence put in triple form: who are we, where do we come from, and where are we going, is a challenge that humankind has grappled with since the beginning of creation. Within the context of this chapter, “The Theology of Evolution”, this question shall be addressed under the following headings:

- Humankind as an *imago Dei* and participant in divine being;
- Humankind as created co-creator;
- Humankind in process and evolutionary thought; and
- Humankind as vital force in African traditional religion and philosophy.

4.3.1. Humankind as *Imago Dei* and Participant in Divine Being

In the Hebrew Bible the human person is directly identified as a creature of God, formed out of the earth – dust, created male and female and in the image and likeness of God Himself (Gen. 1:27). Adam, from the Hebrew, *adamah*, which means

“dust” designates the human creature, man/woman.¹⁰² The etymological analysis here is of crucial importance because, the human person is not “body” and then, “soul” as though two separate entities. The human person is body and soul as one whole. Scholars remind us that in the Hebrew thought, body and soul are not contrasted, therefore this dualism does not exist in the Hebrew Bible. For the Hebrew, the human person is one whole, an animated body. The dichotomy came later in Greek Platonic thought where the human person is perceived as a soul-body, incarnated spirit. This understanding was later carried over into Scholastic philosophy and theology as reflected in Church documents.¹⁰³ The more orthodox approach then is that, although we can talk about the body and soul as distinct, it would not be correct to describe the human person as having body and soul as separate parts.

In the Christian Bible, there is no abstract or speculative philosophical treatise on the human person, because the understanding of the human person in the Hebrew Bible is carried over to the Christian Bible. Jesus came to save the entire human person, not just the soul. In his public ministry he attended to the needs of both body and soul as he addressed both the spiritual and physical needs of the people. He fed the hungry, cured the sick, and forgave sins. (Feeding the hungry – Mk.6:34-44; 8:1-9; Mt.14:13-21, 15:32-39; Curing the sick and forgiving sins – Mk. 1:21-34, 40-42, 2:1-12, 3:1-6; Lk. 4:31-37, 38-41, 5:18-26; Mt. 7:28-31, 8: 2-4,14-16; 9:2-8; 12:9-14; 6:6-11.)

¹⁰² There is a debate among scholars about the actual status of Adam and Eve. A debate centered on whether Adam was an individual human being or a representative of humanity. But this debate does not affect the reference made in this context.

¹⁰³ *Catechism of the Catholic Church* (United States Catholic Conference, Inc., 1994), Paragraphs 362-365 (92-93); See also Richard McBrien, *Catholicism*, 159.

The Pauline writings show the same understanding of the human person in the tradition of the teaching of Jesus himself. The belief in the resurrection of the body (1Cor. 15) is based on the understanding that the body is intrinsic to the being of the human person (1Cor. 15:15-19). Consistent with this biblical tradition, the Church has always taught that life after death is not just about the soul, but the entire human person --- body and soul, hence the emphasis on the resurrection of the body which is clearly spelt out in the creed: “I believe in...the resurrection of the body and life everlasting”.

Although body and soul together form the human person, the concept of “soul” is also used to refer to the innermost aspect of the human person and it is in this that a human being is “most especially in God’s image” because “soul” signifies the spiritual principle in man.”¹⁰⁴ Being in the image and likeness of God is evident from the fact that the human person possesses specific characteristics that are God-like, for example, love, and basic human structures by which communication and dynamic relationship is maintained between God and humankind as God continues his work of creation in and through the human agent. It is in and through the process of this mechanism that the human person continues to participate in divine being, sharing in the nature of God Himself.¹⁰⁵

¹⁰⁴ *Catechism of the Catholic Church*, Paragraph 363, (93). It is important to point out here that to identify the rational soul as the only locus for divine image risks creating a position of dualism between body and soul, where body is identified with matter and soul with spirit, and this in turn can cause a return to the old erroneous philosophical positions that treated matter as evil and spirit as good. From the point of view of this work in particular, to treat the soul as the only locus for divine image does not only undermine the insights of theologians like Bonaventure and Aquinas who conceive all of creation as *vestigum Dei*, and sacrament of God’s presence in creation respectively, but also leads to a disregard for non-human creatures which is at the root of ecological crisis today.

¹⁰⁵ Although the Church encourages dialogue between science and theology as it takes the theory of evolution seriously, the official position of the Church remains that the soul is immediately created by God and can not be reduced to a product or byproduct of the process of evolution. (CCC, 93) Paragraph 366. In the Encyclical, *Humani Generis*, Pope Pius XII clearly states: “Thus, the teaching of the Church leaves the doctrine of evolution an open question, as long as it confines its speculations to the development, from

In the document based on the address of Pope John Paul II to the Pontifical Academy of sciences and International Theological Commission, entitled “*Communion and Stewardship: Human Persons Created in the Image of God*,” two major aspects of the theology of the human person as *imago Dei* are identified. First, John Paul II emphasizes that *imago Dei* is “the basis of communion with the triune God and among human persons.” Secondly, John Paul II speaks of “the *imago Dei* as the basis of a share in God’s governance of visible creation”(# 5). With regard to the first point, the document emphasized that the triune God revealed his plan to share the communion of Trinitarian life – Father, Son and Holy Spirit – who exist in communion and mutual relations, with human persons created in his image and likeness. This is because human beings, made male and female for communion with one another (#40), are destined “to be conformed to Christ, the perfect image of the Father, in the power of the Holy Spirit” (#25).

Secondly, having been created in the image and likeness to God to share in the communion of the Trinitarian love, humankind is then called to participate in the divine governance of creation. The documents make reference to the Genesis text where God commands humankind to “fill the earth and subdue it” (Gen. 1:28), but insists that included in this injunction is responsible stewardship on the part of humankind (#58).

The insight of this document lies in the fact that it underscores the importance of the direct connection between the place of humankind as *imago Dei* destined for communion with God, which is a special privilege, with an equally special responsibility of creative stewardship. Every privilege goes with responsibility and

other living matter already in existence, of the human body”. (That souls are immediately created by God is a view which the Catholic Church imposes on us). Pius XII, *Humani Generis*: DS 3896.

humankind demonstrates that they appreciate this privilege by living up to the responsibility that goes along with it. This observation is particularly important from the stand point of ecological considerations (# 73-80). A further point of significance, from the point of view of this chapter is that this document insists that part of this responsibility of humankind, especially Christians, is “to locate the modern scientific understanding of the universe within the context of the theology of creation” (#62). And so, the document underscores a significant point of contact and integration between science and creation theology that must be respected and upheld by human beings as part of their responsibility. This is because “The place of human beings in the history of this evolving universe, as it has been charted by modern sciences, can only be seen in its complete reality in the light of faith, as a personal history of the engagement of the triune God with creaturely persons” (#62). The other important point made by this document that is of significance from the point of view of this work is that, it acknowledges that:

Since it has been demonstrated that all living organisms on earth are genetically related, it is virtually certain that all living organisms have descended from this first organism. Converging evidence from many studies in the physical and biological sciences furnishes mounting support for some theory of evolution to account for the development and diversification of life on earth...(#63).

Here again, the interconnection, interrelation and interdependence in the cosmos is emphasized. The role of humankind as created co-creator, and their place in the interrelated cosmos will be further addressed in the next sub-section.

4.3.2. Humankind as Created Co-Creator

The billions of years of the inorganic and organic evolution before human life are, in Teilhard's understanding, a preparatory phase for the advent of humankind on the scene of the evolving cosmos. Humankind therefore occupies a position of "privileged axis"¹⁰⁶ as the vanguard of the billions of years of evolutionary history.¹⁰⁷ Human beings are not only spectators but also participants in the ongoing process of evolution. The branch of evolutionary tree that eventually led to humankind is special, a privileged axis, and that explains why it was necessary to have the billions of years of preparation for the advent of this crucial stage in the history of evolution. If we were to plot the history of evolution on a regular annual calendar, the sequence would roughly come to something like this: On January 1, the universe begins to cool down following the Big Bang, on December 21, dinosaurs appear on the face of the earth. Human beings appear only at about 11.50 p.m. on New Year's Eve.¹⁰⁸ Interestingly, the Genesis creation accounts way before any theory of evolution, although not to be interpreted literally, puts the creation of humankind at the tail end of God's work, the sixth day, and after that he took his rest on the seventh day. The traditional argument in cosmology from the point of view of design highlights the anthropic principle which states that the physical components of the early universe were balanced in a delicate manner or "fine-tuned" because if this balance was altered even slightly, life in general and in particular human life would not have come into existence.¹⁰⁹ The significance of the privileged position of human beings is, from the religious point of view, demonstrated in the fact that humankind is created in the image and likeness of God.

¹⁰⁶ Teilhard de Chardin, *The Phenomenon of Man*, 142.

¹⁰⁷ Ewert H. Cousins, (ed), *Process Theology* (New York: Newman Press, 1971), 247.

¹⁰⁸ Philip Hefner, "The Evolution of the Created Co-Creator", in *An Evolving Dialogue: Theological and Scientific Perspectives on Evolution*, James B. Miller (ed), 400.

¹⁰⁹ Ian Barbour, *Religion and Science*, 204-206.

The position of humankind as “privileged axis” and his role as “created co-creator” made in the image and likeness of God, brings to mind the following points. First, human beings are dependent creatures. For their very existence, humankind is dependent on both their cosmic and biological pre-history. But more importantly, they are dependent on the creative power and grace of God himself. Secondly, having arrived on the scene of the evolutionary history, humankind assumes their privileged role as co-creators. They do this by exercising their freedom as well as their power to shape the course of historical events as they help to guide the course of evolution towards its ultimate goal. Humankind, therefore, has a unique and special role of participating in God’s creative work in the ongoing process of creation. Thirdly, to be created co-creators means that humankind has a destiny, a future toward which God draws them by his persuasive love. While working hand in hand with God to guide the rest of creation in the ongoing evolutionary process, humanity freely responds to the divine lure that urges them toward the realization of their destiny.¹¹⁰

To live up to his status as the privileged axis and created co-creator and to fulfill his destiny, humankind must continue to work hand in hand with the Creator to move evolution ahead toward its final goal. Hefner argues:

It will be my material contention that the evolving cosmos is an ongoing creation. The complex interaction in the co-evolution of genetic and cultural information, mediated by human brain and selected by the system of forces that selects all things, can be said to be the means God has chosen to unfold the divine intention and to bring all of nature to a new stage of fulfillment. This entails a corollary understanding: the human being is God’s created co-creator, whose purpose is the modifying and enabling of existing systems of nature so that they can participate in God’s purpose in the mode of freedom.¹¹¹

¹¹⁰ Philip Hefner, in “The Evolution of the Created Co-Creator”, in *An Evolving Dialogue*, James B. Miller (ed), 410.

¹¹¹ *Ibid.*, 400.

To successfully fulfill their role as created co-creator, humankind has to first, understand their place in creation. Process and evolutionary thought contribute to this understanding by offering a perspective that insists that humanity is an integral part of the evolving cosmos. The next part of this section will therefore address the nature and place of humanity in creation from the point of view of process and evolutionary thought.

4.3.3. Humankind in Evolutionary and Process Thought

From the perspective of process and evolutionary thought, humankind is among the latest arrivals in the long process of evolutionary history, coming onto the scene only about seven million years ago.¹¹² In process and evolutionary thought, the phenomenon of humankind is understood within the overall process-metaphysic of the interrelatedness of reality. This intrinsic interrelatedness between humankind and the rest of creation is therefore a major starting point in understanding human nature from the perspective of process and evolutionary thought. What makes up humankind is a combination of the elements, events and experiences of our past incorporated into our present while responding to new possibilities opening into the future before them as they interact with other creatures in the universe. Commenting on this interrelatedness, W. Norman Pittenger has this to say:

For the world in which we live, so described, is no meaningless flight of fancy, no absurd leap out of common experience; and if we take seriously what evolutionary science has taught us, but take equally seriously what Whitehead calls the ‘aesthetic’ – the feeling-qualities, the apprehensions and intuitions, the poetic insight, the emphatic identity of man with his world -- which

¹¹² There is no complete agreement among scholars about the details of human prehistory, but there is some agreement that the first stage of the emergence of human beings (hominids) took place in Africa about seven million years ago. Denis Edwards, *The God of Evolution*, 56.

brings out the natural order and is both organic and continuous with it, we are led to take with the same seriousness the grounding of man in his world and the opening to him, in his experience, of the dynamic depths in that world...¹¹³

Humankind, from the evolutionary point of view, is an integral part of the cosmos, therefore included in the concept of the evolutionary principle of *common descent*, which holds that humans are not created separately.¹¹⁴ Similar insights on the interconnection and interrelationship between humankind and the rest of creation have arisen from research in other disciplines such as anthropology, evolutionary biology and neuroscience.¹¹⁵ Teilhard de Chardin puts it quite succinctly in his observation stated in these words: “The peak of ourselves, the acme of our originality, is not our individuality but our person; and according to the evolutionary structure of the world, we can only find our person by uniting together.”¹¹⁶

Although from the biblical and theological points of view, humankind has a special dimension to them, because they are created specially in the image and likeness of God, the concept of common descent in evolution can, nonetheless, serve as a significant point of contact and dialogue between scientific theories of evolution and creation theologies which affirm that all life originates from a common source, God the Creator.

¹¹³ W. Norman Pittenger, “A Contemporary Trend in North American Theology: Process Thought and Christian Faith”, in *Process Theology*, Ewert H. Cousins (ed), 28.

¹¹⁴ This is an evolutionary principle which holds that all life, including human life, have a common origin, because they share common descent from the beginning in their relationship on the tree of life. Common descent insists that humankind is not created separately.

¹¹⁵ In his book, *Reforming Theological Anthropology: After the Philosophical Turn to Relationally*, F. LeRon Shults observes that: “A person is no longer defined as an ‘individual substance of a rational nature’ (Boethius), or as a ‘punctual self’ (Locke). Instead of autonomous subjects that stand over against the natural world and other subjects, today human self consciousness is understood as always and already embedded in relations between self, other and the world. Similar insights have arisen out of research in evolutionary biology in general and neurosciences in particular, thus illustrating the blurring of boundaries between the ‘natural’ and the ‘human’ sciences. Today, human acting is rarely described in terms of a substantial soul with abstract faculties (or powers) to influence the material world, but more in terms of dynamic-self-in-community.” 31-32.

¹¹⁶ Pierre Teilhard de Chardin, *The Phenomenon of Man*, 263.

With the rest of creation, humankind exercises freedom as they respond to the new possibilities and alternatives that open up before them into the future. Freedom in process thought is a basic fact of reality.¹¹⁷ Humankind, like the rest of creation, is endowed with the freedom to respond to their Creator who is the source of novelty--- the new range of possibilities that open up before us in the process of evolution. Along with this freedom comes the reality of error, wrong choices and negative responses that sometimes bring about sin/evil --- an inevitable outcome of human beings responding to new possibilities and alternatives as evolution moves to higher, more complex and more unified levels.

