Examination of the Environmental Crisis: Specific Focus

Introduction

Living on the threshold of a new age, we squabble among ourselves to acquire or retain the privileges of bygone times. We cast about for innovative ways to satisfy obsolete values. We manage individual crises while heading towards collective catastrophes. We contemplate changing almost anything on this earth but ourselves.[1]

This thesis will examine the environmental crisis with particular reference to the manner in which the imbalance between our perception of the instrumental and intrinsic value of nature contributes to this crisis from a Bahá'í perspective.

This thesis cannot serve as a comprehensive overview of Bahá'í ecology, it can only serve as an introduction to some of the principles that lay at the foundation of the requirements for a highly sophisticated model of ecological philosophy. Implicit is the assumption that this thesis is an attempt at a relative and derivative application of Bahá'í theological ethics. No attempt is made to justify an authoritative view of source theology or the establishment of principles as dogmatic requirements of the Bahá'í Faith. It is written from the perspective of a western Bahá'í whose analytical tools have largely been informed by undergraduate training in Christian theology[2], and whose western metaphysical view has been significantly tempered by contact with a number of other cultures, including an extended residence on an American Indian reservation[3]. It should also be acknowledged that a commitment to particular ideals of post-modernism, such as a type of holistic pluralism, are deeply embedded

through the experience of growing up in the context of a family representative of numerous cultural and religious contexts.[4]

It is hoped that this thesis offers a positive response to the catastrophic ecological crisis facing our beleaguered planet. What is being proposed is not a naïve utopian ideal, but rather a form of utopian critical realism, fostered by the needs such a crisis demands in response. It is not a running away from reality, to sleep and then dream, but rather a desire to wake up out of a fevered nightmare, confront the true reality of its inner causes and pursue a method of appropriate therapy.

The first chapter will examine examples of the extent of the global ecological crisis with reference to recent scientific reports on the current conditions and expected forecasts from organizations utilizing professional scientists such as Worldwatch and the Club of Rome. It will be shown that if we have not already passed the turning point, perhaps represented by Rio 1992, we soon will have committed ourselves to a sufficient period of stubborn clinging to patterns of behavior that will result in the possibility of change only through a massive and universally experienced level of catastrophic suffering, and the collapse of such dysfunctional structures and the metaphysics that lay behind them as the limits to a diseased manifestation of growth rapidly fill the horizon.

The second chapter will examine a range of philosophical responses to the ecological crisis, particularly focusing on the radical ecologies that go beyond the shallow attempts at policy reform and attempt to analyze the causal elements of the crisis and propose remedies of internal metaphysics and deep structural relationships. The primary focus will be upon the way in which the value of nature is perceived by these philosophies and the ways in which they suggest solutions to our perceptive incapacities.

The third chapter will emphasize the need for consultation between these disciplines and will examine a number of tensions that arise through such a hypothetical consultation. It is proposed that the answer does not lie in the mock tolerance of a lazy ethical relativism, but rather a commitment to a more open, vulnerable and transparent position of dialogue towards a shared desire to respond to the crisis. The hope is for a more comprehensive understanding of the diverse responses necessary to a complex problem, and an appreciation of the integrity of an inter-disciplinary solution. Most importantly, the fundamental tensions that arise from such a hypothetical consultation, representative of the post-modern attempts to resolve the ecological crisis, can be highlighted and then be addressed in order to prepare the way for a more integrated and harmonious appreciation of the diverse approaches to a solution.

In the fourth chapter it is proposed that the tensions discussed in chapter three are representative of a fracturing of a number of internal relationships in the western world view that primarily occurred during the Enlightenment period. This chapter represents a historical analysis by way of representative case selections of such a process. An attempt is made to examine the causes of the bifurcation of reality and the imposition of a radical duality upon our culture that occurred generally speaking, between the enlightenment period and the present. It is suggested that as a result of this process, a neurosis of the spirit has afflicted humanity and that by understanding the contextual nature of its causes it can better be confronted.

The fifth chapter continues the discussion to the modern period, but shifts the focus to the underlying assumptions governing the modern scientific culture of positivism. Under examination are the often-unconscious acceptance and creation of foundational structures or metaphysical models within the scientific community that largely represent the worldview of the western mindset. Considering this, assumptions about empiricism, the absolutization of reason and objectivity, positivism, chance as the sole denominator of evolution, and the 'value-free' nature of scientific methodology will be discussed along with a brief examination of some of the dysfunctional philosophies that lay behind these unconscious assumptions.

Next, the principles involved in developing metaphysical models in both science and theology will be discussed. Throughout the text, an underlying focus on these principles is engaged in order to introduce at a basic level the possibility that these models can converge and form a synergistic relationship facilitating greater creativity and comprehensive visions of reality for both fields.

Chapter 6 will examine some of the elements of a Bahá'í model of ecology, specifically those elements felt most significant towards the facilitation of a value system related to nature. The possible telos of nature and relationship between humanity and nature will be discussed via an exploration of 'Abdu'l-Bahá's writings on evolution. This will be done as a prelude to exploring a suggested alternate model that directly impacts both epistemology and metaphysics by offering a vision of intrinsic value and the manner in which it is experienced. This will be representative of a metaphysic that envisions nature as both physically and spiritually relational in its diversity, with humanity participating in acknowledged dependency upon these relationships. Furthermore, it is a model that recognizes all beings possess an independent intrinsic spiritual and material value as well as an emergent value that is potentially infinite in the variety of its expression that arises

through interdependent relationships.

Finally, some of the practical implications of these findings for human relations to the environment will be addressed. Particularly focusing on both the western ideal of 'sustainable development', and the basic principles necessary towards the development of a model of ethics mature enough to meet the sophisticated needs of the rapidly expanding fields of biotechnology and genetic engineering.

While this thesis presents a Bahá'í interpretation of the environmental crisis, the majority of its focus is not a direct study of Bahá'í theology or ecology itself. Rather it is written with a concern to understand the crisis itself, the potential principles of the historical and philosophical sources of this crisis, and the modern response to the crisis. Therefore the majority of focus is upon 'non-Bahá'í' material. However, the creation of the lens being used to focus on such material has the Bahá'í Faith as its most significant source of composition. This lens has determined the criteria of significance of what material has been chosen, the manner in which it has been organized, the principles considered relevant to its investigation, as well as the conclusions which are more explicitly Bahá'í in nature. Therefore it is important to spend some time briefly focusing on the history, texts and ecological praxis of the modern Bahá'í community as a background for understanding the Bahá'í point of view running throughout this thesis.

Brief examination of Bahá'í History

(Author's note inserted 5/5/05: Although wishing to leave the original text of this thesis intact I wish to comment that this section on history had serious limitations of expression. This is both because of my own lack of expertise in history as well as constraining academic requirements. I was obligated to frame this section in a style more suited to phenomenological studies rather than theological, therefore one will notice a different tone that did not altogether suit my natural preferences of expression. This has resulted in my not being able to accurately reflect what I feel is due regard for the sacred reality of the station of the Bab and Bahá'u'lláh as Manifstations of God.)

The Bahá'í Faith was born out of the eschatalogical expectations of early nineteenth century Shiite Islam[5] in Persia. Its beginnings lie in the Babi Religion which arose out of the context of the Shaykh movement begun by Shaykh Ahmad-i-Ahsai[6] and succeeded by Siyyid Kazim-i-Rashti(d.1843). One of the leading followers of the Shaykh movement,

Mullah Husayn(d.1849), believed he had found the expected millennial figure of the "Qaim" in the person of Siyyid Ali Muhammad (b.1819-d.1850), later known as the "Bab" or "Gate". This faith spread swiftly, given the millennial fervor among the general populace, and the attractiveness of its ideology of religious renewal. The Bab represented a source of new authority as the return of the hidden Imam. "The self-ascribed authority of the Usuli mujtahids (doctors of law) was challenged by the appearance of a rival authority figure. The Bab's legislative innovations were perceived as a real threat to the Shi'i establishment". As Arjomand points out, the ulama "dreaded" the Babi movement, "whose success would have eliminated them and the orthodox Shiism they represented."[7]

The Usuli mujtahids, who feared the reduction of their ecclesiastical circle of power, exerted their influence on the populace and the secular authorities[8], who began using more violent measures in an attempt to quell this nascent yet apparently radical faith.

The theological concepts of 'Qaim' (He Who Will Arise- i.e., from the family of the Prophet Muhammad), 'Bab' (Gate), and 'Mahdi' (the Guided One) as used by the Bab, were all refocused in different ways than his orthodox Islamic contemporaries. While each title can be seen to represent the fulfillment of messianic expectations, they are presented as metaphors of a transient, predominantly spiritual, rather than secular authority, whose temporary jurisdiction prepares its willing allegiants to expect, almost immediately, the advent of 'Him Whom God Shall Make Manifest.'

For Bahá'ís this advent took place in the person of Bahá'u'lláh (b.1817-d.1892) who presented himself as the universal manifestation of God anticipated by all previous religions for whom the Bab had been preparing the way. While his own prophetic status within the Babi community developed through several stages[9], according to his own words, his initial intimation of a unique prophetic state of being occurred in October, 1852 in the Siyah-Chal (Black Pit) a subterranean prison in Tehran, Iran.

During the days I lay in the prison of Tihran, though the galling weight of the chains and the stench-filled air allowed Me but little sleep, still in those infrequent moments of slumber I felt as if something flowed from the crown of My head over My breast, even as a mighty torrent that precipitateth itself upon the earth from the summit of a lofty mountain. Every limb of My body would, as a result, be set afire. At such moments My tongue recited what no man could bear to hear.[10]

For

the following ten years Bahá'u'lláh maintained his 'messianic secret'[11] and publicly announced himself as 'Him Whom God Shall Make Manifest' on April 22, 1863 in Baghdad, immediately prior to his exile to Constantinople.

The Shaykh movement and then the Babi Faith were in one sense part of a grass roots revolution with particular attention on reforming religious doctrine and a corrupt clerical class through realizing the eschatalogical expectations of the return of the Mahdi, the twelth Imam in Shiite Islam, framed in a paradigm of progressive revelation using predominantly allegorical intrepretation of the Quran.[12] There were other messianic movements in this period, "such as the Mahdiyya of Sudan or the Ahmadiyya in India, all of these remained within the bounds of Islam, from their own point of view, at least."[13] Of these movements, it is only the Babi, and then the Bahá'í Faith which "broke entirely away from Islam and, in the end, successfully established itself as a new and, in some areas, even a rival religion."[14]

There is a great deal of difference in the theological development from the early Babi age to that of the contemporary Bahá'í one. While Bahá'í theology continued these concepts, it quite differently developed new principles through the second half of the 19th century to the present. Its message took on a much more apparent universal tone in its praxis[15], and its hermeneutical circle expanded to embrace the West[16]. The Bahá'í Faith continued on with more fluid and dynamic doctrinal development, showing an increasing awareness of the modern concerns of progress, humanism and international relationships, with global unity becoming its primary animating theme.

The more international focus can first be seen in the writings of Bahá'u'lláh. Bahá'u'lláh stipulated the need for an "all inclusive" world assemblage of governments in order maintain unity and peace as well as advocating the principle of "collective security" [17]. Applying this global vision to the individual, Bahá'u'lláh wrote:

> That one indeed is a man who, today, dedicateth himself to the service of the entire human race. The Great Being saith: Blessed and happy is he that ariseth to promote the best interests of the peoples and kindreds of the earth. In another passage He hath proclaimed: It is not for him to pride himself who loveth his own country, but rather for him who loveth the whole world. The earth is but one country, and mankind its citizens.[18]

Bahá'u'lláh's

vision not only expanded beyond the Babi concerns for the transformation of Shiite Islam, but broadened to include a global audience. This can also be seen by the fact that he wrote tablets to a number of the world's major powers of the time[19]. These particular foci became even more enhanced as the ministry of both Abdu'l-Bahá[20] and then Shoghi Effendi[21] expanded and placed a greater if not primary priority on the spiritual development of the west and then upon the entire diverse body of nations and peoples. Before the turn of the century a significant community of Bahá'ís had developed in America[22], and between 1900 and 1911 Abdu'l-Bahá (b.1844-d.1921) addressed the American Bahá'ís with several thousand Tablets.[23] Shoghi Effendi (b.1897-d.1957) further expanded the scope of the community, and under his ministry the Bahá'í community grew from primary populations in Iran, America and India, to active national communities in hundreds of countries.

In 1963 the Universal House of Justice[24] was elected as the global governing body of the Bahá'í Faith and today it provides guidance to Bahá'í adherents of every national, cultural, ethnic and religious background, making it likely the most diverse body of organized people on the planet[25].

The Current Global Bahá'í Community and Ecological Praxis

The Bahá'í community has the capacity to facilitate a diverse range of contributions and perspectives towards the development of Bahá'í ecology. With its strong emphasis on the principles of the independent investigation of truth[26], cultural diversity[27], and the fact that it is only at the beginning of developing a paradigm of systematic theology, there exists a strong potential for a diversity of theological and philosophical viewpoints from a great variety of cultural perspectives.

It is very important to acknowledge the potential diversity of authentic Bahá'í interpretations of 'a Bahá'í model of ecology'. There is a need to develop a great number of remedial applications that are necessary to respond to the complexities of the global environmental crisis, and there is a growing number of Bahá'í studies which focus more directly on the environment[28]. Interestingly, individuals whose backgrounds and employment are directly related to ecological management comprise nearly all the authors. Therefore it

is no surprise that concerns for practical application have been a hallmark of the Bahá'í contribution thus far. Arthur Dahl writes,

> For two decades I lived and worked mostly in developing countries, assisting governments and international organizations with the practical problems of environment and development often at, or close to, the grass roots. I was thus largely cut off from the intellectual and academic debates of the past twenty years, except for what could be gleaned from the magazines and newspapers to which I had occasional access. Apart from a couple of undergraduate courses in economics thirty years ago, my experience...comes only from dealing with practical problems in the field. My approach to these fields is thus more intuitive than scholarly...However experience with the practical realities faced by many countries and communities can be more valid for the type of analysis presented here than abstract academic training.[29]

This thesis has dwelt primarily on a specific element of theoretical ecological philosophy and due to such limitations, has largely been unable to incorporate as much of a collaborative approach with these authors as might be otherwise desirable.

Within the current international Bahá'í community there is general agreement that spiritual and material unity in diversity within a global context is at the heart of the successful resolution of all problems facing humanity. Similar to social ecology, the Bahá'í model of ecology contains the view that unjust social relationships are intimately entwined with environmental degradation. The potential for the ultimate form of environmental degradation- a nuclear holocaust- exists as a result of this non-recognition of global interdependence, the antithesis of unity in diversity. Therefore, while there are a great variety of principles important to facilitating harmony within and between the human and natural world, unity of the human species becomes the most urgent pre-requisite for restoration and facilitation of ecological harmony. For if there is no basic level of unity among humanity, not only is the potential for nuclear holocaust and other forms of devastation not eliminated, but ecologically damaging military conflicts and the processes of production and resource wastage used in their facilitation, will continue to occur. We have moved beyond the era where 'coexistence', a tolerance of each other's differences and nationalistic isolated communities represented a new stage of maturity. Only the recognition of global interdependence can truly address the needs of the earth's biosphere. Without this, there is little chance for moving on to a vital consensus on the development of international environmental policy or an effective ecologically sustainable model of economics, much less a global vision of a united species living in harmony with nature.

This does not mean that unity in diversity of the human species is the most important principle for environmental ethics in an absolute sense. Rather it is a relational recognition that at this stage of human evolution and interrelationship with nature, it is the most urgent out of a range of principles, and represents a pre-requisite for the most basic levels of ecological harmony. Once a minimal level of unity among humanity is established, another principle or set of principles may very well become featured as prominent, as the basic fulfillment of human unity enables the beginning of a spiritually interdependent telos to be realized between humanity and nature. Of course this does not mean that we should wait to discuss the entire range of principles involved in conjecture about future potential of ecological harmony, but that a specific principle takes priority in praxis at this stage out of basic urgent necessity.[30]

In this regard, the general focus within the Bahá'í community is that of facilitating principles considered conducive towards such a unity of the human species. Principles such as the equality men and women, elimination of all forms of prejudice via cherishing the diversity of races, cultures and religious backgrounds, recognition of global interdependence and the unity of the human race, among others, are applied in varying contexts, within their own communities. It is generally believed that the lack of application of these spiritual principles is at the root of human dysfunction, and that such dysfunction is at the core of environmental degradation. Within the Bahá'í community, the greatest focus is upon attempting the development of a model of authentic human relations, and it is likely that the average Bahá'í would say that this is how the Bahá'í community can best solve the environmental crisis. In a letter 'To the Peoples of the World' the governing body of the Bahá'í Faith, the Universal House of Justice, reflects this emphasis on the development of a working model of unity in diversity.

The experience of the Bahá'í community may be seen as an example of this enlarging unity, ...It is a single social organism, representative of the diversity of the human family, ...If the Bahá'í experience can contribute in whatever measure to reinforcing hope in the unity of the human race, we are happy to offer it as a model for study.[31]

Overwhelmingly the focus of the Bahá'í community has been to attempt a praxis of these principles towards realizing unity in diversity in their own communities as well as a focus on practical applications.

However, more traditionally 'direct' attempts at developing environmentally sustainable patterns at a local

community level are not lacking. In industrialized countries this has often meant concerted efforts at tree planting, observances of Earth Day, maintenance of public 'peace gardens', and conducting 'cleanup' days. As well, there is a recognized pattern of Bahá'ís with particular environmental concerns attempting to help co-ordinate coalitions of local environmental groups towards consultation and co-operative praxis.

While in developing countries there are a great variety of Bahá'í programs from numerous ongoing projects to facilitate indigenous based solutions to promote energy systems incorporating the principles of sustainability[32], grassroots support and the empowerment of local people, to programs of microfinance.

Of particular significance, according to Dr. Al Henn, Director of the Harvard Institute for International Development, is that

> Bahá'ís really have focused on 'Small is Beautiful' and on getting things done with a minimum of resources.[33]

Microfinance is applied within the context of initiatives that address the problems of

> malnutrition and disease, flight from rural to urban areas in search of work, environmental degradation or the breakdown of families and communities.... [These] programs that provide small-scale loans and economic training to resource-poor people are one of the brightest spots in the new development paradigm.[34]

There are a variety of reasons for the deforestation of the great rainforests of Brazil, including big business motives for short term profit from cattle grazing and lumber. However such programs as mentioned have no small impact upon reversing the trend for resource-poor people responsible for the landclearing.

The majority of Bahá'í social/environmental projects occur in developing countries. For example, in 1989 of 602 Bahá'í education projects globally, the majority were in developing countries 56.8% Asia, 27.9% Africa, 13.6% Americas, 1.6% Pacific.

These institutions usually focus not only on general education, but also on adult literacy, women's education,

sustainable agriculture and health[35]. A more recent report lists 755 such education projects[36].

In 1997 there were 1714 projects directly focusing on social/economic development globally[37].

According to the most recent report from the office of the Bahá'í International Community (BIC), these projects are divided into 3 categories. Category 1 represents simple activities of fixed duration such as tree planting and clean-up projects. Category 2 are ongoing projects such as schools and other projects that focus on 'literacy, basic health care, immunization, substance abuse, child care, agriculture, the environment or microenterprise.'[38] Category 3 represents development organizations with relatively complex programmatic structures and significant spheres of influence. They systematically train human resources and manage a number of lines of action to address problems of local communities and regions in a coordinated, interdisciplinary manner.[39]

Bahá'í Projects According to Level of Complexity by Continent

	Category 1	Category 2	Category 3	Total
Africa	238	54	6	298
Americas	549			

58

15

622

Asia

351

65

8

424

Australasia

164

30

0

194

Europe

157

17

2

176

Total

1459

224

31

This has meant the development of
community based manufacturing of solar operated radios in China, more efficient stoves in Africa, water catchement projects in the highlands of South America, a focus on the facilitation of construction materials based on renewable local materials rather than imported timber, and perhaps most of all a focus on reforestation and protection of current forests.

For example, in Bolivia the
Dorothy Baker Environmental Studies Centre, a Bahá'í sponsored initiative

which is devoted
to exploring how appropriate technologies and education for sustainable development can be applied to improve the social, economic and environmental conditions in the Bolivian altiplano[40]

has been responsible for a number
of environmentally focused programs. This ranges from teaching communities how to build greenhouses, grow vegetables and become more self-sufficient, to teaching these local communities how to build water catchement dams to prevent soil runoff. Subsequently, there have been thousands of small water catchements built and thousands of trees planted in the soil which has been collected behind these catchements. As such, wetland conditions previously eradicated are beginning to return, and with soil conditions improved former indigenous plant life is beginning to thrive again.

In
May 1997, the Bahá'í communities efforts in Greece to lobby for the preservation
of forests helped in the culmination of the official declaration of 10% of its forests as protected reserve at a 'pre-earth summit forestry gathering' supported by the Greek Government and the WWF. This was in conjunction with the WWF goal to establish globally 'an ecologically representative network of protected areas covering at least 10 percent of each forest type by the year 2000.' The Bahá'í community also played a fundamental role in getting guests of
distinguished backgrounds[41] to attend in order to bring the process to a positive and concrete act of consultative will.

There was a lot of good will in the Greek Government
towards this proposal, said Mr. Sullivan. But what we did was to create a high level opportunity to do something that might not otherwise have been done.[42]

On an international scale, the Office for the Environment, a division of the Bahá'í International Community office, was created in New York to co-ordinate activities, consultation and facilitate changes in environmental policy in the United Nations.[43]

General Summary of Bahá'í Ecology

It is proposed that Bahá'í environmental philosophy is similar in its conceptual orientation to radical ecological movements as defined by Michael Zimmerman[44]. This is for two reasons- one the Bahá'í Faith 'offers an analysis of the conceptual origins of the environmental crisis', and two it 'proposes that only a complete and fundamental revolution of global culture can avert impending environmental catastrophe.' This revolution of global culture represents no less than the foundations of a radically new civilization that is characterized by a diversity of loving relationships set within the context of a dynamic and creative integration between material and spiritual reality.

On a popular level one may get the impression that the Bahá'í Faith is entirely optimistic about the course of human history. Bahá'u'lláh, the founder of the Bahá'í Faith, writes,

> Yet so it shall be; these fruitless strifes, these ruinous wars shall pass away, and the 'Most Great Peace' shall come....[45]

From a Bahá'í perspective, the revelation of Bahá'u'lláh represents the fulfillment of prophetic hopes longed for in human religious history. Bahá'u'lláh was the Proclaimer of the coming of age of the entire human race, whose revelation represented the tremendous release of spiritual forces and capacities necessary for the establishment of such a golden age.

However, according to Bahá'ís two things should not be forgotten. Firstly, this revelation is not an external act of God, imposed upon and descending on humanity as a pre-determined reality. While the spiritual capacities required for a peaceful civilization have been released, this revelation also represents a call to participate in relationships characterized by such capacities arising from God's love for humanity. So in one sense the revelation of Bahá'u'lláh is an invitation to an internal decision to engage in an act of free-will to use such fresh capacities to participate in such a transformation of ourselves and our families, and

thereby facilitate loving social relationships.

Secondly, this optimism in universal peace is a long-term vision extending over at least the next 500,000 years[46]. The immediate future of our civilization is less then certain. In 1986 the Universal House of Justice, the global governing body of the Bahá'í Faith, reminds us in its letter 'to the peoples of the world' entitled The Promise of World Peace,

precipitated by humanity's stubborn clinging to old patterns of behavior, or is to be embraced now by an act of consultative will, is the choice before all who inhabit the earth.

The rapid collapse of communism and the apparent diffusion of the global nuclear crisis may appear to avail us a sigh of relief. However, the materialistic capitalism that has evidently won victory is only a more subtle, yet perhaps more effective form of evil. This is through the apparent immediate satisfaction that it offers through its facilitation of both voracious consumerism and the exponentially increasing production capacities developing to meet such self-created needs. Also contributing to this is the associated affect of cultural imperialism in reducing cultural diversity. Such an economic pattern of relationships still represents the extension of 'stubborn clinging to old patterns of behavior'- the antithesis of 'ecologically sustainable development'.

There are precedents for the collapse of a number of great civilizations in history. Any closed system has limits to growth, and yet the metaphysics of our current civilization largely assumes by the principles that govern its economic relationships that there are no limits to growth, and that indeed continued high rates of growth are desirable. Many great civilizations before ours have collapsed after engaging in similar patterns of unsustainable growth. It is clear that social and economic relationships of equity and moderation must be facilitated to achieve realistic growth rates in western civilization rather than our current arbitrarily moderated free market global economy which is facilitating increasing extremes of wealth, education and health.

The civilization, so often vaunted by the learned exponents of arts and sciences, will, if allowed to overleap the bounds of moderation, bring great evil upon men. Thus warneth you He Who is the All-Knowing. If carried to excess, civilization will prove as prolific a source of evil as it had been of goodness when kept within the restraints of moderation. Meditate on this, O people, and be not of them that wander distraught in the wilderness of error. The day is approaching when its flame will devour the cities, when the Tongue of Grandeur will proclaim: 'The Kingdom is God's, the Almighty, the

All-Praised!'[47]

Of significant difference to
previous civilizations, however, is the manner in which technology, both in communication and transportation, effectively and immediately expose the injustice of such disparities caused by our lack of moderation. This public awareness, combined with a more democratic function of the common people to facilitate policy changes, has led to a capacity for more immediate pressure to change both the structures and the principles underlying economic relationships that are responsible for such extremes. Therefore, we have a significant advantage as a civilization in that education has achieved a much greater and immediate ability to create positive changes towards more sustainable relationships. Within this context the facilitation of a metaphysical vision of humanity as a diverse, yet united family provides a powerful and effective tool towards equity and justice.

Within the Bahá'í writings is contained a vision
of humanity collectively on the threshold of adulthood, yet in a transitory, painful adolescent stage of adulthood. In this transitory adolescence, humanity experiences the rush of creative capacity and the frustrations that attend a delay in the moral maturity necessary to utilize such new capacities. It is the degree to which a number of spiritual principles are internalized that determine the ability of the adolescent to successfully traverse this stage of increased capacities to realize his/her true potential of creativity. These include principles such as moderation in the face of an increased ability to experience stimulation in a variety of areas, self-control, the capacity for delayed gratification and sacrifice in response to a broader, less self-focused vision, patience, integrity and other such principles.

The long ages of infancy and childhood, through which the human race had to pass, have receded into the background. Humanity is now experiencing the commotions invariably associated with the most turbulent stage of its evolution, the stage of adolescence, when the impetuosity of youth and its vehemence reach their climax, and must gradually be superseded by the calmness, the wisdom, and the maturity that characterize the stage of manhood. Then will the human race reach that stature of ripeness which will enable it to acquire all the powers and capacities upon which its ultimate development must depend.[48]

We are simultaneously experiencing the death
pangs of a derelict civilization characterized by such stubborn and childish patterns of behavior, such as racism, sexism and nationalism, and the birth pangs of new forms of social relationships suited to respond to the needs of a more integrated, diverse and creative global community.

The tragic effects of the patterns

of behavior associated with our prior stage of childhood are being manifested most clearly in our global environmental crisis. From one possible Bahá'í perspective, this crisis represents no less than the 'unimaginable horrors' that we all face. It is not a black and white case of metaphysical revolution vs. Armageddon, or consultative will vs. unimaginable horrors. Such horrors of the dislocation of relationships, loss of culture, the loss of biodiversity and the massive scale of suffering and death on the human side through military conflicts, malnutrition and disease are already very present in our everyday life. So it is not a case of 'change completely now or else face an eventual catastrophe'. Rather the duration and depth of these horrors we currently increasingly experience, directly correspond to how quickly and to what degree we transform our relationships, whether by conscious faith, rational choice or by unconscious response, towards the spiritual principles that have been offered by the revelation of Bahá'u'lláh.

As will be seen in chapter one, the overall tendency of the community is to view the causes of the global environmental crisis, particularly within the political and scientific community, as external to humanity rather than found within internal metaphysics. Even those analytical attempts at engaging a fractured metaphysics can be superficial in their attempts to restructure the human vision. The dysfunctional fracturing of metaphysics is more than a breach between perception of subjective and objective, or a pattern of dualistic objectification within social relationships. These are manifestations of a deeper spiritual illness. There is common acceptance that many of the problems of our global crisis find their roots in such negative internal human qualities expressed in greed, corruption, and selfish clinging to national interests. Yet the corresponding and logical deduction that the positive spiritual counterparts of these negative qualities, such as selflessness, trustworthiness and service to others represent what is lacking in education, social relationships and economic policies, is a step less taken.

The current remedies being applied to the global crisis are predominantly technological. The problems are seen to be external variables that can be manipulated by technical solutions which allow for greater productivity, cleaner processes, balance of economic markets by a variety of moderating tools such as manipulating interest rates, or the creation of new legislative bodies, etc.. Politicians and most of humanity, in response to the symptoms plaguing the planet, seem to try changing everything but themselves. While in fact those external variables of hunger, poverty, disease, ocean pollution, global warming etc., are in fact not the disease itself, but rather symptoms of the disease and represent a 'third stage' of complications of the true 'virus'. As will be discussed further in chapter four, the fracturing of our metaphysics, which finds its historical expression primarily since the enlightenment, represents the secondary stage of the disease. These secondary complications characterized by dualistic forms of domination and objectification expressed in a variety of relationships may also

appear to represent the primary source of the earth's woes. While addressing those problems, we apparently cut straight to the heart of the illness, a proper restoration of health requires an essential and deeper acknowledgement. At its core, this disease is ultimately a loss of the capacity to love. This disease represents an internal fragmentation of our own spirits and their vision in response to a self-imposed alienation from loving relationships. This is a civilization that has lost its love of God.

The vitality of men's belief in God is dying out in every land; nothing short of His wholesome medicine can ever restore it. The corrosion of ungodliness is eating into the vitals of human society; what else but the Elixir of His potent Revelation can cleanse and revive it?[49]

This is not some simplistic attempt at a justification of religious dogma. This 'love of God' facilitates filial affection for all expressions of life: ourselves, our family, the diverse range of cultures in our global community, and more importantly in the context of this thesis, love of the earth and its diverse inhabitants within our ecosystem. The love of God evokes creative responses and infinitely diverse manifestations of capacity throughout reality, from the smallest of particles that have yet to be discovered[50], to the human spirit, to the civilization in which we dwell, to the macrocosm itself. The conscious response to this relationship represents the panacea whose efficacy alone can heal the neurosis of human spirit afflicting current civilization and subsequently the degradation of the natural environment. It is the manner of this response that is in question.

In the face of 'unimaginable horrors' engaging in acts of 'consultative will' are essential towards developing a truly positive global ecological metaphysic, and in particular analyzing and initiating corrective measures regarding our 'stubborn clinging to old patterns of behavior'. It is as Jean Paul Sartre said in his focus on facilitating authentic, conscious and responsible decisions that among the greatest of sins are the blind habits that impair the authenticity of our lives and keep us from responsible participation in creating our own future with predetermination, meaning and intention[51]. From the level of the family unit to transnational relationships, such acts of consultative will, as measures of facilitating a unity of vision, accountability of behavior and the analysis and implementation of strategic measures to enact that vision, are thus essential. Towards that vision the Bahá'í model of ecology has much to offer in the positive generation of a global ecological metaphysics.

The Bahá'í model of ecology views physical reality as composed of both material and spiritual relations. These are viewed as interdependent aspects of existence, which require both to be appreciated in any application of economic, legal or social development. It values both faith

and reason as perceptive capacities towards a comprehensive understanding of the intelligibility of the natural world. Its vision of unity and diversity, material and spiritual interdependence, and theocentric emphasis of radical relationality between God and the world, breaches a gap between the subjective and objective as well as instrumental and intrinsic understandings of value. It proposes a clear vision of purpose and meaning which is consistent and equally applicable to the evolution of individuals, species, their inter-relationships within the biosphere, and the entire Cosmos. It offers a critique of anthropocentrism, which proposes a relational ontology of humanity, in which the very nature of human character evolves through and is dependent upon the myriad relationships within the biosphere of our planet and the whole cosmos. It implies that we are not the most advanced species within the universe, and entails a vision of a conditional spiritual
and material stewardship between humanity and nature qualified by humility, and characterized by both unity and detachment.

The Bahá'í vision of spiritual
biodiversity does not merely focus on the myriad of variables underlying the relationships of the complex biospheres of earth. Its vision is infinite both in the temporal sense[52], in that "creation hath no beginning
and no end", and in the spatial[53] in that when considered relatively[54], there are an infinite range of beings populating an infinite Universe. As well it contains a vision of spiritual bio-diversity which extends through infinite, progressive dimensions of reality[55]. Each dimension possessing unique conditions of existence and yet retaining a coherent interdependence throughout them all.