In Teilhard de Chardin's worldview, evolution progressed to a higher, more complex and more intense levels of consciousness that eventually culminated in the arrival of humankind.¹¹⁸ Teilhard coined the word *hominization* to describe the progressive development of humankind to higher and more complex levels of sophistication at the stage of evolution which he calls the *noosphere*, the sphere of the mind. Teilhard conceives of human beings as prime participants in the process of evolution because at this current stage in evolutionary history, the most important area of development in complexity is in human thought and culture. With the emergence of human consciousness in the stage of *noosphere*, there is a "thinking layer" at which the earth "gets a new skin" and "finds its soul".¹¹⁹

In the evolutionary line that led humankind to the capacity for symbolic thought, communication by language, self awareness and the sense of the spiritual which were there potentially, blossomed and developed as the human species matured. In today's human culture we see a steady increase in socialization, evident, for example, in modern

¹¹⁷ C. Robert Mesle, *Process Theology: A Basic Introduction* (St. Louis, Missouri: Chalice Press, 1993), 47-48.

¹¹⁸ Teilhard de Chardin, *The Phenomenon of Man*, 163-190. (180).

¹¹⁹ *Ibid.*, 202; See also Denis Edwards, *God of Evolution*, 102..

sophisticated means of communication that reduces the universe into a global village, while moving humankind toward a higher degree of consciousness. The evolutionary process is moving toward higher levels of unification and spiritualization as the cosmic system advances toward a final point of convergence. Teilhard suggests that perhaps, after millions of years, humankind will be able to cross a new threshold of consciousness and reflection and enter into the final stage of single collectivity of consciousness, that final point of convergence which he calls the Omega Point:

It is mankind as a whole, collective humanity, which is called upon to perform the definitive act whereby the total force of terrestrial evolution will be released and flourish; an act in which the full consciousness of each individual man will be sustained by that of every man, not only living but the dead.¹²⁰

From the standpoint of the principles of contact/dialogue and confirmation/integration, the contributions of John Haught and Arthur Peacocke are again important especially from the consideration of the issue of theodicy.¹²¹ Haught develops his theology of the cross in response to theodicy by drawing on the insights from theories of evolution. He argues that the insight of the Darwinian worldview can help us to contemplate more deeply and explicitly the mystery of God especially as it is manifested in the experience of pain, suffering and evil in the world which, for Christians, is epitomized in the suffering and death of Jesus Christ on the cross. This is because:

In the symbol of the cross, Christian belief discovers a God who participated fully in the world's struggle and pain...Evolutionary biology not only allows theology to enlarge its sense of God's

¹²⁰ This is a quote from Teilhard's work by Theodosius Dobzhansky in his article titled, "Teilhard de Chardin and the Orientation of Evolution: A Critical Essay" published in *Zygot 3* (1968), 242-258 and in Ewert H. Cousins, (ed), *Process Theology*, 247.

¹²¹ Theodicy in general deals with the question of how to justify the attributes of God as an all powerful and all loving God in the presence of evil. From the perspective of evolutionary and process theology, pain and suffering, evil and death are more or less part of the natural process of development and growth. It is therefore a departure from the traditional Christian understanding in which pain, suffering, evil and death are the result of the Fall of Adam and Eve (Original Sin).

creativity by extending it over measureless eons of time; it also gives comparable magnitude to our sense of the divine participation in life's long and often tormented journey.¹²²

Haught identifies two attributes of God to illuminate his position, namely, a God of *kenotic love* and a God of *power of the future*. Through the self-abasement of God he allows creation to function in and through gifts of freedom and autonomy that are necessary for the creative process. It is in divine self-emptying that God's practice of self-withdrawal, self-removal and self-restraint is made possible. However, he continues to be involved by luring creation toward increased beauty and perfection. Secondly, Haught situates this position in a wider context within the cosmic process of evolution. In what he calls, *the power of the future*,¹²³ Haught insists that it is God's power of the future that is the ultimate metaphysical explanation for the physical reality, which includes humankind, and all that is involved in the unfolding process in creation. In his words: "I would argue that it is precisely the implied metaphysics of the future that can best account for the cosmic qualities --- chance, lawfulness, and temporality --- that allegedly provide the raw stuff of biological evolution."¹²⁴ It is from the dimension of this future that God renews creation and from this too comes the ultimate moment of redemption. This eschatological perspective, what Haught calls the comprehensive renewal of creation, gives meaning to the experience of pain, suffering and evil in the world, and explains the destiny of creation in the process of evolution.¹²⁵

Developing this theme further, Peacocke suggests that the insights of evolutionary and process thought can provide a deeper understanding of theodicy and the theology of the

¹²² John F. Haught, *God After Darwin: A Theology of Evolution* (Boulder, Colorado: Westview Press, 2000), 46.

¹²³ *Ibid.*, 89-93.

¹²⁴ *Ibid.*, 94.

¹²⁵ *Ibid.*, 190.

Fall of humankind as a result of Original Sin. Traditional theology attributes the presence of pain, suffering, evil and death in the world to the Fall of Adam and Eve. For Peacocke however, evil and death as such, can no longer be understood as a wage of sin but as part of the natural process of evolution. The classical theology of atonement should therefore be revised to incorporate the understanding of humanity within the process of evolution. From this perspective therefore, humankind is thought of as being in process and human nature as still becoming. Death is natural, not evil. Dying is necessary for new life to come into existence and new life requires dying for nourishment and sustenance as exemplified in the suffering of a prey being crushed in the teeth of a predator. "So, there is a kind of structural logic about the inevitability of living organisms dying and preying on each other ... The statistical logic is inescapable: new forms of matter arise only through the dissolution of the old; new life only through death of the old."¹²⁶ By adopting this approach, Peacocke rejects the sequence in the traditional position of theology where the Fall is followed by the plan for redemption. This is because, for him, there was never really an original pre-lapsarian pristine state of purity and innocence as the book of Genesis suggests --- the golden age of Adam and Eve in paradise. This paradise state of righteousness is actually an image of the future that human kind aspires to attain in the end.¹²⁷

¹²⁶ Arthur R. Peacocke, "Biological Evolution: A Positive Theological Appraisal", in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, 370. See also Ted Peters & Martinez Hewlett, *Evolution from Creation to New Creation*, 138-139.

¹²⁷ The pre-lapsarian state of innocence portrayed in the Genesis creation accounts, may well be a vision of a future state to which humanity aspires and hopes to attain in the end. In recent theological discourse on the doctrine of Original Sin, the works of the Italian Jesuit of the Gregorian University, Rome, Maurice Flick, S.J., is remarkable. Flick observes that: "It would be a possible transposition in evolutionist terms of the doctrine of original sin, if we said that evil, for which we have need of a Redeemer, is no longer a falling away from a perfection that existed in the past, but the gap separating us from the perfect end to which evolution has not yet attained". For more information on this, see, "Original Sin and Evolution" in *The Tablet* (September, 10, 1966), 1010; and in a joint article written by Maurizio Flick, S.J., and Zoltan Alszegehi, S.J., titled: "Il Peccato Originale in Prospettiva Evolutionistica" in *Gregorianum* (1966), 201-225.

Furthermore, Peacocke situates moral evil within the context of human freedom which he links directly with divine self-limitation.

This self-limitation is the precondition for the coming into existence of free-self conscious human beings, that is, of human experience as such. This act of self-limitation on behalf of the good and well-being, indeed the existence, of another being can properly be designated as being consistent with, and so exemplifying the ultimate character of *God as Love*.¹²⁸

Because God loves and does so in a radical way, he self-limits so that humankind, and creation in general, can freely function as they fulfill their potentials. Included in the exercise of this freedom, is the possibility of sin and evil but this does not lessen the intrinsic goodness of the gift of freedom in human beings. The self-limitation of God makes allowance for the possibility of evil and death as natural history unfolds because this is the unavoidable means necessary for the development of nature, life and human beings as the gift of freedom is exercised on all levels. However, God, the creator continues to be present to all of these for God is involved in the unfolding creative process of the world. And therefore, God shares in the pain, suffering and evil of the world both in the experience of the creatures of the world and in the very unfolding process of the universe. This, according to Peacocke, is nowhere more clearly demonstrated than in the experience of the Cross, the suffering and death of Jesus Christ on the cross.¹²⁹

The theodicy of Haught and Peacocke therefore build on the position of Teilhard who conceives pain, suffering and evil as necessary by-products of the process of evolution. Rejecting the classical view that presents pain, suffering and evil as punishment and expiation for sin that is made up for by Jesus' suffering and death on the cross, Teilhard insists that these must be conceived within the overall

¹²⁸ Arthur R. Peacocke, *Theology for a Scientific Age* (Minneapolis: Fortress Press, 1993), 123.

¹²⁹ *Ibid.*, 126.

evolutionary worldview of a cosmos that is becoming. In his own words: “Physical and moral evil originate from a process of becoming; everything which evolves experiences suffering and moral failure... The Cross is the symbol of the pain and toil of evolution, rather than the symbol of expiation”.¹³⁰

In conclusion, this section reiterates the theme of interconnection, interrelation and interdependence in creation focusing on the place of humanity as an integral part of the cosmos. And this is a position affirmed by different disciplines as Barbour testifies,

Cosmology joins evolutionary biology, molecular biology, and ecology in showing the interdependence of all things. We are part of an ongoing community of being; we are kin to all creatures, past and present [and future]. From astrophysics we know our indebtedness to a common legacy of physical elements. The chemical elements in your hand and brain were forged in the furnaces of the stars. The cosmos is all of one piece. It is multi-leveled; each new higher level is built on lower levels from the past. Humanity is the most advanced form of life of which we know, but is fully a part of a wider process in space and time.¹³¹

From the perspective of the insight of traditional societies, the concept of humankind as vital force in African philosophy is once again a relevant contribution. This is because while it equally affirms the theme of interconnection, interrelation and interdependence between humankind and the rest of creation, it adds yet another dimension to the discussion. The third and final part of this section, the last section of the chapter, will therefore address the nature of humankind as vital force in A.T.R. and philosophy.

¹³⁰ Teilhard de Chardin, “La Vie Cosmique,” in “Ecrits du temps de la guerre.” See also, Ian Barbour’s “Teilhard’s Process Metaphysics” in *Process Theology*, edited by Ewert H. Cousins, 344.

¹³¹ Ian Barbour, *Religion in the Age of Science*, Vol. 1 (New York: Harper and Row, 1990) 147.

4.3.4. Humankind as Vital Force in African Traditional Religion and Philosophy

The concept of humankind in African thought is understood within the general idea of the organic universe in which all creatures participate in the vital force that comes from God the Creator who is the ultimate source of existence and the Supreme Vital Force. In Bantu philosophy for instance, humankind, *Muntu*, is believed to possess the vital force at a level higher than all other creatures because they participate in the Supreme Vital Force at a higher degree more than any other creature. In Bantu philosophy therefore, it is believed “that all the forces scattered though the universe are drawn together into a centered life and given an order and unity in man, *Muntu*”.¹³²

Because of the special position that humankind holds in creation, they are seen as the center of life with the ability to organize, direct and utilize the various life forces that exist in the organic universe. The superiority of humankind over other creatures is also evident from the possession of a special inner vital power that is specifically characteristic of human nature. This special inner vital power, *Amagara*, makes it possible for human beings to continue to live in the realm of the ancestors after death, because it a life principle that enables the “living dead” to assume another form of existence in the invisible world.¹³³ Through *Amagara*, humankind participates in the life of God the Life-Giver while at the same time maintaining a vital solidarity with other creatures in the organic universe over which they come first in order of hierarchy.¹³⁴ In this lies the nature and destiny of humankind as Nkurunziza puts it:

¹³² Deusededit R.K. Nkurunziza, *Bantu Philosophy of Life in the Light of the Christian Message: A Basis for an African Vitalistic Theology* (Frankfurt: Peter Lang, 1988),145.

¹³³ *Ibid.*, 146.

¹³⁴ *Ibid.*, 146-147. *Amagara* originates from the Life-Giver, the Creator himself and it constitutes that which makes a human being and without which there would be no human being. It is a dynamic life force that is not subject to disintegration, thus able to survive death. It is the fundamental life principle in

The dynamic life power is the fundamental principle which facilitates the two levels of participation whereby man can affirm his solidarity both with the corporeal and incorporeal, with the material and the spiritual reality. He can fully participate in the life power of both the visible and the invisible universe respectively. Man, in his natural constitution, is a living symbol of God because his dynamic life power has its origin and reason of existence in the Life-Giver and is destined to participate and to manifest in the highest possible degree in the fullness and integrity of life which is due to the One who is the source of all life.¹³⁵

The social dimension of human nature is a major concept in African anthropology. The African culture underscores the fact that humankind does not exist in isolation but in their very being they are in constant and ongoing interaction and interrelation with other creatures in the organic universe, animate and inanimate alike. From the unique and privileged position as the one around whom creation is centered, humankind forms a nexus of interconnected and interacting forces linked in the network of relationships in the universe. The life of human beings affect and is affected by the other creatures in the universe and *vice-versa*, either in a positive or negative way. Temples again, affirms this theme of interconnection and interrelation in his observation that:

Bantu psychology cannot conceive of man as an individual, as a force existing by itself and apart from its ontological relationship with other living beings and from its connection with animals or inanimate forces around it... The Bantu cannot be a lone being... he feels and knows himself to be a vital force, at this very time to be in intimate and personal relationship with other forces acting above him and below him in the hierarchy of forces. He knows himself to be a vital force, even now influencing some forces and being influenced by others. The human being, apart from the ontological hierarchy and the interaction of forces, has no existence in the conceptions of the Bantu.¹³⁶

human beings that is equivalent to the concept of soul. For more information on this, see, Nkurunziza, *Bantu Philosophy of Life in the Light of the Christian Message*, 146-147.

¹³⁵ Ibid., 148.

¹³⁶ Placid Temples, *Bantu Philosophy*, 68-69; The same idea is expressed by Geoffery Parrinder, in *Religion in Africa*, 28.

Essential to the concept of personhood from the African perspective is the quality to be and the ability to participate in communal, interpersonal and cosmic relationships. The solidarity of creatures in the universe and that of human beings in the human community is based on the common participation in the vital dynamic force. It is solidarity with other creatures all of whom share a common Creator and common origin. Such solidarity is therefore based on a common participation in a vital force that is ontological, dynamic and existential, whereby the creatures are related to each other because of their common origin and destiny.¹³⁷

Among the contributions of the insight from African perspectives to this discussion is that the belief in and practice of community and communal life serves as a lesson to correct the individualism practiced in Western culture as depicted in the famous Cartesian dictum, "*Cogito ergo sum.*" In African thought, the understanding is more in the mindset of "I exist as a community therefore I am." Existence, in African thought, is intrinsically and inseparably tied up with community and communal life. "I" is incomplete. A person is complete only in communal relationship of "I-thou." This is because the life and fulfillment of a person is actualized only in and through the community – family, clan, ethnic group and tribe.

From the point of view of the models of dialogue and confirmation being developed in this work, one could argue that social science from African perspective, mirrors interconnection, interaction and interrelation in nature. This in turn could be conceived as a reflection of communion and mutual relations among the three Persons in one God, although the concept of the Trinity *per se* does not exist in A.T.R. In African philosophy of life,

¹³⁷ Deusededit R.K. Nkurunziza, *Bantu Philosophy of Life in the Light of the Christian Message: A Basis for an African Vitalistic Theology*, 153.

although individuals can be identified as individuals, the concept of community, based on the philosophy of *inter-being*, overrides the concept of individuality and the ideology of individualism.¹³⁸ It is in community, not as isolated individuals, that human beings realize their potential as creatures of God.¹³⁹

The treatment of the place and role of humankind in an evolving creation here brings the third section of this chapter to a close. This is the final section of the chapter that began with the examination of communion and relationality in the divine Godhead, analyzed from the standpoint of the concept of “person,” that was the focus of the first section, and as reflected in the interrelatedness among creatures in the universe addressed in the second section. This last section on the place and role of humankind in an evolving cosmos therefore concludes the fourth chapter that puts forth a proposal for a theology of evolution.

4.4. Conclusions

The basic themes that run through this chapter are interconnection, interrelation and interdependence in creation paired with a reflection on communion and relationality among the three Persons in one God, as analyzed within the context of the ontology of relations. This is an ontology that departs from the traditional concept of reality as being conceived in a rather fixed and static condition to an understanding of reality as relational, dynamic and becoming. In this chapter, “Towards a Theology of Evolution,” therefore, the

¹³⁸ An interesting dimension to this phenomenon is that some social scientists have observed that African culture tends to over emphasize the communal dimension of society sometimes at the expense of due recognition of individual status. Such critiques are concerned, and rightly so, that the importance of the individual as a unique person may be diminished in the face of greater focus to community status.

¹³⁹ As indicated before, obviously, the concept of Trinity, as such, is not present in African Traditional Religion. The point being made here is that the philosophy of *interbeing* in social science, from the African perspective, can be developed to form a basis for contact with the concept of communion and relationality between the three Persons in one God, in the theology of the Trinity.

argument is made that it is only within the context of the ontology of relations that an authentic and viable theology of evolution can be developed.

From this stand point then, the first section focused on relationality and communion in God, the creator, as the question, of how to conceive God within the framework of an evolutionary worldview is addressed. This explains the treatment of the concept of person in the Greek traditional theology where the terms, *perichoresis* and *koinonia*, are used to further articulate the relationship between the three Persons in one God. The understanding of the Trinity as God in communion and mutual relations, Father, Son and Holy Spirit, is a major contribution toward an understanding of God within the framework of theistic evolution. The insights of process and evolutionary thought as well as the model of vital force in ATR were developed to further articulate the theme of interrelatedness in creation as a reflection on communion and relationality in the divine Godhead.

In line with the same themes of interconnection, interrelation and interdependence, the second section then makes the case that since God, the creator, is the origin and source of the universe, it follows logically that the divine attributes of communion and relationality are reflected in creation, his handiwork. This is demonstrated in the interrelatedness that is evident in creation. The concept of a universe that fits into the theology of evolution is that which views creation as *vestigium Dei* and a sacrament of God's presence in the universe as developed in the works of St. Bonaventure and St. Thomas Aquinas. Because if creatures are vestiges of God and sacraments of God's presence in the universe, as indeed they are, the same relationality and communion that is characteristic of the divine Godhead will be reflected in creation. In the same line of thought, Sallie McFague, in developing the organic model, tells the common creation story, which underscores the ontological interconnection

and interrelationship in creation as the body of God. Another contribution of the organic model is that it emphasizes the self-replicating and self-organizing quality that creatures exhibit in the universe. God indeed makes “things make themselves”.¹⁴⁰ But God continues to be involved as creation evolves in response to his persuasive love toward its goal. The insights of process and evolutionary thought and the ATR model of vital force are developed to further articulate the theme of interrelatedness in the cosmos.

Because humanity is an integral part of the cosmos, humankind, made in the image and likeness of God, assumes a special role of created co-creator to work hand in hand with God to bring creation to its ultimate end. And so, the final section addressed the place and role of humankind in creation. Here again, the insights of process and evolutionary thought as well as the concept of vital force in ATR are developed to further articulate the interconnection, interrelation and interdependence between humankind and the rest of creation, and to underscore the place and role of humanity as part of the evolving cosmos and as created co-creators.

The significance of the insights from process and evolutionary thought in this discussion lies in the fact that they help to underscore the relational and dynamic nature of reality as they introduce a concept of God that is utterly relational and involved in the process of an evolving universe. By emphasizing divine immanence over transcendence, process and

¹⁴⁰ Charles Kingsley, *The Water Babies*, Original Edition, 1863 (London: Holder & Stoughton, 1930), 248. “Four years after Charles Darwin published *The Origin of Species*, the Church of England vicar and novelist, Charles Kingsley, wrote for his children, the evolutionary fairy tale: *The Water Babies*. Kingsley was convinced that the Darwinian theory of evolution was the context within which it was possible to find the working of ‘a living, immanent, ever-working God’. The concept of God as immanent in creation was understood by Kingsley as a creation in which God made ‘things make themselves’. Self-determination, for him, was consistent with divine action. Indeed, divine creativity for him was of such a nature that it could only work through entities that had their own degree of creativity and self-determination.” Charles Birch, “Neo-Darwinism, Self-Organization, and Divine Action in Evolution”, in *Evolutionary and Molecular Biology*, 225. In this dissertation I too have put forward a position arguing that self-determination, self-organization and self-replication are consistent with natural selection --- Darwin’s mechanism of evolution --- and the view point of divine creativity as articulated by the various authors whose works are examined above and especially in process (and evolutionary) thought.

evolutionary thought help us to understand that God is directly involved in a personal and intimate way in the evolutionary process of the universe as he guides creation through persuasive love to its ultimate goal. Another major insight from process and evolutionary thought lies in the emphasis placed on the freedom of creation as it responds to new possibilities and alternatives made possible by God the source of novelty. Although this opens up the possibility of error, sin and evil, it is the way by which creation actualizes its full potential in the process of evolution and responds to God the Creator as it moves toward its goal.

Equally significant are the insights from ATR that represent a perspective of traditional societies. Once again, the themes of communion and relationality are emphasized as African philosophical models are developed to further explain how God's vital force is diffused in creation. The importance of this is that it represents a model of pan-en-theism that demonstrates God's ongoing involvement in creation and how creation responds to divine guidance as it moves in and through this dynamic vital force toward its goal. The African concept of creation points out how every creature participates in the divine vital force, each according to its kind. This vital force, a principle of life, diffused in creation becomes a common source of relatedness as creatures perceive themselves as members of the same cosmic family with a common origin and destiny. This point of view offers a powerful defense of creation in the face of ecological crisis.

In this chapter, the principles of contact/dialogue and confirmation/integration in the models of relating science and religion have been applied to address the basic questions at stake, namely: How do we understand God the Creator in the context of evolution and within the framework of an evolving universe? What understanding of creation fits into the

framework of theistic evolution? And what is the place of humankind in the whole drama of an evolving universe?

For any theology of evolution to be authentic and viable, the principles of contact/dialogue and conformation/integration must be explored to the fullest possible level. It is only through contact and integration between religion, science and ideas from traditional cultures around the world, that the full truth about the nature of reality --- God, creation and humankind--- will be attained. Reality is not understood from the perspective of one discipline alone. This is the weakness and inadequacy of reductionism. For a comprehensive picture of the nature of reality, the insights of all disciplines must be put into consideration and brought to bear on the discussion. For instance, science deals primarily with the *how* of things --- *how* things function in the universe. Religion goes beyond the *how* to investigate *why* things are the way they are and, more so, *why* they exist at all in the first place. To have a complete picture of reality, both questions have to be addressed. As the often quoted statement of Albert Einstein says: “Science without religion is lame, religion without science is blind.” Therefore, far from being in conflict or contrast, religion and science must be examined from the point of view of the principles of the models of contact/dialogue and confirmation/integration to arrive at the full truth.

Rather than being a threat to faith, science can help to clarify some of the elements of the creedal formula. The German-Swiss theologian, Hans Kung, testifies to this by saying that theories of evolution are absolutely essential in the understanding of our faith today. They make it possible to have a deep and richer understanding of God not as above or outside the world but in and through evolutionary history; a deeper and richer understanding of creation not as opposed to but as making evolution possible and meaningful; and a deeper

and richer understanding of humankind as organically related to the rest of creation --- the universe and all that is contained in it.¹⁴¹ God, the Creator, is the source and origin of the universe. Creation shares a common cosmic story, a story that identifies their common origin and common destiny. This common creation story that tells it all is well expressed by John Polkinghorne:

In the beginning was the Big Bang. As matter expanded from that initial singularity it cooled. After about three minutes the world was no longer hot enough to sustain universal nuclear interactions. At that moment its gross nuclear structure got fixed at its present proportion of three quarters hydrogen and one quarter helium. Expansion and further cooling continued. Eventually gravity condensed matter into the first generation of galaxies and stars. In the interior of these first stars nuclear cookery started up again and produced heavy elements like carbon and iron, essential for life, which were scarcely present in the early stages of the universe's history. Some of these first generation stars and planets condensed in their turn; on at least one of them, there were now conditions of chemical composition and temperature and radiation permitting, through the interplay of chance and necessity, the coming into being of replicating molecules of life. Thus evolution began on the planet Earth. Eventually it led to you and me. We are all made of ashes of dead stars.¹⁴²

In spite of the unanswered or yet to be answered questions, the merits of integrating ideas from science and religion for an authentic and viable theology of evolution cannot be disputed. As research and study benefit from the insights that come from the application of the principles of contact/dialogue and confirmation/integration, they continue to accept the challenges to use these principles to acquire new knowledge while at the same time deepening the old ones in the development of a theology of evolution that brings humanity ever closer to the full truth.

¹⁴¹ Hans Kung, *Does God Exist?* Trans, by Edward Quinn (New York: Doubleday, 1980), 347.

¹⁴² John Polkinghorne, *One World: The Interaction of Science and Theology* (N.J.: Princeton University Press, 1986), 56.

Just as no creation theology today can ignore the insights of evolution, so too, no branch of theology can ignore theology of evolution. Theology of evolution has implications for all branches of theology, including African Christian theology. However, because of the scope of this dissertation, It is only the implications of theology of evolution for African Christian theology that can be examined here. The next and final chapter of this study will therefore do a summary and an evaluation of the themes addressed in chapters one to four, and an analysis of the implications of a theology of evolution for African Christian theology.

CHAPTER FIVE

SUMMARY, EVALUATION AND IMPLICATIONS

Introduction

The fifth chapter of this dissertation, which is the concluding chapter, is divided into four parts. The first part will be a summary of the chapters 1-4, Creation Theologies, Scientific Theories of Evolution, African Cosmogonies and Toward a Theology of Evolution. The second part will be an evaluation and analysis of the basic themes that run through this dissertation. The third part will examine the implications of a theology of evolution for African Christian theology. Finally, the fourth part will be the conclusion.

5.1. Summary of Chapters One to Four

The first section of this chapter is a summary of the first four chapters in which the themes that are most relevant to this dissertation are re-iterated.

Creation Theologies: The first chapter of this dissertation, “Christian Theologies of Creation”, addressed the theme of creation in the Bible, and the development of creation theology in the early history of the Church through the Middle Ages. In this chapter, the creation texts in the Jewish First Testament and Christian Second Testament were examined. The central theme of the Genesis creation accounts is the place of Yahweh-God the gratuitous and purposeful creator of the universe and all that is contained in it. Creation is totally dependent on Yahweh-God the creator. Standing out from the position of creation stories of the world around them, the Genesis accounts emphasize the command and control of the creator- God over creation as he effortlessly

brings order out of chaos. Humankind is an integral part of the world as they are rooted in the earth --- earth creature, yet maintains a unique and responsible position as people created in the image and likeness of God, and created co-creator. And the violation of this special place brings about evil and chaos that is restored by Jesus Christ, but would wait to be made aright completely in the new creation.

Among the prophets whose works were examined in the chapter, the major theme of creation is underscored in the firm conviction that God's creative power is made manifest in a dramatic way as it unfolds in the history of Israel. It is the same God who created them as a people, liberated them from slavery in Egypt and led them to the Promised Land who brought reality into existence and sustains it in his creative power. This same creator-God abided with his chosen people, Israel, even when they strayed in ways that led to negative consequences, all the while leading them towards a new creation (Isaiah: 40, 45, 49). By creating Israel anew out of the chaos caused by every experience of exile, God manifested his original divine power and ability to create order out of chaos.¹ The prophetic tradition thus serves as a good example of the eschatological dimension of creation as the biblical vision looks to the future as the ultimate fulfillment of God's creative act.

While maintaining the theme of redemption in relation to creation, Wisdom Literature puts more emphasis on the beauty, order, magnificence and religious significance of God's creation all of which point to the reality of God in whom all these qualities exist in its fullness and perfection. These themes are sung in the Psalms (for example, Pss. 8 and 96) and articulated in words of Wisdom (for example, Sir. 42:23-25)

¹ Zachary Hayes, *The Gift of Being: A Theology of Creation* (Collegeville, Minnesota: The Liturgical Press, 2001), 29-30.

that calls on all of creation to celebrate the greatness of God and sing his praises as his presence is manifested in the wonders of creation.

In the Christian Second Testament, the theme of creation builds on the insight of the Jewish experience articulated in the Jewish First Testament which is further developed based on the perspective of the experience of the saving mystery in Jesus Christ. It is the same God of the Hebrew Bible who communicated himself in his Son Jesus Christ in and through whom creation came into existence and through whom salvation is attained. The insight of the Christian perspective lies in the understanding that creation, as a movement from chaos to cosmos, is mediated in and through the eternal Word of God incarnated in Person of Jesus Christ. Commenting on the creation text in the epistle to the Colossians (1:15-20), Hayes observed that “we might conclude from such texts that the figure of Christ is not extrinsic to the universe. In fact we might say that God’s creative action reaches a high point in the relation between the world and God in the one whom Christians call the Christ”.² From the Christian perspective, the eternal ground of existence becomes enfleshed in Jesus Christ in whom creation came to be and finds its meaning. And this points to the eschatological dimension because it is in the same Jesus Christ that creation, now becoming a new creation in and through Jesus Christ, attains its ultimate goal. The Christian tradition thus underscores that close connection between creation and redemption with Jesus Christ as the medium in and through whom both of these are realized.

In the development of the Church, the belief in God the creator was formulated in creedal statements, for instance, the Nicene creed (AD. 381) which states explicitly the God is “maker of heaven and earth”. The doctrine of creation in the early history of the

² Ibid., 36.

Church was formulated more explicitly as the Christian community defined itself and its position against rival philosophies of Hellenistic dualism and Gnosticism. The concept of *creatio ex nihilo*, for instance, was developed to refute many erroneous philosophical positions of Gnosticism and pantheism. These include the belief that matter is evil and the work of a lesser being; the pre-existence of matter; and that the world is divine and an emanation from God. Against these erroneous philosophies the Church insists on the orthodox teaching that God is the source of all creation, both matter and spirit; matter is neither eternal nor evil but created by God and created good; the world is not divine or part of God but distinct from him; God is immanent in creation as he continues to be involved in the work of creation, *creatio continua*, while remaining transcendent. He is the one true God, the creator and redeemer who is reflected in creation. And this orthodox position is articulated in the works of great theologians such as Augustine, Aquinas and Bonaventure.