This is not just a revolution of internal
perspective in metaphysics, macrohistory and epistemology. It has direct practical implications in fostering a global revolution in social, economic and political structures that also govern our relationship with nature. There are a variety of requirements for a fundamental revolution of global culture, necessary from a Bahá'í perspective, in order for ecological harmony to be established. Most importantly, it implies the requirement of the unity of the human race, due to the urgency of the present time and because it represents the next inescapable stage of human social and spiritual evolution. It also necessitates a fundamental revolution in the model of relationship between women and men, and the elimination of all forms of prejudice. It requires a reordering of the global economic paradigm through the recognition of spiritual principles, and whose more relational models must eliminate the extremes of wealth
and poverty, and a dysfunctional valuing process based on a non-relational materialism that results in both the objectification of oppressed humans as well as nature. As well, it implies the need for the development of a global legislature, equally representative of all nations, facilitating an authentic and egalitarian processes of consultation, with an executive capacity

sufficient to ensure harmonious and balanced international relationships, that will ensure agreed upon ecological principles are kept by all parties.

The primary Bahá'í principle which provides the framework of its world view is that of global unity in diversity, and the primary principle which governs the application of the many associated principles towards this world view, is the recognition that religious truth is not absolute but relational[56].

The texts used are those of the Founder of the Bahá'í Faith "Bahá'u'lláh"[57], his son Abdu'l-Bahá[58], and Abdu'l-Bahá's grandson and Guardian of the Bahá'í Faith, Shoghi Effendi.[59]

While the majority of texts used form part of the official 'canon' of the Bahá'í Faith, such a canon is not static set, but rather a dynamic and highly relational body of diverse works that have a variety of historical and cultural contexts as well as relationships to other texts within the wider body of scripture. It is often important to understand these contexts and relationships in order to appreciate their place within the wider hermeneutical circle. While this thesis is primarily a theological endeavor, where required, historical and literary criticism will be used to enhance hermeneutical understanding towards the attempt to build a vision of Bahá'í environmental theology.

The Bahá'í View of the Relationship of Science and Religion:

As this thesis is primarily concerned with the role of a balanced metaphysical relationship between instrumental and intrinsic value in facilitating a mature global environmental vision from a Bahá'í perspective, it is necessary to examine some of the more explicit texts in the Bahá'í writing related to this theme. This is not only regarding the writings related directly to the Bahá'í view of nature, but also the relationship between science and religion. This is because underlying the relationship between science and religion is the relationship between physical and spiritual components of reality. The principles related to these relationships eventually manifest themselves in the manner in which we perceive both the instrumental and intrinsic value of nature. These perceptions eventually further crystallize into patterns of behavior in our individual and collective social relationships, as well as influencing the emergence of political institutions and legislative trends that govern our economic patterns that in turn determine the manner in which we behave toward our ecosphere.

Among the global religions, the Bahá'í writings make comparatively substantial and comprehensive reference to the harmony of science and religion. [60] The revelation of Bahá'u'lláh itself is considered to be divine in origin, all-embracing in scope, broad in outlook, scientific in its method...[61] (emphasis added)

What is meant by 'scientific in method' is not explained in the immediate context of the passage. However from hermeneutical contexts it appears to mean the disclosure of a rational and logical paradigm of reality that possesess integrity and consistency and is capable of being explored by the "independent investigation of truth." Hossain Danesh writes that Abdu'l-Bahá uses the same language to describe both science and religion, and that they can be defined as processes which engage in discovering the 'relationships derived from the realities of things'.[62] He further writes that

So, the two main objectives of Bahá'í scholarship are the spiritualization of science and the application of scientific method to religion, thus creating a true harmony between science and religion.[63]

In a number of passages in the Bahá'í corpus of writings, the acquisition of sciences is considered to be equivalent to the worship of God:

Strive as much as possible to become proficient in the science of agriculture, for in accordance with the divine teachings the acquisition of sciences and the perfection of arts are considered acts of worship. If a man engageth with all his power in the acquisition of a science or in the perfection of an art, it is as if he has been worshipping God in churches and temples.[64]

Not only is the traditionally spiritual act of worship linked with the more physical realm of everyday work and the development of secular knowledge, but is reflected in the physical structures that represent worship in the Bahá'í Faith. An example of this finds an essential statement of its physical expression on the institutional level in the development of the Mashriqu'l-Adhkar[65]and its accessories. An institution inaugurated by Bahá'u'lláh, eventually to be built in every city or village, it includes a temple or 'house of worship', open to all peoples for the purpose prayer and worship to God, and is surrounded by various dependencies dedicated to the service of the human race.

...When these institutions -college, hospital, hospice, and establishments for

the incurables, university for the study of higher sciences and giving post-graduate courses, and other philanthropic buildings - are built, its doors will be open to all the nations and all religions. There will be drawn absolutely no line of demarcation. Its charities will be dispensed irrespective of colour and race. Its gates will be flung wide to mankind; prejudice toward none, love for all. The central building will be devoted to the purpose of prayer and worship. Thus for the first time religion will become harmonized with science and science will be the handmaid of religion, both showering their material and spiritual gifts on all humanity. In this way the people will be lifted out of the quagmires of slothfulness and bigotry.[66] (emphasis added)

By both science and religion maintaining a dialogue and pursuing a creative dialectic, both become processes that are more accountable. While according to the texts of 'Abdu'l-Bahá, the accountability of religion in response to the discoveries of science is emphasized.

Any religion that contradicts science or that is opposed to it, is only ignorance - for ignorance is the opposite of knowledge...Religion and science walk hand in hand, and any religion contrary to science is not the truth. [67]

If religious teaching, however, be at variance with science and reason, it is unquestionably superstition.[68]

But ultimately both science and theology are seen as interdependent means of understanding reality.

Religion and Science are inter-twined with each other and cannot separated. These are the two wings with which humanity must fly. One wing is not enough. [69]

Particularly as they both find their source in the act of God's self disclosure[70],

Science is the first emanation from God toward man.[71]

The implications of denying this interdependence is seen when one 'wing' is exclusively preferred to the other:

Religion and science are the two wings upon which man's intelligence can soar into the heights, with which the human soul can progress. It is not possible to fly with one

wing alone! Should a man try to fly with the wing of religion alone he would quickly fall into the quagmire of superstition, whilst on the other hand, with the wing of science alone he would also make no progress, but fall into the despairing slough of materialism.[72]

So the Bahá'í vision of the relationship between science and religion is seen to be both complementary and integrative or interdependent. The authentic facilitation of science and theology are spiritually relational activities of the human spirit and intellect. Both are acts of internal reflection, which are responses to the infinite disclosures of God's Self which ultimately represents the participation in relationship through attraction and love. That Love of God finds concrete expression not only in the infinite levels of physical creation, but also in the special historical revelations of the Manifestations of God as acts of a more specific, comprehensive and personal disclosure of relationship by God. This Divine revelation also takes place in our own being, where the light of that revelatory Love illuminates our own soul, body and mind in a more personal and intimate form of relationship.

The harmony of science and religion is seen as a defining feature of the next, inescapable stage in the organic evolution of the spiritual and social life of humanity.

In such a world society, science and religion, the two most potent forces in human life, will be reconciled, will cooperate, and will harmoniously develop.[73]

With regard to the harmony of science and religion, the Writings of the Central Figures and the commentaries of the Guardian make abundantly clear that the task of humanity, including the Bahá'í community that serves as the leaven within it, is to create a global civilization which embodies both the spiritual and material dimensions of existence. The nature and scope of such a civilization are still beyond anything the present generation can conceive. The prosecution of this vast enterprise will depend on a progressive interaction between the truths and principles of religion and the discoveries and insights of scientific inquiry. This entails living with ambiguities as a natural and inescapable feature of the process of exploring reality. It also requires us not to limit science to any particular school of thought or methodological approach postulated in the course of its development...[74]

Bahá'í Texts Relating Directly to Nature

If one examines what are considered traditional
central Bahá'í spiritual principles, you encounter the oneness of God, the common foundation of all religions, the equality of men and women, the elimination of all forms of prejudice, the harmony of science and religion, the concept of progessive revelation, the unity and diversity of humanity, and others.

Intrinsic to the Bahá'í writings
is also a complex paradigm of environmental theology. This may not be traditionally listed as a basic Bahá'í principle. Yet, this paradigm
represents
a field of belief which provides a grounding for the rest of the principles and which perhaps more than any other concept in the Bahá'í writings provides a context of relationality in which the list of basic Bahá'í principles can be understood in practical application. Indeed as the practical remedial application of abstract spiritual principles is considered essential to the Bahá'í concept of scholarship[75], the last chapter of this thesis
will attempt to relate some of the metaphysical explorations in the preceding chapters to practical implications for modern civilization.

Within Bahá'u'lláh's writings,
nature is considered to possess sophisticated levels of emergent infinite intrinsic spiritual value[76]. Nature is an expression of God's
Will, manifests the names and attributes of its creator, and is unified and interdependent. The love of God is the 'organising and binding force' that creates, sustains and is responsible for its physical and spiritual evolution. The primary historical agency of this love of God in the contingent order has been the periodic Manifestations of God who have from the "beginning that hath no beginning" successively released the spiritual forces responsible for the continuing material and spiritual evolution of the universe. With the advent of the most recent of these Manifestations, Bahá'u'lláh, humanity has been
called
into a new and expanded consciousness regarding its relationship to the environment. Humanity is no longer a passive object, unaware of the forces of evolution. Rather we are now at the threshold of becoming collectively conscious of our capacity for both good and evil as an active agent in influencing evolutionary processes. It will be proposed that from a Bahá'í perspective, this capacity of active agency finds its most authentic expression in facilitating a spiritual environment which will foster the range of God's attributes manifested in the evolutionary process, of both nature and ourselves. We have already seen how a civilization characterized by antithetical spiritual qualities is negatively impacting biodiversity. Yet there is also the correlative potential for a civilization whose relationships are primarily governed by spiritual principles to have a positive impact upon biodiversity and not only cherish but facilitate the richness of all life in our ecosphere.

Collectively, nature as creation primarily witnesses the attribute of God's Being, 'Creator'.

Nature in its essence is the embodiment of My Name, the Maker, the Creator...Nature is God's Will and is its expression in and through the contingent world. It is a dispensation of Providence ordained by the Ordainer, the All-Wise.[77]

More specifically, in varying capacities and characteristics nature reflects the infinite Divine attributes of the Creator.

And when it shineth forth from the Horizon of the universe with infinite Divine Names and Attributes upon the contingent and placeless worlds, this constituteth the emergence of a new and wondrous creation which correspondeth to the stage of 'Thus I called creation into being'[78].

Every time I lift up mine eyes unto Thy heaven, I call to mind Thy highness and Thy loftiness, and Thine incomparable glory and greatness; and every time I turn my gaze to Thine earth, I am made to recognize the evidences of Thy power and the tokens of Thy bounty. And when I behold the sea, I find that it speaketh to me of Thy majesty, and of the potency of Thy might, and of Thy sovereignty and Thy grandeur. And at whatever time I

contemplate
the mountains, I am led to discover the ensigns of Thy

victory and
the standards of Thine omnipotence[79].

Even the most basic physical elements exemplify
the qualities of attraction and unity, two basic manifestations of Divine Love.

Whatever is
in the heavens and whatever is on the earth is a direct

evidence of
the revelation within it of the attributes and names of

God,
inasmuch as within every atom are enshrined the signs that

bear
eloquent testimony to the revelation of that Most Great

Light.[80]

The predisposition of nature for both
diversification and interdependence is strongly affirmed in numerous passages.

Even as the
human body in this world, which is outwardly

composed of
different limbs and organs, is in reality a closely

integrated,
coherent identity, similarly the structure of the physical

world is
like unto a single being whose limbs and members are

inseparably
linked together.[81]

This principle of unity and interdependence
applies to all levels of physical/spiritual reality from the complex
gravitational relationships of interstellar bodies to the movements of
subatomic particles[82].

...among the
parts of existence there is a wonderful connection and

interchange
of forces, which is the cause of the life of the world

and the
continuation of these countless phenomena.... From this

illustration
one can see the base of life is this mutual aid and

helpfulness.[83]

According to Abdu'l-Bahá the organization and
co-operation apparent in the sophisticated interdependent relationships in
nature is a manifestation of Divine Love.

Love is the
cause of God's revelation unto humanity, the vital bond

inherent, in
accordance with the divine creation, in the reality of

things.
Love...is the unique power that bindeth together the divers

elements of
this material world, the supreme magnetic force that

directeth
the movements of the spheres in the celestial realms[84].

Thus from a Bahá'í point of view, one could
literally say that the mysterious, invisible, unquantifiable force which binds
sub-atomic particles at their most intrinsic level is the Love of God.
Literally, the very ground of our being is the Love of God.

One cannot discuss the Bahá'í view of nature in
its writings without acknowledging the tension with other texts by
Bahá'u'lláh
which appear to have a derogatory view of the contingent order.

Thou art the day-star of
the heavens of My holiness, let not the defilement of the world eclipse thy
splendor.[85]

...Barter not the
garden of eternal delight for the dust-heap of a mortal world. Up from thy
prison ascend unto the glorious meads above, and from thy mortal cage wing thy
flight unto the paradise of the Placeless.[86]

O MY SERVANT! Free
thyself from the fetters of this world, and loose thy soul from the prison of
self. Seize thy chance, for it will come to thee no more.[87]

There are many such texts which appear to degrade the status of the natural world and which view it as a barrier to salvation. It is offered that the tensions between such texts are significantly resolved when we examine what 'world' in the derogatory texts as opposed to 'nature' and 'earth' in the cataphatic texts mean. The use of 'world' within the context of use, refers not literally to nature or the created order, but rather to the 'animal nature' or 'ego' of the human, such as greed, lust and the worship of 'vain imaginings'. The 'world' is the self. However this 'world' of the self is not an inescapable ontological condition of authentic being, but rather a functional capacity. In this case the focus is a warning against reflecting the materialistic focus of current human civilization rather than reflecting the spiritual potential. These egotistical elements tarnish our souls reflective capacity, causing in effect an 'eclipse' of our true potential for spiritual 'splendour'.

It is helpful to also consider the theological archetypes of Genesis and the creation story in particular when approaching Bahá'í texts that initially appear negative towards nature. The Garden of Eden story includes a number of themes, among them the birth of human consciousness. This awakening of free will represents the capacity of the human to be detached from its natural or animal instincts and turn towards higher spiritual values that occur from the capacity for conscious responses to the love of God. So in this context to free oneself from nature or to subdue it, is representative of the function of detachment. This however is a cyclic process and needs to be placed in a wider hermeneutical circle. References in religious texts are made to the beginning in the end, the alpha and the omega, and the resurrection. There are different contexts for each of the terms and a variety of associated concepts that occur in each metaphor. However, it is proposed that a return to Eden is a related idea to this cluster of theological concepts. One possible meaning, from a Bahá'í perspective, is this: At the initial stage of human consciousness and the capacity for detachment, turning towards nature as our source of identity and force that governs our relationships means both enslavement and idolatry. At this stage of the development of human consciousness the significance of nature is the reflection of our own ego and the baser elements of human nature such as lust and hunger[88].

However this is not a categorical rejection of nature: far from it. If we successfully turn away from this baser self through the capacity of detachment, fully embrace our higher selves, i.e. the love of God and all attributes such as compassion and humility, we then can return to nature and see it not as a reflection of our baser selves, but as reflection of Divinity. The love of God empowers this capacity for a resurrection of spiritual relationships between humanity and nature, seen in the pre-fall descriptions. This is also another meaning of beating our swords into ploughshares. Technology being symbolic of the capacity of humanity for cognitive detachment from nature, implies the ability to either use this capacity to serve the baser human instincts or to return to nature empowered by the love of God and use it as a means for the

restoration of natural relationships.

When a wider hermeneutical circle
is examined it is clear that Nature itself is sacred by its association with the attributes of the Creator. Associated with this is the idea that by incorporating spiritually intrinsic valuing criteria in regard to nature, and allowing these to moderate the currently dominant material instrumental metaphysics of nature is essential towards the application of a broad and mature set of international environmental ethics. Abdu'l-Bahá clearly warns humanity about the implications of such an imbalance:

However, until material achievements, physical accomplishments and human virtues are reinforced by spiritual perfections, luminous qualities and characteristics of mercy, no fruit or result shall issue therefrom, nor will the happiness of the world of humanity, which is the ultimate aim, be attained. For although, on the one hand, material achievements and the development of the physical world produce prosperity, which exquisitely manifests its intended aims, on the other hand dangers, severe calamities and violent afflictions are imminent.[89]

[+CHAPTER1]

Chapter
1: The
Negative Consequences of Not Recognizing Our Global Interdependence

The World Model

In
1972 an eminent group of intellectuals, The Club of Rome, commissioned the research skills of a group of scientists at the Massachusetts Institute of Technology to develop a model capable of engaging the question of future prospects for current economic practices. In response, they developed the computer program called World3. This program, combined with the new capacities of a super-computer, was able to calculate a great variety of principles applied to enormous quantities of raw data and thereby explore the potential 'carrying capacity' of the planet. They used such variables as various forms of resource depletion, efficiency of technologies, population growth, and pollution outputs among many other sets of data.

Three
main summary conclusions were offered in the report compiled by the research team utilizing World3 and their best attempts to include known assumptions of relevant data to the question at hand[90].

1
If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next 100 years. The most probable result will be a sudden and uncontrollable decline in both population and industrial capacity.

2
It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his or her individual human potential.

3
If the world's people decide to strive for this second outcome rather than the first, the sooner they begin working to attain it, the greater

will
be their chances of success.

This
report produced a great deal of responses. This is for an obvious number of reasons such as the defense reaction of capitalist interests, but partly this was also due to the hype of the model being processed by a super-computer at MIT combined with the significant reputations of the scientists on the research team and the members of the Club of Rome. This context of the credibility of the scientists and a public fascination with the apparent pronouncement of doom from a super-computer, gave a sudden weight of critical realism to the environmental crisis.

While there have been a number of valid criticisms[91] of the modeling system used in World3, none of them have been able to fundamentally challenge the foundational principles of systems analysis used in the model. Changing the variables of the model could only offer a short-term forestallment of an eventual global population and industrial collapse[92].

In 1991 this same team[93]
conducted the same modeling process using the data from the set of variables available twenty years after the first model calling it Beyond the Limits[94].

Much of the conclusions remain

the same and there is still room for optimism in the potential for change represented in conclusion 2. However, a number of important limits to growth have been reached decades sooner than expected giving rise to a greater sense of urgency.

In 1971 we concluded that the physical limits to human use of materials and energy were somewhere decades ahead. In 1991, when we looked again at the data, the computer model, and our own experiences of the world, we realized that in spite of the world's improved technologies, the greater awareness, the stronger environmental policies, many resource and pollution flows had grown beyond their sustainable limits.

The new report concluded that there were only two variables in the model which upon application could change the destructive course of events.

The first is a comprehensive revision of policies and practices that perpetuate growth in material consumption and in population. The second is a rapid, drastic increase in the efficiency with which materials and energy are used.

These conclusions are no doubt true and evoke a strong feeling of grim urgency to develop such solutions. Later in the thesis, the revolution of external limits of policy reform and technological efficiency required will be shown to only be truly possible when the inner limitations of the human world view are sufficiently understood and changed with an equally urgent determination. Prior to moving on to this aspect of the discussion, a brief examination of specific elements of the environmental crisis will be made.

The Global Environmental Crisis: Recent Data

There are myriad aspects of the environmental crisis that negatively affect the quality of the human condition. However only a few examples of the main categories of degradation are sufficient to provide justification for the argument of this thesis.

Throughout the world freshwater aquifer tables are dropping dramatically. Tragically, this is occurring with the greatest rapidity in the two countries with the greatest populations, China[95] and at an even greater rate throughout India.[96]

The extraction of water from aquifers in India exceeds recharge by a factor of 2 or more. Thus almost everywhere in India, freshwater aquifers are being pulled down by 1-3 meters per year.[97]

This is in a country whose population is expected to increase by more than 64% over the next 50 years from 976 million to 1,517 million[98]. This is a foreboding prospect in an agriculturally dependent country where three fifths of all children already suffer malnutrition[99].

The resulting fall in water tables will eventually lead to a steep cutback in irrigation water supplies, threatening to reduce food production. Unless New Delhi can quickly devise an effective strategy to deal with spreading water scarcity, India-like Africa[100]-may soon face a decline in life expectency[101].

While in China, the implications of water depletion are equally devastating particularly for the negative potential impact on global food prices. In 1999 the water table under Beijing fell by 2.5 meters, representing a significant drop in water levels, while since 1965 the water table has fallen more than 59 meters[102]. These water levels are dropping primarily in response to agricultural needs, both as the population continues to grow and the natural river systems are depleted. The cradle of Chinese civilization for thousands of years, the Yellow River, for the first time in recorded history, in 1972 it failed to reach the sea for fifteen days and since 1985 it has run dry for an increasing part of each year. In 1997 it failed to reach the sea for 226 days.

By 2010 it is likely that China will have fully and suddenly depleted its underground water tables and the rivers will not provide enough for the agricultural needs[103]. A rain based agriculture will mean that China will require massive importation of grain from other countries. 70% of China's agriculture comes from irrigated land, as opposed to only 15% for the U.S., combining this fact and that China, with nearly 1.3 billion people, a fast-growing economy, and a $40-billion-plus trade surplus with the United States, has the potential to disrupt world grain markets. In short, falling water tables in China could soon mean rising food prices for the entire world[104].

Half of the forests that once covered the earth are gone. Between 1980 and 1995 more than 200 million hectares of forest were destroyed.[105]
With a sharply rising trend towards urbanisation, populations are more likely

to be tolerant of clear cutting woodlands, rather than selective gathering patterns of rural based populations[106]. This process of urbanisation causes a state of mental hyperseparation from nature. This among many other factors would indicate little to prevent a rise in a rate of deforestation.

The current model of Western economics that developing countries are turning to only increases their intention to rely on fossil fuel based economies. Considering that Oil production will peak and then begin to rapidly fall sometime between 2000[107] and 2010[108], the implications are foreboding.

This chart[109], representing data[110] for the global production of oil, was compiled by Petroconsultants. This report[111] was made on behalf of Oil industry interests and indicates the speed with which the growth of global consumption will outpace available resources obviously causing a very rapid increase in the price of oil.

The report, written for oil industry insiders and priced at $32,000 per copy, concludes that world oil production and supply probably will peak < as soon as the year 2000 and will decline to half the peak level by 2025.

Large and permanent increases in oil prices are predicted after the year 2000[112].

According to a report prepared by Oak Ridge National Laboratory for the Office of Transportation Technology of the U.S. Department of Energy and made public in mid-January 1996,

'OPEC (Organization of Petroleum Exporting Countries) nations, in control of two-thirds of the world's reserves, will soon have the ability to regain monopoly power in world oil markets'. The report concludes 'Price shocks can be very profitable to oil producers, and consuming nations appear to have developed no adequate defense against them,'[113]

Without immediate massive investment in alternate, clean technologies, countries must produce more to pay for the rising oil prices which then increases the consumption of energy. A vicious and short lived feedback cycle begins where

countries must increase their energy output in order to pay for increasing oil prices until we reach 'overshoot and collapse'[114] and the industrial sector implodes. This occurs along with a corresponding impact on the loss of human population as the economic structures necessary to support the agricultural requirements of such a growing population disappears.

Global warming[115], induced through human activity, has created ecological havoc on many levels, from massive erosion of the oceans 'tropical rainforests'- the coral reefs[116] to extensive melting of thousands of square kilometers of polar ice sheets[117].

Global warming has many negative implications. An illustrative example of combined data from 1950 to 1998 is provided below (also see the Arctic and Southern Ocean Sea Ice Concentration documentation for more information). While the quality of these data vary over time, the resulting time series provides a reasonable summary of hemispheric ice extent. These data suggest greater variations in recent years, with six of the 10 years of minimum Arctic ice extent having occurred since 1990[118].

This graph[119] indicates that seven of warmest years of the known global record were recorded in the 1990's, with 1998 being the warmest by an anomaly of .57 Celsius above average[120].

The previously mentioned feedback system incorporating massive increases in unsustainable industrial output necessary to purchase the increasingly expensive oil can only negatively impact upon the greenhouse effect with the simultaneous release of massively increasing amounts of hydrocarbons.

A combination of pollution, overharvesting, rising sea levels and increasing water temperatures are rapidly depleting the worlds fish reserves.

...11 of the world's 15 most significant fishing regions and 70 percent of the major fish species are overexploited.[121]

The global fishing harvest in 1997 was 90 million tons, yet as most marine biolgists believe, the oceans cannot sustain an annual catch of more than 95 million tons, the catch per person will decline steadily in the decades ahead as world population continues to grow[122].

Most reports indicate ocean levels rising by at least 17 centimeters, but likely to rise up to 95 centimeters[123] or even 1 meter[124] by the year 2100. This would flood many major coastal cities from New York to Sydney, and wreak havoc in densely populated delta areas such as Bangledesh[125].

Flooding[126], major storms[127] and extensive forest fires[128] continue to escalate in severity with each passing year.

The Destruction of Biodiversity and the Loss of the Immanence of God

However, even more tragic than these climatic events which directly impact upon the human condition, is the rapid planetary loss of biodiversity.

One of the first environmental crises which facilitated biocentric rather than anthropocentric considerations, which came to the forefront of public consciousness was the DDT problem, brought to our attention by Rachel Carson in the early 1960s.[129]

Since then there has been a proliferation of awareness that species other than humanity are suffering from environmental degradation.

Based on an assumption of one million species, David Raup estimates a "background" or natural rate of species extinction at one species every four years[130]. However, estimates of the current rates of species extinction range from 1000 p.a. [131] to 4000 to 6000 p.a. with further projections that this rate may double or triple over the next few decades[132]. Even the lower end of estimates of the extinction rate represent a period of mass extinction perhaps greater than on any other period on earth, and certainly the greatest in 65 million years[133]. However, it is the first time it has been inflicted by a single species, rather than through natural events. Being "natural" of course does not necessarily mean "good". Whether it is the massive impact of a large meteor, or a modern day thermonuclear explosion, the effect is similar. [134]
However, it should be noted that "the fossil record indicates that several discernible mass extinction events occurred in the geologic past, but it also indicates that the rate of "background" or routine extinctions has declined with time and, correspondingly, that biological diversity has increased with time. On the average, speciation has outpaced extinction.The earth's

evolutionary process tends toward greater biological diversity,...although it has
been interrupted by widely spaced setbacks."[135]

Other
than the news of it, this extinction rate, is not so obvious in our daily lives, and rarely gives us pause for thought. Earlier in human history humanity was particularly a rural species, and we lived more obviously within the same environment as "the rest" of the ecosystem. Under such conditions, the massive extinction of species would have had much greater impact upon our immediate psyche. But with a massive trend towards urban migration, projections indicate that well over half of humanity will live in cities by 2015,[136]
making it the first time in history for humanity to be categorized as predominantly an urban creature. This urbanization, literally, further separates humanity from nature and causes a further loss of sensitivity to the actual condition of interdependence among diverse species, particularly to their suffering and extinction.

This
is also reflected in Western philosophical models which largely govern the perception of our hyperseparated relationship with nature. [137]
One of the first practical, yet indirect, comments on this urbanization-based hyperseparation, was made by Aldo Leopold. He wrote:

There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast
comes from the grocery, and the other that heat comes from the furnace. To avoid the first danger, one should plant a garden, preferably where there is no grocer to confuse the issue. To avoid the second, he should lay a split of good oak on the andirons, preferably where there is no furnace, and let it warm his shins while a February blizzard tosses the trees outside. If one has cut, split, hauled, and piled his own good oak, and let his mind work the while, he will remember much of where the heat comes from, and with a wealth of detail denied to those who spend the weekend in town astride a radiator. [138]

It
should also be understood that a global estimate of a 54.4%[139]
urban-based population is misleading for the purposes of determining overall natural hyperseperation for two reasons. First, it is a global average. While the biggest shift towards urbanization is in developing countries, the projection is for industrial countries to have 80% urbanization. And most significantly, those in decision-making positions and those who determine environmental and economic policy, media focus, education curriculum, and so on, are almost exclusively based in cities. Considering this, the concept of urban/rural hyperseparation is much more pervasive than one might first assume. From this it is clear that the hopes for an unsolicited 'organic response' from

the world's leaders in decision-making positions is unlikely. A dramatic shift in environmental policy is more likely to only occur after extensive public pressure and a united and diversely based education process, facilitated by all ecologically concerned groups.

It is the nature of that education process which must be consulted upon.

Conservation rests on insecure foundations as long as it does not go beyond an instrumental ethic for its justification. When conservationists try to oppose polluters and developers solely with pragmatic arguments about the value of species and the gene pools of the rain forests to human welfare they have been maneuvered into fighting on the same ground as their opponents. Their pragmatic arguments for the long-term value of a species will be weighed against pragmatic arguments for the immediate needs of human beings. If a judge rules that the arguments of the developers are more compelling and that a flood-control dam will provide more tangible benefits to humanity than will an endangered species, to whom will the conservationists appeal?

...The ethical principle that follows is that we should respect every entity for its intrinsic value as well as its instrumental value to others, including ourselves...We deal with entities appropriately when we rightly balance their intrinsic and their instrumental worth.[140]

The critical nature of maintaining this balance cannot be emphasized enough. Last century it was said, "we are nuclear giants and moral midgets". The discoveries in atomic physics released an enormous potential for both the advancement and destruction of both human civilization and the environment. The political metaphysics of most of that century unfortunately focused the lens of science primarily on its destructive potential. Motivated by the fevered insanity of these metaphysics, the finger of humanity moved a number of times towards 'the button' of global destruction, hovering millimeters away with hesitancy.

To breathe a sigh of relief, concluding that that crisis has passed and that we are in a new and improved century would be folly. Not only does the prior 'button' exist, but primarily through political fragmentation in the East, there are more fingers with such capacity. As well the stability of the 'mercury switch' beneath the button has become frayed through a deterioration of economic and social structures, and a 'responsible military decision defending national interests' is no longer necessary for that spark to arc the gap of destruction. Acts of terrorism, partly inspired by growing disparities between extremes of social conditions throughout the world, necessitate the vigilance

against the ongoing nuclear threat to the earth.

This
is not to deny that there are number of recognizable positive forces moving human civilization towards a positive integration of a global community, but complacency with the current model cannot be tolerated. If one is concerned with the preservation of biodiversity then it would be foolhardy to breathe a sigh of relief at the passing of the cold war potential and the apparent victory of the west.

There is a new button. A new dimension of physical reality has been discovered. The capacity of bio-genetic engineering has released forces of potential creativity and destruction that dwarf the issues of ecological justice raised by nuclear physics.

The
nuclear form of destructive capacity represents an external force, capable of blasting, without any conscious selection, all of the earth. However terrible, and penultimate a form of destruction that may appear to be, there is something worse. The genetic form of destructive capacity represents an internal force, capable of deforming and changing the very fiber of being. Each member's creative freedom is potentially distorted, and the balance of its relationships with others impaired.

Both
forms of destruction are equally terrible in the capacity of their penultimate destructive capacity, that of extinction. Yet the potential of the genetic force represents a potential deformation and twisting of spirit so that such extinction means the loss of identity and internal integrity and impacts all relationships in the interdependence of the biosphere. Those who survive this type of extinction are not what they once were in a much deeper and complete sense than the survivors of atomic conflagration.

In this context respecting and seeking to understand
the sacred worth of 'every entity for its intrinsic value as well as its instrumental value to others, including ourselves' gains enormous implications for the application of ethics towards the positive application of the enormous capacity of biotechnology. This is because the sophistication of ethics required to meet the needs of this technology is much greater than that required for the application of nuclear physics.

It
is in this context of the requirement for the development of a sophisticated set of ethics appropriate to respond to the capacity of biotechnology that Bahá'í ecology offers one of its greatest contributions.

As
will be discussed in chapter 6, for Bahá'ís the loss of biodiversity and the distortion of individual identity has particularly tragic significance. Each species, and indeed each individual being, represents a unique expression of a spiritual attribute or set of attributes (i.e., names of God) arising from their relationship with other beings, in the contingent order.