Scientific Theories of Evolution: Having addressed creation theologies in the first chapter of this dissertation, the second chapter turned to scientific theories of evolution because no contemporary theology of creation can ignore evolution. To situate the discussion on the scientific theories of evolution the first section of the chapter presented a historical survey of evolution thought among the early Greeks. The relevance of this is to recall that modern theories of evolution did not develop in a vacuum but influenced, at least in part, by ideas of evolution among the early Greek philosophers/naturalists who “conceived of the world animistically as a living, divine organism, and they spoke of the origin and evolution of the cosmos in images of piloting

and craftsmanship that implied intelligent direction and design.”³ Following a logical rather than historical order, the second section examined the Big Bang cosmology that was proposed as a model for understanding the origin and nature of the universe as an expanding and evolving cosmos. Biological and human evolution were then examined with particular attention to Charles Darwin, and the concluding part identified some of the challenges of scientific theories of evolution on tradition.

The central theme of this chapter is the evolutionary model developed by Darwin in his theory of natural selection. Through the mechanism of natural selection, variations of inherited characteristics give some advantage to certain species in the competitive struggle for survival and this leads to gradual modification of these inherited characteristics that are then passed on to subsequent generation. In *The Origin of Species* therefore, Darwin applied this theory and demonstrates how species are formed. This mechanism of natural selection is applied in his explanation of the origin of the human species as developed in his second major work, *The Descent of Man*.

The concept of evolution itself predates Darwin as indicated by the survey of pre-Darwinian theories of evolution in this chapter. However, in the theory of natural selection, independently co-founded with Alfred R. Wallace, Darwin made his original contribution to the theory of evolution. His discoveries during his voyage round the world made him question the natural theology of William Paley who argued that each species was distinctly and specially created by God from eternity. Although Darwin had accepted and admired the natural theology of Paley, this could not stand in the face of the new

³ James C. Livingstone, *Anatomy of the Sacred: An Introduction to Religion* (Princeton, New Jersey: Princeton-Hall Inc., 1998), 236.

findings from his research and study during this journey. Based on his discovery of variation within a population, environmental conditions that favors these variations, adaptation to the existing environmental conditions and the differential reproduction of the individuals who happen to have these favored variations, Darwin rejected Paley's position and with him many others in subsequent generations.

As development in science progressed, there was movement away from the geocentric cosmos of the pre-modern world and the mechanistic, static and predictable world of Newtonian thought, to this position where we now find ourselves in the face of a universe that evokes a sense of mystery, because it is unfolding, dynamic, organic and interrelated, marked by a degree of unpredictability as it operates within the interplay of chance, necessity and providence. Peacocke observes that the most distinctive character of modern scientific worldview is perhaps the converging perspective from different branches of science about the unfolding and dynamic nature of the universe --- a process of evolution. This is demonstrated in the works of geologists, biologists, chemists, physicists and astronomers.⁴ These developments in scientific research demonstrate that just as the cosmos goes through stages of evolution, science also evolves in the knowledge of the world. For example, space and time were thought to be absolute but are now relativized as the universe is known to be a complex of relations with no absolute observational standpoint.⁵ Nature was conceived to be of a simple structure with a combination of relatively few entities, but now it is known to be a complex structure of a multitude of components with different levels of organization that are relational. A universe that was thought to be fully comprehensible and knowable, is now identified to

⁴ Arthur R. Peacocke, *Creation and the World of Science*, 59.

⁵ *Ibid.*, 55.

have an inexhaustible potential that is open to novelty beyond the complete grasp of humankind.⁶

This evolving development in knowledge has demonstrated what is now acknowledged as an unparalleled advancement in the development of human consciousness. However, this expansion and intensification of human consciousness has equally revealed the limitations and fragility of human knowledge. This is evident from research in some of the branches of science. Two examples of this that readily come to mind are: First, the inability of scientists to obtain an accurate date of events from the actual moment of the Big Bang explosion up to the first few minutes after it, not to talk the pre-Big Bang situation. Secondly, the inability to measure with accuracy the behavior of elements at the sub-atomic and atomic levels as Heisenberg's uncertainty principle indicates. In a similar way, there is unpredictability of the evolution of new species as the ecosystem is impacted by climate change. A good deal of this phenomenon results from the limitation in human knowledge, however, it is also due to the very nature of an evolving cosmos itself and this is evident in the case of the behavior of atoms that are by nature elusive and thus an indication of the fact of mystery in nature itself.⁷ Furthermore, the place of the human observer as totally objective is no longer tenable,⁸ because the ideal "objective observer" of classical physics has been overtaken by discoveries in modern science. The physicist, Richard Schlegel made this observation:

We have learned that man cannot describe the physical world as if his own investigations had no effect on upon it. The classical

⁶ Ibid., 62-63.

⁷ Ibid., 63-64. A similar observation is made by Elizabeth A. Johnson, C.S.J., "Does God Play Dice? Divine Providence and Chance" in *An Evolving Dialogue: Theological and Scientific Perspectives On Evolution*, edited by James B. Miller, (Harrisburgh, Pennsylvania: Trinity Press International, 2001), 57.

⁸ Arthur Peacocke, *Creation and the World of Science*, 55-57.

physicist who could sit, as it were, on one side of the translucent screen with his thoughts and experiences, viewing the he studied on the other, is now the impossible spectator... the scientist now finds that he in fact has a role in the creation of the world that he is describing. It is not ... that his emotions bias his results, but rather that his act of observation participates in forming the natural world...even in so traditionally a model of an objective science as physics the completely uninvolved spectator has been shown to be an impossibility.⁹

These limitations are however not surprising considering the fact that humankind is equally a product of this evolving process of the cosmos. Humankind does not constitute an alien, unrelated entity all by themselves but a product of the energy-matter dynamic in the space-time relationship as nature itself and the cosmos they investigate in their study.¹⁰ This is therefore a further indication that as an integral part of the universe, humankind affects and is affected by the whole of nature as they stand face to face with the mystery of creation that eludes total human comprehension.¹¹

African Cosmogonies: No discussion on the question of origins is complete without including a perspective of traditional societies in the world. African cosmogonies represent this perspective, hence the third chapter of this dissertation. The first major section of this chapter examines African Traditional Religion in general, because African cosmogonies are products of ATR. For Africans, the existence of God is *a given*. This is demonstrated in the many names and titles for God, as well as other modes of expression such as proverbs, ejaculatory statements, prayers, songs and myths. African religiosity finds expression equally in rituals, rites and other religious ceremonies. God, the

⁹ Richard Schlegel, "The Impossible Spectator", 6th Centennial Review Lecture in Michigan State University, May 12, 1975, *The Centennial Review*, 218-230; Also in Peacocke, *Creation and the Natural World*, 56.

¹⁰ Arthur Peacocke, *Creation and the World of Science*, 65.

¹¹ Ruddof Otto and John W. Harvey, *The Idea of the Holy: An Inquiry into the Non Rational Factor in the Idea of the Divine* 1926 (London: Oxford University Press, 1926), 12-31.

Supreme Being, is the creator and source of being who holds the entire creation in existence.

The most obvious attribute of the Supreme in ATR is that of creator, and his relationship with creation is expressed in the phenomenon of vital force. God, the Supreme Vital Force, diffuses this vital force in the universe and creatures share in it according to their kind. African worldview posits two realms, the invisible world, which includes the heavens and all that dwell in it and the visible world here below. However, these two worlds are not two separate entities but part of the same reality in which the visible world is conceived as a photo-copy of the invisible world. Therefore the two realms though distinct, form a unity characterized by interconnection and interrelatedness in and through the same vital force that unites them with each other and their creator.

As a unique creature who possesses the vital power at the highest level, humankind deputizes for the Supreme Being in the visible world. However, humankind does not exist in isolation but in community that includes all other creatures as they affect and are affected by them. Here again, the basis of unity is their common participation in the vital force as humankind serves as a nexus of interconnected and interacting forces in a network of relationships in the universe.

The second major section examines creation myths from different parts of Africa all of which identify God as creator and sustainer of the universe. These creation stories are told in different forms with the most relevant ones being the seed-based and egg-based cosmogonies because of the concept of “unfolding” and “incremental development” that characterizes these creation myths. The relationship between creation

myths and communities is demonstrated in the fact that a good number of these myths reflect role models and ancestors of the communities from which they emerge.

A.T.R. contributes to this study in many ways. Besides representing a perspective of traditional societies, the phenomenon of vital force in ATR helps to correct the God-creation dualism that exists in classical theism and the absentee god of deism. A.T.R. pan-en-theism, while acknowledging the transcendence of God conceives the divine being as being present in creation where mountains, rivers, land are among his dwelling places. Secondly, in A.T.R. land or Earth is conceived in a feminine attribute of mother -- "Mother-Earth" or "Mother-Land". Furthermore, land is a sacred gift from God that must be revered and religiously guarded. This explains the cult that is built around land through which worship and sacrifices are offered to the Supreme Being. While emphasizing the reproductive role of the land in the feminine attribute of mother, this concept equally provides a powerful defense for ecology as land is considered as one of the dwelling places for the Supreme Being.

Toward a Theology of Evolution: One of the methodologies being applied in this dissertation is "comparative-dialogic." Based on this methodology therefore, the first three chapters, creation theologies, scientific theories and evolution and African cosmogonies are compared and put in dialogue with each other in chapter four. The objective then is to identify the areas of compatibility and develop the common grounds toward a theology of evolution --- theistic evolution.

The fourth chapter sets out to address these questions: How is God, the creator, to be understood in the context of evolution and within the framework of an evolving

universe? What understanding of creation fits into the framework of theistic evolution? And, what is the place of humankind in the whole drama of an evolving cosmos?

In response to the first question, the chapter argues that a God of evolution will have to be a God of communion who exists in mutual relations, a God conceived within the context of reality defined not only as “being” but also as “becoming”, and a God of “vital force”. Drawing on the concept of the ontology of relations, the insights of the Cappadocian Fathers developed by John Zizioulas were examined in the analysis of the relationship that exists between the three persons in one God. This analysis led to the conclusion that God is essentially a God of communion in mutual relations, an assertion that is supported further from the insights of process and evolutionary thought as well as the ATR concept of vital force.

The second major question in the chapter focuses on the kind of creation that fits into the framework of a theology of evolution. In this section, the main argument is that since creation is the handiwork of God and God’s nature is reflected in his handiwork, it follows logically that communion and relationality in God is what defines the nature of creation. From the theological perspective, the insights of Bonaventure who taught that creation is *vestigium/umbra Dei*, Aquinas who conceived of creation as sacrament of God’s presence in the world and Sallie McFague’s vision of the world as the body of God were examined. From the perspective of process and evolutionary thought, creation is understood as dynamic, unfolding and utterly relational rather than static, fixed and mechanical. The insights from the works of Alfred North Whitehead and Pierre Teilhard de Chardin and others were employed to develop this position. The dynamic and relational character of creation is further re-enforced in the ATR concept of vital force

which originates from God and is diffused in all creation. Creatures therefore share in the Supreme Vital Force according to their kind, a phenomenon that forms and remains the basis for interconnection and interrelation in creation.

The last section of this chapter addresses the place and role of humankind in an evolving universe. In response to this, traditional theological anthropology in which humankind is depicted as *imago Dei* is examined. As created co-creator, humankind assumes the role of responsible and creative stewardship as they work hand in hand with God to bring creation to its final destiny at the Omega Point. However, process and evolutionary thought remind us that in that role, humankind remains an integral part of an evolving cosmos as it affects and is affected by creation because of the dynamic interconnection between them and the rest of creation. Insights from the works of John Haught, Ian Barbour and Arthur Peacocke, among others, were examined to develop this position. Sharing in the vital force of God in a degree higher than the rest of creation, ATR insists that humankind is granted special power to organize, control and utilize the vital forces in the organic universe according to the will of the Supreme Being. Here again, the emphasis is on the fact that humankind is an integral part of creation in spite of their privileged position.

From the doctrine of *creation-ex-nihilo/creation-continua* in Christian theologies of creation, the dynamic interconnection and interrelatedness of nature in scientific evolution (and process thought), and the pan-en-theism of A.T.R. in its concept of vital force, a synthesis is developed that provides the necessary formula (or formulary structure) for a theology of creation that opens up to the future in a spirit of hope. This eschatological vision within the context of an evolving cosmos is no where better

expressed than in the work of Teilhard de Chardin who remains the single most painstaking individual to present a landmark and revolutionary synthesis of creation and evolution. This vision of final unity where matter and spirit converge --- a moment of grand convergence and unification, in what Teilhard calls the Omega Point is identified with the glorified Christ at the end of time.¹² For Teilhard, the intelligibility of the future as the goal of destiny rests on what went before and what is at the moment. The future does not make sense except within the context of the past and the present from which the future will continue to evolve as creation moves toward its final destiny --- the ultimate fulfillment of the evolutionary process.¹³

From the summary of the chapters, the basic themes that unite the three perspectives of creation --- Christian theologies, scientific evolution and African cosmogonies --- are identified. These basic themes will therefore be analyzed in the next section with the aim of identifying their relevance for ecological theology (Eco-theology).

5.2. Evaluation and Analysis of Basic Themes

A carefully examination of the first four chapters of this dissertation, Creation Theologies, Scientific Theories of Evolution, African Cosmogonies and Toward a Theology of Evolution, will indicate that there are some basic themes that run through them all. These themes include: *Interrelatedness/Interconnection*; *Process/Evolutionary Pattern*; *Teleology/Destiny and Sacredness/Mystery*. These themes are conditions, *sine qua non*, for any viable and authentic theology of evolution. This section will do an

¹² Arthur Peacocke, *Creation and the World of Science*, 338.

¹³ *Ibid.*, 333-346.

evaluation of these themes in each of the four chapters with the view of demonstrating why they are necessary conditions for any viable and authentic theology of evolution.

The second part will then examine how these basic themes provide a basis for an ecological theology (Eco-theology) which is a major implication of a theology of evolution.

5.2.1. Basic Themes of the Dissertation

The first basic theme to be examined is that of *incremental development/evolutionary process*. In treatment of creation theologies in the first chapter of this dissertation, the theme of incremental development is identified in Augustine's concept of "seed principle". Rejecting a literal interpretation of the creation accounts, Augustine conceived the two creation accounts in Genesis as a stage-by-stage development. The first account is the stage where things of different kinds existed only in the form of "seed principle" (*rationes seminales*). The second account is the stage where things reached their developed and matured form.¹⁴ In spite of the insight of Augustine's interpretation of the Genesis accounts, it would be reading too much into it if this is interpreted as a theory of evolution. However, one could argue that Augustine's interpretation envisages a possibility that creation and evolution are compatible.¹⁵ In a similar way, the idea of developmental process is also implicit in the doctrine of *creatio-ex-nihilo/creation-continua* which emphasizes that God did not just bring things into existence but continues

¹⁴ Ernan McMullin, *Evolution and Creation*, 11-16. McMullin observes that Augustine was not the first to adopt this interpretation. The Alexandrian Fathers and in an even clearer way, Gregory of Nyssa, had argued for this stage-by-stage incremental development approach –12. Augustine cautioned that "seed" is not to be taken literally as actual seed, but a reference to an inherent hidden force by which things that are only latent or in potency are brought into view or developed when the right conditions are in place --- 13.

¹⁵ *Ibid.*, 15.

to sustain them in being as creation journeys towards its goal. This position is equally implicit in Aquinas' doctrine of *exitus-reditus* in which he envisions everything as coming from God and going back to God.

Scientific theories of evolution, as the term states, clearly and explicitly identify a cosmos that is in a process of evolution. This became evident from research in biological evolution in the late 18th to 19th centuries, culminating in the landmark theory of Charles Darwin. Developing his mechanism of evolution ---natural selection--- Darwin demonstrated how various life forms evolved. Applying the same mechanism to humankind, he demonstrated the descent of human beings through the process of evolution. The Big Bang cosmology developed later as a model of an evolving cosmos further confirmed earlier theories of evolution.

African cosmogonies do not have the concept of evolution. However, the idea of incremental stage-by-stage development is implicit in the seed-based and egg-based cosmogonies. The Dogon creation myths, for example, demonstrate a stage-by-stage process whereby the creator made the seed or egg and then guided the development into matured creatures.

The second theme is that of *mystery/sacredness* in creation. The Judeo-Christian tradition firmly acknowledges that creation is a mystery. Creation in the strict sense of bringing being out of non-being is an act of God for God alone can create in that way. The use of the Hebrew word for "create," *bara*, attests to this because the verb always has God as its subject.¹⁶ This explains why discussion about creation in the Christian tradition is often expressed as "the mystery of creation".

¹⁶ *Catechism of the Catholic Church*, # 290, 76.

Scientific theories of evolution do not explicitly identify nature or creation in “mystery” terms. However, scientists testify to the element of mystery in their investigation of nature and awe in their observation of the cosmos. The example that comes to mind is the “Uncertainty Principle” in which the behavior of elements at the sub-atomic levels cannot be measured with accuracy not only because of limitation in human knowledge but also because of the inherent mystery in nature itself. Commenting on the sense of awe and mystery expressed by scientists, Peacocke observed that:

It is not surprising, too, that the intellectual beauty, coherence and all-embracing scope of the present scientific perspective on the universe that the physical (let alone the biological) sciences have vouchsafed us in the last few decades provokes even in quite hard-headed scientists a response of awe, almost a sense of the ‘*mysterium tremendum et facinans*’¹⁷

In ATR there is a profound sense of mystery and sacredness in nature and creation. This is the basis for the development of cults around elements of nature, such as the sun, moon, mountains, rivers and others through which ATR adherents worship God. The mystery of creation in ATR is therefore expressed in mythological forms as the cosmogonies clearly demonstrate.

The third basic theme that runs through all the three perspectives on creation is that of *interconnection/interrelation*. The basis for interconnection and interrelation in creation from the perspective of Christian theologies is the common origin and destiny of creation, God himself. As vestiges of the creator and sacraments of God’s presence in the universe, creatures share a common feature of manifesting the nature of the divine creator in their lives. Interconnection and interrelatedness is further demonstrated as creatures

¹⁷ Arthur R. Peacocke, *Creation and the World of Science*, 64.

complement and fulfill each other in giving glory to God the creator and service to the community of creatures in the universe, for no creature is self-sufficient.

Interconnection and interrelation is no where better demonstrated as in scientific theories of evolution. All branches of science attest to the fact of interconnection and interrelation in the universe. This is most evident in cosmology, astrophysics, evolutionary and molecular biology, chemistry and ecology. The Big Bang cosmology suggests that all creation originate from the primeval atom. Relativity theories further demonstrate that not only are things to be conceived as relative but that space and time themselves are inseparably connected to each other. The science of genetics identifies the areas of interconnection and interrelatedness in beings. And ecology demonstrates the dynamic interconnection of living things in the common cosmic home.

The basis for interconnection and interrelation in ATR is the common bond of unity formed around the principle of vital force. God the creator, who possesses vital force in its fullness, diffuses it in creatures. Therefore creatures share in the vital force, each according to their kind. Creatures, according to ATR function in response to the level of vital force present in them as they affect and are affected by other creatures in both the visible and invisible worlds.

The last of the themes being examined in this section is that of *teleology/destiny*. One of the most obvious declarations in the creation theologies as articulated in the First Jewish Testament, Second Christian Testament, and the teachings of the Church is that creation has a goal (teleology) and a destiny as expressed in the relationship between creation and redemption. This is best expressed in Aquinas' theology of creation in which

he envisions all creation coming from God and going back to God --- the *exitus-reditus* schema.

Teleology as such, that is, from the Christian understanding, is not explicit in scientific evolution. However, because evolution gives rise to novelties as it guides the development of things from simpler and lower forms to higher and more complex ones, one could argue that it is goal-oriented, albeit, in a non-deterministic sense. The emergence of new forms is clearly demonstrated in the principle of natural selection which is Darwin's mechanism of evolution.

The concept of teleology, again in the strict Christian sense of it, is not explicit in ATR either. Creatures in the visible world are, in general, understood to have a purpose of serving as means of communication with the Supreme Being and also of serving human needs. In some parts of Africa, adherents of ATR believe in re-incarnation, while others simply believe in after-life and being reunited with the ancestors.

This concludes the analysis of the basic themes that run through the three perspectives on creation --- Christian theologies of creation, scientific theories of evolution and African cosmogonies. The relevance of this analysis is that these themes form the basis of a theology of evolution and ecology (eco-theology), because the foundation for a theology of evolution and ecology rests on a concept of creation which recognizes the element of interconnection/interrelation in creation, the mystery/sacredness of nature and creation, the teleology of creation and the evolutionary process through which creation is brought to its final destiny. This next sub-section will therefore examine ecology (eco-theology) which remains a major area of implication of a theology of evolution.

5.2.2. Implications for Ecology (Eco-Theology)

Modern interpretation of the Genesis creation accounts emphasize that the place of humankind in creation is that of responsible creative stewardship.¹⁸ Contrary to a position in which non-human creatures are viewed as being there primarily to serve humankind, modern interpretation insist that non-human creatures exist primarily to give glory to God their creator and only on a secondary level do they provide for human needs, but, even at this level, humankind still has an obligation for responsible stewardship to creation. This position is further developed in theological discusses where creation is conceived as vestiges of the Trinity (Augustine), *vestigium/umbra Dei* (Bonaventure) and sacrament of God's presence in the universe (Aquinas).

The fact that humankind is an integral part of nature is demonstrated clearly in scientific theories of evolution. Evolutionary history is a history of group processes not an individual and isolated phenomenon. This insight counteracts the behavior of humankind that shows a tendency to superimpose themselves on and lord over non-human creatures, using them (or better still, abusing them), in a selfish and exploitative manner.

The awareness of the sacredness of nature, as a dwelling place of God and the divinities, is the basis of humankind's relationship with non-human creatures in ATR. This is most clearly demonstrated in the Mother-Earth (Mother-Land) phenomenon that

¹⁸ For long the command of God the book of Genesis: "subdue the earth and have dominion over it" (1.28) was interpreted in ways that led to irresponsible plundering and exploitation of nature. A dichotomy between humankind and the rest of creation ensued, based in this interpretation, in which creation was conceived as being there just for the purpose of humankind. For more information see, Arthur R. Peacocke, *Creation and the World of Science*, 274-278.

evokes worship of the Supreme Being through the sacred land.¹⁹ It is therefore clear from these three perspectives on the question of origins examined in this dissertation, that a solid foundation exists for ecological issues being addressed in this sub-section, eco-theology.²⁰

The term “ecology”, from the two Greek words, *oikos* (home/house), and *logos* (word, study, or reason)²¹ reminds us that the cosmos is a common home for all existents. Ecology therefore challenges us to re-think the ethical, political, social and other dimensions of existence that show an imbalance between human and non-human creatures and, for that matter, humans and humans. Unfortunately, a creation theology that is responsive to ecological issues has suffered a great deal of neglect in Catholic and other Christian traditions. In her analysis of this situation, Anne M. Clifford observes that this neglect is due to a literal and simplistic interpretation of the creation accounts in the book of Genesis (1 & 2) that results in anthropocentrism and exploitation of non-human nature; a dichotomy between human beings and the rest of creation; the separation of creation from redemption and treating them as though they were two distinct and unrelated disciplines; and, the defensive posture of the Church against science that results in theology’s emphasis on the salvation of human beings and the surrender of the rest of

¹⁹ A.T.R. recognizes that the main dwelling place for God is “up above” in the heavens. But ATR also see nature and a place where god, divinities and the ancestors dwell as they watch over and direct the forces of nature and all of creation. This, as demonstrated in chapter three is not pantheism but pan-en-theism --- African Pan-en-theism.

²⁰ Eco-theology, from the combination of ecology and theology, is a term used in discourse of ecological issues from the perspective of theology. In the book, *Eco-theology: Voices From South And North*, edited by David G. Hillman, several contributors from different parts of the world address the question of ecology and theology as they offer perspectives of different cultures of the world. David G. Hillman, (ed), *Eco-theology: Voices From South And North* (New York: Orbis Books, 1994).

²¹ In 1866, a German biologist, Ernst Haeckel (1834-1919) coined the word “ecology” to explain the interdependence and interaction of living organisms with each other and their environment. For more information on this see, Leonardo Boff, *Ecology and Liberation: A New Paradigm* (Maryknoll, New York: Orbis, 1996), 9.

nature to scientific enterprise, thereby widening even further the already existing gap between human and non-human nature.²²

The wanton abuse and exploitation of nature takes on another dimension as anthropocentrism gives rise to dualism of body and spirit, male and female, white, black and brown, and this is supported to a certain degree, by the hierarchical and patriarchal system, particularly in the Catholic Church. And for this reason, Christianity is accused of being co-responsible for ecological crisis.²³ This aspect of human and social ecology is the focus of Leonardo Boff in his book, *Ecology and Liberation: A New Paradigm*. In this book, Boff insists that:

Ecology has to do with the relations, interaction, and dialogue of all living creatures (whether alive or not) among themselves and with all the exists. This includes not only nature(natural ecology) but culture and society (human ecology, social ecology and so on).²⁴

Boff makes a detailed analysis of all the forms of oppression, segregation and dehumanization suffered by certain segments of people in the society as he offers an indictment of the exploitative practice of developed countries, multi-national corporations and other global establishments around the world. He identifies a systemic imbalance in the society evident in the social, economic and political areas whereby the poor

²² Anne M. Clifford, "Foundations for a Catholic Ecological Theology of God" in *And God Saw That It Was Good*, edited by Drew Christiansen, S.J., and Walter Grazer (Washington, D.C.: United States Catholic Conference, 1996), 19-46.

²³Sean McDonagh, *To Care For The Earth* (Sancta Fe: Bear and Company, 1986), 108.

²⁴ Leonardo Boff, *Ecology and Liberation: A New Paradigm* (New York: Orbis Books, 1996), 7. In Boff's understanding and explanation of "human ecology", he believes that it includes "man's inhumanity to man" --- the oppression, injustices, marginalization and dehumanization that certain segments of people in the society suffer in the hands of fellow human beings. However, other scholars, such as Arthur R. Peacocke, restrict the term, "human ecology" to humankind and the environment --- *Creation and the World of Science*, 257, footnote # 5. In this dissertation however, I follow the interpretation of Buff by including in the definition of "human ecology" the oppression, injustice and dehumanization inflicted on humans by fellow humans.

(individuals and countries) becomes poorer and the rich (individuals and countries), richer. Human and social ecology, which includes issues of racism, sexism and classism, and other forms of ecological issues, continue to remain a great challenge to the society today.

Eco-theology, therefore, has an obligation to be the voice for the poor and voiceless as it raises awareness about the abuse and exploitation of nature and the dehumanization of certain segments of people in the society, and calls for a conversion of heart. As creatures of God, everything, living and non-living alike, deserves to be treated with dignity and respect and this underscores the inclusive and holistic nature of ecology and ecological issues. Eco-theology is therefore based on the teaching that the history of salvation, which will culminate in everything being brought into one in Christ, is inclusive and holistic. (Col. 1.20). Ecological crisis is a manifestation of the bondage under which all creation is subjected to. Creation cries out for liberation and freedom from this bondage (Rom. 8:18-21)²⁵ that must lead to a new world order where all existents in the common home, *oikos*, are treated with justice and fairness, dignity and respect.

The implication of a theology of evolution is not just for ecology (eco-theology) but for other branches of theology as well. However, this falls outside the scope of this dissertation. The final section of this dissertation will therefore address the implication of theology of evolution for African Christian theology which is a logical follow up of the place of African cosmogonies in this study.

²⁵ Pauline soteriology is inclusive and holistic. Paul envisions a redemption that is not just for humans but for the entire creation, human and non-human alike. Such an inclusive and holistic soteriology provides a solid basis for eco-theology--- Rom. 8:18-21; Col. 1:20.

5.3. Implications of Theology of Evolution for African Christian

Theology

One of the insights of theology of evolution is that it underscores the fact that just as the cosmos itself evolves so too does the idea of God, the universe and all existents in it. As the third chapter of this dissertation, “African Cosmogonies”, clearly indicates, nearly every culture of the world conceives and develops an idea of God, the origin of the world and of humankind in ways that are unique, yet, related to those of other cultures. From the standpoint of African theology therefore, theology of evolution challenges us to develop an ongoing interaction and interrelation between African culture and Christianity in ways that make the Christian faith more relevant and meaningful to African people, hence the implications of theology of evolution for African Christian theology.²⁶

The ongoing interaction and interrelation between African culture and Christianity is being developed through the models of inculturation and liberation that form the hallmark of African theology. A full treatment of these models and African theology is not required in this study since that would be another whole dissertation in itself. Therefore, this final section will only be a brief analysis of African theology of creation under the following headings:

- The Model of Inculturation.

²⁶ As a Christian and an African, the discourse on theology of evolution cannot be conceived in isolation from my background. This is because socio-cultural/geographical location is often a factor that cannot be entirely divorced from one's theological reasoning. Therefore, while I hope, in this study, to make a contribution to Christian theology by offering a Christian perspective on evolution, I am also seeking to articulate a theology that is appropriate to the African context. This explains the relevance of the perspective on creation from traditional societies, using Africa as an example, (African Cosmogonies in chapter three) and this section on the implications of theology of evolution for African Christian theology in this chapter.

- The Model of Liberation.
- Inculturation/Liberation: A Praxis Perspective.

5.3.1. The Inculturation Model

The focus on the concept of “inculturation” as a theological model is a relatively new enterprise in theology, occurring only in the last few decades. The reality of inculturation, however, pre-dates the modern Christian era, since it dates back to the time of the life and mission of Jesus himself.²⁷ The early missionaries who came to Africa adopted different models of evangelization described in terms such as imposition/cultural domination, translation and assimilation, adaptation and adjustment. However, the inadequacy of these principles in evangelization led to the development of the model of inculturation in African Christian theology.²⁸ The process of evangelization itself has therefore undergone an evolution from the methods of imposition, translation and

²⁷ Peter Schineller, S.J.; *A Handbook on Inculturation* (New York: Paulist Press, 1990), 14.