As
each species becomes extinct, it does not merely represent the increasing imbalance in our ecosystem, or the loss of another potential pharmaceutical benefit, but the loss of diverse, beautiful and unique manifestations of God's Being in the contingent order. And if these species have never even been known, then we may have missed out completely on having the chance to ever know and learn from the expression of their particular spiritual attribute(s). As well, not only does the world lose the chance to experience the ongoing "becoming" or further development of their spirituality in ever-increasingly sophisticated and beautiful manifestations of God's Spirit in the world, but our own spiritual growth and richness is negatively affected[141].
Since we are all who we are, primarily because of our spiritual and physical relationships in the natural world.[142]

In one sense, this process of
unbridled mass extinction ultimately represents the initiation of the "death of God" in our world. The
current dominant model of western economics and its attendant metaphysical assumptions,
may have given us a 317.59% increase in the assets of the Dow Jones Industrial Average over the past ten years[143], yet it is causing the death of our world. Neo-classical economics has resulted in treating earth as a 'business in liquidation'.[144] What is required is a radical
change to this model. As Thomas Kuhn describes it, a 'paradigm shift' of inner metaphysics and perception is required of much greater significance than the Copernican revolution. A model is required in which global interdependence, complex levels of diversity, and the sacredness of all life is given due regard.

Before
moving on to a more in-depth discussion of such a valuing process in the Bahá'í
model of ecology, the modern discussions about instrumental and intrinsic value of nature will be examined in a representative number of environmental philosophies. Particularly those of the 'radical ecologies' in order to understand humanity's current attempts at an appropriate analysis of the 'inner limits' of our ecological metaphysics which determine by projection, the nature of the external limits discussed earlier.

[+CHAPTER2]

Chapter 2: An Examination of the Value of Nature in Environmental Philosophy

In practice the ultimate challenge of environmental ethics is the conservation of life on earth. In principle the ultimate challenge is a value theory profound enough to support that ethic. We need an account of how nature carries value, and an ethics that appropriately respects those values.[145]

While there is a growing concern to mitigate the natural global catastrophes that pursue humanity, on global, regional, national and local levels, management practices currently in place tend to reduce the reality of nature to the concerns of primarily economic or legal definition. In this framework, which is narrowly anthropocentric[146] and more importantly, in which only humans possess intrinsic value, the value of nature is only that which is given to it by humans. Which generally means that the component parts of nature are only as valuable as the resources they provide for human consumption are judged to be by the current economic climate. In such a system, those components of nature that provide no obvious resource are of no value. Admittedly, there is a general awareness in most, but not all cultures, that humans should avoid totally removing those elements of nature that have no immediate obvious resource value. However this is generally considered only in the interests of human consumption and resource potential. Firstly, this represents anticipation that a future value may be found, and secondly, there is awareness that the "balance" of the ecosystem is likely to be altered, and then elements of nature which do have value may be negatively affected.

At the very minimum level of expression[147], the central problem with this anthropocentric criterion of value is the arbitrary standard of its distribution of value in nature, as well as the 'insecurity of its guarantees for the welfare or flourishing of non-human beings'[148].
Not only are those beings, which have no apparent value in this system, not safeguarded, but the myriad of creatures we have yet to discover are afforded no protection. Even what is given value today may gain a negative value when

future economic variables change[149], and thereby lose its protective status.

Many within the environmental ethics movement, particularly those within the animal rights and welfare groups, see this anthropocentric focus and subsequent arbitrary objectification of nature as the root cause of many of the ills affecting the earth's ecosystems, and the ultimate threat to life on earth. It should be noted that the postulated causes of ecological devastation are numerous. If the freedom to generalize the radical ecological movements is permitted, without a digression into the diversity of sub-disciplines, then it can be stated that deep ecology postulates anthropocentrism as the root cause; social ecology postulates a dysfunctional social hierarchical structure; while ecofeminism critiques the parallel relationship between the variety of principles governing the dualistic domination and objectification of male over female with the same principles governing the domination and objectification of humanity over nature.

In response to these concerns, a number of schools of thought have developed which propose various models of intrinsic value within nature. An examination of the full range of these theories regarding intrinsic theory is not possible due to the limitations of this thesis. However, a number of representational concepts will be discussed. An analysis of what is considered their strengths and deficiencies from a perspective of the proposed Bahá'í model will be reserved for the end of this section.

Ironically, a group of concepts related to intrinsic value which very closely resembles certain aspects of the Bahá'í Faith's vision, is not found among the plethora of modern models that are currently proposed, but is found in the medieval period with that of Francis of Assisi (1182-1226). This is due to

his appreciation of the diversity of creation and his recognition of the unique value of every creature.[150].

And more importantly because of his

...emphasis on the presence of God in the diversity of created beings, and his desire that humans should rejoice in this diversity and glorify God for it and with it, and act in ways consistent with respect for it.[151]

Although it is debatable how similar his understanding of the presence of God

in the diversity of created beings was to that of the Bahá'í one, that of all beings possessing specific and unique 'names of God' or spiritual attributes. It is possible that he did regard

...animals and plants as symbolic of virtues, vices, and doctrines.[152]

However Hughes finds this opinion 'problematic' and indicates that,

Francis remarked on the symbolism of creatures that he encountered, but his comments were simple and biblically based.[153]

It is important to acknowledge Francis of Assisi as a prelude to examining the Bahá'í model. This is because of his unique focus on celebrating the diversity of creation as manifesting the presence of God, as well as the potential to see individuals and species as symbolic of aspects of God's Being, which is similar to the Bahá'í vision of nature. As well, Francis of Assisi by his example lived a life of 'theocentric stewardship' which was one of fellowship, respect, love, celebration, awe and humility. As will be seen, this is similar to the Bahá'í critique of 'stewardship' in regard to the particular virtues that humanity is called upon to practice in their relationship with creation.

Someone else within the Franciscan order who expanded on the theme of the diversity of creation as manifesting the presence of God was Bonaventure (1221-74).

Bonaventure inherited from Pseudo-Dionysius the axiom that goodness is self-diffusive (bonum diffusivum sui), and this becomes a key metaphysical principle underlying his theology of the trinity and of creation. If goodness is self-diffusive, then God, the highest good, will be most radically self-diffusive and fecund.[154] As such the dynamic fecundity in creation points to the boundless fecundity of trinitarian life.[155]

For Bonaventure, the nature of this self-diffusion of God leads to the realization that creatures are nothing less than a kind of representation of the Wisdom of God, and a kind of sculpture[156] and that every creature is of its very nature a likeness and resemblance to eternal wisdom.[157]

Bonaventure also uses the metaphor of God's goodness as light, manifested in its diverse spectrum within creation. As a ray of

light entering through a window is colored in different ways according to the different colors of the various parts, so the divine ray shines forth in each and every creature in different ways and in different properties.[158]

A second concept which Bonaventure introduces also has great similarities to the Bahá'í model.

For Bonaventure, then, the universe is a book which can be read, a book whose words reveal the Creator...We humans, if it were not for the distortion of sin, would be able to read the book of creation and come to know God. In fact, fallen human beings are like illiterates with little appreciation of the book that lies open before them. They need a second book of the Scriptures to read the book of the universe.[159]

In the words of Bonaventure himself, the

First Principle created this perceptible world as a means of self-revelation so that, like a mirror (speculum) or a footprint (vestigium), it might lead the human being to love and praise God the artisan.[160]

As will be discussed later in the thesis this has remarkable similarities to a number of passages in the Bahá'í writings.[161]

Moving on to the modern era, one of the first persons to have a concern for overly anthropocentric models of environmental ethics was Aldo Leopold. With his famous dictum

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.[162]

Combined with his clear awareness of ecological interdependence, Leopold raises a concept which opens the door to the criticism of anthropocentrism, and to the consideration of more biocentric and ecocentric models. And while Leopold did not write from a contemporary philosophical perspective, at the most minimal level his work did implicitly indicate a critique of 'dysfunctional' anthropocentrism. Requiring, at the very least, a prudential heightening of enlightened self-interest based on knowledge of such interdependence[163]. It may be argued that this requires a deontological response in developing a

sense of obligation toward the wider biotic community through such an extension of enlightened conscience. Towards this self-enlightenment Leopold expresses concern for the trends in modernization, particularly in the process of education and economic development, where human hyperseparation from nature is on the increase.

> Perhaps the most serious obstacle impeding the evolution of a land ethic is the fact that our educational and economic system is headed away from, rather than toward, an intense consciousness of land. Your true modern is separated from the land by many middlemen, and by innumerable physical gadgets. He had no vital relation to it; to him it is the space between cities on which crops grow.[164]

In summarizing the effect Leopold's land ethic has upon anthropocentrism, it might still be called a moderate, but self-enlightened form of anthropocentrism[165] within a framework of egalitarian ecocentrism wherein the biotic community attains the obligation of moral considerability through an extension of our social conscience.

> In short, a land ethic changes the role of Homo Sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.[166]

The modern concern for overly anthropocentric models of philosophy, in relation to ecology, appears to have registered most significantly as a concept in the academic world, initiating debate and inciting public interest, in the early 1970's. Criticism was levied at the inadequacy of the philosophical ethical models when applied to the relationship between humanity and nature, and cries of 'human chauvinism'[167] and 'speciesism'[168] rang out. The first of these responses, which will be briefly examined, are those of Peter Singer, Tom Regan, Kenneth Goodpaster, and Paul Taylor. These particular views are within the general framework of the philosophical response of 'environmental ethics'.

These initial works, in relation to intrinsic value, tended to propose models of ethical extensionism, and whose application was achieved via dialogue about what human qualities, which were shared by animals[169], that should be considered to represent the lowering of the benchmark of 'moral considerability'.

It is not intended to conflate the meanings of 'intrinsic value' and 'moral

considerability'. The definitions of these two terms in this thesis are similar to those noted by Rick O'Neill[170]. The term 'intrinsic value' is used in the sense of involving a thing's good.

By intrinsic value I mean noninstrumental value, the value a thing has in itself, as opposed to the value it has as a means to some good.[171].

While 'Moral Standing'

... refers to an entity's membership in the moral community...to know x has moral standing is to know we must take x's interests into account as a matter of right[172], that x is a matter of moral concern.[173]

So while all beings may possess some form of intrinsic value, they may or may not posses an intrinsic value of sufficient merit which meets the criteria of moral considerability proposed by a model[174]. Note however that these definitions by O'Neill are not considered absolute definitions of these terms[175], and are context dependent. But in the context of the concern for an exclusivist and dysfunctional anthropocentrism within the context of environmental ethics, they can be interpreted at face value.

There are a range of standards of value that can be applied to nature. From a materialist view of nature as an object whose value is completely dependent on the needs and desires of humanity, to an uncritical egalitarian pansychism[176] that attributes feelings and equal value to all the parts of nature.

Within an animal rights framework, Peter Singer used sentience[177] as the intrinsic value benchmark combined with the utilitarian value theory that pleasure is good and pain is evil, and therefore expanded the circle of moral considerability to those animals which possessed this capacity. Regarding this position, J. Baird Callicott writes,

Classical Utilitarianism insisted upon the impartial accounting of pleasures and pains, but arbitrarily limited that accounting to the pleasures and pains of human beings. Remove this ad hoc limitation, and voila!, one has animal liberation.[178]

Tom Regan, illustrating the limitations of moral considerability based within a

utilitarian framework, writes that its deficiency lies in

...that there is no necessary connection, no
pre-established harmony between respect for the equality of interests principle
and promoting the utilitarian
objective of maximizing the balance of good over bad. On the contrary, the
principle of utility might be used to justify the most radical kinds of
differential treatment between individuals and groups of individuals, and thus
it might justify forms of racism and sexism, [and speciesism]...[179]

Regan
also attempts to illustrate the deficiencies of classical cases against cruelty
to animals. He proposes that Thomas Aquinas, Immanuel Kant and John Locke argue
against cruelty, not for the sake of any value given to the animal, but because
of apprehension it

...inclines them to treat humans similarly.[180]

Regan
quotes Locke,

For the Custom of Tormenting and Killing of Beasts,
will, by Degrees, harden their Minds even towards Men; and they who delight in
the Suffering and Destruction of Inferior Creatures, will not be apt to be very
compassionate, or benign to those of their own kind.[181]

Regan
then goes on to propose his own solution of animal rights based upon an
extension
of what he sees as the inherent value of humans. This inherent value Regan
proposes exists because

...logically independently of the interest of others,
each individual is the subject of a life that is better or worse for that
individual. Because of the type of value that human beings have, it is wrong (a
sign of disrespect and a violation of rights) to treat humans as if they had
value merely as a means (e.g., to use humans merely to advance the pleasures of
the group). In particular, to harm human beings for the sake of the profit or
pleasure of any group is to violate their right not to be harmed.[182]

Regan
does not specify the range of animals this applies to, but states it applies to
all animals which display the intrinsic value defined as 'subjects of a life
that is better or worse for them.'[183], and he states that the animals
which this applies to are 'numerous'.

Kenneth
E. Goodpaster argued that sentience is a means to life rather than an end in itself.

Biologically, it appears that sentience is an adaptive
characteristic of living organisms that provides them with a better capacity to anticipate, and so avoid, threats to life. This at least suggests...that the capacities to suffer and to enjoy are ancillary to something more important rather than tickets to considerability in their own right.[184]

He
therefore proposed a minimalistic ethical criteria in which 'being alive' becomes the benchmark for moral considerability.

As far as I can see, X's being a living thing is both
necessary and sufficient for moral considerability so understood, whatever may be the case for the moral rights
that rational agents should acknowledge.[185]

Paul
Taylor primarily focuses on the inherent worth rather than discussing the issue of moral considerability or the rights of non-humans. He proposes a biocentric model in which all beings are telelogical, or purpose oriented, centres of life.

...conscious or not, all are equally teleological
centres of life in the sense that each is a unified system of goal-oriented activities directed toward their preservation and well-being.[186]

Taylor
analyses what he considers to be the philosophical and religious reasons behind the human assumption of superiority over nature and concludes it is

...an expression of an irrational and self-serving
prejudice that favors one particular species over several million others.[187]

Taylor
believes that rejecting the superstition of human superiority leads directly to accepting that all beings possess the same level of inherent worth[188].

Rejecting the notion of human superiority entails its
positive counterpart: the doctrine of species impartiality. One who accepts that doctrine regards all living things as possessing inherent worth-the same inherent worth, since no one species has been shown to be either 'higher' or 'lower' than any other.[189]

This same attitude he suggests leads to a natural, biocentric oriented respect for all living things.[190]

Just as the previous models mentioned respond to the problems of exclusivist anthropocentric philosophy and concerns for the ill treatment of non-humans, deep ecology also responds. However, there is a decisive shift away from ethics, moral consideration and rights. Rather, deep ecology attempts to facilitate a shift from the 'self' towards the 'Self'. That is, a movement from that of the selfish ego to a 'wider identification' of self with other species, ecosystems and the whole ecosphere. It does this by focusing on a critique of ontology, with the intention of fostering spiritual and psychological maturity and enlightenment and thereby causing a corresponding change of perception and comprehension to achieve 'right action' in the human/nature relationship.

George Sessions highlights, from a deep ecology perspective, the reasons why a move from the speculations on intrinsic value in ecophilosophy to the more comprehensive vision of deep ecology is necessary:

It now appears that an overall broad consensus is now emerging on these issues among ecophilosophers and professional ecologists to the effect that modern moral theory cannot be extended to cover adequately ecological situations: that nonhuman individuals, species and ecosystems have equal inherent value or worth along with humans; and that a new postmodern nonconsumerist sustainable society is required based on an ecocentric worldview.[191]

Of course these statements are highly debatable, particularly as to whether there is a 'overall broad consensus...among ecophilosophers and professional ecologists...' about any of these assumptions. A cursory review of any recent environmental philosophy journal, or the publications of anthologies intended for undergraduate introductions to the field, clearly indicate a definite diversity of opinions on all of these assumptions[192].

Instead of biocentric egalitarianism, that of considering the equal worth and/or rights of all individual entities, deep ecology attempts a holistic perspective of ecological or ecocentric egalitarianism, representing a greater focus on the internal interrelatedness of ecosystems .

Arne
Naess makes a statement which highlights why deep ecology focuses upon a deep shift of vision towards a wider ecological identification with all of nature, rather than upon establishing a criteria of qualities that obligates moral considerability and a duty of attendant rights:

Within fifty years, either we will need a dictatorship
to save what is left of the diversity of life forms, or we will have a shift of values, a shift of our total view such that no dictatorship will be needed.[193]

In
other words, rather than imposing externally enforced obligations (rights and duties) upon individuals to respect other living things, deep ecology focuses on the internalization and self-enlightenment of broad ecological principles through a process of education, such that the behavior is a choice and natural response of the individual.

Naess
proposes that all life on Earth has value in itself and he continually places value on diversity of species. Representing the first of his proposed 8 basic principles of deep ecology, Naess states:

The well-being and flourishing of human and non-human
life on Earth have value in themselves (synonymous: intrinsic value, inherent worth). These values are independent of the usefulness of the non-human world for human purposes.[194]

Naess
qualifies this statement and indicates that

The term "life" is used here in a more comprehensive
non-technical way to refer to what biologists classify as "non-living": rivers (watersheds), landscapes, ecosystems.[195]

This
understanding of intrinsic value represents a model which is ecospheric (global), unqualifed in its universal egalitarian vision, and non-anthropogenic, that is, it considers intrinsic value as independently objective, (in itself and of itself) and not generated by

...any awareness, interest, or appreciation of it by any
conscious being[196]

Callicott
finding Leopold's land ethic to be 'just what the doctor ordered', and considering it to be 'a touchstone, a seminal classic', has attempted to

flesh out the arguments which Leopold himself only evoked and to connect his ideas, especially his ethical ideas, with the antecedants in the history of Western philosophy echoing in his rich literary allusions.[197]

Callicott has presented an outline of his proposed conceptual and logical foundations of the land ethic:

> Its conceptual elements are a Copernican cosmology, a Darwinian protosociobiological natural history of ethics, Darwinian ties of kinship among all forms of life on Earth, and an Eltonian model of the structure of biocenoses all overlaid on a Humean-Smithian moral psychology.[198]

The Copernican and Eltonian elements facilitate a vision of 'filial affection' by shifts in both spatial and structural perspectives.

The Copernican element mentioned by Callicott refers to a perspective which sees the earth as isolated in an 'utterly hostile universe beyond'. Callicott proposes this isolated and remote perspective enhances our

> sense of kinship, community, and interdependence with fellow denizens of the Earth household.[199]

The Eltonian element refers to Charles Elton and his ecological model of diverse species occupying specialized niches within the 'intricate corporate society' of the ecosphere. This is where he claims Leopold's concept of an interdependent biotic community finds its source.

Callicott gives a definition of intrinsic value that is anthropogenic while being nonhomeocentric[200]. This model of intrinsic value rather than focusing on specific criteria for intrinsic value in individuals, develops a theory of moral considerability in which intrinsic value is extended to the wider ecospheric community. Callicott writes

> the biotic community owns what Leopold...calls "value in the philosophical sense" – i.e., direct moral considerability- because it is a newly discovered proper object of a specially evolved "public affection" or "moral sense" which all psychologically normal human beings have inherited from a long line of ancestral social primates.[201]

This

value is 'discovered' neither by theology or philosophy, nor by the use of reason[202]. Rather, value is a social-biological product of evolution as seen in the 'Darwinian protosociobiological natural history of ethics'. To summarize, value is the result of biological evolution through the social extension of moral considerability, or as Darwin terms it, 'filial affections' and 'sympathy'. This is done in order to increase the 'inclusive fitness' of its members. This concept is linked by Callicott with David Hume and Adam Smith where ethics rest upon feelings or sentiments. Callicott writes that

> according to their analysis, moral value is not identified with a natural quality objectively present in morally consderable beings-as reason and/or sentiency is objectively present in people and/or animals-it is, as it were, projected by valuing subjects.[203]

Elsewhere he writes,

> Now, as Hume observed, not only have we sympathy for our fellows, we also are naturally endowed with a sentiment, the proper object of which is society itself.[204]

This is how value for Callicott is both anthropogenic and nonhomeocentric. It is anthropogenic in that value is created by the valuing subject and nonhomeocentric in that is represents a form of relational ontology rather than an individualistic one, as value is

> the projection of filial affections onto wider circles of social networks.

Callicott indicates this extension of social conscience or filial affection to include the ecosphere is not only an 'ecological necessity' but an 'evolutionary possibility',

> because a moral response to the natural environment-Darwin's social sympathies, sentiments, and instincts translated and codified into a body of principles and precepts-would automatically be triggered in human beings by ecology's social representation of nature...therefore, the key to the emergence of a land ethic is, simply, universal ecological literacy.[205]

In other words, this natural evolutionary process of moral extension can be anticipated and facilitated by stimulating awareness of its necessity through

the vehicle of education.

Elsewhere,
Callicott states the need for "ecological literacy" in a more minimalistic and simple fashion,

...we badly need a positive conservation ideal, a dream,
to inspire us and direct our efforts...[206]

Social
ecology, sometimes referred to as 'political ecology', is a complex philosophy.

Foremost
among social ecologists is Murray Bookchin. While not all social ecologists agree with all he has to say[207], he is the most commonly cited by other social ecologists when referring to foundational ideas within social ecology.

Bookchin
writes,

...the idea of dominating nature has its primary source
in the domination of human by human and the structuring of the natural world into a hierarchical Chain of Being.[208]

Within
the concerns of this essay, his political and social critique are not as important as those elements which bear a direct relation to intrinsic value theory so only a simple summary is possible of those particular elements related to his proposed solutions to inter-human domination.

In
the social ecology critique of this 'domination of human by human' one can note elements of the marxist critique of the exploitive economic structures of capitalism as a source of ecological degradation. Capitalism itself, along with other increasingly centralized, western, political structures are seen as symptomatic of a dysfunctional model of human relationships. In this model of humanity, there is a clear hierarchy of dominant/subordinate relationships. These oppressive hierarchies, white/black, male/female, rich/poor, young/old, objectify those humans who fall into the subordinate categories, who are then denied freedom and self-determination.

The
injustice of this is what lies at the foundation of exploitive environmental relationships. As such, the focus of social ecology is upon a revolution of these dysfunctional social and political structures towards more classic egalitarian forms found partly in the Greek democratic concept of the polis.

From a political structural perspective, he proposes a move towards accountable municipal assemblies elected by local communities linked together in bioregional confederate systems[209]. The purpose of this structure is to facilitate freedom in its best form: that of self-determination; as well as restoring the classical idea of citizenship: that of 'a lifelong, ethically oriented education to participation in public affairs' and

the cultivation of an affiliation with the interests of the community, one in which the communal interest was placed above personal interest, or, more properly, in which the personal interest was congruent with and realized through the common.[210]

For Bookchin, intrinsic value can be seen in the evolutionary self-determination of the natural world towards more sophisticated unity in diversity, and towards the goal of self-awareness, of which human beings are representative. The dysfunctional human structures are seen to be out of alignment with this overall purpose.

Here implicit elements of Aristotelian teleology, and similar components of Teilhard de Chardin vision of spiritual evolution, can be seen, although Bookchin never explicitly admits telelogy as part of his vision. This is perhaps because he is aware that a universe predisposed towards a purpose is held in tension with his primary concern of self-determination. As well, he does not see evolution in the Hegelian sense of Geist, that of it eventually reaching an 'Absolute', but rather this evolution is continual and open ended.

Political and economic structures not only need to be in harmony with this principle, but should be structured so as to facilitate its process of emergent value. Humanity, as the emergent consciousness of nature, is responsible to use this consciousness by 'diminishing the impact of natural catastrophes, and promoting the thrust of natural evolution through its technics, science, and rationality.'[211]

The other element in social ecology which is significant towards the consideration of intrinsic value is the subjective location of value within the valuer. Humans as the only known components of nature possessing intellect and reason are the valuer of nature. There is a sort of objective intrinsic value in the whole as the previously mentioned evolutionary process, but there is no intrinsic value in life itself.[212] Ultimately, even this emergent value seen in the evolutionary process of facilitating unity and diversity, freedom, higher consciousness, and the ultimate value of self-determination, is a subjective

value located in the perception of the human.

Concerning
ecofeminism, there are a variety of sophisticated approaches to ecological ethics, and it is beyond the descriptive capacity of this thesis to explore them. Those elements which are particularly related to intrinsic value and associated principles relevant to this thesis will be explored. But by no means is a generalization of such a diverse discipline intended.[213]

There
are a variety of approaches used within ecofeminism that are applied towards this critique. Karren Warren illustrates eight typologies of connection: (1) Historical, Typically Causal; (2) Conceptual; (3) Empirical and Experiential; (4) Symbolic; (5) Epistemological; (6) Political (Praxis); (7) Ethical; and (8) Theoretical[214]. She further comments,

'Ecological Feminism' is the name of a variety of
positions that make visible different sorts of women-nature connections, claiming that an understanding of these connections is necessary for any adequate feminism, environmentalism, or environmental philosophy.[215]

It
is proposed that a common theme animating most forms of ecofeminism, is that of a vision which sees a parallel relationship between the variety of principles governing the dualistic domination and objectification of male over female with the same principles governing the domination and objectification of humanity over nature. By deconstructing what is considered the essential causes of this dysfunctional relationality, ecofeminism seeks to gain insight into reconstructing a more authentic, egalitarian and holistic vision of relationships both within human society and between humanity and nature.

An
implication of such an approach for intrinsic value theory is that ecofeminism does not attempt to define what aspects of the ontology of nature illustrate intrinsic value worthy of moral consideration. Rather ecofeminism seeks to offer a critique of the principles that determine the valuing process itself. This is primarily done through an examination of the parallel relationships mentioned. By way of this critique a transformation in the entire valuing system occurs, thereby creating more maturity and holism in the way relationships are perceived, and the way in which value is determined itself.

Within
this thesis, two ecofeminists have had significant influence. The first, and perhaps most significant, is that of Val Plumwood. Of the above typologies, Plumwood uses a variety of methodologies including historical, ethical, epistemological and conceptual critiques regarding the relationship between

humanity and nature. Challenging not only the anthropocentric and androcentric ontological paradigm of humanity, and the manner in which nature is defined and valued, but also the hierarchical dualistic dominant/subordinant paradigm of relationships between them . Thus having a direct relation to the consideration of intrinsic value.

A number of the principles that Plumwood explores will be discussed in greater detail, and will form a common thread throughout the thesis. To summarize, those concerns which she explores, that are related to intrinsic value theory and this thesis are: instrumentalism, materialism, dualism, hyperseperation, backgrounding and denied dependency, homogenization, incorporation, the critique of rationalism, and the removal of teleology, agency and intentionality from nature, and the formulation of a authentic model of human ontology;[216]

The second ecofeminist to make a substantial contribution in this thesis is that of Sallie McFague.[217] She offers valuable concepts related to macrohistory and more immanent and relational theological models in a panentheistic framework. The Bahá'í view, with its apophatic elements, qualifies and stresses the metaphorical nature of the theological model of immanence more strongly than McFague. And perhaps more importantly, it lends an even greater specificity to the descriptive capacity of the model in its particular expressions of the infinite attributes of God Being revealed through all beings.

However, this does not diminish from a number of other valuable principles associated with interdependence and relationality which will be explored.

[+CHAPTER3]

Chapter 3: The Current Radical Ecological Debate and the Principle of Consultation: Towards an Understanding of Tensions

The current debate between the three disciplines of the radical ecological movement represents a complex pattern of discussion. It has been common for the internal debate between the disciplines to focus on specific principles, felt to be commonly held by members of the opposing discipline and to criticize these principles from the viewpoint of the opponent discipline.[218] Within their disputes 'they have often seemed less than dialectical in their approach.' [219] Within the wider field of environmental ethics as well, many believe these debates are 'interminable'. Such as 'animal rightists entrenched against the

wildlife managers, preservationists pitted against conservationists'[220]. Even going so far as to say that '...these polar extremes seem to be incommensurable.'[221] There is a growing concern about the polemical nature of the debate,

I don't see the point of either school trying to trash the other, working toward some imagined theoretical purity...[222]

This may be due not only to the attachment and investment for each philosopher to his or her discipline, but upon superficial readings and generalizations about the other disciplines. Simple characterizations of each discipline are made impossible by the fact that there are varying viewpoints held by a number of sub-groups within each discipline. In some cases the models of conceptual analysis within two sub-groups of the same discipline can be considered antithetical, proving it impossible to generalize the overall model of conceptual analysis held by the discipline group as a whole[223]. Making the discussion all the more difficult is the occasional tendency for critics to exclusively focus on the most outspoken members of the opposing groups,[224] therefore missing out on the diversity, and breadth of vision present within each movement. In this context the principles of authentic consultation have much to offer.

Consultation, in the sense of sharing ideas while remaining open to others in the pursuit of a common goal, represents a widening of our 'hermeneutical circle'. It represents

...a process for producing change in order to accomplish some definite purpose. This involves a sharing and interaction of thoughts and feelings in a spirit of love and harmony.[225]

It ultimately contributes to the expansion of our vision and our ability to relate to others.

Let your vision be world-embracing, rather than confined to your own self.[226]

This is valued, with obvious qualifications, by all three major forms of radical ecology. From a deep ecology perspective it represents a step towards that process of the expansion of the identification of self with the ecosphere. From one perspective of ecofeminism it contributes to

an

adequate account of the ecological self...able to recognize both the otherness of
nature and its continuity with the human self.[227]

And
certainly it is related to the concerns of social ecology for democracy, and the

creativity
arising from cultural diversity. In the following quote from Murray Bookchin, he is speaking directly of social structures. However it assumed by extension of principle, that it applies to groups of people possessing similar outlooks and concerns, such as an ecological discipline.

Any community,...however, risks the danger of becoming
parochial, even racist, if it tries to live in isolation and develop a seeming self-sufficiency.

And he further indicates the need to

foster a healthy interdependence, rather than an introverted,
stultifying independence. [228]

Perhaps more than any other goal,
the goal of living a life of ecological wisdom requires the contribution of many disciplines and many cultural perspectives. A key facet of 'unity in diversity' which all disciplines, to varying degrees, place importance upon, is remaining open to the experience of diversity. This openness entails becoming 'transparent' and allowing ourselves to grow as human beings in response to this rich tapestry of life. This is no case of a lazy ethical relativism, but a commitment to a wider and more comprehensive vision of reality. An authentic, united and diversely representational vision requires a higher degree of appreciation for sophisticated integrity, complexity of problems and solutions, mature consultation skills and results in a synergistic pattern of growth.

Perhaps this is
how we ought to think about the diverse environmental philosophies... No one has
all the right answers in every situation, but each has something important to bring to environmental ethics. Each provides a different perspective from which we can understand the values of, and the place of humans within, nature. ...They
are resources that we can use to diagnose and treat environmental illness. Although no single one provides all the right answers, we need them all.[229]

But, as all disciplines agree,

the need is so urgent, and the time so little, a greater commitment to consult with the goal of a united, yet diverse praxis[230] towards ecological harmony is required.

What Can We Learn From a Consultation Between the Ecological Disciplines?

If such a hypothetical consultation between the disciplines occurred with the purpose of achieving some sort of unity of both vision and purpose, for the sake of both humanity and nature, what elements of discussion would surface?

Of course, the first issue would be an apparent difference of agreement on the causes of ecological degradation.

To summarize again, deep ecology postulates anthropocentrism as the root cause; social ecology postulates a dysfunctional social hierarchical structure; while ecofeminism sees a parallel relationship between the variety of principles governing the dualistic domination and objectification of male over female with the same principles governing the domination and objectification of humanity over nature.

It would be naïve to propose that these causes are in complete harmony. That would be to ignore the diverse philosophical traditions that provide the foundations for many of the propositions within the traditions. However it is possible to see that these represent different aspects of a complex problem, and thus require the development of different approaches towards different causal elements.

This becomes more evident when we consider that the nature of the object will prescribe the method of knowing[231].
While the degradation of nature is not an object in the strict sense, it can be considered an object in the wider sense of a phenomena possessing qualities which define its character. As such, considering that it is such a multifaceted object of consideration, the methods required for understanding its character need to be diverse. This is obviously problematic when traditions tenaciously cling to the assumption that their method addresses the root cause and which assume a single essential attribute defines the nature of the object. Within such an endeavor, such traditions should attempt to be detached from the assumption of such primacy, and be willing to concede that there are potentially a number of 'roots' to the problem as well as essential attributes which define its character.

While maintaining this pluralistic assumption that a united but diverse approach is required, it is important to be aware of the tensions that arise from the relationships between the approaches. The question must be asked, are these tensions based on essentially conflicting and irreconcilable aspects of reality, or are they tensions of perspective and interpretation?[232] Paul Davies summarizes what he considers to be the scientific consensus on the character and range of the principles ("laws") of nature[233].
These principles which govern the relationships within nature are considered to be universal[234], absolute[235], eternal[236] and omnipotent[237].