²⁸ Peter Schineller, S.J., makes an analysis of the different models of evangelization used by the early missionaries and identifies the inadequacies of each of them. Imposition/cultural domination in missionary activity falls short of what is needed for genuine evangelization because it is based on the assumption that Christianity is a finished product which must be delivered in its neat package and accepted as such in the mission land to which it is exported. The necessary interaction to the mutual enrichment of two cultures, African and Christian, which characterizes true evangelization is therefore not given a chance to operate. Translation/ assimilation also fall short of the standard because they operate a one way system, in that, the Christian message together with the culture of the missionaries are presented to the mission area while they remain totally closed to any meaningful interaction with the culture and the tradition of the mission area. Here again, the practice is based on the assumption that Christ did not exist in the culture of the mission area, but as one being introduced by the missionaries. Adaptation/ adjustment models are equally inadequate because they adopt a surface level of interaction which does not take into serious consideration the inherent good and the rich values within the local culture in which Christianity is introduced. *A Handbook on Inculturation*, 14-24.

This analysis in itself demonstrates the evolving process of evangelization in Africa. From the use of principles such as imposition, translation and adaptation, the evangelization method has evolved to the model of inculturation which is a more effective method of evangelization. The model of inculturation has the elements of a dynamic and ongoing interaction and interrelation in “partnership and mutuality” that acknowledges and respects both cultures, the African and Christian, in ways that earlier models did not. This analysis is also found in my unpublished work: Ameh A. Ejeh, “Inculturation in the Teaching of Pope Paul VI *Vis-à-Vis* The Life Situation in the African Church”, (Fordham University, New York, 1997), Chapter One.

adaptation to that of inculturation which is proving to be a more effective model of evangelization.

Furthermore, inculturation proves to be an authentic and viable method of evangelization because it recognizes that the seed bearing Word - *logos spermatikos* --- is already present in every culture waiting to be unveiled.²⁹ The concept of *logos spermatikos* is traceable to Justine Martyr who himself was influenced by Plato and the Neo-Platonists. In his theology of creation and incarnation, Justin Martyr taught that every human culture has already implanted in it, the *logos spermatikos*, which is God's agent in creation.³⁰ This pre-existing divine being, *logos spermatikos*, reached its fullness in the incarnation event at which the Word (logos) took on human flesh and pitched his tent among us (Jn. 1:140).

This incarnation model explained within the concept of the “seed bearing Word” is equally recommended by Vatican II.

If the Church is to be in a position to offer all men the mystery of salvation and the life brought by God, then, it must implant itself among all those groups in the same way that Christ by his incarnation committed himself to the particular social and cultural circumstances of the men among whom he lived. (*Ad Gentes*, #1)

Based on the incarnation model Pedro Arrupe, S.J., defines inculturation in these words:

Inculturation is the incarnation of Christian life and of the Christian message in a particular cultural context, in such a way that this experience not only finds expression through elements proper to the culture in question, but becomes a principle that

²⁹Aylward Shorter, *Toward a Theology of Inculturation* (New York: Orbis Books, 1988), 75-79.

³⁰Ibid., 75-76.

animates, directs and unifies the culture, transforming and remaking it so as to bring about “a new creation.”³¹

From the point of view of African theology, this definition of inculturation is of invaluable importance. This is because the definition puts inculturation within the context of “animating principle” which is the central theme and function of “vital force”, the hallmark of A.T.R., as articulated in chapter three of this dissertation, “African Cosmogonies”. A definition of “inculturation” within the context of “animating principle” is therefore a major point of contact between African culture and Christianity.

However, the incarnation model used to explain inculturation must be understood in an inclusive sense; otherwise, we are left with the impression that the pastoral agent or missionary brings Christ and the Gospel message to incarnate them in a culture that had hitherto no presence of Jesus Christ. It is in this regard that the concept of *logos spermatikos*, in Justin Martyr’s theology of creation and incarnation provides a better explanation of the model of inculturation. Justin Martyr underscores the fact that the Christ who took on flesh at the incarnation is the same Christ through whom everything was created and who has remained present in creation and in all cultures of the world ever since, albeit, in a hidden way.³² He insists that God’s divine presence in creation is in and through the medium of *logos spermatikos*, as creation was being prepared for the advent of Jesus Christ. The actual taking on of flesh by Jesus in the womb of our Mother Mary -- the incarnation event -- is therefore, not a beginning of the presence of Christ in creation but a fuller and more profound level of his presence and solidarity with creation

³¹ Pedro Aruppe, S.J., “Letter to the Whole Society on Inculturation”, in *International Apostolate of Jesuits*, 2. This is also quoted by Peter Schineller, S.J., in his book, *A Handbook on Inculturation*, 6. The word “animates” is italicized by me for emphasis.

³² Aylward Shorter, *Toward a Theology of Inculturation*, 85.

and all human cultures.³³ This is a more inclusive understanding of the incarnation model that better explains the concept of inculturation because it underscores the need for ongoing and dynamic interaction and interrelation that must exist between African culture and Christianity. This inclusive understanding of the incarnation model is, unfortunately, not emphasized enough in the documents of Vatican II (*Ad Gentes*), or in papal encyclicals³⁴. Commenting on the significance of the incarnation model, Schineller, S.J., states:

Incarnation, therefore, presents us not with an option but an obligation. As followers of Christ, we are to identify ourselves with the culture, history and people we are part of. We are to live with both feet on the ground, taking seriously God's creation and human re-creation of that world through culture. For it is only in and through particular cultures and contexts that God's love and truth are revealed and made present.³⁵

Inculturation itself, in a sense, follows a process of evolution as two cultures, African and Christian, engage each other in ways that give rise to something new --- a novelty that is of mutual benefit to both cultures. Theology of evolution therefore calls for and endorses the application of the inculturation model in African Christian theology by recommending a dynamic and ongoing interaction and interrelation between Christianity and African culture in ways that make the Christian message more relevant and meaningful to Africans. For the inculturation model to become fully effective,

³³ Ibid., 122, 195. The insight of Justin Martyr has a further significance from the point of view of Christology understood within the context of theology of evolution. This is because, Justin Martyr's incarnation theology suggests that Jesus Christ was not introduced into the cosmos as if "thrown in" from the outside, but came forth or emerged from (or we could say, "evolved from") a cosmos that was created in and through him when the appointed time came. The same Jesus in and through whom the universe came to be, and who has remained present in it ever since, took on flesh at the event of the incarnation, and continues to lead creation to the Omega point --- Teilhard's idea of the Cosmic Christ.

³⁴ Ibid., 233.

³⁵ Peter Shineller, S.J., *A Handbook on Inculturation*, 21. The preference for the "incarnation model" is equally expressed by Emmanuel Martey in his book, *African Theology: Inculturation and Liberation* (New York: Orbis Books, 1994), 65-66; See also S. Iniobong Udoidem, *John Paul II on Inculturation: Theory and Practice* (New York: University Press of America, Inc., 1996), 48-58.

however, it must also employ the liberation model. Liberation here is understood on three levels: First, from the point of view of theology, it includes the liberation of the Christian message from the garb of European culture as it is presented to Africans. Secondly, from the economic, social and political perspectives, this includes the liberation of Africa and Africans from domination, exploitation and negative indoctrination from both foreign and domestic forces. Thirdly, it is a liberation from ecological problem because when the ecosystem is in crisis, the poor people of the planet-Earth suffer most.

5.3.2. The Liberation Model

The evangelization of the African continent occurred in two main phases. The first phase came in the early centuries of Christianity during which the Christian faith flourished in North Africa, with Alexandria in Egypt, and Carthage in Tunisia, as among the most prominent centers. During this phase, the African Church produced theologians and Church leaders such as Clement of Alexandria, Tertullian, Origen and Cyprian (2nd and 3rd centuries), Augustine, Athanasius and Cyril (4th and 5th centuries).³⁶ The first phase was mostly based in North Africa as the sub-Saharan Africa waited for the second phase. The second phase of evangelization came along with the colonization of Africa which started to flourish in the 15th and 16th centuries. Therefore, the process of evangelization, unfortunately, developed hand in hand with colonization and importation

³⁶ Rosino Gibellini, "African Theologians Wonder...And Make Some Proposals" in *Paths of African Theology*, edited by Rosino Gibellini (New York: Orbis Books, 1994), 1-2. Ideas for the development of the Gospel message and the Church in Africa are offered by Bishop Michael E. Apochi in his book, *Hints for the Implementation for the Ecclesia in Africa* (Nigeria, Jos: Fab. Anieh Publishing Company, 1997), 5-30.

In his book, *Anatomy of Inculturation*, Laurenti Magesa developed a section on the Alexandrian and Carthaginian schools as he examines the contribution of Africans to the early history of the Church. However, he laments that these contributions of Africans to the development of the Church and her doctrines are sometimes not acknowledged enough -- *Anatomy of Inculturation: Transforming the Church in Africa* (New York: Orbis Books, 2004), 119-122.

of European culture which took place along with other negative components such as exploitation and slavery.³⁷ Against this backdrop, African Christian theology, following the model developed by the theology of evolution, must foster an ongoing and dynamic interaction between African culture and Christianity (along with the European culture, colonialism and neo-colonialism) in ways that will lead to a new understanding of God, the universe, humankind and God's relationship to the cosmos. This interaction will necessarily include the liberation of the Christian faith from the European garb and African culture from any negative traits thereby creating a favorable condition for the evolution of an authentic African theology that is relevant and meaningful to the African people.

The models of inculturation and liberation for African Christian theology call for a contextual approach that takes the unique African situation and experience into consideration because no theological discourse can take place in isolation from the social-cultural context. In his book, *My Faith as an African*, a Cameroonian Jesuit theologian/sociologist, Jean-Marc Elá, S.J., asks some important questions among which is: Is inculturation possible in Africa as long as Africans are not in control of their lives and destinies? In response to this question, Elá observes that missionaries, because they are foreign to African culture, lack the necessary background to carry out inculturation effectively. On the other hand, native Africans cannot make inculturation happen effectively as long as they remain under cultural and socio-economic bondage to non-Africans.³⁸ African Christian theology needs to address these concerns as it seeks to make

³⁷ Rosino Gibellini, "African Theologians Wonder...And Make Some Proposals" in *Paths of African Theology*, 2-5.

³⁸ Jean-Marc Elá, *My Faith as an African* (New York: Orbis Books, 1988), 170-177.

the Christian faith more relevant and meaningful to Africans. The seriousness of this situation is also expressed by Shorter who observes that:

It is also true that African cultural identity is by no means clear-cut, and that there are still far too many traces of colonial, cultural domination in Africa. These are even reinforced by neo-colonial structures of dependence. It is not only cultural liberation of which Africa stands in need, but a real political, social, and economic liberation.³⁹

Here again, the principle of ongoing and dynamic interaction and interrelation developed in the theology of evolution (chapter four of this dissertation) provides a solution to the problem. It is only through putting African culture and Christianity in a dynamic interaction that the questions identified above can be adequately addressed.⁴⁰

5.3.3. Inculturation/Liberation Model: A Praxis Perspective

African Christian theology views Inculturation/liberation model as rooted in the Christ event itself because the incarnation is conceived, in a sense, as an act of divine inculturation --- God taking on human nature and culture in the incarnation event --- and Jesus's mission which is essentially liberative and salvific (Lk.4:16-19). Based on this conviction therefore, African Christian theology seeks to inculturate the Christian faith into African culture, as well as to address the basic problems of the life situation of African people.

From the point of view of praxis, both the hierarchy and the laity of the African Church have and continue to undertake ways by which the inculturation/liberation model

³⁹ Aylward Shorter, *Toward A Theology of Inculturation*, 247.

⁴⁰ Emmanuel Martey proposes a Christology that is both inculturational and liberative as it brings traditional Christian teaching on Jesus Christ in dialogue with African cultural concepts. This is one of the ways to make the Christian faith more relevant and meaningful to Africans, because therein lies the position that adequately addressed the unique African situation -- *African Theology: Inculturation and Liberation*, 80-82.

can be applied in the everyday life activities of the Church. This initiative is being carried out in all areas of the life of the African Church, however, because of the scope of this study, only a few examples of these can be examined. The three examples are: first, the basic Christian communities; secondly, the justice and peace initiative; and thirdly, ecological praxis with particular reference to the case of the Ogoni people of the Niger-Delta area of Nigerian verses the Shell British Petroleum (Shell Petroleum Development Company) and the Nigerian government.

- The Basic Christian Communities
- The Justice and Peace Initiative
- Ecological Praxis (Citing the example of the Ogoni People of the Niger-Delta Area of Nigeria)

The Basic Christian Communities (BCC) developed by the African Church to facilitate the work of evangelization is based on African cultural and sociological model of family, lineage, village and clan. This model provides the local Church with a framework to respond to the exhortation of Pope Paul VI to evangelization by forming and organizing Basic Christian Communities to involve everybody in the activities of the Church down to the grass-root level. At the African Synod of Bishops in 1974 based on the theme of “Evangelization”, a collective position was taken by the African Church:

We must bring to our Catholic faith, not only the cultural and artistic experiences which are part of our heritage --- a real, even though as yet, modest Africanization --- but also a theology which enables us to tackle the challenges arising out of our historical background and ongoing evolution of our society.⁴¹

⁴¹ AMECEA Documentation Service, 11/74/2., 2-3. This also quoted by Shorter in *Toward a Theology of Inculturation*, 212-213.

Activities of Basic Christian Communities include catechetical, liturgical, devotional and community development initiatives. These are organized under the leadership of faithful and responsible representatives of the Basic Christian Communities who give progress report to the Parish Priest and the Parish Laity Council members from time to time. These activities are also coordinated through the various religious societies and devotional groups such, Christian Women Organization (CWO), St. Vincent de Paul, St. Anthony, St. Jude, Block Rosary Groups, Eucharistic Devotion, Purgatorial Society, the Choir Groups and a host of others.

The African Church, more than anywhere else, recognizes the urgency to address not only the spiritual needs of the faithful but their physical needs as well. This realization is equally based on the mission of Jesus Christ who did not only preach the message of salvation but went about curing the sick, feeding the hungry, and giving company to the outcast (Mk. 1:14-2:12; 6:34 – 44; 8:1-10; Mt. 8: 1-37;14:13-21; Lk. 4:31 – 44; 5:12-26). In this regard, the office of Justice and Peace, which is established in every diocese of the African Church, addresses the needs of the local Church in both spiritual and physical areas.

The practical day-to-day application of the inculturation/liberation model in the African Church emphasizes the role of the community as an agent of transformation. This community-oriented approach was underscored at the conference of Bishops of East Africa leading up to the African Synod of 1974. At this conference the Bishops made a collective statement:

We believe that the Church in our countries, called to continue the prophetic mission of Christ, must defend those authentic human values which have been the basis of the life of our people. The Church must stand up against all that would tend to degrade the

human person or lead to injustice, violence, oppression, racism, wars and evils of all sorts.

While the Church of Christ is universal, it is a communion of small local Christian churches, communities of Christians rooted in our own society. ...they must grow so that with time they become firmly rooted in the life and culture of the people.. incarnated in the life of the people...led by the local people... meets and answers the local needs and problems ... to develop real intense vitality and to become effective witnesses in their natural environment.⁴²

The Bishops of the African Church work hand in hand with the Laity to address economic, political and social issues which sometimes require admonishing governments as they speak out against corruption, tribalism, and other forms of injustice in government. In a similar way, they warn against other acts of injustice from outside, such as those that might be perpetrated by multinational corporations or governments of foreign countries. The office of Justice and Peace also coordinates activities to address issues such as land or chieftaincy disputes, health and human services, ecological problems, as well as other social, economic and political issues among the people. This position was further reinforced in the documents of the African synod where the Bishops observed that:

[In and through the Church] the baptized person evangelizes the cultural roots of his person and of his community and takes up the socio-economic and political challenges in order to be able to

⁴² *AFER*, Vol. 16., Nos., 1 and 2 (1974), 9-10. This is also quoted by Shorter in *Toward a Theology of Inculturation*, 264-265.

In the synodal documents, the Bishops at the African Synod, reemphasized the need for the Justice and Peace initiative. The "Statement" of the Catholic Theological Association of Nigeria (CATHAN) for the Synod observed that: "Action for justice and peace is a constitutive dimension of the ministry of Jesus (Lk.4: 16-19). Jesus declared that he came to set the oppressed free and to proclaim the Lord's year of favor. This entails sharing our common heritage, namely, the bounties of God and nature on the basis of mutual acceptance of one another as co-heirs in Christ. In this sense, justice and peace imply mutual respect, acceptance, fellowship and inclusion." *African Synod: Documents, Reflections, Perspective*, compiled and edited by African Faith and Justice Network under the direction of Maura Browne, SND. (New York: Orbis Books, 1996), 52; 48; 38-40; and 109-113.

express the message in his own words and in a new dynamic of life which transforms the culture and the society (#17).⁴³

In the development of the theme of Ecological Praxis, we equally draw on the insights of African cosmogonies, addressed in chapter three, where the concept of vital force is identified as an important basis for the philosophy of inter-being in A.T.R. As Supreme Vital Force, God diffuses “vital force” in creation and makes it possible for all created things to participate in this vital force, each according to their kind. Vital force, therefore, becomes the basis for the ontological interconnection and interrelatedness --- inter-being --- of all existents in the universe. The African worldview is that of an organic universe where everything in creation is connected with everything else in a dynamic and ongoing network of interrelationship. This insight from A.T.R. is a major contribution to theology of evolution because it is a theology that is based on the fact that the universe is a cosmic whole where things exist, not in isolation from each other, but in the same dynamic interconnection and interrelatedness.

Because God is present in everything through the medium of vital force (pan-en-theism), creatures are the self-expression of God who holds them in being. And because God is present in everything, all existents have an intrinsic value in themselves as each creature gives glory to God according to their kind. It is from this perspective that the concept of vital force in African philosophy provides a powerful defense of the planet-Earth in the face of ecological crises. African creation theology draws on the models of inculturation and liberation as it seeks to incorporate the insights of evolution in ways

⁴³ “Message of the Synod” in *African Synod*, 75. The documents of the African Synod provide detailed report, information and recommendations on inculturation and liberation in the African Church which cannot be adequately addressed here because of the scope of this study.

Bishop Michael E. Apochi developed similar insights on practical ways of applying the Gospel message to the African situation in his book, *Hints for the Implementation of the Ecclesia in Africa* (Nigeria, Jos: Fab. Anieh Publishing Company, 1997) 126-138.

that resonate with African traditional culture that is community-oriented, agrarian and maritime, rather than technological. This call for liberation necessarily includes a liberation from ecological crisis. It is a call that challenges us to make a decisive option for the poor and the oppressed in a radical way.

In tracing the root causes of ecological crisis, both Sallie McFague and Leonardo Boff identify anthropocentrism (human-centered) and androcentrism (male-centered) as major factors. These factors equally find expression in racism, classism and sexism and oppression in all their forms.⁴⁴ In all of these the poor people of the world are mostly affected, hence the need for ecological praxis. In his observation on the plight of the poor and oppressed in this predicament, Boff states:

Nevertheless, it is impossible to develop an adequate respect for nature without taking into account the way in which nature adversely affects important creatures, such as marginalized and impoverished human beings.⁴⁵

At the United Nations Conference on Ecology and Development (UNCED) in Rio de Janeiro (June 1992), it was observed that the main contributors to the ecological crisis are the rich countries of the Northern Hemisphere. For example, in 1985, the United States of America alone emitted over one billions tons of carbon dioxide into the atmosphere and the former Soviet Union, 985 million tons of carbon dioxide. This problem is worsened by the fact that the same rich nations of the Northern Hemisphere are reluctant to work toward reversing this trend as they try to put the burden on the poor

⁴⁴ Sallie McFague discusses the problem of anthropocentrism (human-centered) and androcentrism (male-centered) first within the context of the weaknesses of the traditional organic model. But she also identifies them as root causes of ecological crisis in the society. For more information on this, see, *The Body of God: An ecological Theology*, 1-25 and 36. In a similar way, Leonardo Boff equally identifies anthropocentrism and androcentrism as major factors responsible for ecological crisis as he argues that this is largely created by the Western culture and the extravagant life-style that comes with it. *Ecology and Liberation: A New paradigm*, 12-43 and 132-133.

⁴⁵ Leonardo Boff, *Ecology and Liberation: A New paradigm*, 14.

countries of the Southern Hemisphere.⁴⁶ In all of these, the poor people of the world suffer most, because when the ecosystem is in crisis, it is the poor that is mostly affected.

Ecological crisis is found, among other areas, in the logging of the rain forest (deforestation), depletion of the ozone layer, acid rain, air, water and land pollution, and the global warming that result from all of these. To address the crisis of ecology is not limited to care of individual animals or plants or even species. It is a call to care for interacting ecosystems because what affects one part of creation affects all others. The food chains that link diverse species and the delicate balance that hold together the interconnecting web of life in biotic communities have been researched and documented by contemporary ecologists.⁴⁷

One of the current examples of the suffering of poor people as a result of ecological crisis is found among the Ogoni people of River State in the South East of Nigeria, called the Niger-Delta. Ogoni is an ethnic group of about 500,000 people who occupy the area where Shell British Petroleum (Shell BP), a multinational oil company, operates with the Nigerian government in the drilling and extracting of crude oil.⁴⁸ Ogoni people are mostly farmers and fishermen who depend on fertile land and uncontaminated water for farming and fishing to earn a living and support their families and communities.

⁴⁶ David G. Hallman, (ed.), *Eco-Theology: Voices from South and North*, 3-9. See also, Leonardo Boff, *Ecology and Liberation: A New paradigm*, 17-18.

⁴⁷ Roderick Frazier Nash, *The Rights of Nature: A History or Environmental Ethics* (Leichardt, NSW: Primavera Press, 1990). This book provides an overview of environmental ethics and urgency of the need to address the problem of the environment. In it, Nash also suggests ways to address the ecological crisis. For a first-hand reflection on the situation of the Niger Delta oil drilling and its effect on the local people, see, John K. Wangbu, (ed.) *Niger Delta: Rich Region, Poor People* (Enugu, Nigeria: SNAAP Press Ltd., 2005).

⁴⁸ At the initial stage of the mining of crude oil in the South Eastern part of Nigeria, only Shell Petroleum Development Company (SPDC) or Shell BP (Shell British Petroleum) was involved. At the moment however, we have other companies such as Chevron Oil, Schlumberger, Agip and Texaco Oil. For an overview of the crisis situation of the poor people of Ogoni in the wake of the operation of the Shell Petroleum Development Company, see, *Ogoni's Agonies: Ken Saro-Wiwa and the Crisis in Nigerian*, edited by Abdul-Rasheed Na'Allah (Nigeria: African World Press, 1998); and Ken Saro-Wiwa, *Genocide in Nigeria: The Ogoni Tragedy* (Port Harcourt: Saro International Publications, 2000).

All of these changed after Shell BP discovered crude oil deposits in the area and opened up oil wells to drill for crude oil. In 1957 oil wells started to be dug, with the first located in Dere (Bornu) and since then, oil prospecting has grown to about 200 wells scattered across the indigenous communities of Ogoni land. With the increase in the oil wells and development of the Shell BP project in Ogoni land, the farm land and the rivers became impoverished and contaminated making farming and fishing difficult if not altogether impossible. The condition of the poor people of Ogoni area worsened as compensation from both Shell BP and the Nigerian government was inadequate to offset the loss incurred by the local people who watch helplessly as their land, water and the entire ecosystems are destroyed through extraction of crude oil.

The Ogoni people, disappointed and frustrated with the Nigerian government and the Shell BP, founded the “Movement for the Survival of Ogoni People” (MOSOP). This movement advocates for resistance against oppression and exploitation of the Ogoni people in a non-violent struggle, as it challenges the locals to stand up in defense of the economic and environmental rights of their people. Unfortunately, this struggle has led to violent clashes between the Nigerian government and Ogoni people that have resulted in loss of precious lives, among whom was Ken Saro Wiwa⁴⁹, as the communities witness continued suffering of the poor people.

⁴⁹ Ken Saro-Wiwa (October 10, 1941-November 10, 1995) was a Nigerian from the Ogoni people of South East. Saro-Wiwa was an author, a television producer, environmentalist and activist. As spokesman and president of Movement for the Survival of Ogoni People (MOSOP) Saro-Wiwa led his people in non-violent struggle against exploitation and destruction of their land and water through the extraction of crude oil. For his role in the struggle, he was executed along with others by the Nigerian military government in 1995 and his death provoked a widespread international outrage. In his book, *Genocide in Nigeria: The Ogoni Tragedy* (Port Harcourt: Sunray, 1991), Saro-Wiwa chronicles the plight of the Ogoni people and the suffering and oppression in the hands of Shell BP or Shell Petroleum Development Company (SPDC) and the Nigerian military government.

The exploitation of the Nigerian Delta region is a typical example of injustice perpetrated by rich Western countries against the poor Third World countries, as observed by J.K. Onoh who said:

During the colonial period, the UK acted as middleman in the purchase and sale of Nigerian's raw materials to the rest of the world. When oil was discovered it was added to the list of Nigeria's raw materials and marketed by the British-sponsored-oil-company- Shell BP.⁵⁰

Exploitation and oppression in the Nigerian situation has undergone three main phases. First, the destruction of tropical forests (deforestation) perpetrated by the Western European countries and America following the industrial revolution in Europe and the need for timber for ship-building, other forms of construction and factory work, as well as the plunder of other resources, natural and human (slavery). Secondly, the exploitation through agricultural produce and expansion of cash crops production such as rubber, cocoa, oil palm, coffee, cotton and groundnut. The third phase, which is the current one, is the drilling and extraction of oil and gas that has rendered farm land, fishing water and entire ecosystems unproductive, leaving the people in a poor and deplorable conditions. For over five decades, the drilling of oil and gas in the Niger-Delta area of Nigeria has been fueled by greed and desire to maximize profit. This has resulted in massive deforestation and destruction of entire ecosystems as gas pipelines, seismic lines, canals, burrow pits, oil well, land field drills, helicopter pad and delivery routs, dredge spoils dumps and camps sites and a host of other projects are constructed and reconstructed all across the Niger-Delta area.

Because of the high quality of Nigerian crude oil that makes it easier and cheaper to distill, it has and continues to attract foreign international and multinational

⁵⁰ J.K. Onoh, *The Nigerian Oil Economy* (New York: St. martin's Press, 1983), 19.

corporations who disregard human rights in the pursuit of profit at the expense of the ecosystem and the welfare of the people.⁵¹ In the face of the blatant abuse of human rights little or nothing is done by the international community to resolve the ecological crisis of the Nigerian people in the Niger-Delta area.

The case of the ecological crisis of the Niger-Delta people of Nigeria carries with it an added seriousness because it encompasses environmental, social and human ecology in all their forms. Like all other forms of ecological crisis, the Niger-Delta situation requires a proactive stance on the part of the local, government and international communities not only for better life for the poor people but also for other creatures and the entire ecosystem. This proactive stance must include raising awareness about the intrinsic value and integrity of all creatures in the universe. From the perspective of African culture, the sacredness of nature and of creation remains a powerful and compelling indictment of the multinational oil companies for the violation and destruction of the ecosystem in the Niger-Delta area of Nigeria.

The African worldview of organic universe recognizes not only the sacredness of creation but also the interconnection and interrelatedness of all existents in the universe. Based on this awareness, African Christianity, drawing on the insights of evolution seeks to develop a theology that further challenges us to recognize both the intrinsic value and integrity of all creatures and the unique dignity of all human creatures as each of these reflect the vital force of God according to their kind. African Christian theology challenges us to be committed to ecology and justice as inseparable aspects of the human struggle. This theology views economic and social oppression, racism, sexism, classism, and the wanton violation of the planet-Earth as radically interrelated. Therefore,

⁵¹ G. Chandler, "Oil Companies and Human Rights", in *A European Review*, 7, 2, (1989), 69-73.

ecological and social ethics, from the perspective of African Christian theology, must go together in their option for the poor and solidarity with the downtrodden and oppressed members of the society. As the World Council of Churches clearly states, taking action against unjust economic and social conditions of the world and taking action against the ecological crisis are interconnected and interrelated dimensions of the one praxis to which every Christian is called, because to be a Christian involves a commitment to "justice, peace, and the integrity of creation."⁵²

The above analysis demonstrate clearly that from the perspective of African Christian theology, inculturation and liberation models are like two sides of the same coin in the evangelizing mission of the African Church. Following the insight of the evolutionary model, the Church in Africa must evolve in a way that she becomes for the African people, a sacrament of inculturation and liberation. As inseparable models of evangelization, inculturation and liberation have the potential to adequately address the spiritual and physical needs of the African people as the Gospel message is made relevant and meaningful to the faithful of the African Church.

5.4. Conclusions

The analyses of creation theologies, scientific theories of evolution and African cosmogonies demonstrate the interconnection and interrelatedness of all things in an evolving cosmos. It is an interconnection and interrelatedness that is grounded in the Trinity

⁵² Laurenti Magesa, in his book, *Anatomy of Inculturation: Transforming the Church in Africa*, 135, makes reference to the activities of the World Council of Churches; Leonardo Boff, *Ecology and Liberation: A New Paradigm*, 76, also comments about the Eight Assembly of the World Council of Churches in Canberra, 1990, which focused on the theme of "Ecology and the Increased Marginalization of the Third World". At this Council meeting, the participants urged that technology should work with nature and its mysteries and not seek to dominate it: "Final Declaration of the Assembly", 1:12.

itself. Together we form an ongoing community of beings where all creatures have a kinship relationship with each other, past, present and future. The cosmos in a unity, it is all one piece, although of different layers. Humanity is the highest level of this ongoing process, nonetheless, part of a wider evolutionary process.