If one is committed to a vision of reality which is diverse yet intelligible, multifaceted yet united, and that the principles which govern its relationships are indeed universal, absolute, eternal and omnipotent, then it must be assumed that these tensions are a matter of interpretation and perspective rather than representative of an antithetical, dualistic structure of reality.

What are some of the dualistic tensions in the discussion of intrinsic value that can be perceived?

1.)
Tension between intrinsic value defined as subjective (anthropogenic and instrumental) and objective (independent existence implying a condition of agency).

2.)
Between proposals of moral consideration through the extension of a theory of rights or a revolution in ecological relationships through an enlightenment of human understanding.

3.)
Between cognition and emotion, particularly within the Kantian framework of the earlier environmental rights movements[238].

4.)
Between individualistic and holistic models.

5.)
Between egalitarian distribution of universally equal levels of intrinsic worth and a

heirarchical model of diminishing value.

6.)
Between biological and spiritual models of relationship.

7.)

Tension in that most models implicitly or explicitly posit a telos or overall purpose to

nature and evolution, yet this is done in a modern positivistic scientific framework

that assumes this is not possible.

There is another kind of tension which while not as explicit, is even more fundamental to the nature of this discussion. That is:

8.) The assumption by many engaged in the discussion of ecological philosophy that

religion, and more specifically theology, is essentially incompatible with such an

endeavor.

Let us briefly examine examples of this last particular tension in some of the major models of ecological philosophy.

The first environmental philosophies proposed individualistic rights based solutions in a Mills framework such as Tom Regan, or an ethics based solution in a Kantian framework, such as Paul Taylor.

It is important in particular to understand the implications of Taylor's Kantian framework for this tension of theological incompatibility. While there are few explicit anti-theological comments in these works, there is a deep-seated implicit rejection within this framework. Although Kant believed in God and was a transcendental idealist, he was also an empirical realist[239]. Most importantly for our discussion, the consideration of theological models of natural theology or metaphysics is highly problematic in a Kantian framework. This is because it is

fundamentally anti-metaphysical, in the sense that it is impossible to move, by philosophical reason, beyond the world of human experience, inner or outer, to affirm legitimately the existence of some reality transcending this experience.[240]

As well the Kantian dichotomy dictates that

knowledge must be
denied to make room for faith.[241]

Speaking
of the legitimation of 'large-scale or high-cost social enterprises such as
war, scientific and technological development, or environmental
exploitation'[242]
Deep Ecologist Warwick Fox makes the connection that

Such enterprises have habitually been undertaken not
simply in the name of man, capitalists, whites, or Westerners for example, but
rather in the name of God (and thus our essential humanity-or our
anthropocentric projection upon the cosmos, depending upon ones
perspective)...[243]

And
Fox continues by saying

where these traditions have supposedly been primarily
theocentric rather than anthropocentric, it has of course still been humans who
have, by divine decree, had "dominion...over all the earth [which they were
enjoined to "fill and subdue"]...and over every living thing that moves upon
the
earth" (Genesis 1:26 and 1:28). From a deep ecological perspective,
personalistic theocentrisms, in which humans are made in the image of a god to
whom they have a privileged personal relationship, are simply anthropocentric
projections upon the cosmos.[244]

As
Fox makes no mention of any other possible theocentric models, it appears that
Fox assumes that anthropocentric projection is an essentially defining
characteristic of theocentrism, and thus rejects it outright.

From
an ecofeminist perspective, Karren J. Warren qualifies 'stewardship ethics', an
important part of most theocentric models, as a 'non-consequentialist' approach

that extend traditional ethical considerations to
include animals and the nonhuman environment. (Some would argue that these are
not bona fide environmental ethics, since they do not make the natural
environment itself deserving of moral consideration.)[245]

One
assumes that Warren is aware her assumptions depend upon what type of model of
stewardship ethics is being examined and that there are actually a variety of
such models.

It
is probable that this assumption is related to a more essential and popular feminist critique of traditional theocentric models as representational of patriarchal hierarchy and the 'Great Chain of Being'. A pyramid of diminishing power and authority beginning with God and descending to Men, and finally to Women, children, animals, plants and rocks.[246] Although there are a number of ecofeminists who do not dismiss theocentric models out of hand, this concern is significant, and perhaps explains why theocentric models are widely ignored within ecofeminism as potentially positive frameworks for its main concerns.

Social
Ecologist Murray Bookchin clearly rejects the potential of any theocentric models. He says that although

an appeal for the respiritization of the natural
world, recurs throughout the literature of social ecology, it should not be mistaken for a theology that raises a deity above the natural world or that seeks to discover one within it. The spirituality advanced by social ecology is definitively naturalistic (as one would expect, given its relation to ecology itself, which stems from the biological sciences), rather than supernaturalistic or pantheistic.[247]

The
spirituality of social ecology bears no relationship to a theocentric model, and rules out such a model in principle, as its concept of spirituality is a naturalistic one with its basis in a biological framework. However, even this admission of the need for spirituality is highly qualified,

To prioritize any form of spirituality over the social
factors that actually erode all forms of spirituality, raises serious questions about one's ability to come to grips with reality.[248]

Speaking
within the Land Ethic tradition, Callicott seems to come close to admitting the previous and potential future contribution a theocentric model makes; yet he rejects it for not altogether logical reasons. He admits that, at least historically, ethics originated within religion, but he disregards this as relevant and qualifies it by saying that ethics found its source in the theological belief in a God who 'imposes morality on people'. He also indicates that God 'sanctions' this
morality by means of 'plagues, pestilences, droughts, military defeats, etc.'. The theme of progressive revelation

of course, handily and as simply explains subsequent
moral growth and development.[249]

In spite of his admittance of the historical origins of ethics within theology and religion, and that the theme of progressive revelation does offer a form of moral evolution, Callicott goes on to say

Western Philosophy, on the other hand, is almost unanimous in the opinion that the origin of ethics in human experience has somehow to do with human reason.[250].

Callicott also comments,

The idea that God gave morals to man is ruled out in principle-as any supernatural explanation of a natural phenomenon is ruled out in principle in natural science. [251]

However, Callicott offers no explanation for what justification lies behind this ruling out of theology or models of revelation in principle.

One assumes, by the way he has stated the case, that Callicott has rejected a literalistic interpretation of Old Testament moral theology. However, this is a narrow understanding of moral theology in that it not only ignores the diversity within the Christian tradition, but also within non-Christian theologies. More importantly, this is a rejection by association with an immature concept and not valid by any school of logic. It is like saying that a theocentric model of moral development, (A) is invalid because there is an interpretation of such a model (B) which is immature such as the literalistic moral theology of a specific branch of Old Testament hermeneutics. Not only does it ignore the unnecessary association of A with B, but it appears ignorant that B hasn't been the popular expression of moral theology within the majority of Christian traditions for nearly a century and is only one of many diverse models.

Ironically, in other works Callicott suggests that a moral metaphysics based on the Yahwist tradition within Genesis appears to, out of all other models,

provide most effectively for the intrinsic value of other species...[and] unequivocally provides for objective intrinsic value for existing nonhuman species.[252]

Also Callicott sees as positive elements that

God cares for the creation as a whole and for its
several parts equally,[253]

and
that man is called to care for nature as steward rather than subdue it in
domination.

However
Callicott rejects this tradition in favour of the Humean modern moral
metaphysic of 'Bio-empathy'. This is strange, considering that Callicott
believes that

only J-Theism provides for objective intrinsic value for
existing nonhuman species.

Callicott ultimately rejects this Theistic model because of its association
with the Priestly strand in Genesis which sees humanity as privileged over
nature
in a domineering relationship. Callicott argues that this instrumental vision
of nature has dominated Judeo-Christian history and effectively removed the
capacity of J-Theism to have any transformational impact on wider society in
fostering its vision of objective intrinsic value.

If one is concerned with the integrity of a model, it is very strange that Callicott advocates a model, Bio-Empathy which, he admits, does not provide objective intrinsic value for existing non-human species. The capacity for objective intrinsic value within J-theism comes from the independent valuing consciousness of God which locates value in all of nature and is related to God's Self-revelation, and in which lies the capacity for the development of a natural theology. As the framework of bio-empathy is Humean, it leaves little room for Theism, revelation, or natural theology and thus also this capacity for objective intrinsic value. This is as value is purely a matter of individual perception and more importantly these metaphysical models do not stand the strict empirical test of 'Hume's fork' which distinguishes between real or apparent knowledge.

When we run over libraries persuaded of these
principles, what havoc must we make? If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, Does it contain any abstract reasoning concerning quantity or number? No. Does it contain any experimental reasoning concerning matter of fact or existence? No. Commit it then to the flames: for it can contain nothing but sophistry and illusion.[254]

Is this the key to Callicott's rejection in principle?

However,
it appears that Callicott rejects the potential of J-Theism purely by

association as he does not directly allude to this Humean critique. Callicott does not reject J-Theism itself, but its association with a history of Judeo-Christian dysfunctional ecological relationships that he states is based on the dominance of P-Theism.

It's
like saying: 'I reject the usefulness of the model of democracy, because it was developed in a Greek civilization that endorsed slavery, the domination of women and other such anti-democratic dysfunctional relationships.' Why not recognize the non-essential historical associations, and then modify and develop the model, particularly if it appears to have the greatest potential out of a range of other models? Or at least discuss those elements that make the model attractive and attempt to incorporate them in a new model? That Callicott rejects the potential of both J-Theism specifically and a moral or natural theology 'in principle' is less than satisfying in its logic.

[+CHAPTER4]

Chapter
4: Comprehending the Origins of the Tensions in the History of the Conflict Between Science and Theology

To reiterate the tensions
proposed in chapter three-

1)
Tension between intrinsic value defined as subjective (anthropogenic and

instrumental) and objective
(independent existence implying a condition of agency).

2)
Between proposals of moral consideration through the extension of a theory of rights or a revolution in ecological relationships through an enlightenment of human understanding.

3)
Between cognition and emotion, particularly within the Kantian framework of the earlier environmental rights movements

4)
Between individualistic and holistic models.

5)
Between egalitarian distribution of universally equal levels of
intrinsic worth and a

heirarchical
model of diminishing value.

6)
Between biological and spiritual models of relationship.

7)
Tension in that most models implicitly or explicitly posit a telos or
overall purpose to

nature and evolution, yet
this is done in a modern positivistic scientific framework

that assumes this is not
possible.

8)
The assumption by many engaged in the discussion of ecological philosophy
that

religion, and
more specifically theology, is essentially incompatible with such an

endeavor.

It is proposed that the tensions aforementioned,
and particularly the last one, can be better understood and resolved by
examining the causes of the bifurcation of reality and the imposition of a
radical duality upon our culture which occurred generally speaking, between the
enlightenment period and the present. As the Bahá'í model itself is
theocentric, this examination is also helpful towards illustrating the
potential integrity, consistency and harmony of a complementary and even
integrated relationship between science, philosophy and theology.

The restoration of ecological
relationships is completely dependent upon the vision which governs the
restructuring
of our global civilization.

When we consider what religion is for mankind, and
what science 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.[255]

This is not an attempt at a sort
of Grand Unification Theory[256] that will unite all philosophies,
but rather an attempt to appreciate diversity and also the integrity of
reality, without lapsing into ethical relativism. This section will propose
that these tensions are representative of a kind of neurosis of the spirit
which finds its foundations in the above-mentioned bifurcation of reality.

Ever since the Enlightenment, theology on one side and empirical science and philosophy, on the other, have existed in an uneasy relationship. This section seeks to examine the historical nature of this problem with specific reference to a number of causational, yet erroneous philosophical presuppositions.

For the purposes of this thesis, the "Enlightenment" is representative as the initial developmental period of certain world?views. A full account of the relationship between science, theology and philosophy from that period to the modern day would require an enormous volume of historical discussion. However, this section will be limited in its first half to a discussion of the more significant world?views that are associated with the Enlightenment movement; significant in their implications for the "uneasy relationship" between such disciplines. Once the way is cleared, the following chapter will discuss the emerging evidence of a convergence between the paths of knowledge.

The Enlightenment has often been presented as the time when the superstitions and dogmas of religion were vanquished by the empirical razor of reason with the development of science[257]. And religion has often been characterized as the complete antithesis of science. The Bible, Church traditions and even the core belief in a Creator were all seen as essentially in conflict with the emergent discoveries of science[258].

The Enlightenment did helpfully challenge a number of tyrannical forms of authoritative and superstitious epistemology and encouraged more individualistic epistemological freedom. However, this common portrayal of the scientist vs. the church is a false antithesis, symptomatic of a simplified caricature.

The following reasons are suggested as the primary causes for such misunderstandings:

I. The objectification of the central figures in the Enlightenment as "scientists" (with all the inappropriate modern conceptions that goes with the word "scientist"). Disregarding the complexity of each individual as a person with a variety of influences, and deeply affected by the context of their own culture who often held the opinion that their scientific investigation was not only compatible, but was necessitated out of their deep personal faith in God.

II. A number of immature philosophical pressupositions about the nature of reality within the newly developing scientific community in the enlightenment; coupled with

III. immature religious apologetics
from the Catholic side which included clinging to outdated "scientific" traditions as essentially representative of theology, and from the Protestant side in choosing to claim essential association with newly developed scientific theories in order to provide resources against both atheism and Catholicism, which would eventually prove to be a two edged sword.

IV. Specific social and political elements of the particular and unfortunate historical context in which the newly emergent relationship between theology and professional science became defined.

V. Exaggeration of the antithetical nature of the conflict by the "press". Contrast makes more interesting reading, and dysfunctional religious structures make convenient scapegoats for social malaise.

It is proposed that the radical
separation of these disciplines has occurred through diverse processes, both historical and philosophical. There were numerous, purely historical, considerations that were particularly significant as they provided the context in which the modern relationship between science, philosophy and theology developed. These include the weariness of western culture with religious strife and the 30 year war between Catholicism and Protestantism; the stubborn clinging of religious institutions to traditional interpretations of reality that would prove false and thereby discredit theology by association; and struggles of class structure, particularly in England, between pastoral scientists
and professional scientists.

However, it is proposed that this
was primarily due to a number of immature theological, scientific, and philosophical assumptions of reality. These are too numerous to list but include: Newton's reduction of reality to mechanical determinism; Descartes dualistic hyper-materialistic division of subject and object, value and fact, faith and reason, spirit and matter; Monod and Darwin's vision of an evolution which is a process of random chance without purpose; Kant's reduction of the value of the natural world and moral concern for it to a disinterested, instrumental extension of reason; Marx's reduction of moral values to primarily materialistic economic relations (which is effected equally by the individualistic capitalism of the West); Nietzche, Sarte, and Freud's proposition of God as a human construct which imposed the tyrannical removal of freedom and self-determination from humanity and nature; and finally the reactionary deconstruction of Descartes vision of reason as pure, impersonal, and self-sufficient through the absolute relativization of value through postmodernism and the deconstruction of value found in Derrida.

Often, the story of this group is
not so much about what these individuals believed, but how subsequent thinkers and wider society interpreted and perceived them in justifying the fragmentation of reality. Often these interpretations were not faithful to the complete vision and context of each person. However, from a perspective from the "end of history," some of these unfortunate misrepresentations, rather than what these individuals really believed, moved the forces of history to where it is.

What is the popular account of some of these personalities? We learn
in school that Galileo stood against the Church in proclaiming that we were not at the centre of the Universe, but peripheral; that Newton showed it was not God who caused the glory of waterfalls but elementary laws of nature which obey mathematical principles; and that Darwin dealt the death blow, by showing that a creator did not make us in "His" image 6000 years ago, but that we developed from apes millions of years ago, and that we originally began not in the hand of God but in primordial slime.

However, if we examine these persons more
closely we find significant reasons for a reassessment of such a simplified story of the "war" between science and religion, characterizing them as on the "science" side. Surprisingly enough, to varying degrees, each and
all of these "scientists" at one time or another, considered that
"a synthesis between theology and science was necessary and was taken for granted from the outset."[259]

Before turning to these personalities, it is important
to understand something of their historical context particularly those features of the landscape which are significant for facilitating the "fragmentation of reality". It is beyond the capacity of
this thesis to

discuss
the complex nature of the reformational critique or the complex theological differences of its participants, such as Luther and Calvin. Nor is it possible to discuss the nature of the response of reform within Catholicism.

What is important for this thesis, is to understand some of the social and religious factors that contributed to the tensions within the spirit of the European person. These tensions, between the simple faith of the average person and the dissonance experienced by his faculty of reason as a result of religious corruption and conflict, would largely contribute to the multiple divisions and disunity within the religious community of Europe. These tensions would also represent a significant inner experience that would be mirrored in the larger scope of the newly forming relationship between science and theology.

It
has frequently been argued that in many ways Christianity prepared the western mind for the development of science. It is undoubtedly true that, by the end of the Middle Ages, immediately preceding the enlightenment period, Christian theology had developed a number of methodologies and models that were in principle, not only compatible with the future scientific movement, but also largely responsible for it. Numerous works have been written which illustrate the evidence for this view. A great variety of factors have been considered as responsible for this belief, but only the briefest summary of some of the more significant ones is possible.

1.) The development of universities in Europe at the end
of the eleventh century with courses in geometry, music, arithmetic, astronomy, logic and natural philosophy.

2.) A typical university would have four faculties: the
faculty of arts, and the three "higher faculties" of medicine, law, and theology."[260] The recovery of Aristotle's works
on natural sciences implemented a new growth in Christian thought.

Within a few decades, they had become the standard
fare for Arts students in all the universities, notably in the two most renowned, Oxford and Paris. In scope and detail, these works had no rival. Plato's Timaeus, which had been the handbook for so long, was pushed aside. By the mid-1200's the natural science taught in the universities to all students, including theology students, was that of Aristotle.[261]

3.) Within this context of newly developing universities,
a new breed of Christian theologians developed, such as Robert Grosseteste, Nicolas Oresme, Henry of Langenstein, and most significantly Thomas Aquinas. For these scholars, in the fusion of their theology, and Greek, often Aristotelian philosophy, there was an assumption of harmony in the relationship between their faith and the assumption of the intelligibility and subsequent investigation of the natural world.

4.) A feature which often receives little attention in the
standard historical introduction into the Christian contribution to the development of science, is that the renaissance within the European Christian context would not have occurred but for the transfer of an already developed scientific philosophy from Islam.

While
this fourth point is not directly related to this thesis, it is important to mention, as it is a very important principle that is directly related to a secondary principle of this thesis, the unity of science and theology. As well, it has been almost completely repressed either through ignorance, or a conscious or unconscious form of western imperialism infecting scholarship in

this area. A brief digression from the main theme of this thesis is therefore necessary.

It is proposed that there are three levels of "backgrounding" or "denied dependency"[262] in most historical accounts of the relationship between Islam and Christianity.

Backgrounding or denied dependency is one aspect of feminist critique that focuses upon hierarchical forms of oppressive relationships. Although not originally formulated for the Christian/Islamic relationship, it is nonetheless directly applicable.

Backgrounding is a complex feature which results from the irresoluble conflicts the relationship of domination creates for the master, for he attempts both to make use of the other, organising, relying on and benefiting from the others services, and to deny the dependency which this creates...Common ways to deny dependency are through making the other inessential, denying the importance of the other's contribution or even his or her reality, and through mechanisms of focus and attention...But this dependency is also hated and feared by the master, for it subtly challenges his dominance, and is denied in a variety of indirect and direct ways, with all the consequences of repression. The real role and contribution of the other is obscured in culture, and the economic relation is denied, mystified, or presented in paternalistic terms.[263]

This denial of dependency is meant to apply to the dualist structures of western thought such as the human/nature and male/female dichotomy, but it is just as applicable to the relationships between Christianity and Islam, particularly in rereading a history that has been filtered through the lens of a victorious western Christianity.

The three levels of denied dependency begin at the most superficial and descend to the most essential. They are:

1) Of dependence on translations of Greek philosophy and textual commentaries provided by Islamic scholarship.

2) Of dependence on essential contributions of models of interpretation, methodology, epistemology which are responsible for the development of science, and an overall optimism in the creative capacity of science towards the advancement of civilization that was transferred from Islam to Christianity.

3) Of spiritual dependency on Islam.

It is undoubtedly true that the Christian community developed unique models that facilitated the Renaissance. However, the building blocks and a number of preconceived scientific methods and perspectives, upon which these models were built, came from the Islamic contribution. Usually, with Christian commentaries, the Islamic contribution is completely ignored, or at best marginally acknowledged as the preservation and transmission of Greek philosophy, which Christianity then uniquely interpreted to help facilitate the process of scientific enquiry. However this ignores more essential contributions of interpretation, methodology, epistemology and an overall optimism in the creative capacity of science towards the advancement of civilization that was transferred[264]. From a Bahá'í perspective it is not just a matter of denied philosophical, theological and scientific dependency upon Islamic culture. It also represents a denial of spiritual relationship between Islam and Christianity. The revelation of Muhammad released the capacities required for the scientific revolution. That it continued on and developed more fully in the Christian community is only an indication of the universal nature of God's revelatory spiritual forces. The subsequent structural collapse of Islam serves as a useful distraction and tool for justifying the imperialistic assumptions of western Christian superiority.

This was facilitated in a number of ways. It began with cross-cultural exchange in Spain in the eleventh century, particularly marked by the capture of Toledo from the moors in 1085 and the introduction of Islamic works. Equally, if not of greater significance, the interpretation and philosophical application by the extensive Jewish community present in Spain, which provided a crucial cultural and theological bridge. The fall of Constantinople in 1453 and the subsequent massive shift of refugees and extensive collections of Arab translations of Greek manuscripts to the west marked the most comprehensive introduction. The intelligibility of the universe as worthy of scientific enquiry, or 'ilm', finds its origin in Islam. "From the outset, Islam was committed to ilm, or knowledge. Ilm is a fundamental value in the Quran, as indeed it must be, since the universe is God's creation. To understand it, therefore, is to understand the sings of God's creative act; the very word ayat refers to both the verses of the Quran and the evidence of God in creation – both are revelations, in their own way."[265] It doesn't take a great stretch of imagination to realize that these fundamental assumptions in early Islam were mirrored in the models of philosophy which facilitated scientific development and the first natural theology to be based directly on the scripture itself.

To return to the main thesis, there is a general agreement that the Christian community facilitated models of thought which were not only in harmony with, but significantly facilitated the scientific revolution.

However, a less frequently argued position is the unfortunate historical feature of European Christianity in that it also facilitated an unnecessary split between that science, its object of study, and its associated methodological principles with those same features corresponding in theology.

Within Europe, in the14th and 15th centuries, religion, in the form of late medieval Catholicism, was in a crisis. There was a rise of a new sense of nationalism throughout Europe coupled with the disintegration of the Holy Roman Empire into loosely united petty kingdoms. In a desperate attempt at asserting papal authority, Pope Boniface VII (1294-1303), decreed in his famous bull, Unam Sanctum that "We declare, we say, we define and pronounce that to every creature it is absolutely necessary to salvation to be subject to the Roman Pontiff." In response, King Phillip of France declared the Pope a criminal and took him prisoner for a brief time. This eventually resulted in the "Great Schism". From 1305-1377 all the popes were French and under the control of King Phillip, and in reaction to this nationalistic puppetry, rival popes were also asserted (1378-1417). This condition only ceased in the first half of the fifteenth century by an act of international political and ecclesiastical will in the Councils of Constance and Basel.

With this, the classical sense of papal integrity, prestige and authority never returned. Coupled with this were a number of corrupt practices operating within the Church that tugged at the conscience of the average person. Among these were the sale of indulgences, obligatory confession and countless forms of papal taxation including fees to be paid for appointment to offices within the Church.

From a socio-economic view, the economic and cultural emancipation of the average middle-class person played no small part in the overall process. A variety of factors such as relocation of demographics towards rivers and coasts, the consequent increase in trade and commerce, and a change from barter-based to a more fluid money economy, resulted in increased economic freedom and leisure time for cultural growth. As David Noss sums up so well:

The spiritual fact was that at the very time when the layman began to feel his own competence most, the Church seemed to him most corrupt. The Church had become identified in his mind with a vast

system of financial exactions, rapaciously draining gold from every corner of Europe to Rome, where luxury, materialism, irreverence, and even harlotry seemed to reign unchecked among the clergy. Not only was the Church in his eyes corrupt, it seemed also to be left behind in the onward sweep of progress. In a changing world it represented cramping institutionalism, conservatism, conformity from age to age of one inflexible law, one worship, one order of life for every individual. Worse still, a yawning gulf had opened between religion and life, and the disparity between the Church and man's need increased more and more, until the pious layman, just a little appalled anyway by the secularizing effects of capitalism and nationalism, began to wish for changes in the Church that would make it serve the needs of men better.[266]

This discontent reached a watershed when Pope Leo X (1475-1521) increased the practice of the sale of indulgences as a fund raising technique in order to finance the renovations of St. Peter's cathedral in Rome. Representative of the troubled conscience of the wider society within Europe, Martin Luther (1483-1546) called for reform within the Church symbolized by his 95 theses, which he nailed to the castle church of Wittenberg on October 31, 1517. Ultimately the Catholic Church would not embrace this spirit of reform in the way that was hoped, and those reformers were forced to form there own communities, which swept through Germany with Luther, and through Switzerland with Urlich Zwingli (1484-1531) and John Calvin (1509-1564), eventually leading John Knox (1513-1572) to take Calvins vision from Geneva to Scotland. The Protestant movement grew in France with the Huguenots and their eventual emancipation with the Edict of Nantes (1598) precipitated by 5 years of bloody conflict.

The resort to bloodshed became the norm and from 1618-1648, (known as the Thirty Year War), the horrors of war ripped through Europe, with its primary scene of operations in Germany, while the evils of a newly centralized inquisition and an index of forbidden knowledge plagued those concerned with the reform of religious identity. This context served to foster a particular weariness of the general populace with religious conflict and a loss of faith in the ability of religion to transform society in a positive fashion.

This is essential to appreciate in order to understand the major contribution of historical context to the following conversations in the relationship between science and theology.

In May 1543 a work was published entitled de revolutionibus orbium coelestium ("on the revolution of the heavenly bodies"). In this Copernicus (1473-1543) proposed the first Heliocentric model within Western civilization[267]. While Copernicus's theory did make an impact upon the Christian community, however that impact was not as

substantial as one might assume[268]. His assumed principle of uniform,

circular orbits could not explain the apparent movement of the planets. Those movements had been explained within the Ptolemic model with increasingly sophisticated theories of epicycles until it had become a cumbersome model, yet Copernicus could not provide an alternative. It was not until after the detailed observations of Tycho Brahe (1546-1601) and the analyses of these observations by Johannes Kepler (1571-1630) that a sufficient model of elliptical orbits was produced that offered a simpler and more logical alternative to the Ptolemic model.

The controversy of this model did not come to a head until Galileo (1564-1642). Rather than just proposing a mathematical model, Galileo insisted that his observations reflected the nature of reality and the actual structure of the solar system. Galileo recognizing a conflict between tradition and more importantly biblical interpretation also asserted a doctrinal position of a non-literal approach to the Bible: "The Bible tells us how to go to Heaven; not how the heavens go."

The Catholic Church was "on the defensive" clinging to tradition ever tighter than before. Although having once condemned Aristotle for his materialism, the Church had come to believe that Aristotle

had spoken the final truth about everything. So the battle was really between obscurantist church authorities who defended Aristotle, and a rather arrogant Galileo, who preferred to trust his new?fangled telescope.[269]

There is also a more significant and political motive for the Church's stubborn clinging to tradition. A central issue of the reformation, and exacerbated by the 30 year war occurring at the time of this incident, was whether Protestantism was an heretical innovation (Catholic view) or a renewal of the original Christian spirit (Protestant view). As such, the Catholic polemic included the unchanging theology of Catholicism in order to assert its claim to original and continuing authority. In such a context the Catholic Church was obliged to defend the traditions of both Aristotle and Claudius Ptolemy which were challenged by Galileo. Galileo proposed numerous changes such as a more mathematical, objective understanding of matter, towards the science of bodies in motion-dynamics, and began a new exploration of the concept of inertia. All of these ideas were to inspire Newton and others to continue refining and expanding these models.

This "fundamentalist" stance by the church lost face in the victory of well?established findings. Such a loss gave the first appearance of a victory of science over and against religion rather than what it really was;

the victory of open?mindedness over narrow minded, corrupt authority.

Owen
Gingerich has illustrated the popular exaggeration of this incident.[270]
For example, Gingerich has pointed out that the censorship of Galileo's works
was concentrated around Rome, with relatively little censorship outside of
Italy[271]. This points to the parochial
political nature of the conflict.

It is not argued that the conflict in the Galileo
incident was purely historical. Galileo's scientific convictions did conflict
with basic biblical world views interpreted in a literalistic fashion and
eventually they challenged an anthropocentric understanding of humanity as the
centre of the Universe. However, it is argued that neither of these two beliefs
are representative of the Christian gospel, so are not in direct conflict with
the Christian revelation. (However it may have appeared at the time)

Galileo
saw no conflict between his Christian belief in God and the rational
investigation of physical reality.

I do not feel obliged to believe that the same God who has endowed us
with senses, reason and intellect has intended to forego their use and by some
other means to give us knowledge which we can attain by them. He would not
require us to deny sense and reason in physical matters which are set before
our eyes and minds by direct experience or necessary demonstrations.[272]

Newtonianism represented a greater
challenge to the already strained relationship between science and religion.
Newton was very religious and
considered his theological commentary on "Daniel" of equal or greater
importance than his "Principia." It is interesting to note that
Newton had twice as many books on theology and philosophy than on mathematics
and physics[273]. And while he may have considered
his theological contribution to be more valuable, the apple falling on his
head,
rather than God justified, is how the future remembers him.

The important point to appreciate is that Newton was able to
demonstrate that a vast range of observational data could be explained on the
basis of a set of universal principles.[274]

Newton claimed that he developed his laws
of physics inspired by thinking of God as
the "great mathematician." He believed that the implicit order and
design of the natural world was evidence of God's operation in the contingent

world.

And thus much concerning God:
to discourse of whom from the appearance of things certainly does belong to Natural Philosophy.[275]

Here Newton makes it clear that he
believes that the study of the natural order, or "the appearance of things" concerns witnessing God's existence. Newton goes a step further and indicates that not only is the discourse of God related to the order of physical reality related to Natural Philosophy, but that the consideration of the beauty and sophistication of design in the physical order leads to belief in God's existence:

When I wrote my treatise
about our Systeme, I had an eye upon such Principles as might work with considering men for the beliefe of a Deity: and nothing can rejoice me more than to find it used for that purpose.[276]

In the context of having described a
number of the features illustrating the grace, sophistication and beauty of the design implicit in the physical order, Newton indicates the proper spiritual response such observations should induce:

These and suchlike
considerations, always have, and ever will prevail with mankind to believe that there is a Being 1) who made all things and 2) has all things in his power, and 3) who is therefore to be feared.[277]

The fact that science and theology are not
only considered to be in harmony, in Newtons view, but that science is like a natural theology itself which indicates God's existence in itself. Indirectly anticipating the tension that Darwin would later experience, Newton wrote:

We know Him only by His most wise and
excellent contrivances of things, and final causes; we admire Him for His perfections; but we reverence and adore Him on account of His dominion; for we adore Him as His servants; and a God without dominion, providence, and final causes, is nothing else but Fate and Nature. Blind metaphysical necessity, which is certainly the same always and everywhere, could produce no variety of things. All the diversity of natural things which we find, suited to different times and places, could arise from nothing but the ideas and will of a Being necessary existing[278].

There were a number of theologians, classicists, professional scientists and philsosophers who embraced Newton's apparent proof through design for the existence of God against the widely perceived mob of atheists growing in the heart of urban Europe. Roger Cotes embodies the optimism of the period in the great hope of Newton's refutation of Atheism:

Newton's distinguished work will be the safest protection against the attacks of atheists, and nowhere more surely than from this quiver can one draw forth missiles against the band of godless men.[279]

This attachment to Newton's mechanistic and potentially universal explanation for the operation of the entire physical order, as proof against atheism, would prove to be a tragic flaw, in the same way that other God of the Gaps theories would prove to be in later scientific models.

These mechanical laws while consistent with Newton's belief in God, posed a greater problem to other Christians who wanted to see God as the "mysterious force" behind the operation of Creation. The problem being that if Newton's physics have the potential to explain completely the operation of things in the physical universe, then God is relegated to a superfluous role. Although Newton postulated God as the great Designer and the First Cause, ironically Newton's mechanistic laws of operation left God little role except as a possible Creator who "winds the clock and lets it go." Unfortunately, Newton's goal of facilitating Theism and the active, relational, providence of God in sustaining the world and witnessing God's immanence within it was thwarted. Rather his brilliance became used as a fundamental resource in the flourishing of Deism – a belief in a transcendent and removed Creator who once He created, made room between Himself and creation and "let it go on its way." Even this minimalist view of God lost credence with the combination of future scientific contribution and the interpretations surrounding it.