God, in his infinite wisdom and goodness freely created a world that is in process, as it evolves and unfolds on a journey toward its ultimate goal. It is a step-by-step journey towards ultimate perfection, “a process of becoming (that) involves the appearance of certain things and the disappearance of others, the existence of a more perfect along side the less perfect, both constructive and destructive forces of nature.”⁵³

As indicated before, theology of evolution does not claim to have all the answers. However, one could argue that just as no creation theology today can ignore scientific theories of evolution, so too, no branch of theology can ignore theology of evolution (theistic evolution), because our understanding of God, the universe and humankind have implications for any theological enterprise. This implication is equally evident in theological discourse from the African perspective, hence the focus on “Implications for African Christian Theology” in the concluding section of this chapter. Through the models of inculturation and liberation, the hallmark of African Christian theology, the African Church makes the Christian message relevant and meaning to the African people. This approach must include addressing the poor condition of the people whose situation has been exacerbated by the influence of colonial and neo-colonial systems and the existing structures that are derived from them, the corruption and mismanagement in government and the ecological crisis that result from the activities of the international and multinational corporations who operate in Africa.

⁵³ Catechism of the Catholic Church, part 1, # 310, 82.

Inculturation and liberation are twin models that must function hand in hand as the Gospel message is presented to the people of Africa in ways that are relevant and meaningful. It is only through the application of this two-fold model, and drawing on the insights of evolution and theology of evolution, that a new creation can evolve as the African and Christian cultures interact and engage each other in ways that benefit both of them.

GENERAL CONCLUSION

This dissertation is a comparative-dialogic and dialectic study in which the question of cosmic origins was examined from three perspectives: creation theologies, scientific theories of evolution and African cosmogonies. The insights of these three perspectives were then analyzed and the areas of compatibility identified in the development of a theology of evolution. The general conclusion reiterates some of the insights from each of the three perspectives to highlight their contribution in the formulation of a theology of evolution.

- The two major themes emerging for the examination of Christian theologies of creation in the first chapter are: *creatio-ex-nihilo* and *creatio-continua*. These two theological concepts emphasize the fact that not only did God create the universe out of nothing, but that he remains involved in creation, recreating and sustaining creation in being. The significance of the concept of God's continual involvement in creation is that it underscores the fact that creation is not a single event in the past, completed and closed. Creation, on the contrary, remains an ongoing process, under divine guidance, as it evolves and develops towards its final destiny. This same understanding is expressed in the *Catechism of the Catholic Church* which states:

With infinite wisdom and goodness God freely willed to create a world 'in a state of journeying' towards its ultimate perfection. In God's plan, this *process of becoming* involves the appearance of certain things and the disappearance of others, the existence of the more perfect along side the less perfect, both constructive and destructive forces of nature.¹

¹ *Catechism of the Catholic Church*, parag. 4, #310, 82. The italization of "process of becoming", is done by me for emphasis.

One could argue that this observation is along the same line of thought expressed in the interpretation of the Genesis creation texts by St. Augustine, St. Basil and St. Gregory of Nyssa, which although not directly intended, lend themselves to being interpreted as an ongoing process --- an evolutionary understanding of creation.² The *extus-reditus* schema of Thomas Aquinas envisions creation as coming from God and going back to God. This again underscores the idea that creation originates from God, and that God continues to animate, guide and direct the movement or process of creation, leading it all back to himself, the final goal. Furthermore, although Vatican II did not directly and explicitly address the question of evolution, there was an implicit reference to it in the fifth article of *Guadium et Spes* where the document states: “Humankind substitutes a dynamic and more evolutionary concept of nature for a static one” (GS, #5). While this is not an endorsement of any particular theory of evolution, it does highlight the importance of considering more seriously, a concept of nature and reality that is dynamic and evolutionary.

As vestiges of the Trinity (Augustine), *vestigium/umbra Dei* (Bonaventure) and sacrament of God’s presence in the universe (Aquinas), creatures are interconnected and interrelated, and through this, complement and support each other on a common journey towards their final destiny. This also provides a basis for ecological issues in the world.

² Basil the Great, *Hexameron* (Nine Homilies delivered by St. Basil on the Cosmogony of the opening chapters of Genesis); Gregory of Nyssa, “On the Making of Man”, in *A Select Library of Nicean and Post-Nicean Fathers of the Christian Church*, translated by Philip Schaff and Henry Wace; 2nd Series, (Vol. VIII, St. Basil’s Letter and Select Works) translated by Bloomfield Jackson; (Vol. V, St. Gregory of Nyssa: Dogmatic Treatises, etc.), translated by William Moore and Henry Austine Wilson (Edinburgh: T & T Clark; Michigan, Grand Rapids: WM.B Eerdmans Publishing Company, 188 & 1989); St. Augustine, *The Literal Meaning of Genesis*, Books 2 and 3, in *Ancient Christian Writers: The Work of the Fathers in Translation*, edited by J. Quasten, W. Burghart, and T. Comerford Lawler (New York, Newman Press, 1982).

Rev. Fr. Vittorio Marcozzi, a Vatican Specialist on Anthropological Studies, comments about the evolutionary understanding implicit in the interpretation of the Genesis creation accounts in the works of Augustine, Basil the Great and Gregory of Nyssa. See Vatican Documents/Catholic Periodicals, interview titled: “Darwin Revisited.”

However, creation from the Christian perspective, remains a mystery, because no matter how much is known about the universe, there will always be some aspects of it that will elude total human comprehension.

- As the title of the second chapter clearly states, the universe is in a process of evolution. The ideas of evolution are traceable to the early Greeks, but as a modern scientific theory, evolution started to make its mark from the 17th to 18th centuries. The most popular and influential of these theories of evolution is that developed by Darwin in his theory of natural selection. Through the mechanism of natural selection, organisms that are better able to adapt to the environment, due to variations of inherited characteristics, survive more and produce more offspring for subsequent generations. In *The Origin of Species* therefore, Darwin applied this theory and demonstrates how species are formed, and in *The Descent of Man*, the same theory is applied in the explanation of the origin of humankind. Scientific theories of evolution demonstrate that the universe, life forms and human life, came into existence through the process of evolution. This process is further confirmed by the Big Bang theory that was later formulated as a model of an expanding and evolving universe. Although evolution challenges us to rethink certain aspects of traditional Christian doctrine, for example, the doctrine of Special Creation and the place of humankind as an *imago Dei*, there is hope that further research and study will resolve some of the seemingly irreconcilable issues in the relationship between creation and evolution.

Among the three perspectives on the question of cosmic origins, scientific theories of evolution most clearly demonstrate the dynamic interconnection and interrelatedness in nature and in the universe. Evidence from different branches of

science, as examined in the second chapter of this dissertation, shows this dynamic interconnection and interrelatedness. Ian G. Barbour expresses this quite succinctly:

Cosmology joins evolutionary biology, molecular biology and ecology in showing the interdependence of all things. We are part of an ongoing community of being; we are kin to all creatures, past, present and future. From astrophysics we know our indebtedness to a common legacy of physical elements. The chemical elements in your hand and brain were forged in the furnaces of the stars. The cosmos is all one piece. It is multi-leveled; each new higher level is built on lower levels from the past. Humanity is the most advanced form of life of which we know, but is fully part of a wider process in space and time.³

The continued advancement of science and development in human knowledge does not completely eliminate the element of mystery that is inherent in nature and the cosmos, and in human knowability. The more science delves into the inner workings of nature and the cosmos, the more elements of mystery are revealed, and the more scientists themselves are humbled by the awesome nature of the universe that they investigate. Part of this phenomenon is because humankind themselves form an integral part of the unfolding cosmos and the very dynamic of evolutionary process itself.

Because evolutionary process generally follows a pattern of development from simpler and lower forms to higher and more complex form, one could argue that it is goal-oriented, to a certain degree. A Christian appropriation of evolutionary history goes further to postulate this goal-oriented pattern as teleological. This is evident in the works of Teilhard de Chardin who envisions the Omega Point as the ultimate goal of the process of evolution. His vision of the “the cosmic Christ” is the culmination of the cosmic history in the *parousia* event where all things are brought into one in Christ and ultimately in God himself.

³ Ian G. Babour, *Religion in the Age of Science*, (New York: Harper and Row, 1990), 147.

- No discussion on the question of origins is complete without a perspective of traditional societies. African cosmogonies fulfill this requirement. To have a better understanding of African cosmogonies, an introductory section on African Tradition Religion (A.T.R.) was provided, because African cosmogonies emerge from A.T.R. The main relevance of African cosmogonies lies in the concept of *inter-being* --- the ontological interconnection and interrelatedness of all existents --- based on the mechanism of vital force as demonstrated in the relationship between cosmogony and community. A Belgian priest/anthropologist who worked in Africa for decades and studied the African culture observed that:

The concept of separated beings...entirely independent of one another, is foreign to Bantu thought. Bantu holds that created beings preserve a bond one with another, an intimate ontological relationship comparable with the causal tie that binds creature and Creator. For the Bantu, there is *interaction of being with being*, that is to say, of force with force. Transcending the mechanical, chemical and psychological interactions, they see a relationship of forces which we should call ontological...⁴

In African cosmogonies, there is little or no speculation about the very nature of the Supreme Being or the actual origin of the universe from a purely philosophical perspective, because the fact of God's existence and his place as the source and origin of the universe and all existents is a given. African mythology therefore focuses more on how God created human beings and other creatures in the universe. Through the Supreme Vital Force of God diffused in creation, African cosmogonies demonstrate the ontological interconnection and interrelatedness in creation and all existents in the universe. Although not directly referred to, an evolutionary pattern is implied in the egg-based and seed-based cosmogonies. A good example of this is in the creation myth of the Dogon

⁴ Placid Temples, *Bantu Philosophy*, 39-40. Italization of "interaction of being with being" is done by me.

people of Upper Volta (Burkina Faso) in North Africa. Through all of these, the wonder and awesome nature of creation is manifested. However, for African people, the element of mystery in creation is indisputable. Therefore, African cosmogonies use myth, symbols, proverbs, songs, parable and other media to express the sense of mystery in creation.

- Based on the methodologies applied in this study among which are comparative-dialogic and dialectical methods, the fourth chapter developed the insights from the three perspectives on the question of origins addressed in the first three chapters, --- theologies of creation, scientific evolution and African cosmogonies--- in the formulation of a theology of evolution. Through the development of the models of contact/dialogue and confirmation/integration, the chapter made an analysis of the interconnection, interrelation and interdependence in creation identified as a reflection of communion and relationality in the Trinity itself. This is a position that privileges relation-based ontology over substance-based ontology which is identified as a more authentic and viable approach in the formulation of a theology of evolution. Divine attributes are reflected in creation, the handiwork of God the creator. This point is clearly stated in the work of theologians who see creation as *vestigium /umbra Dei* (Bonaventure), as sacrament of God's presence in the universe (Aquinas) and as body of God (Sallie McFague) as well as the A.T.R. concept of God as Supreme Vital Force. This dynamic is aptly expressed by Denis Edwards:

The God of Trinitarian theology is a God of mutual and equal relations. When such a God creates a universe it is not surprising that it turns out to be a radically relational and interdependent one. When life unfolds through the process of evolution, it emerges in

patterns of interconnectedness and interdependence that fits with the way God is.⁵

Although made in the image and likeness of God, humankind is an integral part of the cosmos. As *imago Dei*, humankind assumes the role of created co-creator as they work hand in hand with God to bring creation into its final destiny. The theme of interconnection and interrelatedness is further developed based on insights from process and evolutionary thought that underscore the relational and dynamic nature of reality. Process and evolutionary thought also identify the self-replicating and self-organizing character of nature by which creation responds to new possibilities and alternatives made available by God, the source of novelty. The insights A.T.R., along with those of creation theologies and scientific evolution, present the ontological interconnection and interrelatedness in creation in a way that provides a powerful defense of creation in the face of ecological crises.

- The final chapter of this dissertation summarizes the work and reiterates that basic themes that run through this study. These are: interconnection/interrelatedness; incremental development/evolutionary process; sacredness/mystery; and teleology/destiny. These themes are identified as necessary conditions for the development of a theology of evolution. Just as no creation theology today can ignore scientific theories of evolution, so too, no other branch of theology can ignore theology of evolution.

The implications of theology of evolution for ecology are examined in a section under, “eco-theology” because this is a direct and necessary ethical consequence.

⁵ Denis Edwards, *God of Evolution*, 28.

Ecology as the name clearly indicates, reminds us that the cosmos is a common home for all existents. Eco-theology therefore challenges us to re-think the ethical, political, social and other dimensions of existence that show an imbalance between human and non-human creatures and, for that matter, humans and humans.

The final section of the chapter examines the implications of theology of evolution for African Christian theology. Under this section, the models of inculturation and liberation are analyzed as inseparable models for evangelization of Africa. Inculturation fosters the engagement of, and dialogue between the African and Christian cultures in a way that gives rise to something new --- a novelty that benefits both cultures. African Christian theology recognizes that inculturation is not complete without its twin model, liberation. This is a two-fold liberation: first, the liberation of Christianity from the garb of European culture as it is taught to the African people, and secondly, the liberation of Africa from all forms of exploitation and domination, foreign and domestic, and from ecological problems. It is only by applying this two-fold model that an authentic evangelization that truly transforms the life of the African people can be effected. In the “Post-Synodal Apostolic Exhortation to the African Church”, Pope John Paul II emphasizes the importance of a transforming evangelization as he reiterates the words of his predecessor, Pope Paul VI in his encyclical, *Evangelii Nuntiandi*:

The purpose of evangelization is “transforming humanity from within and making it new”. In and through the only Son, the relations of people with God, one another and all creation will be renewed. For this reason the proclamation of the Gospel can contribute to the interior transformation of all people of goodwill whose hearts are open to the Holy Spirit’s action.⁶

⁶ John Paul II, “Post-Synodal Apostolic Exhortation,” Given at Yaoundé, in Cameroon, on 14 September, Feast of the Triumph of the Cross, in the year 1995, the seventeenth of my Pontificate. This exhortation to the African Church is printed in *Synod Documents*, 249.

The African Church recognizes that the most effective way of evangelization to realize this transformation of humanity from within, as Pope John Paul II exhorts, is by applying the models of inculturation and liberation. This section thus concludes with the treatment of the inculturation/liberation model from the praxis perspective as applied in the basic Christian communities plan, the justice and peace initiative, and ecological praxis, in which the current example of the Ogoni people of the Niger-Delta area of Nigeria is examined.

This concludes the dissertation in which the question of origins was analyzed from three perspectives, namely, Christian theologies of creation, scientific theories of evolution and African cosmogonies. Through the use of comparative-dialogic and dialectic methods, and the application of the models of contact/dialogue and confirmation/integration, the insights of these three perspectives were examined and analyzed in the formulation of a theology of evolution. As indicated before, theology of evolution does not claim to have all the answers. However, just as no creation theology today can ignore the insights of scientific evolution, so also, no other branch of theology can ignore theology of evolution. The implications for all theology, including African Christian theology, are crucial. This is equally evident in ecological issues where theology of evolution has a direct ethical implication.

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