The person who unwittingly facilitated the next step in the divisions of reality was Descartes. To be fair, it is perhaps more due to the conclusions his naïve interpreters arrived at rather than his own attempts to develop a model that facilitated such a further division[280]. However, Descartes, is of course, not without fault. While Newton saw science as an answer, and perhaps the answer to atheism, Descartes saw philosophy as the discipline exclusively appropriate for the

defense of God:

I have always been of the opinion that two questions – those dealing with God and with the soul – were among the principal ones which should be demonstrated by philosophy rather than by theology.[281]

Descartes believed theology to be inappropriate towards the endeavor of proving the reasonableness of either God or spiritual matters, because it relied on personal faith, which for Descartes is subjective and useless as a tool for the demonstration of coherence and intelligibility to those who themselves don't believe. Certainly once faith is granted, religion contains its own internal intrinsic principles of evidence, historical evidence, and logical methodologies; however the reasonableness of all of these are dependent on an apriori assumption of faith and therefore make it purely an internal activity. It is only philosophy, with its grounding in universal reason that can appeal to the reasonableness of all people.

I make bold as to say that never has faith been so strongly supported by human reasons, as it can be if my principles are followed.[282]

Both Newton, in placing so much primacy on science and its ability to reveal the wonders of the natural order as proof of God's existence, and Descartes in placing exclusive capacity on philosophy and internal principles, inadvertently made it appear that theology had no capacity to demonstrate that its own models possessed integrity, reasonableness, consistency and due consideration as approximations of an objective reality.

The contrast with Newton here is total. In Newton, the world served as warrant for the existence of God. In Descartes, God served as warrant for the certain existence of the world. In Newton, a universal mechanics which would deal with all of the phenomena of nature could then incorporate the divine existence; in Descartes, metaphysics would have to establish the divine existence from the proportions given in cognition, and from that deduce the truth of God which would guarantee the existence of the world.[283]

For Descartes metaphysics is entirely adequate and self-sufficient to demonstrate the existence of God. There is no need to posit God as active in relation with the physical world to demonstrate the reasonableness of God's existence. Descartes further reduced the mechanistic nature of physical reality by asserting a priority on internal principles. With the discovery of principles such as the law of the conservation of momentum, (which Descartes had adduced to a principle of pressure) physics began to achieve its own internal independence from theology.[284]

The next
step, that of the beginning of alienation and assumptions of conflict between science and theology occurred through others such as Joseph Lagrange and Pierre Simon de Laplace. The shift in popular perspective is characterized by the legend of the conversation between Laplace and Napoleon in 1802. In response to Napoleon's insinuation that God is the author of existence, "And who is the author of all of this?" Laplace replied that internal principles are sufficient explanation and "Je n'avais pas besoin de cette hypothese-la"[285] ("I have no need of that hypothesis"). God had become merely a competing hypothesis among the infinite possibilities. To many, God became not only an unnecessary thesis, but also a deficient thesis at that.

These new
thinkers saw that if physics is entirely independent from theology, then theology can only be assumed to be a burden in the pursuit of objective truth. To take in the considerations of religion or theology at all is a stumbling block to growth. Did not the reliance on religious tradition keep humanity in ignorance of the true operation of the solar system for its entire existence? Now that science was liberated from the oppressive tyranny of religion the capacity for discovery and the growth of human civilization seemed infinite. Humanity had become its own God, the only limitations on its capacity for omnipotence were its own efforts.

To return to a historical context, England had been spared the more extreme forms of conflict during the reformation. Compared to other European countries, physical conflict was less severe, say in comparison to the 30-year war. As well, its distance from Rome meant that although it was no doubt affected by such dramas, it was less caught up in the intrigues of the Papacy, such as the great schism, the inquisition, and the confrontations between national independence and assertions of papal authority.

With the moderation so characteristic of them, the
English leaders nourished a desire to enjoy at least the degree of religious self-determination that the Refomation had brought to the continental Protestants, and yet they bowed to the forms of legality in their national life and patiently waited.[286]

There is no doubt that England did have great religious tensions, such as the enforcement of the "Bloody Statute." It also experienced radical shifts of religious endorsement by the state with alternate communities being the source of persecution. This swayed between an anti-Catholic Henry VIII, a moderate Edward VI, the ardent Catholic Queen "Bloody" Mary and her intolerant husband, the later King Phillip the II, and finally back to England's current state of moderation with Queen Elizabeth and the Act of Uniformity in 1559.

The significance of this historical context rests in its moderating influence upon the "neurosis of spirit." The severe inner dissonance between faith and reason that occurred in "mainland" Europe, as discussed earlier, was in general, less intense in England[287]. It was one of the last countries to experience a popular level of exclusively material and mechanistic metaphysical assumptions about science.[288]

This perhaps may explain why, that as late as the early to mid-19th century in England, it was still possible to have an established class within society that pursued the harmony of science and religion; that of the "pastoral scientist." This stratum in society enjoyed a substantial position of merit and prestige. In fact the majority of scientists and most of the members of the British Association were also theologians. It is within this context that we examine Darwin.

Darwin's anti-theistic and anti-spiritual stance has been greatly exaggerated by his interpreters who have specific agenda. At the age of 22, Darwin graduated from Cambridge with a Bachelor of Arts in Theology and the Classics. He considered the joint life as clergyman/field scientist a very natural one and could imagine no better vocation[289]. From this fact we see his early belief that discovering the beauty and sophistication of nature was a way of confirming the beauty and sophistication of the mind of God. Some might argue that this represented a "pre-Beagle" conversion experience. However, if Darwin did undergo a process in which God took less of an active role in evolution, it did not occur upon "discovering" his new theory. Confusion on this issue primarily results from modern interpreters erroneously associating his eventual rejection of organized religion with a rejection of God and design. Darwin speaks of his eventual rejection of organized religion. His rejection was of the

Old Testament from its manifestly false history of the world...and from its attributing to God the feelings of a revengeful tyrant...I gradually came to disbelieve in Christianity as a divine revelation... Thus disbelief crept over me at a very slow rate, but was at last complete.[290]

Notice that he is not rejecting God or spiritual reality, merely a particular interpretation as seen in the Old Testament. This seems to be for two reasons. One, the inconsistent and conflicting views of Old Testament history[291], and two, a view of God as a revengeful tyrant.

Some also see

his belief in the comprehensive ability of a single evolutionary model and his condemnation of the doctrine of special creation as a rejection of God or a spiritual nature in humanity. Yet,

Darwin
himself was quite clear that his explanation of the biological evidence was not the only one which could be adduced. He did, however, believe that it possessed greater explanatory power than its rivals, such as the doctrine of special creation. 'Light has been shown on several facts, which on the theory of special creation are utterly obscure.'[292]

A very rarely
noticed event, and of no small significance, was the tragic suicide of Darwin's beloved father, later in life. Combine this personal loss and his frustration with unsuccessful appeals to the church regarding the doctrine of damnation that that suicide implied, and this had no small influence on him becoming cynical towards organized religion.

Increasingly, throughout his life, Darwin seemed to vacillate between purely random and purposeless understandings of the process of natural selection, and between the need to posit intention, purpose and design in such a process.

I am conscious that I am in an utterly hopeless
muddle. I cannot think that

the world, as we see it, is the result of chance;
and yet I cannot look at

each separate thing as the result of Design.[293]

Perhaps this tension is also a reflection of Darwin actively wrestling with the apparent waste and suffering seen in the process of evolution:

We must regret that sentient beings should be exposed to
so severe a struggle, but we should bear in mind that the survivors are the most vigorous and healthy and can most enjoy life: the struggle seldom recurs with full severity during each generation: in many cases it is the eggs, or the very young which perish.[294]

Part of this
tension is also due to his immersion in a scientific culture that encouraged reductionism and materialism and did not facilitate broader interdependent metaphysical visions of reality. This is reflected in his positing the

principle 'survival of the fittest' as the primary selective criteria for successful species adaptation. Using a materialistic and reductionist metaphysics to filter this principle results in a 'survival of the fittest' that places emphasis on capacities for aggression, domination and competition. While in dialogue with the more interdisciplinary studies of modern environmental science, Darwin's vision may have tempered by our increased awareness of evolutions apparent propensity for sophisticated levels of interdependence between species and ecospheres. Seen in a broader vision, 'survival of the fittest' implies an organisms ability to more creatively participate in these sophisticated webs of interdependence. Some might even say to emulate attributes of cooperation and harmony as well as diversification.

Unfortunately,
Darwin found himself on the defensive, attacked by the majority of apparent theistic or spiritual proponents. Perhaps if he had encountered more intelligent harmonizers of spiritual and material principles such as Keith Ward he may have instead said:

The goal of the process is a fully
conscious goal, formulated in the

mind of God. What God wills, and
consequently what the process

will eventually produce, is not the triumph
of the strong, but the

triumph of virtue, of beneficence,
compassion and love. The

ultimate evolutionary victory, on the
theistic hypothesis, does not

go to the most ruthless exterminators and
most fecund

replicators.[295]

Naïve concepts
of God, such as a vengeful or controlling God, which Darwin objected to, particularly in poorly constructed Old Testament interpretations that were all too common, are not conducive to such a vision. God is not determined to externally remove all waste and randomness like a stern parent, but is aware that love can only be chosen in freedom.

...the apparently random element is in fact
the best way of

achieving a goal directed outcome, while leaving the process itself

non-determinstic. Thus, a space is left for the free actions of

intelligent beings, which will later be so important to the

development of the cosmos. The apparently wasteful extermination

of individuals and species is, in fact, the best way of achieving a

gradual improvement of organic life-forms, while not permitting

autocratic 'interferences' which miraculously effect improvements

from outside the system. Moreover, it seems virtually undeniable

that the process brings into existence states of very great value

(like the appreciation of beauty, moral action and rational

understanding), which could not otherwise exist in the same way.

Thus the process is purposive, in the important sense that it is an

elegant and efficient law-like system for realising states of great

value.[296]

So we have the internal tensions of dissatisfaction with organized religion, amplified in his experience of personal loss, his knowledge of the waste and suffering present in the process of evolution, and perhaps most significantly there is a third tension.

In reaction against the stranglehold which the doctrine of special creation had upon the human imagination, it may have been necessary to construct a secular science, free from all appeals to God.[297]

Regarding this last concern, Darwin writes against the theory of special creation:

> Do they really believe that at innumerable periods in the earth's history certain elemental atoms have been commanded suddenly to flash into living tissue?[298]

and Darwin indicates that one who holds the view that "man is the work of a separate act of creation" is "like a savage".[299]

However in spite of these layers of tensions, Darwin still consciously and unconsciously feels the need to incorporate strong elements of design, both explicitly and implicitly throughout his work. At the end of The Origin of Species, Darwin indicates that natural selection advances our understanding of both science and God:

> 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...There is a 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, whilst 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. [300]

Even considering Darwin's vacillations between chance and design, it is strange how such an explicit affirmation of design seems to be completely ignored by subsequent interpreters, particularly among the neo-darwinists.

The very centre of Darwin's theory of evolution, the model of "natural selection" clearly incorporates those very features which materialists wish to suggest Darwin's theory disprove. The metaphor of natural design clearly indicates the qualities of purposefulness, active choice, rational analysis, and intention and most importantly, an active consciousness as the source of this process.

In the first chapter of the Origin of Species Darwin discusses the processes involved in

artificial
selection, as used in horticulture and agriculture. Artificial selection is seen as a methodical process where the intent of the breeder is to select particular desired qualities and through successive generations, amplify those qualities in a particular group. He then transfers this model in an analogy to describe the same processes in nature.

It
may metaphorically be said that natural selection is daily and hourly scrutinizing, throughout the world, the slightest variations; rejecting those that are bad, preserving and adding up all that are good; silently and insensibly working, whenever and wherever opportunity offers, at the improvement of each organic being.[301]

Remembering the
tension and vacillation of Darwin between positing purpose and random chance to the process of natural selection, Darwin later in life, commenting in his third preface to The Origin of Species writes,

...it
is difficult to avoid personifying the word Nature; but I mean by Nature, only the aggregate action and product of many natural laws, and by laws the sequence of events as ascertained by us.[302]

It is proposed
that this qualification is representational of Darwin's strong concern not to be misinterpreted as using a metaphor equivalent to a "God of the Gaps" method. This concern is evident when one remembers the "stranglehold of special creation," Darwin's intention to dispel such a myth, as well as his efforts to indicate that a comprehensive theory of evolution, possessing its own independent integrity is possible. This is particularly supported by his concern, (in polemic against special creation) that there is no need to allude to external supernatural principles.

Even the modern materialistic neo-Darwinists in
seeking to avoid implications of purpose and design in nature are unable to use metaphors that avoid implications of purpose and design; the most common being a machine. Perhaps this model is used to avoid connotations of the world possessing a "soul" or any spiritual nature. Yet, a machine is created by an independent
consciousness, obeys
principles incorporated in its design, and is created for a specific purpose.

It may be argued that it is impossible to avoid

using such models that imply these principles and still convey consistency and integrity in the structure of the model of evolutionary theory. It may represent the intuition of "faith" in the intelligibility of the created order that the reason for this is that these principles are so in-built into physical reality that only those models that allude to such principles can be considered to have authentic representational value. And that this is also in-built into structures of the human mind to recognize the purposeful Mind present in the ordering of our reality. However this is a subject for fuller discussion in the concluding section of this thesis.

Darwin admits a number of significant tensions in his model. He is unable to demonstrate the process of "speciation" in geological records, as no "intermediate" species have been found. This geological incongruency has still not been resolved. As well he has difficulty in explaining the "extreme perfection and complication of certain organs such as the eye"[303]. Darwin writes:

A crowd of difficulties will have occurred to the reader. Some of them are so grave that to this day I can never reflect on them without being staggered; but, to the best of my judgement, the greater number are only apparent, and those that are real are not, I think, fatal to my theory.[304]

That Darwin would experience such a vacillation on the issue of design and chance, purpose and randomness, is representative of both his feeling that design and purpose must be present, counteracted by the strong tensions mentioned previously. That he never came to terms with resolving these tensions by managing to qualify the context of a theory of evolution in which design, purpose and Divine participation were in harmony, is a tragedy of history. Speaking of his inability to resolve this tension Darwin writes:

I am in a thick mud; the orthodox would say in a fetid abominable mud. I believe I am in much the same frame of mind as an old gorilla would be in if set to learn the first book of Euclid...yet I cannot keep out of the question.[305]

It is tragic that Darwin failed to resolve this tension for himself, as it became a useful lever for those later interpreters who exclusively wished to focus on the chance and random process of evolution present in Darwin's theory, ignoring the aspects of design and purpose, and thereby distorting the potential harmony of theology and science.

Regarding the misappropriation of Darwin's theory of evolution towards support for aetheism and materialism, Abdu'l-Bahá writes:

> Moses taught that the world was brought into existence in the six days of creation. This is an allegory, a symbolic form of the ancient truth that the world evolved gradually. Darwin can refer to Moses for his theory of evolution. God did not allow the world to come into existence all at once, rather the divine breath of life manifested itself in the commanding Word of God, Logos, which engendered and begot the world. We thus have a progressive process of creation, and not a one-time happening. Moses' days of creation represent time spans of millions of years. From Pythagoras to ibn-i-Sina (known as Avicenna) to the 'faithful brothers of Basra', through Darwin and to the blessed Manifestations of the Bab and Bahá'u'lláh, both scholars and Prophets have testified to the progressive creative action of the Logos (divine breath of life). The Darwinian and monistic theories of evolution and the origin of species are not materialistic, atheisitic ideas; they are religious truths which the godless and the deluded have unjustifiably used in their campaign against religion and the Bible.[306]

As has been briefly illustrated, this misappropriation of ideas occurred through a complex process. Newton's success in explaining the operations of the universe through mechanistic principles, was often equated with seeing the physical order as a machine. Newton actually encouraged this metaphor in that it alluded to Divine intelligence behind the design. Later science would adopt the concept of universal principles and law explaining all physical relationships, but lose the idea of design and God. This was enabled as the "machine" gained the principle of independent internal momentum, through Descartes and others; and finally when the machine acquired a random, purposeless evolutionary force of its own, through Darwin. The machine, had once been a marvel of genius in its sophistication, elegance and universal intelligibility that alluded to an infinitely virtuous Creator. However through a distorted interpretation of both the processes themselves, and the intentions of their authors, it became a self-winding, self-operating, and self-designing machine, as it were. And yet, as has already been noted, there are still difficulties with viewing the metaphor of reality as a machine, and divorcing that model from the implicit connections of creation by an independent consciousness, intentional design and specific purpose.

> There is no doubt that both humans and the structure of the universe have machinelike qualities, but to identify that abstraction of similarity to the extent that

those qualities justify treating the entire phenomenon as a machine is the fallacy of identifying an abstraction as concrete. Alfred Whitehead discusses this process and called it the fallacy of misplaced concreteness.[307]

The distortion of these potentially more united views also occurred through the actions of extremists on both sides of the relationship, acted out in great public dramas. The implications of these dramas would undoubtedly be exaggerated by the immediate historians: the news reporters. The exaggeration of the Galileo affair and the mythifcation of the Laplace-Napolean conversation have already been mentioned. Thomas Huxley, an interpreter of Darwin, and his epic public defeat of Bishop Wilberforce represents another simplification and mythifaction of the significance of Darwin for the separation of religion and science.

The Bishop rose, and in a light scoffing tone, florid and fluent, he assured us that there was nothing in the idea of evolution; rock pigeons were what rock pigeons had always been. Then, turning to his antagonist with a smiling insolence, he begged to know, was it through his grandfather or his grandmother that he claimed descent from a monkey?[308]

It is alleged that Huxley responded,

I should feel it no shame to have risen from such an origin, but I should feel it a shame to have sprung from one who prostituted the gifts of culture and eloquence to the service of prejudice and falsehood.[309]

The inaccuracy of this characterization does little justice to the sophistication of Wilberforce's critiques, as Darwin actually modified his discussion at several points in response to a written analysis by Wilberforce.[310] However, even if Wilberforce had been justifiably lampooned by this confrontation, it would only be symbolic of a number of non-essential factors such as an individual, (possibly representative of a group of similar individuals) exhibiting the qualities of ignorance, fanaticism and a lack of debating skills. But it would not, through any direct association, be representational of a clash of essential truths discrediting any potential harmony between a theological and a scientific understanding of reality.

These same principles of exaggerated significance would apply to numerous other historical events such as the famous Scopes (or "Monkey Trial") trial of 1925, which is remembered for the defeat of ignorant fundamentalists and their uneducated, fanatical, anti-evolutionary position. It symbolizes the moment when the entire U.S. education system rejected special creation, and more importantly, and

unnecessarily, by association, the rejection of any religious implications of design or purpose, and adopted the partial, narrow and distortional materialist interpretation of Darwin's theory of evolution as the standard curriculum.

This "war"
between science and religion is still being raged in the courts of America, with the two fanatical sides, claiming as prosecution counsel in 1925 did, that this is a 'duel to the death'. The two fanatical sides being the fundamental special creationists on the one side, and the scientific materialists on the other. That these two sides are the most outspoken and therefore get the most press coverage, means that any true dialogue between moderates attempting to facilitate a process of mutual consultation, integration and the development of other models besides conflict is largely ignored as not news-worthy. And therefore the general public is constantly bombarded with the impression that the only possible relationship between science and theology is conflict. The next chapter seeks to deconstruct some of the myths in popular scientific materialism, illustrate the harmony of methodology and model building by both science and theology, and indicate the potential integrative relationship before turning to the final chapter. That of the potential contribution of Bahá'í theology towards what has been considered exclusively the domain of science – ecological relationships.

[+CHAPTER5]

Chapter 5: Resolving the Tensions- an Exploration of Metaphysical Model Building, Epistemological Methodologies and of Potential Integration and Synergism of Science and Theology

We must now turn to significant new developments
in both science and theology that challenge the dysfunctional interpretations of reality that have contributed to the diseased metaphysics of Western society. Symptoms of this illness of bifurcation include the radical separation of subjective and objective reality, materialism, purposelessness, the separation of and absolutization of reason and empiricism from a subjectified and denigrated faith, a belief in the ability of science to provide complete and exhaustive descriptions of reality and finally, that the methods and subject of
science are value free[311]. Although these viruses of thought
always found hosts in history, it was not until the Enlightenment that they found a welcoming cultural host, and have fully flourished in our modern age dominated by scientific materialism and religious fanaticism. But we must subsequently speak of promise in the healing of bifurcation. This potential facilitation of unity in our macrohistorical vision can be seen through the unfolding of a new and more creative relationship between theology and science. This ultimately calls for new metaphysical visions of God, humanity, the

reality in which we dwell, and the means by which we know it.

The potential for unity in that relationship points towards a greater unity in diversity of all disciplines, in which academic investigation no longer is done in isolation, but in consultation with the visions of others. It is not that there is one reality and therefore only one discipline that is suited for knowing it. Nor is it that there are many realities and many appropriate disciplines. Rather there is one reality of infinite depth, dimension and qualities in which the means for knowing it can never be exhausted in unfolding an apprehension of the unity in diversity of those levels of reality.

There is a great variety of important issues that should be discussed. Many will be excluded by virtue of having to focus only on those issues that are most significant towards the discussion of resolving tensions related to those ecological movements discussed in Chapter 3. Also consideration is given to those issues that help lead to the possibility of a theocentric Bahá'í model of ecology which can be considered to possess consistency, integrity and the potential for practical application.

This section will begin by examining the often-unconscious acceptance and creation of foundational structures or metaphysical models within the scientific community. As part of this, assumptions about empiricism, the absolutization of reason and objectivity, positivism, chance as the sole denominator of evolution, and the value-free nature of scientific methodology will be examined along with a brief examination of some of the dysfunctional philosophies that lay behind these unconscious assumptions. The central reason for doing this is that those particular assumptions are then used by the scientific materialists in both private and public discourse to illustrate the radical superiority of science over theology as the only possible enterprise for examining the structure and relationships within reality. They then propose theology as the opposite of science in that it is subjective, non-empirical, irrational, and value laden in methodology; and therefore useless as an enterprise of examination that seeks any true correlation with objective reality.

Next, the principles involved in developing metaphysical models in both science and theology will be discussed, and it will be proposed that these principles are the same and in complete harmony. Throughout the text, an underlying focus on these principles is incorporated in order to introduce at a basic level the possibility that these models can converge and form a synergistic relationship facilitating greater creativity and comprehensive visions of reality for both fields. It is hoped that this discussion will further lay the foundations for a mature ecology: an ecological metaphysic that envisions nature as both

physically and spiritually relational in its diversity, with humanity participating in acknowledged dependency upon these relationships, and recognizing that all beings possess an independent intrinsic value.

The facilitation of value through the scientific community

We now examine the assumptions that both the methodology of the scientific community, as well as their object of study, nature, is value free. It is important to expose this 'myth' for a great variety of reasons. For this thesis there are two specific reasons of significance.

Firstly these assumptions predispose society towards an irrational prejudice that science offers an absolute, definitive and exhaustive explanation of nature. Secondly these assumptions prevent the proposal of any intrinsic value within nature. Callicott writes:

> The classical attitude that nature is value-neutral remains a virtually unchallenged dogma of the scientific world view. From this perspective, the attribution of intrinsic value to species, as to anything else under the sun, is doomed at the outset to failure.[312]

When one hears the term "scientific community" it is usual to forget that the "community" has a significant role in the development of value. Towards appreciating the value-laden nature of the scientific methodology, it is important to understand this function of "community" for science.

First, a challenge is issued to the popular view that the scientific community represents a completely objective 'institution' using infallible instruments of empirical experimentation and inerrant reason. The motto of the Royal English Society Nullius in Verba (or "Nothing on authority") facilitates the association that scientists are highly individualistic, confined to their laboratories to avoid external interference in their experiments. Also associated is the view that discoveries are driven by the inherent nature of the scientist uncovering the layers of reality purely arising through objective observation of a given subject. However, the function of "community" both for religion and science determines value in a variety of very pervasive ways.

Michael Polanyi has illustrated that the scientific community employs recourse to a longstanding scientific tradition[313]. For example, in the submission of certain papers to scientific journals, their acceptance or rejection is based

upon a community experienced expectation of what is significant and what is not. A systematic charter defining boundaries does not guide these expectations, but rather an unspoken set of 'traditional' values. These 'scientific' values represent an apriori acceptance of a metaphysical model of reality. This model itself has developed through collective unconscious assumptions and it is not directly subject to scrutiny in these same scientific journals. The implicit materialist metaphysics in which chance is absolutized as the governing function of evolutionary biology is one example that will be discussed later.

The choice of what patterns of 'facts' are to be considered significant, to the very choice of the topic of research is largely influenced by the current dialogues within the scientific community. In this century external political and economic agendas play no small part in this process. The funding of public scientific research is almost always linked to specific purposes that serve items of governments agenda. In this century, even the focus of the genius of Albert Einstein was significantly determined by the government concern to develop weapons of war. Perhaps the greatest scientific drama was enacted with humanity walking upon the moon, yet even this noble scientific victory was only possible and driven by the immense political agenda of the cold war. Since the diffusion of those government agenda and the end of the "space race" imperative, the focus on space exploration research has greatly diminished in proportion to the funding. The current attempts to revitalize the MIR station is due to corporate desires to gain profit by catering to the smallest percentage of humanity, the elite rich.

The general public misconception is that the discoveries of science that advance Western civilization are a natural by-product of the scientific process. However, these days, private corporate funding represents the greatest source of scientific funding, and is totally motivated by profit. So only those areas of research that are seen to directly contribute to practical applications of particular technology that will benefit the shareholders are funded. The fact is, that medical miracles and domestic technologies that ease the burdens of every day life are not a function of an inherent principle of science, but rather a coincidental association with the profit motive of the corporate element. Additionally, the corporate element introduces an even greater division in the synergistic consultative process of the scientific community, as each team races to its theory to the production line first in order to win the victory of profit for its sponsoring company. In this environment, little genuine sharing of unique ideas, at least prior to 'production', is facilitated.

If all nations through an act of consultative will determined to finance the facilitation of peace, and the abolition of the suffering of the masses of the

disadvantaged minorities as the goal of the scientific community, rather than what it is, war and profit, a completely different pattern of research would no doubt occur.

Most universities are turning to corporate sponsorship for funding, so particularly the post-graduate education of scientists is now largely determined by these value-laden contexts. A deep appreciation of the history of scientific philosophy is not within the parameters of these concerns and so the scientist graduates often without any understanding of the important wider historical, philosophical or interdisciplinary issues involved with their discipline. There are certainly exceptions to this, such as international collaborations of scientists that are largely free of profit motivation. But even the goals of CERN have to be agreed upon by the community of governments funding the projects and share in the profits of any 'spin-off' technologies.

The rational investigation of the scientist as an act of faith or personal commitment in relationship with the perception of objects:

Lesslie Newbigin quotes and then comments on the first stage of Bertrand Russell's definition of scientific method. While it gives the appearance of complete objectivity, certain qualifications challenge this.

In arriving at a scientific law there are three main stages: the first consists of observing the significant facts...Out of the billions of pieces of data available, how does one determine what the significant facts are? This introduces an element of personal judgement.[314]

Einstein has said,

The supreme task of the physicist is the search for those highly universal laws from which a picture of the world can be obtained by pure deduction. There is no logical path leading to these laws. They are only to be reached by intuition, based upon something like an intellectual love.[315]

This concept of intellectual love may be more widely accepted in physics, where beauty and harmony sometimes become the criteria of a model because the invisible nature of the reality they study sometimes allows no direct

investigation. Concerning the theory of inflation applied to the earliest moments of the big bang, Astrophysicist Owen Gingerich writes:

> It would derail us to consider its technical aspects or some of its fascinating ramifications, such as the fact that this theory can't be empirically demonstrated and simply must be believed because of its beauty.[316]

In biology, a scientist might be less likely to accept that this is a defining characteristic of scientific investigation partly because of biological reductionist tendencies. Francis Frick, co-discoverer of the structure of DNA wrote:

> The ultimate aim of the modern movement in biology is in fact to explain all biology in terms of physics and chemistry.[317]

There is more likely to be an assumption that the biologist is studying something which is completely objective and subject to empirical demonstration so therefore in no need of subjective elements such as "intellectual love" or faith.

However if we look at Darwin, the evolutionary biologist par excellance we find an implicit statement similar to Einstein's proposal of the need for "intellectual love" as a criteria for filtering what data is significant. Darwin writes:

> I mean by nature, only the aggregate action and product of many natural laws, and by laws the sequences of events as ascertained by us.[318]

This alludes to the subjective nature of determining which sequences of events should be correlated, as the decision of ascertaining what events are significant will represent a matter of personal choice and faith in its intelligibility. Interestingly, Darwin also alludes to an associated criterion that most biologists would be surprised to see. In On The Origin of Species, Darwin indicates that his theory of natural selection represents a rational theory because: "To my mind it accords better with what we know of the laws impressed on matter by the Creator,...[319] and he goes on to indicate his attraction to the "grandeur" that the "powers" of nature have been "originally breathed by the Creator into a few forms or into one." And his further attraction to the beauty and wonder of the diversity that has subsequently evolved.[320]

An atheistic biologist might discount this as a moment of weakness in Darwin, or an example of irrelevant subjective faith. For many great discoveries have been made by scientists who had no faith in God's existence, or felt compelled by any form of "intellectual love". Yet it may be argued that Einstein, Gingerich and Darwin's statements are merely representative of conscious awareness of a broader context that is usually represented as an unconscious process: the basic assumption that reality is intelligible and coherent. And more importantly that the human mind is somehow capable of recognizing by attraction those principles which are "inherent" in physical reality. There is actually little effective difference between this and the more explicit statement that our love of the ordering principles "impressed on matter", and reflective of the intelligibility of the Mind of God, represent our ability for intuition of determining significant patterns in scientific investigation.

The hesitancy of the materialist in accepting that intellectual attraction, or perhaps even more minimally, an aspect of attraction, recognition, is related to a form of love or faith rests in an inherited, unconscious, dualistic prejudice of the scientific community.

This arises from the belief in the need to separate reason and faith, cognition and emotion based both on the inherited interpretations of a separation of reason and emotion in both the Cartesian and Kantian frameworks. More importantly, this prejudice arises by association of these dualistic frameworks with the modern scientific assumptions of the criteria of empiricism. To quote Val Plumwood once again,

> The Kantian account of ethical universalisation as derived from reason alone disguises and denies the dependency of ethical judgement on empathic elements.[321]

This same separation of reason and emotion is a denial of the dependency of intellectual investigation and attraction to universal principles upon the combination of both reason and emotion.

When this unconscious prejudice is recognized and remedied, the great divide, between rational investigation of an intelligible order and the attraction by intellectual love to the qualities of the mind of God which are universally expressed in reality, attains a much more coherent relationship.

The

concept of "intellectual love" also represents a framework in which the divide between rationalism and empiricism, and object and subject find greater unity in relationship. In this case "rationalism" represents the belief in the independent ability of reason to construct reality based on the archetypal forms residing intrinsically in the mind. While "empiricism" as the belief that the investigation of reality is dependent upon the accumulative experience of the perception of external forms.

Considering
the relational requirements of "intellectual love", forms are not developed in the mind solely by the impression of the external world nor does the external world only become "real" when our mind extends its categories upon it. There is a mutual relationship of the internal mind being attracted to the external Mind as found in nature. The principles of value are intrinsic to both our own minds and the intelligibility of nature, the "external" Mind. There are certainly a number of qualifications necessary to these statements and this concept will be more fully explored when attention is given to the theocentric aspects of the Bahá'í model. But the main point here is that there is intrinsic internal
value
(often called subjective) and external intrinsic value (often called objective) that find a participatory relationship through love[322].
In a theocentric model in which intellectual love intuitively guides the person towards more authentic visions of reality, the love represents a meeting point of relationality which is neither an extension of self, or an impression by the other. Value finds a unique expression through the relationship between the two participants. This uniquely created value is neither the subjective externalization of internal value nor the internalization of objective external value, but is created somewhere in between.

Michael
Polyani has provided a valuable analysis that further illuminates the unity between the "internal" rational process and the manner in which we "indwell" the "external" perceptive tools we use to negotiate reality. In his model the boundary between inner processes of reason and external sense perception is shifted if not erased. The focus shifts from determining the boundary to realizing the relationality of our rational investigation with the external world. This, once again, is possible because of the way in which our rational faculty almost physically "indwells" those external tools of perception. To illustrate,
Polyani uses the case of the blind man who learns to indwell his walking stick, and it for all intensive purposes, becomes an extension of his mind as a new perceptual organ. There is obvious room for perceptual error, but the blind man develops a personal faith in the perceptual capacity of his walking stick, until he indwells it as an extension of himself. Scientific investigation is much the same, in that the scientist experiences an act of personal commitment when he engages in the relationality of indwelling his tools of perception. Once again the great divide between subject and object is seen as an illusion

of western thought. Both of these concepts, that of "intellectual love," of knowledge as a relational state of affinity and attraction between two participants, and the concept of "indwelling," in which the tools we use to perceive these relationships involves an act of personal faith and relationship, conclusively illustrate the value laden nature of determining "facts" through the observation of objects.

For
Bahá'ís this ability of the human mind to indwell relationally tools of perception is an amazing and natural capacity of the soul. As should already be clear, the interpretations used so far indicate that while there may be a separation of objects, there is a highly significant relationality between them. In this regard, the body is the perceptive organ which the soul "indwells." But the nature of the soul, being what it is, has a natural capacity to indwell "perceptual organs" other than the biological limitation of the human body. While the function of the rational faculty of the soul, the mind, is highly related, but not dependent upon the biological functions of the brain, it is through association of the perceptual tools that we choose that our mind can indwell.

The
Assumption of the Exhaustive Capacity of Science to Comprehend Reality

Charles
Birch touches on some of the essential deficiencies of the modern worldview:

It has tended to see progress in terms of straight
lines beaming out into the future, with its ultimate faith in the capacity of science and technology to solve our problems...it is deficient as a total worldview and has left us in a dilemma about ethics and values and purposes. We are now seeing the exhaustion of that sort of modernity.[323]

For
Birch, a postmodern worldview implies that:

Progress is seen as a fulfillment of spiritual
possibilities.[324]

However,
the modern worldview still offers strong resistance to a vision of material and spiritual relationships as being integral to progress, and within science there is often an assumption in the exhaustive capacity of science to offer a complete worldview based on physical "facts" alone.

Positivism,
or the belief that knowledge can be based on facts alone or upon regularities

among facts, and incorporating a strong reliance on empiricism, finds its first significant proponent in August Comte (1798-1857). It is interesting and significant to note that its original proponent envisaged it as a means for creating a new religion. For Comte, positivism represented a final stage in the evolution of epistemology. The first stage represented theology and the proposition of causes to supernatural principles. The second stage is of metaphysics, in which there is a shift in category description of causes but not
representative of any significant difference in explanation. The final stage is that of positivism upon which knowledge is based on facts alone. Comte actually developed his own positivist "church", in which scientific elite (the positivistic "Saints") would eventually reorganize society in a rational and peaceful manner.

While
Comte's idea of founding a quasi-religious movement on these ideas never gained substantial social momentum, it did find a reemergence in the scientific philosophy of logical positivism.

It's
manifestation in the philosophy of science experienced its heyday with the ideas of a group called the "Vienna Circle," most influential from the 1920's to the 1940's. Although there were differences of opinion among the group's members, it represented a reinterpretation of aspects of David Hume's philosophy and the forms of symbolic logic found in Bertrand Russell. From this context arose the assumption of the separation of value and fact. There was a strong emphasis on empiricism and a fundamental theme throughout that belief must be justified on the basis of experience. Another proponent of such positivism was Rudolph Carnap who proposed that the only sources of knowledge are perception by the senses and analytical principles of logic. More importantly, he proposed that only statements that can be verified could be considered to be truthful. This is commonly referred to as the "verification principle."

Although
logical positivism was popular and explicitly influential in the development of scientific philosophy in the first half of this century, it was later shown to have too many internal inconsistencies to warrant further endorsement as an academically successful model in the field of scientific philosophy. The primary inconsistency lay with the verification principle and the realization that the interpretative process that occurs between the object and the perceiver results in a theory-laden process[325]. As well it was clear that positivism assumed the complete deficiency of metaphysics, yet it assumed a materialist metaphysics itself.

It is
proposed that Comte's underlying goal of replacing the functions of traditional

religion with a quasi-religious positivistic philosophy became more successful than perhaps even Comte dreamed; although perhaps on a less conscious level, this has occurred through its expression in the modern scientific community. This is particularly the case in the more reductionist biological sciences that have a greater reliance on empirical methodology and the reliance on "facts", coinciding with a greater natural aversion to admitting metaphysical considerations then say physics. However, even in physics we find such elements of quasi-religious positivistic philosophy.

Carl
Sagan's popular television series embodies this unlimited confidence in scientific methodology to offer exhaustive statements about reality.

The cosmos is all that is or ever was or ever will be.[326]

Regarding the context of this Ian Barbour writes:

Sitting at the console from which he shows us the wonders of the universe, he is a new kind of high priest, not only revealing the mysteries to us but telling us how we should live. We can indeed admire Sagan's great ethical sensitivity, and his deep concern for nuclear survival and environmental preservation. But perhaps we should question his unlimited confidence in the scientific method, on which he says we should rely on to bring in the age of peace and justice.[327]

Equally
confident in the comprehensive ability of scientific methodology to explain everything about everything is the scientific materialist Jacques Monod. An evolutionary biologist, he has exclusively focused on the role of pure chance in his interpretation of Darwin.

Man knows at last that he is alone in the universe's unfeeling immensity, out of which he emerged only by chance.[328]

While
representative of a highly reductionist approach to knowledge, Monod, at the same time represents a faith in the comprehensive explanatory ability of biology. Chance is the source of every development in the universe and, for Monod, this

is today the sole conceivable hypothesis, the only one compatible with observed and tested fact.[329]

Yet even
in Monod the tensions between purpose and chance are still present as can be seen firstly in his metaphysical model of the universe as a machine. The

purposive implications of this model have already been discussed in the previous chapter.

Anything can be reduced to simple, obvious mechanical interactions. The cell is a machine. The animal is a machine. Man is a machine.[330]

Even the
belief that a machine lacks purpose can only occur in a highly narrow-minded, reductionist vision in which its various parts are reduced to their most basic principles of function. Any attempt to relate these functions and examine the machine as a whole immediately illustrates the absurdity of postulating pure chance and purposelessness to its function.

Chance
has become Monod's "God of the gaps" theory. Biological science is not an appropriate tool for the examination of purpose. So when biology recognizes a tension that can only be resolved by the postulation of purpose, and the acceptance of a broader vision of metaphysics, chance is used as the explanatory principle in order to keep this highly reductionist metaphysics intact. Even the great defender of chance, Monod writes,

It is obviously impossible to imagine an experiment proving the non-existence anywhere in nature of purpose.[331]

Monod's
intention is to illustrate that purpose is not an empirically observable phenomenon. So it cannot be proved or disproved, similar to the statements by earlier materialists about God. But remembering the previous concept, "The nature of the object prescribes the method of knowing" and an entirely different
conclusion is reached. What Monod is then really saying is "Biology is not an appropriate method of knowing the nature of purpose." Supporting this, Keith Ward writes:

Biology does a magnificent job of analyzing the mechanisms of inheritance and molecular construction. In doing so, it does not need to refer to purpose or value at all. But there is no justification for saying that it eliminates purpose from the world. All we need to resist is the idea that any natural science gives the whole, complete and exhaustive truth about the real world. Biology can show us how the process of evolution works. It cannot, and does not, try to show us what this process is for, or what its purpose is.[332]

Purpose
can be known, and in fact is a necessary and logical postulate in a number of other disciplines, such as history. For example, if we want to study the development of the science of biology itself, say during the period of the enlightenment, we have to postulate and attempt to understand the purposes of

the various persons who contributed to its development. For biology as a discipline would not be a discipline were it not that it possessed an overall purpose itself. This purpose developed through the conflict and consensus of the intentions and purposes of the individuals who participated in the construction of that discipline. The intentions and purposes of these individuals are causally related to those before them, and theoretically these causes which are characterized by purpose and intent continue to the beginning of humanity's development. The average historian is merely content to trace these causal purposes back to a specific causal purpose (or a set) that he or she will consider most relevant for context for their study. However, the principles of historical methodology imply that if one wanted as comprehensive an understanding as possible, the causal purpose of every individual related to a specific event, traced back to at least the beginning of consciousness would need to be understood. This illustrates that reductionist biology itself ignores the central significance of consciousness, and the purpose and intent generated by it, as a factor of "evolution" in the development of its own discipline.

Ironically, this is equally true for such a significant movement within biology, as the metaphysics of Monod himself. This metaphysics, which represents the assumption of a materialist construction of reality operating by chance alone, can only be comprehensively appreciated by the use of a number of disciplines, including the principles of intention and purpose within historical methodology.

The Limits of Empiricism

There is no doubt that empiricism as that proposed by John Locke, as knowledge based on human experience and sense perception, has a valuable contribution for epistemology. This is particularly as it represents a moderating response to the rationalist assumptions of the sole supremacy of reason as the basis of knowledge that became influential particularly with Descartes. However, empiricism has now gained ascendancy over rationalism in the epistemological aspects of modern scientific materialist metaphysics. So there is a tendency to discount the potential of the inner rational process as possessing any kind of intrinsic ability to recognize intuitively through an empathetic function, similar values in the phenomenal world.

Empiricism has limitations in the associated assumptions of objectivity in its application providing "proof" and conclusive verification of theories. This has already been illustrated through the discussion of Michael Polyani, and the manner in which a personal relationship characterized by faith exists between the

empiricist and her subject matter. Karl Popper also was concerned with such assumptions of such an interpretation of 'verification' providing self-evident proof of a theory. He contributed to the scientific understanding of the need to also posit circumstances in which a theory can be proved wrong.

I shall certainly admit a system as empirical or scientific only if it is capable of being tested by experience. These considerations suggest that not the verifiability
but the falsifiability of a system is to be taken as the criterion of demarcation...It must be
possible for an empricical system to be refuted by experience.[333]&[334]

Alistair
McGrath illustrates the difficulties with relating the "factual observations" and the network of associated hypothesis, with the theories they support (or contradict) as equally illuminated by Pierre Duhem (1861-1916) and Willard Van Orman Quine[335].

Duhem argues that we do not have access to the full list of hypotheses which underlie our thinking. It might at first seem that we could enumerate all the hypotheses that can be made to account for a phenomenon, and then eliminate all of these hypotheses except one by experimental contradiction. However, according to Duhem, the physicist is simply never going to be in a position to be sure that all the hypotheses have been identified and checked.[336]

While
Duhem was particularly thinking of natural science, and specifically physics when he wrote this, Quine re-interpreted his theory and expanded it to apply to the empirical process in general and therefore applicable to all disciplines. His main critique is that experience often has an insignificant influence on our overall metaphysical assumptions. His argument known as the "Duhem-Quine thesis" states that when data is discovered that conflicts with a theory, it is not possible to single out the one statement in the theory responsible for the conflict. Rather than rejecting the theory outright, an internal adjustment to suit the new data is more likely.

Within
the discipline of sociology, particularly as applied to knowledge, this theory has contributed to the understanding the significant contribution of cultural values to theory development. This is known as the "underdetermination thesis." According to this sociological interpretation, there are

an indefinite number of theories that are capable of fitting observed facts more or less adequately. The choice of theory can thus be explained on the basis of sociological factors, such as interests. According to this view, experimental evidence plays a considerably smaller role in theory generation and confirmation than might be thought.[337]

Ultimately
Duhem and Quine

both affirm that it is not theoretically possible to identify the site
of the tension between theory and experience.[338]

It would
be a serious mistake to assume that the sociological critique leads to the
conclusion that theories or the knowledge of reality those theories allude to
within science are totally relatavized as social constructions.[339]

Certainly
the thesis of Duhem, Quine and its reinterpretation in sociology is moderated
when the principle of intuition is introduced in enabling the selection process
of determining significant relationships between conflicting data and
statements within theories. No less significant, is the way that individual
intuition is often augmented by the community process of intuition gathered
through consultation. This occurs as different relationships to the data
provide a more complete view to enable this selection process of significant
relationships.

As Duhem
himself notes, Physicists do seem to achieve success relying on this intuition
to choose relevant relationships between data and theoretical considerations.

While the
consideration of intuition substatially moderates the Duhem-Quine thesis, it
does not detract from the thesis significantly contributing to an appreciation
of the limitations of empiricism.

Theories
in their ability to describe reality are ultimately dependent upon particular
contexts and an isolation of specific relationships. This is illustrated by
both Albert Einstein and Niels Bohr:

As far as the laws of mathematics refer to reality, they are not
certain, and as far as they are certain, they do not refer to reality.[340]

Isolated material particles are abstractions.[341]

It is not
being suggested that theories have no correlation to reality, but rather that
the correlation can only be recognized as a relational condition and not
absolute.

This is reflected in assumptions about religious truth within the Bahá'í
Faith

as well.

The fundamental principle enunciated by Bahá'u'lláh ... is that religious truth is not absolute but relative...[342]

Bahá'í's assume the infinite capacity of God includes intelligence as applied to the design and sustenance of an equally infinite creation. Therefore, we can say that science, as a human endeavor to discover principles that offer total and certain statements that explain reality, is always subject to development and change. This leads ultimately to a realization that every theory throughout history and including the current period is insufficient and even immature from the broader perspective. This makes the attempts of modern theology to legitimate itself in relation to these insufficient models a continually dangerous process. Particularly when theology will always provide insufficient models for the very same reasons. Dialogue between science and theology, in humility before God's infinite intelligence, requires us to glory in discovery of God's intelligibility, but to be constantly aware that it is an infinite process that implies our constant insufficiency.

The tension between the inadequacy of the descriptive capacity of finite models of an infinite reality is related to Thomas Kuhn's exploration of the process of paradigm shifts within the scientific community. Kuhn is primarily concerned with the development of science in its epistemic sense[343] or the theoretical and cognitive patterns as seen, for example, in the contents of scientific journals. For Kuhn, the constant investigation of physical reality by the scientific community produces anomolies which do not fit accepted theories. Eventually the burden of these anomolies requires a significant shift in the basic paradigm in order to logically explain them. These ongoing "scientific revolutions" are more common on small scale revisions of sub-theories rather than an entire world-view such as the copernican revolution, however it does still occur on the level of large scale reconstructions of scientific world-views. Some have criticized Kuhn's assumptions of incommensurability between newer and older paradigms[344], yet Kuhn's model represents a valuable contribution towards understanding the contextual process of scientific discovery. It represents a form of critical realism that has applications to both scientific and theological enquiry.

For this thesis, authentic scientific enterprise is best characterized by "critical realism." That is combining the assumption that entities exist in the world independently of human cognition or perception with an affirmation that the knowledge of such entities is a relational activity on the part of the scientist. This is in contrast to naïve realism that asserts reality can be perceived directly with no moderating considerations of mediation.

With
critical realism, truthful observations can be made about reality, however these observations are never total and do not represent absolute correlations between perception and reality. With critical realism, neither the absolute certainty of objective certainty between perception and reality, nor the complete relativazation of the relationship between perception and reality is proposed. Truth is known in particular contexts and specific relationships. It is a mediatory process in which perception is real, but indirect. Analogies and metaphorical models are thus a valuable and necessary endeavor which acknowledge the partiality of their correlation, yet can be seen as necessary in alluding to descriptions of relationships within reality[345].

Methodological
Parallels and Differences Between Theology and Science

We have
already discussed a number of methodological issues related to the scientific enterprise and the determination of value. These same methodological principles apply, in varying degrees, to the religious community responsible for facilitating theological metaphysics.

1) Value is facilitated
by a community experience.

2) Value is facilitated
by the personal faith of the scientist.

3) Value is facilitated
by the apriori acceptance of a largely unspoken set of metaphysical principles that form the framework for investigation.

A)
The
overall metaphysical vision is organic and changes and develops in response to a number of conscious and unconscious realizations about the tensions within finite models attempting to describe an infinite reality.

B)
These
models do not definitively describe reality with certainty, but can only infer correlations within particular and limited relational contexts.

4) Value is facilitated
by a highly relational condition, characterized by elements of "love" between participants[346].

It has
been shown how theological and scientific paradigms, rather than being

antithetical, appear to possess similar functions in the construction of value. It has been seen that rather than being value free, the "foundational structures" or underlying metaphsycial assumptions governing scientific methodology are actually value laden. Equally, the epistemic processes of both theology and science involve commitments of faith and conscious or unconscious participation in relationships. Ultimately "discovery" rather than being the result of following mathematically precise procedures, often involves degrees of affinity or a type of "love" between the knower and the known. In this context, reason and faith, logic and love, subjective and objective truth, intertwine in a relationship of knowing.

Chapter 4
illustrated a number of historical roots for the non-essential causes of the tensions in modern ecological philosophy. This chapter has suggested a unity of epistemology and metaphysical model building which introduce more harmonious relations between the elements of tension discussed in Chapter 3. It is also hoped that this chapter has served to demonstrate a number of similarities, particularly in methodology, but also in the focus of examination, between scientific and religious communities; so that both spiritual and material considerations
can be equally considered with integrity in any philosophy of ecology.

[+CHAPTER6]

Chapter 6: An
Examination of Selected Elements of a Bahá'í Model of Metaphysics (With a Particular Focus on the Balance Between
Instrumental and Intrinsic Value)

As
was seen in chapter one, the overall tendency of the community, particularly the scientific and political community, is to view the causes of the global environmental crisis as external to humanity rather than found within internal metaphysics. There is common acceptance that many of the problems of our global crisis find their roots in such negative human qualities expressed in greed, corruption, and selfish clinging to national interests. Yet the corresponding and logical deduction that the positive spiritual counterparts of these negative qualities, such as selflessness, trustworthiness and service to others represent what is lacking in education, social relationships and economic policies, is less commonly accepted[347]. Even those analytical attempts at engaging a fractured metaphysics can be superficial in that they attempt to restructure the human vision in relatively shallow ways. The dysfunctional fracturing of metaphysics is more than a breach between perception of subjective and objective, or a pattern of dualistic objectification within social relationships. These are manifestations of a deeper spiritual illness.

The current remedies being applied to the global crisis are predominantly technological. The problems are seen to be external variables that can be manipulated by technical solutions which allow for greater productivity, cleaner processes, balance of economic markets by a variety of moderating tools such as varying interest rates, or the creation of new legislative bodies, etc. In response to the symptoms plaguing the planet politicians, leaders, and most of humanity, seem to try changing everything but themselves. While in fact those external variables of hunger, poverty, disease, ocean pollution, global warming etc., are not the disease itself, but rather symptoms and represent a 'third stage' of complications of the true 'virus'. As discussed in chapter four, the fracturing of our metaphysics, which finds its historical expression primarily since the enlightenment, is the secondary stage of the disease. These secondary complications, characterized by dualistic forms of domination and objectification expressed in a variety of relationships, may appear to represent the primary source of the earth's woes. And while if we directly engage those problems, we apparently cut straight to the heart of the illness, a proper restoration of health requires an essential acknowledgement. At its core, this disease is ultimately a loss of the capacity to love. It is an internal fragmentation of our own spirits and their vision in response to a self-imposed alienation from loving relationships. Primarily this alienation and hyper-isolation of individuals from each other and nature is a result of our human capacity for universal fellowship having atrophied. What is it that is most conducive to universal fellowship and a restoration of such loving relationships? Bahá'u'lláh's revelation suggests a civilization that is infused with the love of God.

> The vitality of men's belief in God is dying out in every land; nothing short of His wholesome medicine can ever restore it. The corrosion of ungodliness is eating into the vitals of human society; what else but the Elixir of His potent Revelation can cleanse and revive it?[348]

These words are not some shallow attempt at justifying religious dogma. For this 'love of God' facilitates filial affection for all expressions of life, ourselves, our family, the diverse range of cultures in our global community, and more importantly in the context of this thesis, the earth and its diverse inhabitants within our ecosystem. The love of God evokes creative responses and infinitely diverse manifestations of capacity throughout reality, from the smallest of particles that have yet to be discovered[349], to the human spirit, to the civilization in which we dwell, to the macrocosm itself. The conscious response to our relationship with God represents the panacea whose efficacy alone can heal the neurosis of human spirit afflicting current civilization and subsequently the degradation of the natural environment.

As was seen in chapter two, there

are a variety of modern philosophical responses to the environmental crisis that attempt to offer metaphysical critiques of its causes and propose solutions. Chapter three has shown that there are a number of tensions in such efforts, particularly when the issue of the value of nature, from categories of moral considerability, to theories of intrinsic value are discussed. As has been seen in chapter two, many consider it the most important issue in resolving the environmental crisis as an act of reconciling our internal metaphysics with our ecosystems. As important as determining the possibility of intrinsic value is, it is also perhaps the most problematic of all philosophical considerations in eco-philosophy.

It seems impossible to provide reasons for valuing natural kinds. It seems to me that the world would be a worse place if we were to lose the tiger, bald eagle, or the various species of whale, but I do not know how to justify this view to someone who disagrees.[350]

Of the tensions discussed in chapter three, those tensions arising in postulating intrinsic value theories are most evident. It has been proposed that the primary reasons the postmodern philosophers find difficulty in attributing value to nature is this fracturing of western internal metaphysics.

As was seen in Chapter four, the reasons for this tension in these post-modern attempts are complex, yet are all representative of a type of complicated spiritual neurosis in which holistic relationships are compromised by the exclusion of the spiritual aspects of reality, ultimately represented by the rejection of the plausibility of models that incorporate God as a necessary 'principle'. Together, chapters four and five suggest that modern science has developed levels of sophistication in which it is becomes possible to move beyond these earlier prejudices against God's necessary existence and to allow for a more relational models of reality, one in which the fracturing of metaphysics can move towards restoration.

However, this potential for a restoration of the variety of metaphysical relationships has not fully been absorbed by the eco-philosophical community and there is often still a strong distrust of the possibility of universal spiritual principles or of a God that may have authored them. In attempting to propose philosophical solutions to this hyperseperation of relationships, most post modern eco-philosophers[351] have thrown the baby out with the bath-water. This has occurred for numerous reasons. Primarily, the God that has been rejected has been a God created in the image of the enlightenment philosophers themselves, generally an overly masculine God who is Himself detached from nature, and Whose capacity for love is diminished by either being posited in the Deist sense as removed and external, or in the other extreme as controlling and deterministic. Combining

these conceptions of a God who expresses dysfunctional forms of love, with historical religious patterns of human imposed epistemic tyranny and severe social injustice, has lead many to reject the most necessary philosophical premise of all. The inclusion of an All-Loving God as the Ultimate Empowering Force of freedom and agency in creation provides a grounding in which the necessary philosophical principles related to postulating an intrinsic value of nature can be logically proposed with integrity. What are these necessary elements that are dysfunctionally related if not impossible without the premise of God? A roundtable discussion of many of the post-modern eco-philosophers as suggested in chapter two would possibly suggest the following principles:

A conception of nature in which
it possesses

1)
Both anthropogenic instrumental value and non-anthropogenic intrinsic value.

2)
Agency and intentionality.

3)
Uniqueness in value, function and purpose

4)
Authentic interdependence (authentic relational ontology)

5)
Provision of a non-anthropocentric basis of ethics

In addition to these principles
the following discussion of a suggested Bahá'í model is productive in that it facilitates a vision of nature in which each individual being, from the level of sub-atomic particles to the greatest of objects,

6)
Possesses the capacity for infinite emergent intrinsic spiritual value[352].

This final chapter will focus on these selected
elements of a proposed Bahá'í model of metaphysics that are conducive to the above mentioned elements which are ultimately necessary for the restoration of the balance between instrumental and intrinsic value.

As a
preliminary to the investigation of selected elements of a Bahá'í metaphysics appropriate to the discussion in hand it important to make a few acknowledgements.

Most discussions of Bahá'í metaphysics use comparative studies of Judeo-Christian, Islamic, Babi and Bahá'í literary, and philosophical motifs as well as historical criticism. As well, there has been a strong emphasis on the neoplatonic language and forms, as used by Bahá'u'lláh, responding to the contexts of His historical audience who had been influenced by a variety of neoplatonic interpreters such as Plotinus, Avicenna and Shaykh Ahmad. Such investigations are essential to understand the hermeneutical context of scripture; as well it is clear that form and content are highly interdependent. It has been said 'the medium is the message'. However, as the Bahá'í revelation purports to be universal in scope and its principles are meant to embrace the full variety of human cultural contexts, I believe such Islamic and Neoplatonic motifs are non-essential elements of the cultural revelatory medium. As such, these apparent philosophical influences are a historical coincidence related to qualities of expression, rather than imposing necessary philosophical requirements on all authentic models of Bahá'í metaphysics. This goes towards the important acknowledgement of the potential diversity of authentic Bahá'í propositions of a model of ecology, from practical applications to suggested metaphysical paradigms. A Bahá'í of Hindu background may more creatively use her intuition of cyclic temporal aspects of reality in her engagement, while an indigenous African may more creatively use his intuition of the spiritual principles that relate this world and the next to equally foster a unique and valuable perspective. Each of the 2100 tribal and ethnic groups represented in the Bahá'í Faith bring different gifts to the table, and many of them are neither Islamic nor Neoplatonic in character.

Of the current works on metaphysics in the Bahá'í community, topics of discussion have included manifestation theology[353], to introductory explorations of the principles involved in the harmony of science and religion[354], to the relation of dualism and monism in Bahá'í texts[355], to the tension between the relative and the absolute,[356] to principles of epistemology related to mature forms of inter-religious dialogue[357] among a range of other metaphysical subjects[358]. And while there have been introductory discussions of how general Bahá'í principles relate to ecology, there has been no direct engagement of the postmodern radical ecological movements attempts to develop metaphysical responses to the environmental crisis[359], and certainly no attention given to the balance between instrumental and intrinsic value in nature[360].

'Abdu'l-Bahá,
Evolution and the Relationship Between Humanity and Nature

What is needed is a consistent and coherent world view, and at least for some of us, the universe is easier to comprehend if we assume that it has both purpose and design.[361]

Purpose and design are deeply integral to intrinsic value as they are directly related to issues of agency, intentionality, and uniqueness. The potential telos or purpose of nature emerges most essentially in discussions of evolution. The principles of evolutionary theory are also deeply related to qualities of interdependence that can affect models of ontology.

The specific manner in which the ultimate telos of nature will unfold is of course a mystery. However, from a Bahá'í perspective, it is proposed that nature finds its grounding and source in the Love of God, and is an active and relational expression of God's Will, and that nature manifests by its physical diversity the names and attributes of God's Being.

...the object of existence is the appearance of the perfections of God[362].

Evolutionary processes are conducive to the ongoing increase in both the development of a range of physical attributes possessed by its individual creatures as well as the complexity and sophistication of the relationships between such creatures. As these physical attributes and relationships are the manifestations of spiritual attributes in the contingent world, it appears that the purpose of nature is the gradual unfoldment of the infinite Being of God in the contingent order[363]. With this purpose appears to be a parallel movement of the universe to develop the capacity for sentience in order to become self-aware of its reflective capacity.

More specific reference needs to be made to evolution of humanity in general and its implications for our relationship with nature. It is not possible, within the confines of this thesis, to discuss comprehensively the Bahá'í understanding of evolution. Yet a basic examination of `Abdu'l-Bahá's concepts related to evolution provide a sufficient hermeneutical circle of meaning.

The majority of texts dealing directly with evolution are written by Abdu'l-Bahá from the first decade of the 20th century. Competent and comprehensive examinations of the historical and philosophical context of Abdu'l-Bahá's discussions on evolution

have recently been done by Eberhard von Kitzing and Keven Brown.

It would be inappropriate to examine Abdu'l-Bahá's writings on evolution from a modern Neo-Darwinist concept of the evolution of species; that is the random variations of the genotypes combined with the natural selection of newly emergent phenotypes based on their ability to adapt to new environmental conditions[364].
Abdu'l-Bahá wrote much of his discussions of evolution between 1904-1906.[365] It is to a number of philosophical assumptions about evolution, held in the late 19th century through the turn of the century, both in the Middle East and in Europe, that Abdu'l-Bahá addressed his discussions. Keven Brown illustrates that Abdu'l-Bahá would have been well aware of the central concepts of Darwinism, the arguments of Darwin's supporters and detractors, as well as the Muslim debates regarding it in the Middle East.

...Muslim thinkers, in general, rejected Darwin's theory insofar as it called for speciation by random variation and natural selection alone and failed to allow for the role of God's Wisdom in the creation of species.[366]

To summarize the context, Abdu'l-Bahá was concerned to offer the Bahá'í understanding of evolution adjusted to the context of balancing a number of disparate philosophical assumptions, particularly between two extremes. Between that of the materialistic non-purposive Darwinian understanding as proposed by a number of advocates, and the classical Platonic ideas of species essentialism combined with creationism as transmitted in both in Muslim and Christian philosophy, Abdu'l-Bahá's concern was not to argue for or against the biological mechanisms of evolution; and most definitely not from a modern definition of such mechanisms. Examinations of Abdu'l-Bahá's writings on the subject which erroneously apply the modern understanding of biology, tend to result in proposals of parallel evolution[367] in order to justify the apparent logic of his arguments. Or at the very least such applications[368] indicate a confusion between the modern concept of species and the more general archetypal platonic essentialist category which Abdu'l-Bahá's usage more closely resembled.

Keven Brown presents a useful summary of some of the elements of `Abdu'l-Bahá's paradigm of evolution:

'Abdu'l-Bahá held that religion and science must ultimately agree, and in his theory of creation by formation and evolution, he has retained essential components from each. From the Holy scriptures he has retained the concept of God as the creator of species by his voluntary will; from science he has accepted what had been categorically established, such as the great age of the earth and the fact that numerous species have appeared and disappeared during the vast expanse of geologic time. He also supported the idea of the gradual development of beings, but only within independent species and without giving up the key role of divine providence.

`Abdu'l-Bahá, like most of his Muslim and Christian contemporaries and his predecessors in medieval Islamic philosophy, viewed the universe and its species as preexisting, in plan, in the mind of the Creator. This understanding of the universe intends to preserve for it a predetermined, non-arbitrary meaning and purpose. From this perspective, biological species and the relationships between them are the unfolding of preexisting potentials inherent by design in the universe. When and where these potentials become manifested varies by

the needs

and preparedness of the environments in which they
appear.[369]

One of the
important keys to understanding `Abdu'l-Bahá's model is what Kitzing calls a 'meta-biological concept' the 'originality of species'.

The existence of humanity is proposed to ground in non-trivial,

time invariant laws of nature, in timeless species essences, in the

reflection of the eternal names and attributes of God.

Consequently, the potential to form human beings exists from the

very beginning of our universe and is not created at some time

point as suggested by literal interpretations of the Old Testament,

nor were the human characteristics ad hoc self-created as for

instance proposed by Monod. `Abdu'l-Bahá combines two

arguments supporting the existence of a human species essence:

the classical Platonic idea of a harmonious and perfect universe

and the modern concept of the time invariance of the fundamental

laws of nature. Thus, `Abdu'l-Bahá assumes the principle

reproducibility of the results of nature. By means of these

arguments `Abdu'l-Bahá rebuts the self-creational concepts of

evolution held by "some European philosophers"."[370]

Organic life
is drawn to reflec the names and attributes of God. The spiritual agency of these names and attributes of God are an active force, the Will of God emanating from the Mind of God. `Abdu'l-Bahá offers this as the viable alternative to creation by accidental causes or by necessary causes.

Now, formation is of three kinds and of three kinds
only:

accidental, necessary and voluntary. The coming
together of the

various constituent elements of beings cannot be

accidental, for

unto
every effect there must be a cause. It cannot be necessary, for then the formation must be an inherent property of the constituent parts and the inherent property of a thing can in no wise be dissociated from it....the third formation remaineth and that is the voluntary one, that is, an unseen force described as the Ancient Power, causeth these elements to come together, every formation giving rise to a distinct being.[371]

All matter is
acknowledged to come from the one and diversify into the many, drawn upwards through the various stages of kingdoms.

Therefore, it is
evident that in the beginning there was a single matter, and that one matter appeared in a particular form in each element. Thus various forms were produced, and these various forms as they were produced became independent, and each element was specialized. But this independence was not definite, and did not attain realization and perfect existence until after a very long time. Then these elements became composed, organized,

and
combined in infinite forms; in other words, from the

composition
and combination of these elements a limitless number of beings appeared.[372]

This spiritual
agency is sometimes alluded to as a series of spirit subsets such as the spirit of the mineral kingdom, vegetable, animal and humanity. The active force of its spirit influences each kingdom, until groups of its constituent elements are developed sufficiently to emerge into the next kingdom. When `Abdu'l-Bahá claims that man has always perfectly existed, he is referring to the human spirit, or potential and latent essence.

In the world of existence man has passed through various stages

until he has attained the human kingdom. In each stage the

capacity for ascent to the next stage has appeared. While in the

kingdom of the mineral the capacity to progress to the stage of the

plant appeared, and, therefore, he came into the vegetable

kingdom. In the vegetable kingdom, the capacity to progress into

the world of the animal was obtained, and thus he came into the animal kingdom. Similarly, from the world of the animal he came into the world of man....In this world, also, it is necessary to prepare and make ready for the world to come. Whatever is needed in the world of the Kingdom of God, man must prepare and make ready for it here.[373]

The human spirit acts as an agent empowering the physical form of the human, Homo sapiens, towards a set of potentials which eventually reach a minimal condition of expressive capacity that enables the human soul to be 'attracted' to its form.

Moreover, these members, these elements, this composition, which are found in the organism of man, are an attraction and magnet for the spirit[374]; it is certain that the spirit will appear in it... when these existing elements are gathered together according to the natural order, and with perfect strength, they become a magnet for the spirit, and the spirit will become manifest in them with all its perfections.[375]

In other words, the physical form evolves until it attains a sufficient level of complexity allowing for a particular level of spiritual expression to attract the soul to it as a modus operendi in the contingent order. This minimal attribute is that of consciousness, or as `Abdu'l-Bahá calls it, the capacity for 'meditation'.

You cannot apply the name `man' to any being void of this faculty of meditation; without it he would be a mere animal, lower than the beasts. Through the faculty of meditation man attains to eternal life; through it he receives the breath of the Holy Spirit – the bestowal of the Spirit is given in reflection and meditation.[376]

It is clear then that the physical form is not what defines being 'human', but rather the capacity for consciousness. This means that other ecosystems on other planets which also generate environmental contexts eventually resulting in physical forms capable of consciousness, are not generating alien lifeforms, but other

human beings whose soul merely has a different 'cultural context'.

Abdu'l-Bahá stated
there are other worlds than ours which are inhabited by beings capable of knowing God.[377]

Their souls
express themselves through forms that look different, however the soul-body relationship exists entirely because the same basic spiritual requirements were met as exist in us. Therefore we may call them fellow humans. As Kitzing tells us:

The lack of
reference to the biological characteristics of the

members of homo
sapiens supports the idea that the human

species essence is
to a lesser degree defined by biological

characteristics
but mainly by spiritual virtues. This idea would allow for the existence of "human beings" in this universe with an organism differing from that of homo sapiens, i.e, with a different metabolism and morphology.[378]

According to
`Abdu'l-Bahá we already have an active relationship with such human beings, even if they are on the furthest end of the known Universe.

How much the organs, the members
and the parts of the body of man are intermingled and connected for mutual aid and help, and how much they influence one another! In the same way, the parts of this infinite universe have their members and elements connected with one another, and influence one another spiritually and materially.

What a connection and what an agreement is this!

Since this connection, this spiritual effect and
this influence, exists between the members of the body of man, who is only one of many finite beings, certainly between these universal and infinite beings there will also be a spiritual and material connection. Although by existing rules and actual science these connections cannot be discovered, nevertheless, their existence between all beings is certain and absolute.

To conclude: the beings, whether great or small, are connected

with one another by the perfect wisdom of God, and affect and influence one another. If it were not so, in the universal system and the general arrangement of existence, there would be disorder and imperfection. But as beings are connected one with another with the greatest strength, they are in order in their places and perfect.

This subject is worthy of examination. [379]

Mention needs to be made of an apparent inconsistency in the writings of Abdu'l-Bahá in relation to how it compares with what we currently assume in modern biology. Consider the following Bahá'í text.

It is evident and confirmed that the development and growth of man on this planet, until he reached his present perfection, resembles the growth and development of the embryo in the womb of the mother: by degrees it passed from condition to condition, from form to form, from one shape to another, for this is according to the requirement of the universal system and divine law....Man's existence on this earth, from the beginning until it reaches this state, form, and condition, necessarily lasts a long time, and goes through many stages until it reaches this condition. But from the beginning of man's existence he has been a distinct species....Now assuming that the traces of organs which have disappeared actually existed, this is not a proof of the lack of independence and nonoriginality of the species. At most it proves that the form, appearance, and organs of man have evolved. But man has always been a distinct species, man, not animal.[380]

It is submitted that `Abdu'l-Bahá was not proposing parallel evolution[381], nor was he advocating a particular physical mechanism of biology in the process of evolution. He was responding to the spiritual needs warranted by his historical context. This context required a reaffirmation of the uniqueness of the human spirit, rather than its form, as being ontologically different to the animal. It also required an affirmation of the physical mechanisms of biology be seen as a manifestation of spiritual relationships and not random chance so that the noble purpose of the human being would not be lost. Perhaps in his denial of the transmutation of species, Abdu'l-Bahá is aware of the materialist pre-occupation of indicating that man descended from the ape as a philosophical argument that denies the existence of man as an eternal archetype in the Mind of God as well as having a spiritual nature in general. Perhaps if the materialists had not placed such weight on this biological mechanism of transmutation as a proof of the denial of a spiritual human reality, Abdu'l-Bahá may have written with a different focus. Regarding interpreting

`Abdul-Baha's texts as potentially advocating a theory of parallel evolution, Kitzing writes:

The answer to the question, how to understand the analogy between phylogeny and ontology, depends critically on assumptions about the general purpose of these talks. If, on the one hand, they are understood to give an outline of the fundamental reality of the universe in general and the reality of humanity in particular, about the philosophical concept of the origin of complex order in our world and the purposefulness of our cosmos based on God's plan, than this analogy should be understood as a convincing argument that essentialism and evolution are not mutually exclusive. If biological evolution is based on laws inherent in nature, it is not unlikely that also social laws, are God given, ruling the interactions among human beings, their moral behavior. Because the ``European philosophers", representing an important philosophical school of modern evolution, reject the possibility of essentialistic evolution, such argument becomes rather important in the discussion of the general fundaments and driving forces of evolution. If the evolution of life is arbitrary, if order appears ad hoc without a cause, the same arbitrariness applies to social laws. They would be ad hoc, accidental. There would be no preference for a certain frame of laws. Any frame would apply as well. It is very likely that `Abdu'l-Bahá is much more concerned about the spiritual consequences of the theories of ``some European philosophers" than about the details of biological development.

If, on the other hand, these passages are thought to be not so much concerned with fundamental verities of the origin of life and human spiritual reality, but with particular concepts of how biological life evolved on earth, than this analogy could be understood to indicate parallel evolution.[382]

`Abdu'l-Bahá's differs from most Muslim presentations of essentialism in that it is not entirely deterministic. There is an openness to the development of species depending on environmental conditions and the manner in which the variety of species interact.

...the perfection of man is entirely due to the composition

of the atoms of the elements, to their measure, to the

method of their combination, and to the mutual influence

and action of the different beings.[383] (emphasis added)

Earlier in the passage, Abdu'l-Bahá makes it clear that those beings include

all these endless beings which inhabit the world, whether

man, animal, vegetable, mineral whatever they may be...

`Abdu'l-Bahá's presentation of essentialism also differs from the classic Aristotelian model of the species essence being present from the beginning as an immutable archetype manifest in the contingent order in that he acknowledges the process of organic development towards the eternal immutable archetype held in the Mind of God.

One might say that the time invariant essence of species located in the Mind of God represents a range of potentials. The evolutionary process of beings towards their potential is not pre-determined, but is a response to numerous active relationships and environmental conditions. Depending on what context is realized will determine what range of the essence is manifested at a particular time.

This model has significant implications for human custodianship of nature. If evolution is filtered through the metaphysical lens of a neo-Darwinism of radical reductionist materialism, then random chance is the sole determination guiding environmental relationships. This leaves little role for humanity other than to accept principles of individualism, competition and exploitation of resources as a means for ensuring their own genetic reproduction in an otherwise apparently meaningless and often-cruel world. If evolution is filtered through the metaphysical lens of either creationism or an Aristotelian type of static essentialism, then the essential determinism of forms as enforced by the Mind of God results in the creative capacity of environmental relationships being bound by the narrow constraints of pre-determined archetypal forms. This leaves little role for humanity other than to recognize this pre-existent pattern, and freedom means the capacity to rebel or conform. At best, custodianship maintains the status-quo of the static balance of environmental relationships; at its worst it is the subjection of the environment for the use of humanity as the sole possessor of free will.

The metaphysical lens Abdu'l-Bahá gives us, allows for a third response. `Abdu'l-Bahá offered a logical application of the principle of the harmony of science and religion as applied to the theory of evolution and facilitated a moderate presentation that incorporates in a harmonious fashion apparently disparate elements from two extremes. `Abdu'l-Bahá found a way to express the active involvement of God in the evolutionary process entirely consistent with scientific principle, offering an alternative to the standard minimalist alternative of Deism, where God sets up the laws, winds the clock, stands back, and lets it go. In `Abdu'l-Bahá's model, both freedom and determinism coexist in a dynamic relationship. Freedom in the diverse capacity of environmental relationships to uniquely enable latent essence into active potential, and Divine Will, as both an empowering spiritual agent and as a range of boundary conditions of potential within which the free will of beings move towards, became possible.

Applied to custodianship, it implies that consciousness has a role in the recognition and respect for the creative capacity of interdependent relationships in our ecosystems.

We cannot segregate the human heart from the environment outside us and say that once one of these reformed everything will be improved. Man [sic] is organic with the world. His inner life moulds the environment and is itself also deeply affected by it. The one acts upon the other and every abiding change in the life of man is the result of these mutual reactions.[384]

Such recognition of interdependence also implies the importance of humility as a central principle in the application of custodianship. This is due to the acknowledgement of human dependence upon the natural world as seen in the following quote of Bahá'u'lláh:

Every man of discernment, while walking upon the earth, feeleth indeed abashed, inasmuch as he is fully aware that the thing which is the source of his prosperity, his wealth, his might, his exaltation, his advancement and power is, as ordained by God, the very earth which is trodden beneath the feet of all men.[385]

Extinction of Species Represents the Extinction of God's Attributes

From a Bahá'í perspective, as each species, and indeed each individual creature, bears a unique attribute, or set of attributes of God, their extinction implies the loss of a unique expression of God's Being in the contingent order. Thus extinction takes on tragic depth in the loss of

creatures who manifest both intrinsic value inscrutable to all except the mind of God, as well on an instrumental level of value as examples of unique spiritual attributes for humanity to learn from and emulate.

I anticipate that there may be possible objections to this idea from particular popular elements of Bahá'í understandings of theology, as there are passages that appear to say that humans possess all the attributes of God and therefore there could never be a loss. This is assumed because as long as the human species exists, all attributes of God are actively manifested in the contingent order.

Upon the inmost reality of each and every created thing He hath

shed the light of one of His names, and made it a recipient of the

glory of one of His attributes. Upon the reality of man, however,

He hath focused the radiance of all of His names and attributes,

and made it a mirror of His own Self. Alone of all created things

man hath been singled out for so great a favor, so enduring a

bounty.[386]

One might conclude from this passage that humanity possesses all the names and attributes of God and therefore the extinction of a species does not imply the loss of the unique expression of an attribute of God in the contingent order. However, it is clear from a deeper reading of this text and others that this would be incorrect.

Firstly in the very same passage, Bahá'u'lláh goes on to say that this reflective capacity is a form of latent potential, and is only manifested in relative degrees.

These energies with which the Day Star of Divine bounty and Source of heavenly guidance hath endowed the reality of man lie, however, latent within him, even as the flame is hidden within the candle and the rays of light are potentially present in the lamp.

(Bahá'u'lláh: Gleanings, pages 65-66)

The
unfolding of this latent capacity is conditional upon a number of relative qualifications. First is a task that is possible only in degree, as the 'true seeker'

must, before
all else, cleanse his heart, which is the seat of the

revelation
of the inner mysteries of God, from the obscuring dust

of all
acquired knowledge, and the allusions of the embodiments of

satanic
fancy. He must purge his breast, which is the sanctuary of

the abiding
love of the Beloved, of every defilement, and sanctify

his soul
from all that pertaineth to water and clay, from all

shadowy and
ephemeral attachments. He must so cleanse his heart

that no
remnant of either love or hate may linger therein, lest that

love blindly
incline him to error, or that hate repel him away from

the truth.[387]

The means by which this cleansing is done is
primarily by the recognition of and obedience to the Manifestations of God, in this period represented by Bahá'u'lláh.

They are
commissioned to use the inspiration of Their words, the

effusions of
Their infallible grace and the sanctifying breeze of

Their
Revelation for the cleansing of every longing heart and

receptive
spirit from the dross and dust of earthly cares and

limitations.
Then, and only then, will the Trust of God, latent in

the reality
of man, emerge, as resplendent as the rising Orb of

Divine
Revelation, from behind the veil of concealment, and

implant the
ensign of its revealed glory upon the summits of

men's
hearts.[388]

So apparently the cleansing of our reflective
potential is dependent on the use of faith, volition and action to scour the mirror of our hearts, but is also dependent on the grace of God as mediated by Manifestations of God. From this it is clear that human's reflective capacity is not only latent but is only relatively manifested according to the degree of these other variables.

Additionally, the infinite potential for
reflective capacity is a characteristic of the human soul. For the reflective capacity to be manifest in the contingent world it must first be expressed via the physical component of the human: the body. As such it should be recognized that by a number of logical principles the human form is far from perfect in its ability to express an infinite range of spiritual attributes. The evolution of our planet has only recently created creatures capable of consciousness, a basic level of capacity necessary for a soul/body relationship that defines the human. Such evolution is continuing, and the human form will continue to become a more suitable tool for the expression of the human soul. But its imperfect capacity for expression is indisputable.

Thus, once all these are considered it is clear
that while the human indeed possess infinite latent capacity for the reflection of God's infinite Being; the development of this reflective capacity is relative. As well, the vehicle whereby it is expressed, the human form, also constrains this infinite capacity to further conditions of relative expression.

Lastly the uniqueness of
each creature cannot be underestimated. Each being has an internal intrinsic value inscrutable to all save the Mind of God. As Adib Taherzadeh illustrates, every creature manifests the name of God, the 'Incomparable'

.
...the attribute of God the Incomparable appears in every created

thing
and therefore everything is unique.[389]

He quotes the following from Bahá'u'lláh to illustrate:

> Consider, in like manner, the revelation of the light of the Name of God, the Incomparable. Behold, how this light hath enveloped the entire creation, how each and every thing manifesteth the sign of His Unity, testifieth to the reality of Him Who is the Eternal Truth, proclaimeth His sovereignty, His oneness, and His power. This revelation is a token of His mercy that hath encompassed all created things.[390]

A proposal in this thesis is that true freedom is the capacity to actively facilitate the emergence of this unique latent potential into manifest forms. Humanity possessing free will and the potential for positive spiritual development of themselves and their environment can make a major contribution towards the positive and diverse expressions of spiritual qualities unfolding in the contingent order, including their own. This radically affects traditional understandings of custodianship. It becomes not merely a process of maintaining ecological balance, or of subjugation as a resource to be plundered for human comfort. Custodianship entails participating in a Divine creative act of cultivating the relationships between our selves and nature and thereby increasing the spiritual richness of our own and all other species evolutionary processes. Under these assumptions, we are not mere passive observers of an evolution unfolding spiritual essences in the mind of God, but beings called into relationship to participate as responsible custodians of this glorious process. Most importantly for this discussion, it entails that we have a responsibility to develop consciously our capacity for the discernment of intrinsic spiritual value to assist in the creative act of the unfoldment of such potential. How is this done? More discussion will follow, but in its most simple essence, it entails responding to the love of God.

The universal infusion of Divine light: A model of authentic relational ontology

It should be reiterated that any proposed model does not definitively describe reality with certainty, but can only infer correlations within particular and limited relational contexts. When considering the range of potential models within Bahá'í texts, the self-diffusive (or 'emanation' as most Bahá'í scholars currently term) love of God as a Divine Light that infuses all of creation provide a relational scheme in which the necessary principles mentioned in the introduction of this chapter find relationships of integrity.

This model has a similar precedent with the classical Christian theologian Bonaventure who was mentioned in Chapter two of this thesis. To quote him again:

As a ray of light entering through a window is colored in different ways according to the different colors of the various parts, so the divine ray shines forth in each and every creature in different ways and in different properties.[391]

The idea of the universe immersed in "oceans of eternal light"[392] (Bahá'u'lláh's phrase) has many references in the Bahá'í writings. An aspect of the proposed model is that light is analogous to the love of God.

illumine your hearts with the light of His love[393].

It is the warmth that these Luminaries of God generate, and the undying fires they kindle, which cause the light of the love of God to burn fiercely in the heart of humanity[394].

Love is heaven's kindly light, the Holy Spirit's eternal breath that vivifieth the human soul[395].

The sources of this Divine light (which is also love) are the Manifestations of God,

Whatever is in the heavens and whatever is on the earth is a direct evidence of the revelation within it of the attributes and names of God, inasmuch as within every atom are

enshrined the signs that bear eloquent testimony to the revelation of that Most Great Light.[396]

And when it shineth forth from the Horizon of the universe with infinite Divine Names and Attributes upon the contingent and placeless worlds, this constituteth the emergence of a new and wondrous creation which correspondeth to the stage of 'Thus I called creation into being'[397].

What is being mentioned in these passages is the function of the Manifestation of God in acting as a source of spiritual illumination (the 'Most Great Light) which progressively recreates creation, or to put it another way, empowers creation with new capacities that are unfolded in the evolutionary process. It is no coincidence 'Bahá'u'lláh', the title of the Bahá'í Manifestation of God, means 'Light of God'[398].

This universal emanation of Divine Light first bursts forth on the invisible spiritual level of reality,

It hath, therefore, become manifest and evident that within the tabernacles of these Prophets and chosen Ones of God the light of His infinite names and exalted attributes hath been reflected, even though the light of some of these attributes may or may not be outwardly revealed from these luminous Temples to the eyes of men.[399]

It is then reflected in creation according to each being's unique reflective properties.

the fingers of divine power have unlocked the portals of the knowledge of God, and the light of divine knowledge and heavenly grace hath illumined and inspired the essence of all created things, in such wise that in each and every thing a door of knowledge hath been opened, and within every atom traces of the sun hath been made manifest[400].

The Prophets, on the contrary, believe that there is the world of God, the world of the Kingdom, and the world of Creation: three things. The first emanation from God is the bounty of the Kingdom, which emanates and is reflected in the reality of the creatures, like the light which emanates from the sun and is resplendent in creatures; and this bounty, which is the light, is reflected in infinite forms in the reality of all things, and specifies and individualizes itself according to the capacity, the worthiness and the intrinsic value of things.[401]

Such reflection in the contingent order then influences material reality in stimulating the release of its emergent value in the physical realm:

It is the creative energies which His Revelation has released...and later reinforced by the successive effusions of celestial power vouchsafed...to all mankind, that have instilled into humanity the capacity to attain this final stage in its organic and collective evolution.[402]

This light, as the love of God, possesses an infinite range of qualities. Although to outward appearances light is often considered 'white', within it is contained a spectrum of colours that can be infinitely subdivided in differentiation. Each being will reflect a different range or quality of this infinite spectrum according to its individual 'capacity,' and 'intrinsic value'. This intrinsic value is not conferred by human beings but rather rather by God. In fact, not only is this intrinsic value not conferred by humanity, but humanity is not capable of even perceiving this essence of intrinsic value in even the most basic of beings.

...not a single atom in the entire universe can be found which doth not declare the evidences of His might, which doth not glorify His holy Name, or is not expressive of the effulgent light of His unity. So perfect and comprehensive is His creation that no mind nor heart, however keen or pure, can ever grasp the nature of the most insignificant of His creatures[403]

And again:

When we consider the world of existence, we find that the essential reality underlying any given phenomenon is unknown. Phenomenal, or created, things are known to us only by their attributes. Man discerns only manifestations, or attributes, of objects, while the identity, or reality, of them remains hidden. For example, we call this object a flower. What do we understand by this name and title? We understand that the qualities appertaining to this organism are perceptible to us, but the intrinsic elemental reality, or identity, of it remains unknown. Its external appearance and manifest attributes are knowable; but the inner being, the underlying reality or intrinsic identity, is still beyond the ken and perception of our human powers.[404]

So then, what is the point of an intrinsic value that we cannot see? What

potential exists to give a unique value to nature if it remains hidden in the Mind of God? The true benefit of such intrinsic value is indicated when we examine the reflective capacity of each being and the manner in which each of these beings relate interdependently. While the essential intrinsic value of each being cannot be known directly, it can be apprehended through the qualities by which we perceive it. It is helpful to imagine each being possessing a crystalline structure whose composition of facets determine it unique spectral reflective capacity. When two such beings come into relation, they each will reflect a unique set of spectral qualities which will then merge in-between them to form a completely new set of qualities. So it is neither the intrinsic value nor even its reflection that we perceive, but rather, it is this set of qualities formed in relationship that forms a unique value between us. The love of God for creation, equally seen as a reflection of the love of God for God's-Self, is not only the source of its generating impulse but is the means by which its latent capacity unfolds in acts of freedom, eventually manifested by conscious acts of response. Returning to the earlier discussed concept of 'intellectual love', such epistemology based on love represents a framework in which the divide between rationalism and empiricism, and object and subject are transcended in relationship. In this case 'rationalism' represents the belief in the independent ability of reason to construct reality based on the archetypal forms residing intrinsically in the mind. While 'empiricism' as the belief that the investigation of reality is dependent upon the accumulative experience of the perception of external forms.

Considering
the relational requirements of 'intellectual love', forms are not developed in the mind solely by the impression of the external world nor does the external world only become 'real' when our mind extends its categories upon it. There is a mutual relationship of the internal mind being attracted to the external Mind as found in nature. The principles of value are intrinsic to both our own minds and the intelligibility of nature, the 'external' Mind. The main point here is that there is intrinsic internal value (often called subjective) and external intrinsic value (often called objective) that find a participatory relationship through love. In a theocentric model in which intellectual love intuitively guides the person towards more authentic visions of reality, the love represents a meeting point of relationality which is neither an extension of self, or an impression by the other. Value finds a unique expression through the relationship between the two participants. This uniquely created value is neither the subjective externalization of internal value nor the internalization of objective external value, but is created somewhere in between.

As previously mentioned, each being is incomparably unique in its reflective capacity.

This
is more explicitly stated by Bahá'u'lláh,

It should be borne in mind, however, that when the
light of My Name, the All-Pervading, hath shed its radiance upon the universe,
each and every created thing hath, according to a fixed decree, been endowed
with the capacity to exercise a particular influence, and been made to possess
a distinct virtue. Consider the effect of poison. Deadly though it is, it
possesseth the power of exerting, under certain conditions, a beneficial
influence. The potency infused into all created things is the direct
consequence of the revelation of this most blessed Name.[405]

The
exciting implication of such a principle is that even the most basic forms of
beings then possess the creative capacity to create, through relationships, an
infinite form of emergent value. Say for instance a basic atom possesses the
intrinsic value of a form of unity in its reflective capacity, this most basic
of reflections will still form a unique emergent quality dependent on the
relationships surrounding it.

The
tension between the One and the many finds something of a resolution here as
such relationships are not essentially dependent upon physical proximity, the
simplest of beings expresses infinite emergent value in that it is presently
engaged simultaneously in interdependent relationship with every other being in
the entire cosmos.

Know thou that every created thing is a sign of the
revelation of God. Each, according to its capacity, is, and will ever remain,
a token of the Almighty. Inasmuch as He, the sovereign Lord of all, hath willed
to reveal His sovereignty in the kingdom of names and attributes, each and
every created thing hath, through the act of the Divine Will, been made a sign
of His glory. So pervasive and general is this revelation that nothing
whatsoever in the whole universe can be discovered that doth not reflect His
splendor. Under such conditions every consideration of proximity and
remoteness is obliterated....

...the things which have been created...and ordained to be
the manifestations of His names and attributes, stand, by virtue of the grace
with which they have been endowed, exalted beyond all proximity and
remoteness.[406]

It
is apparent that the nature of this exaltation beyond proximity and remoteness
is due to the capacity of the Divine light that is being reflected, rather than
in the beings themselves. The qualities of light that are reflected by each

being, universally include this quality of God as the 'All-Pervading' and mutually influence other beings across the farthest reaches of the universe.

To quote 'Abdu'l-Bahá again on this matter:

> How much the organs, the members and the parts of the body of man are intermingled and connected for mutual aid and help, and how much they influence one another! In the same way, the parts of this infinite universe have their members and elements connected with one another, and influence one another spiritually and materially. What a connection and what an agreement is this! Since this connection, this spiritual effect and this influence, exists between the members of the body of man, who is only one of many finite beings, certainly between these universal and infinite beings there will also be a spiritual and material connection. Although by existing rules and actual science these connections cannot be discovered, nevertheless, their existence between all beings is certain and absolute.
>
> To conclude: the beings, whether great or small, are connected with one another by the perfect wisdom of God, and affect and influence one another. If it were not so, in the universal system and the general arrangement of existence, there would be disorder and imperfection. But as beings are connected one with another with the greatest strength, they are in order in their places and perfect. This subject is worthy of examination.[407]

If we incorporate modern scientific knowledge about the nature of light, it becomes apparent that such influence is not only universal in range of influence, but is also immediate in effect. Physics provides us with an astounding example of this interchange of forces and mysterious unity. The Einstein-Poldoski-Rosin Paradox, an empirically tested theory[408], demonstrates that if two photons are emitted by the same source, they will simultaneously change their polarity if only one is changed. This is regardless of distance. So two photons separated by billions of light years both change their corresponding polarity instantaneously. This is in spite of the fact that there is no apparent signals passed, and that this signal would have to travel faster than the speed of light. This potentially implies an interdependence of relationships between particles, which transcends physical laws as we know them and leads to the conclusion that local actions may have immediate consequences on the farthest side of the universe.

In other words a basic ecological assumption is

that not only do our actions influence fellow beings in our local ecosystem, but instantly influence beings on the farthest side of the universe.

In this discussion, it has been illustrated that this model facilitates the integrity of non-anthropogenic intrinsic value, as it is located in the Mind of God. It facilitates a vision of all beings, even non-sentient beings, as possessing the qualities of agency, intentionality, uniqueness in value function and individual purpose. All beings are interdependent in a relational form of ontology and each possesses the creative capacity to facilitate forms of infinite emergent intrinsic spiritual value. This model also lends itself to the development of non-anthropocentric formulations of ethics, as the love of God inspires a sense of fellowship and love for all beings as each is a unique, valuable and mysterious expression of God's Own Being. Correspondingly this model also breaches a gap between ontology and ethics[409].

Returning to the previously mentioned responsibility to consciously develop our capacity for the discernment of intrinsic spiritual value so as to assist in the creative act of the unfoldment of such potential. The development of this capacity, in its most simple essence, entails responding to the love of God.

The universe begins in the free act of a loving God; [410]

I loved thy creation, hence I created thee.

creation has been empowered with the freedom to respond to that love;

Wherefore, do thou love Me,

and to freely respond to that love evokes the manifestation of the names and attributes of God in the contingent order.

that I may name thy name and fill thy soul with the spirit of life.[411]

This is a universe evolving towards a meta-consciousness, entailing the freedom to respond in loving relationships. Through this is facilitated the emergence of an ever-evolving Body of God, whose eventual minimal level of capacity may represent a more manifest condition when God's Own Soul[412] becomes involved in a more direct relationship of expression than previously possible.

Is this true? Can it be known? It is verifiable if one is extremely patient, but here it can only be proposed as consistent with prior discussions from a Bahá'í perspective[413]. A full discussion justifying a belief in the universe as the evolving Body of God is not possible in this thesis, and is worthy of another study in itself. Yet, while such a belief is not essential to the discussion, it is supportive and so a brief digression is appropriate.

From a Bahá'í perspective the purpose of evolution is to produce increasingly complex forms reflecting the names and attributes of God, as well as producing the eventual capacity for these forms to become self aware of these names and attributes and express them in loving relationships of equally increasing capacity as a means of knowing and loving God. That much is clear. By logical extension of such principles it appears possible that the universe is evolving towards a sufficient level of complexity to enable a minimal capacity for self-awareness as a physical reflection of God's Being. This is not only reinforced as a logical extension of the principles contained in `Abdu'l-Bahá's model of 'substantial evolution'[414], but also in his common employment of comparing the human body to the universe as operating under the same universal principles. There are a number of potential objections from a Bahá'í perspective, primarily the many references to God's transcendent and unknowable essence being ever sanctified from ascent and descent and beyond any direct association with the limitations of contingent reality. Such objections are mitigated when it is seen that the universe is not seen as God's Own Being, but is rather moving towards an eventual minimal capacity to be used as tool of Divine Self-Expression in the contingent order. Similarly, it has already been shown that the human body is not what is essential about being human. Similar metaphors and language is used about the relationship of the human soul to the body in the Bahá'í writings as used in describing God's Spirit and the Contingent world.

Know thou that the soul of man is exalted above, and is independent of all infirmities of body or mind.[415]

Verily I say, the human soul is exalted above all egress and regress[416].

Yet such an independent and non-contingent quality of the soul's relationship to the body does not imply a lack of relationship between the two. And in fact as other passages already cited indicate, the human body provides an evolving mechanism of increasing capacity for the soul's self-expression. Parallel assumptions of the universe equally providing an evolving mechanism of increasing capacity for God's Self-Expression culminating in an eventual conscious relationship[417],

as assumed under the operating principles of one universal law, appears justified.

Conclusion

The main thrust of this thesis was to engage a number of issues related to intrinsic value through an engagement with the secular postmodern ecological philosophies in western civilization. The limitations of this thesis do not permit a number of other important discussions, such as engaging the variety of Christian theological traditions such as Thomas Berry, Paul Davies, Sallie McFague and others. Nor has it been possible to engage the process theological traditions such as Chardin, Whitehead, Cobb or Birch. Even more importantly, and eventually necessary for such a discussion to be ultimately complete and inclusive, is a discussion of the variety of visions of intrinsic value present in the diversity of human religious experience from the Abhidharma to Zoroastrianism. Equally, any attempt to engage such a process of consultation to be considered complete must necessarily include the diverse perspectives of the world's indigenous peoples, a rich source of wisdom for such this discussion in particular. As such this thesis cannot be considered to be complete in its intentions of broad engagements of consultation. Yet it may be considered successful in its attempt to engage the most significant issues related to its necessarily narrowed concerns.

Having made this important acknowledgement, if the consultation process of chapter three was conducted once again, yet included a Bahá'í with views similar to those proposed beforehand, what might emerge?

Returning to the list of tensions discussed, we return to the assumption by many engaged in the discussion of ecological philosophy, that religion, and more specifically theology, is essentially incompatible with the endeavor to produce healthy models of ecology.

It is important to address this particular concern, for from a Bahá'í perspective, intrinsic value is only possible when it finds its origin in a universal valuing Consciousness other than the human. Such a possibility is achieved through the consideration of a mature vision of an All-loving God.

This assumption of incompatability among many of the redical ecological movements

occur for a number of reasons, including Paul Taylor's dependence on a Kantian framework for ethics that assumes a divide between reason and faith; concerns of deep ecologists such as Warwick Fox that theologies are largely anthropocentric projections of dogma; and the Ecofeminist concerns that ethics based on models of theogical stewardship provide no self-evident principles for the moral considerability of the natural world in its own right. Additionally, the general ecofeminist concern, originally proposed by Elizabeth Dodson-Gray that theology presents forms of patriarchal hierarchy, descriptive of a pyramid of diminishing power and authority beginning with God and descending to Men, and finally to Women, children, animals, plants and rocks. Finally Callicott's concerns of caricatures of Old Testament visions of a God as an epistemic tyrant who imposes morality, and a historical association of ecological genocide with the development of the Christian community.

It has been shown by both historical analysis and by examination of mitigating developments in recent philosophy, particularly the philosophy of science, that these concerns are primarily based on negative concepts which are not essential to the theological enterprise. With the addition of a Bahá'í perspective, a theological model has been presented that addresses the above concerns more specifically. For example the concept of 'intellectual love' adequately addresses the limitations of Kantian epistemology. More importantly, the metaphsysical model presented offers a highly relational model of reality in which ethics and ontology achieve an integration through an organic, interdependent understanding of ontology as an unfolding spiritual capacity capable of modification both through individual action and the mutual influence of other beings. This is made possible in that all beings participate in the Divine attribute of 'The Incomparable' in their completely unique capacities. Combining this with the Divine attribute of 'The All-Pervasive' results in all beings becoming enabled as active agents, through the love of God, to influence all other beings with their unique gifts of reflective capacity.

Such a model of theology certainly escapes the bounds of an anthropocentric projection of human identity and instrumental concerns and also offers a vision of universal moral considerability. As other beings, including those often considered most insignificant, have incomparably unique and sacred value in themselves. And although there are neo-platonic usages of hierarchical motifs in the Bahá'í model, they are in principle non-patriarchal[418] and any assumptions of ontological superiority are mitigated by a number of principles primary among these the principle of human ontology being interdependent with ethics. A human's value in such a 'Chain of Being', is dependent upon the proper development of spiritual capacities. A human who dominates nature and abuses it has remitted his or right of custodianship or any claims of superiority.

The man who thinks only of himself and is thoughtless of others is undoubtedly inferior to the animal because the animal is not possessed of the reasoning faculty. The animal is excused; but in man there is reason, the faculty of justice, the faculty of mercifulness. Possessing all these faculties he must not leave them unused. He who is so hard-hearted as to think only of his own comfort, such a one will not be called man.[419]

Equally, the dualistic elements of such a hierarchy are mitigated by the capacity for each being to influence the ontology of all other beings. Thus a monistic influence enters that allows one to see all beings being individual and unique, but also one and interdependent. Such principles indicate the non-essential nature of the cultural context of such neo-platonic statements of hierarchical structure.

Lastly, Calicott's concerns have already been directly addressed throughout chapters four and five. However the Bahá'í model also offers a sophisticated vision that incontrovertibly states the sacred nature of the environment, with very little elements of ambiguity. As well there is no associated history of ecological degradation in the Bahá'í religious community.
As noted in the introduction, there is already a sustained pattern of applying mature principles of ecological harmony in the international Bahá'í community.

Sustainable Development

This thesis has engaged the critical need to encourage a holistic metaphysics that incorporates a valuing process balancing appreciations of both the physical instrumental values and the web of emergent intrinsic spiritual values in nature. It was also mentioned that a practical application of such abstract principles was necessary from a viewpoint of authentic Bahá'í scholarship. While this section could almost be considered a post-script of the metaphysical discussions, in no place does the importance of this balancing act between spiritual and material value emerge more clearly than in the consideration of the practical applications of the group of concepts associated with 'ecologically sustainable development' (hereafter ESD).

The concept of ESD has dominated all recent international discussions of ecology

and development policy. For this thesis, it is crucial to appreciate the possible principles of ESD in discussing the relationship between the intrinsic and instrumental value of nature, as well as functioning to highlight some Bahá'í principles that facilitate the development of a mature ESD.

Some had hoped that the Rio summit would represent a more significant step in the process of international consultative will to reform particularly entrenched patterns of destructive economic and political behavior. Yet in 1991, the same year the World3 research group[420] at MIT advised that the conditions of resource exploitation had worsened beyond their already catastrophic predictions of 1972[421], Sir Geoffrey Palmer prophetically observed that the 1992 Rio conference would not accomplish such a necessary act of consultative will. The primary reason he suggested was the implications that a binding legislative document and the creation of sufficient international legal institutions would have on clearly reducing nation states highly coveted spheres of national sovereignty.

Nearly twenty years after the Stockholm Declaration, we still lack the institutional and legal mechanisms to deal effectively with transboundary and biospheric environmental degradation. The 1992 United Nations Conference on Environment and Development presents an opportunity to make progress. Unfortunately, my reading of the situation in late 1991 suggests that there is no political will to take decisions that will give us the tools to do the job.[422]

As was to be seen, this prediction proved correct at an even deeper level within the Rio declaration itself. Its first article seems to be stated to reassure the paranoid consciousness of nation states clinging tightly to sovereignty.

All nation states have the sovereign right to exploit their natural

resources as they see fit.

While article 3 of the United Nations Convention of Biological Diversity states the general principle that States have a

sovereign right to exploit their own resources pursuant to their own environmental policies, and a responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction[423].

Rather than an exercise of open consultation, or an application of will to solve the environmental crisis, we ended up with a document that at best could only suggest ecological principles within a framework of soft-law that has as its introduction the right of nation states to ignore such principles if they apparently contradict the pursuit of national interests.

All parties seem to acknowledge, or at least pay lip service to the principle of global interdependence yet the will to adopt legislative tools to facilitate the transition of social structures from national independence to a global partnership is clearly lacking. This is particularly tragic as in order for even the necessary and minimal secondary stage of solutions to be implemented, that of technological application, such international co-operation is an essential requirement.

Thus, one may argue that as national institutions are essential in promoting national technological policies and correcting any market failure and underinvestment created as the result of possible myopic technological policies of private firms, at the global level, an international institution should be responsible to correct the market failure and or underinvestment in the areas in which national institutions and private firms pursue technological policies which promote national interests at the expense of the long-term welfare of the planet itself. To this end, an authorised international environmental institution would play a significant role in mobilising the financial and scientific resources of the world to accelerate the required technological changes.[424]

It appears that only when the environmental crisis causes significantly high levels of stress on global economic structures[425]; those same structures that only give nature an exploitive, instrumental economic worth, will nation states have no choice but to survive by more significant commitments to such a process of consultative will.

It is crucial to develop a clearer vision of the essential principles associated with the concept of ESD, particularly so that necessary transnational legislative bodies may refer to such principles in the future formulation of international environmental laws. At the moment the meaning of ESD is not clearly defined nor agreed upon by all

significant parties. The 1987 World Commission on Environment and Development defined it as

development that meets the needs of the present without compromising the ability of future generations to meet their own needs. [426].

This intentionally ambiguous definition has given rise to hundreds of studies discussing the meaning of sustainable development since the 1987 Brudlandt report. One study found that in 1996 there were 450 to 500 books and articles which began by discussing varied interpretations of ESD[427].

Attention to multiple meanings helps to prevent ESD from becoming a fixed and authoritarian ideal. On the other hand, without ideals that become standards, law is flabby and cannot assist in approaches to resource use that are more sustainable.[428]

Although flexibility in the application of general principles is critical for the success of a movement in global legislative reform of ESD towards appropriate responses to diverse ecological and cultural contexts, being clear on particular meaning in each context is crucial.

it is imperative that any environmental legislation dealing with

the concept of sustainable resource use expressly defines the meaning of the vital terms fundamental to that concept[429].

A clearer definition of general principles associated with ESD is required, for in its current ambiguous state, it is just as usable for neo-orthodox capitalist assumptions of unlimited growth as it is for the most radical anti-establishment oriented environmental movements.

Meyers and Muller competently suggest a number of categories into which the varieties of ESD orientations generally fall[430].

The general definition offered by

the Bruntland Commission and espoused by such proponents as Robert Allan, suggests
that

sustainable
development [is] development that is likely to achieve lasting

satisfaction of human
needs and improvement of the quality of life. [431]

Whereas other advocates of
Neo-orthodox economics such as former British Prime Minister, Margaret Thatcher, subsume ESD as a secondary, supportive principle of the real agenda, that of sustainable 'economic' development.

The government espouses the concept of sustainable economic development. Stable prosperity can be achieved throughout the world provided the environment is nurtured and safe guarded.[432]

Others support a similar focus on
the economic function of ESD, in the facilitation of wealth and reduction of poverty for humanity[433]. Some focus on the centrality of
the ability of the environment to sustain growth patterns of resource exploitation and absorb waste as the primary consideration of developing sustainable economic policies.[434] While others still have a more bioregional focus on the sustainability of local cultures patterns of relationship with local ecosystems[435].

One of the appeals of ESD is its
current flexibility to be used by a variety of groups in pursuing their own visions of a sustainable society. However such flexibility can also mean that apparently contradictory patterns of behavior can be justified. It is as if the term ESD currently holds the same inspirational and ambiguous meaning as terms like 'freedom' and 'justice'. Increasingly there is agreement that ESD should be more specifically defined.

we accept the fact that ecologically sustainable development policies
must

be adapted to local conditions and that they must be flexible enough to

meet those problems associated with scientific uncertainty. What we

cannot accept are suggestions that sustainable development should not

have a precise, universally agreed to meaning[436].

Just as it was important to

explore the tensions of radical ecological theory in chapter three, in order to understand the causes and propose a remedial and mature metaphysics, here too it is essential to understand the principles animating the tensions responsible for such a lack of a universally agreed to meaning. It will be proposed that in fact the same issues are involved as explored in chapters three through four. A neurosis of the human spirit, manifested in an inability to internalize the unity of spiritual and material relations as seen in the imbalance between policies of purely instrumental material value and a sometimes unclearly articulated desire to inform policy based on a growing appreciation of the intrinsic spiritual value of nature. Of course there are a variety of other tensions such as the differing contexts of developing and developed nations, cultural perspectives, economic interests and others, but for the purposes of this thesis, the focus is intentionally narrowed in order to focus on a balance between the materially instrumental and spiritually intrinsic value of nature.

An example of a clear and significant tension of different interpretations of ESD that can occur is seen in the conflicting principles of two major international legislative conventions that both refer to sustainable development. The Trade-Related Aspects of Intellectual Property Rights Agreement[437], part of the Final Act of the Uruguay Round of Multilateral Trade Negotiations, and The United Nations Framework Convention on Biological Diversity[438].

The primary tension is seen in the conflict of the orientation towards the management of genetic biodiversity. A discussion of the legislative tensions is comprehensively explored elsewhere[439].
The essential concern expressed in the Trade Agreement is to strengthen international intellectual property protection in order to secure technology transfer for use in world trade, primarily between the developed nations, particularly in the private sector of multinational corporations, while the Biodiversty Treaty focuses on preserving the natural world and maintaining society's traditionally agricultural relationship with it.

In practical terms, the Trade Agreement is having a greater impact on facilitating international legislation supporting its agenda. This is no surprise as it represents the interests of those with economic and political power in the developed nations, and it has a great deal of political will behind it. The Biodiversity Treaty is more representative of the concerns of developing nations and those in developed nations sensitive to such concerns[440].

Mcmanis highlights the two major concerns of developing nations regarding the Trade agreement. First he illustrates that

The developing world views the industrialized world as freely engaging in gene piracy and appropriating traditional knowledge of indigenous peoples, while simultaneously demanding that developing countries cease pirating the industrialized world's intellectual property, at least some of which may be based on the very genes and traditional knowledge that the industrialized world itself has pirated[441].

A second, even more serious concern is that

Traditional agricultural innovation may be threatened, along with the very biodiversity that it has helped maintain, by a system of intellectual property protection that tends to reward the development of new and genetically improved, by highly uniform, and therefore potentially vulnerable, monocultures[442].

A study indicates that in 1985 over-the-counter drugs based on plants was estimated at $43 billion dollars. Seventy-four percent was discovered in bioprospecting initiated by following up on native folklore knowledge[443].

How does this all relate to instrumental and intrinsic value? A number of principles come to light upon focusing on these issues. Firstly the main concern of the corporations and legislators appears to be ensuring the right to retain intellectual and therefore economic rights over the development of biotechnology. However this obscures a deeper issue. A great deal of pharmaceutical development is done by appropriation through bioprospecting. However, the majority of this bioprospecting is hardly random and relies on indigenous knowledge of local ecosystems. This indigenous knowledge was gained through the long-term association and familiarization of native peoples with the diversity of their ecosystems and an appreciation of the sophistication of the interdependent relationships therein. In a manner of speaking, through recognition of interdependent and diverse relationships, indigenous folklore represents a perception of emergent intrinsic value in nature. Whereas the appropriation of such knowledge, motivated by purely material instrumental appreciation of value, results in the development of vulnerable and isolated monocultures. This is engaged in with little or no appreciation of the implications of isolating such elements from their interdependent ecological relationships. Not only may

the application of isolated elements achieve different, less balanced results on the human form, such an isolation does not facilitate the continued interdependent base of relationships responsible for the original generation of genetic material, nor the continued evolution of further beneficial diversity.

Here there is also an obvious issue of injustice, such as the fact the native peoples have, in general, completely missed out on the enormous financial benefit gained by corporations, through the appropriation of generations of indigenous custodianship. However there is also the issue of sustainability and the balance between intrinsic and instrumental value. In order for the instrumental value of nature to be realized through sustainable economic exploitation of its genetic base, the diverse and often unknown emergent intrinsic value of interdependent relationships must be preserved for their own sake and not just the isolated instrumental elements considered valuable by current economic markets.

Once again, the words of the Universal House of Justice are cited,

Whether peace is to be reached only after unimaginable horrors precipitated by humanity's stubborn clinging to old patterns of behavior, or is to be embraced now by an act of consultative will, is the choice before all who inhabit the earth.

Essentially this is a comment on the critical need for the international adoption of a mature and wide ranging praxis of sustainable development. The popularization of the term 'sustainable development' did not occur until the following year, and yet when the context of wide ranging social analysis is considered, in which the above passage is framed, clearly the nature of sustainable development is the object of commentary. The clearest contribution of such commentary is the detailed analysis of how loving human relationships, characterized by spiritual qualities such as integrity, equality, and freedom from prejudice represent the foundations for a 'deep' theory of sustainable development. Similar to the earlier conclusion that the deepest foundations of ecological difficulties rest in a relative loss of the love of God reflected in human relationships, it is also seen as the true foundation for authentic sustainable development.

When the love of God is established, everything else will be realized. This is the true foundation of all economics. Reflect upon

it... Manifest true economics to the people. Show what love is,

what kindness is, what true severance is and generosity.[444]

The Bahá'í International
Community has already issued substantial critiques using Bahá'í principles towards the maturation of a holistic paradigm of ESD that is still flexible enough to facilitate a dynamic and diverse application appropriate to the varying requirements of each cultural context. As previously mentioned, there is a hesitancy to acknowledge the need for a spiritual solution to our ecological and economic problems, even though "anti" spiritual qualities such as
selfishness and greed are often recognized as lying at the roots of the extremes of wealth and poverty and environmental degradation. More often, there is a cynical tendency to view such attempts at proposals of a spiritual nature as 'postmaterialist' constructions that are hopelessly utopian in ideal.

Postmaterialism
offers a deconstruction of industrialised society, but as yet

offers no
reconstructed vision within ecological limits that adequately

answers charges
of utopianism and vagueness.[445]

However, as already discussed in
chapters 4 and 5, this apparently rational response of both cynicism and dismissal of the use of 'spiritual' language finds its roots in an irrational and unnecessary neurosis of the human spirit. Yet greed and selfishness are logically
the absence of generosity, selflessness and a spirit of service to others, qualities considered 'spiritual'.

Humanity possesses, to varying
degrees, the spiritual perceptive capacity to recognize and consult on required spiritual qualities to apply to the varying requirements of the ecological crisis. As well, in the process of human spiritual and physical evolution, humanity has recently developed to a significant degree the capacity to recognize the spiritual and material interdependence of ecological relationships.

From a Bahá'í perspective the perceptive capacity
to recognize the spiritual and material interdependence and diversity of creation was taken to a significantly higher level by the release of transformative energies from Bahá'u'lláh's revelation. A sign of this is illustrated within this last century of secular society by the environmental

movement. Not just a reaction to environmental degradation, and self-preservation, but a heartfelt cry by many that nature is worth something in itself. The struggle by many of the environmental philosophies to articulate a paradigm of intrinsic worth is symptomatic of this newly developed capacity to perceive the spiritual value of nature.

In the previous section implications were offered of an epistemology in which a more synergistic vision of material and spiritual elements of reality makes possible a vision of ESD as not just a process where the status quo of ecological harmony and diversity is maintained.

Returning to our definition of ESD, we suggest that the essential meaning of ecologically sustainable development must be universally accepted as: development which either improves, maintains, or does not materially interfere with the ecology of the area in which such development takes place.[446]

Non-interference and then maintenance of ecology are currently more immediate, urgent and realistic needs to consider in international attempts at applying ESD, than is actual ecological 'improvement'.[447] Humanity may currently have a hyper-advanced state of technological mastery over the natural world, but the wisdom to apply such mastery in facilitating 'improvement' is currently very much lacking. The development of such perceptive capacity and wisdom is what will be discussed in section discussing epistemological issues. In that section discussion will be made of how humanity participates in facilitating in a catalytic fashion the further diversification and harmonization of nature using its increasing perceptive capacities and reflected in the organic evolution of humanity's own increasingly diverse and harmonious social relationships.

Relationships must be balanced in the human world as well at the natural world for ecological harmony to be established. The growing disparity between wealthy and poor classes and countries, is an intolerable situation which is causing a massive disruption to the realization of human capacity. Such an increasing lack of equilibrium is causing many levels of injustice that further facilitate ecological degradation.

Yet current attempts at restoring such a balance are token in nature, and even such gestures are associated with the wrong spiritual principles in order to be effective measures. The dependency of less developed countries on developed countries is not solved by thoughtless foreign injections of monetary aid, nor even by the forgiveness of

debt, but rather by facilitating indigenous responses of self sufficiency and non dependent relationships.

Developed countries can, and arguably will, reform global economic practices in an effort to aid developing countries to meet the environmental and developmental challenges posed by growth; but that will only happen if the ethical shift towards ESD takes place now and the industrialized nations of the world recognize that it is in their interest, because their interests are connected with those of developing countries to ensure that growth has minimal impacts on the environment.[448]

Tools such as microfinance and education programs should not be superimposed by external agencies, but developed in collaboration with the indigenous populations to facilitate suitable economic expressions of each unique culture. This is particularly important considering the potential cultural imperialism that a predetermined structure of ESD applied to inappropriate contexts of cultural diversity can incur.

...sustainable development is not simply a reflection of the successful export of Western ideology, but is itself a force of ideological imperialism whereby Western values not shared or willfully accepted by other nations are unconsciously imposed upon them through the language and implementation of the principle.[449]

Certainly this refers to a particular and perhaps currently dominant form of ESD, but should not be considered an outright rejection of the potential positive process of the ongoing growth of a holistic model of ESD.

A cluster of conceptual associations with ESD need to be addressed which are all related to the immature accounting system used to define economic "development".

Many of the essential interconnections in the system are ignored

economically. The real wealth of information content and integration is not valued at all, nor is the transmission of that information through education...the economic system may seem rational and internally consistent, but it does not reflect reality... Much more work will be required to reflect all essential components of an eco in a set of accounts, either monetary or in alternative measurement units, for those factors that cannot be priced in monetary terms. The system of monitoring and assessment should be able to evaluate the overall trends and balances in the planetary ecos and in its national and functional sub-units, and to give early warning of major problems in time for an adequate response.[450]

Such 'trends and balances' which traditional neo-orthodox economics accounting does not place appropriate values upon include but are not limited to the following:

1) Negative values associated with by-products of industrial pollution and many types of resource depletion.

A country's GNP is boosted by the increasing production capacity of industrial sectors. Yet the negative costs of human health requiring medical attention, loss of biodivesity and associated potential bio-prospecting capacity, and the reduction in national levels of non-renewable resources, are among many other factors that are not balanced against the positive 'profit' of production and consumption levels. Ironically even the additional cost to society of required medical attention to environmentally associated illness is, according to modern accounting methods, seen as an increase to the GNP, as it generates increased revenue in the medical sector.

2.) Positive values associated with the wealth of biodiversity, cultural diversity, a countries education levels reflected in the capacities, skills, potentials and levels of integration in society. Above all, not only material but spiritual qualities need to be considered towards addressing foundational causes of unsustainable development, such as greed and a variety of forms of prejudice.

The limitations of this thesis do not permit a reasonable discussion of the nature of culture

and the preservation of cultural diversity. But it is important to note the spiritual elements of culture which similar to nature, are often ignored in the economic digestive process of western assimilation. It could be argued that particular elements of culture, from a Bahá'í perspective, are social manifestations of the human spirit to diverse ecological contexts in which the human form develops its spiritual relationships. As such, there are parallels between both the extinction of species and the extinction of cultures in that in both occurs a loss of the expression of diverse and unique spiritual virtues and relationships manifesting those attributes.

3)
The requirement for long-term planning, beyond current traditional economic

parameter
considerations.

Current
economics rarely includes as relevant data, anything beyond a twenty year period, yet many issues require much longer term analysis. For example short term profit generates nearly all industry development. Yet in order to calculate the true value of an industry the effects upon future generations beyond the 20 year period need to be considered. Within the forestry industry, this means that hardwood trees that are of a superior quality timber and provide a unique ecological service, are not considered as a viable industrial option, as their harvest time can range from 80 to 150 years,[451]
well beyond the ability of a present generation to benefit from. An expansion of the traditional period of economic planning is essential to any theory of sustainability.

4)
A broadening of vision that moves from artificial economic national

boundaries and includes the essential principle of global inter-dependence.

Segregated units cannot do accurate and true
accounting of sustainable development, for many obvious but often ignored reasons. When systems philosophy is applied to ESD, it is clear that the processes and flows of energy, communication channels, various forms of information and resources between all 'units' must be considered. ESD is more appropriately considered as a relational activity in which these processes are examined, rather than being considered as the examination of things isolated in themselves, whether it be resources, nations or species. Currently most national economic policies ignore a great variety of international relationships necessary for the mature management of a global environment. And as mentioned earlier, this also implies the need for the development of a global legislature, equally representative of all nations, facilitating an authentic

and egalitarian processes of consultation, with an executive capacity sufficient to ensure harmonious and balanced international relationships, that will ensure agreed upon ecological principles are kept by all parties.

5)
A balanced vision of both instrumental and intrinsic value of nature, in which current human needs are not the only considerations of economic and political policy.

This vision may prove difficult
to achieve given current world government attitudes as seen explicitly in Principle 1 of the Rio Declaration on Environment and Development,

Human beings are at the centre of concerns for sustainable development[452]

6.) Last but
not least in significance, current discussions of ESD, including

Agenda 21
of the United Nations Conference on Environment and

Development 1992, retain significant patriarchal structures and orientation[453].

There has been
valid criticism that it ignores the particularly essential roles that 'subdominants' have to play in the role of sustainable development, such as women, children, indigenous peoples, and non-white minorities in general. Their roles are considered essential for a number of reasons. Similar to the unstable health of macrosystems when extremes such as wealth and poverty between countries are the norm, so too does this apply to these traditionally disenfranchised peoples. A form of recognition, through educational and economic empowerment, as well as a valuing of the potential unique perspectives towards long term sustainability that many of these groups, in their custodianship of local ecological units, can potentially offer. A significant increase in the overall representation of these marginilised groups in the ongoing consultation process as well as delegated authority in decision making forums is essential towards overall justice, harmonization of human relations, and the holistic development of mature visions of ESD.

A holistic and
mature conception of ESD thus requires an expansion of vision temporally, to include future generations; spatially to include diverse and interdependent human end ecological global networks that transcend and flow through traditional national boundaries; ontologically to include considerations of

spiritual values for both humans and the diverse components of the environment; and economically in general to include accounting considerations of traditionally ignored negative and positive considerations towards the formulation of estimated growth capacity.

ESD
will always represent a relational and fluid process of vision and praxis rather than a static idea, however it is suggested that the above represent some general principles that should be considered in the ongoing and diverse global consultation on its essential characteristics. The application of such general principles should be diverse and vary according to the ecological and cultural contexts in which they are applied and should facilitate indigenous developments of such applications. This is in opposition to the current practice of universally pre-digested western policies being externally superimposed which homogenizes such diverse contexts and causes the loss of potentially unique expressions of Divine attributes, both found within the human spirit and the natural world.

ESD
ultimately represents a postmodern political and economic version of human custodianship in the Garden of Eden. What has been suggested here is a vision of nature in which its intrinsic value exceeds our perceptive capacity, but inspires respect, reverence and humility before its infinite diversity. Nature is more than an object to be used for human economic consumption. It is also more than a web of interdependent relationships whose balance we must try to maintain out of self-preservation. Humanity has the opportunity to not only cherish its emergent intrinsic value, but seek to acquire the wisdom to facilitate its ongoing unfoldment of diversity. It has been suggested that responding to the love of God is the means by which this occurs. From a Bahá'í
perspective, the most conducive way in which we respond to the love of God in our immediate context on earth is seen in recognizing the disclosure of God's Self in the person of Bahá'u'lláh. Such recognition implies attempting to understand and apply the principles contained within the written form of Bahá'í
revelation. This thesis has represented such an attempt.

[+CHAPTER7]

Notes:

[1] Ervin Laszlo, The Inner Limits of
Mankind: Heretical Reflections on Today's Values, Culture and

Politics,
(Oneworld, London, 1989), pp. 26-27

[2] Bachelor of Theology (Honours). From
1990 to 1995 I trained at Knox College, Dunedin, New Zealand, a

multi-denominational, but primarily Protestant
college. Many of the analytical tools gathered there

have subsequently been applied to the texts and
traditions of my own religion, the Bahá'í Faith. It is

important to note two other cultural contexts that
had no small impact upon a further revision my internal

structures of western metaphysics. The first is
that of Knox College itself, as most of the students were

from the pacific islands, predominantly Samoa.
Equally so, New Zealand, perhaps more than any other

country has been the most successful at attempts to
integrate an equality of cultural value between its

indigenous population, the Maori, and the Pakeha, the white settlers from
England. Because of this
the

voice of the indigenous population, and its
attendant alternate principles of metaphysics have greater

impact.

[3] From 1989 to 1990 I lived on the Wind
River Indian Reservation at Ft. Washakie, Wyoming which

primarily consists of the tribes of Shoshoni and
Arapahoe. I cannot by any means, claim to be an

"expert" in Shoshoni or Arapahoe ecology, merely
that the ecological metaphysical assumptions implicit

in the everyday worldview of the friendships I
developed, deeply impacted upon my psyche. Primary

among these principles was the unity of spiritual
and material reality, as well as all created things

representing signs of the Creator.

[4] My mother's paternal side come from Russian/Polish Jewish origins, including a great-grandfather who was a rabbi, while her maternal side include origins of a Christian Baptist from the deep south culture of Mississippi. My father's side comes from the Episcopalian tradition, and can be traced back to the American revolution on one side, and whose cultural origins began primarily in Scotland and to a lesser extent, England. My wife of 11 years is a Bahá'í Iranian with both a Muslim and Zoroastrian background.

[5] That branch of Islam, predominantly found in Persia, which traces its authority to Muhammad through a succession of Imams, endowed with unqualified infallibility. This succession ended with the disappearance or "concealment" of the twelfth and last Imam in 873 A.D., thus giving rise to expectations within Shiite Islam of his return as the Imam Mahdi (Guided One) or the Qaim (He Who Will Arise) and association of that return with a variety of apocalyptic expectations and the beginning of the last days.

[6] (1756-1825) Shaykh Ahmad-i-Ahsai generated a theophanic vision, incorporating a predominantly allegorical Quranic hermeutic, responding to the millennial expectations of his age in which the "Qaim" or "Hidden Imam" was expected to become manifest and inaugurate the 'twin trumpet blasts' which would herald the dawn of the last age of the Resurrection. Perhaps what made this theophanic vision so successful was that it managed a fusion of some of the more positive elements of the three major trends in post-Safavid Shi'ism: that of the Sadra'i theosophic school, the Akhbari Traditionist school of Bahrain and the diffuse forms of gnosticism. (See Amanat, p.48)

"With Shaykh Ahmad-i-Ahsai and his visionary theophany, Shiism generated a synthesis essential for the later reformation of the Babi thought." (ibid.) The Shaykh school of Ahsai "successfully incorporated the two diverse worlds of jurisconsults and theosophists, the exoteric (zahir) and the esoteric (batin) into one comprehensive system that he believed could compensate for the weaknesses of both worlds." (ibid)

[7] Chrisophter Buck, Symbol and Secret: Quran Commentary in Bahá'u'lláh's Kitab-i-Iqan, (Kalimat

Press, Los Angeles, 1995), p.xxix. Buck cites S.A. Arjomand, The Turban for the Crown: The Islamic

Revolution in Iran, (Oxford University Press, 1989), p. 233, n.9

[8] Both prime minisisters Haji Mirza Aqasi and more extensively Mirza Taqi Khan responded to the

pressure of ulama lobbying, as well as the fear of the reduction of their own secular authority. As

according to significant streams in Shiah Islam, even the Shah was a trustee of secular authority

awaiting the return of the 12th Imam.

[9] see Buck, p.xxix

[10] Bahá'u'lláh, Epistle to the Son of the Wolf, p. 22

[11] This ten year period of silence was perhaps primarily due to concerns to consolidate the Babi community after the public execution of the Bab, although personal reticence is also apparent in Bahá'u'lláh's own writings.

Had it been in my power, I would have, under no circumstances, consented to distinguish myself amongst men...And whenever I chose to hold my peace and be still, lo, the voice of the Holy Ghost, standing on my right hand, aroused me, and the Supreme Spirit appeared before my face, and Gabriel overshadowed me, and the Spirit of Glory stirred within my bosom, bidding me arise and break my silence. (Bahá'u'lláh, Gleanings, p.103)

[12] Amanat, Abbas Resurrection and Renewal: The Making of the Babi Movement in Iran, 1844-1850.

Ithaca. Cornell University Press, 1989

[13] Denis MacEoin, "The Shi'i Establishment in Modern Iran," Islam in the Modern World, ed. By idem

and A. al-Shahi. (London, Croom Helm, 1983) p.95

[14] Ibid

[15] It should be noted that while the Babi Faith may not have appeared as a social enterprise to embrace other religious contexts than that of Shiite Islam, it did have a universal focus of mediation in its theology. For example in one of the Babs Quranic commentaries (Tafsir), in his commentary on Yusuf (Sura 12) or the Sura of Joseph, the Bab "first put forth His claim to be the sole focus of religious devotion for not only the Shi'i world, but the entire world." Todd Lawson, "The Dangers of Reading: Inlibration, Communion and Transference in the Qur'an Commentary of the Bab.", p.179, Scripture and Revelation, (ed. Moojan Momen) George Ronald Publisishing, Oxford, 1997

[16] "In the East the light of His Revelation hath broken; in the West have appeared the signs of His dominion. Ponder this in your hearts, O people, and be not of those who have turned a deaf ear to the admonitions of Him Who is the Almighty, the All-Praised." Bahá'u'lláh, cited by Shoghi Effendi, in Citadel of Faith, Messages to America, 1947-1957 (Wilmette: Bahá'í Publishing Trust, 1965) p.30

[17] Bahá'u'lláh writes-"It is incumbent upon the Sovereigns of the world -may God assist them - unitedly to hold fast unto this Peace, which is the chief instrument for the protection of all mankind. It is Our hope that they will arise to achieve what will be conducive to the well-being of man. It is their duty to

convene an all-inclusive assembly, which either
they themselves or their ministers will attend, and to

enforce whatever measures are required to
establish unity and concord amongst men. They must put

away the weapons of war, and turn to the
instruments of universal reconstruction. Should one king rise

up against another, all the other kings must
arise to deter him. Arms and armaments will, then, be no

more needed beyond that which is necessary to
insure the internal security of their respective countries."

(Bahá'u'lláh, Epistle to the Son of the Wolf, p. 30-31)

[18] Bahá'u'lláh, Gleanings, pg. 250 from Lawh-i Maqsud (Tablet of Maqsud,
[i.e., the Goal, the Desired

One), `Akka, Dec. 31 1881

[19] Bahá'u'lláh wrote not only a
collective Tablet to the Kings of the world, (Suriy-i-Muluk, 1867, in which

He addresses the leader of the world in general
and also addresses specifically The Sultan of Turkey,

Abdu'l-Aziz, The French and Persian Ambassadors,
the Kings of Christendom and the Philosophers of

the world.) but also specifically to Napolean III,
(Lawh-i-Napulyun 1, 1864, Lawh-i-Napulyun II, 1868),

the Shah of Persia, Nasri'D-Din (Lawh-i-Sultan,
1865), to Queen Victoria of England, (Lawh-i-Malikih,

1868), to the Czar of Russia, Alexander II,
(Lawh-I-Malik-i-Rus, 1868), to Pope Pius IX, (Lawh-i-Pap,

1868), to Kaiser William I of Prussia (and
immediately after, Germany), Emporer Francis Joseph of

Austria, and the Rulers and Presidents of America,
(Kitab-i-Aqdas, 1868-1873).

[20] Abdu'l-Bahá received many pilgrims
from America and Canada and later extensively travelled

throughout England, France and America.
Abdu'l-Bahá writes, "The day is approaching when ye shall

witness how, through the splendor of the Faith of
Bahá'u'lláh the West will have replaced the East,

radiating the light of divine guidance." (emphasis added) Shoghi Effendi,
Citadel
of Faith, p. 30

[21] Shoghi Effendi received his
education first from the American university in Beirut and then at Oxford,

majoring in English Literature. As well his
correspondence with believers in the west was unparalleled

and his focus on the development of Bahá'í
Administrative structures in the west was often his primary

concern.

[22] The Bahá'í Faith was introduced to
America in 1892 and by 1899 there were over 1400 Americans who

declared themelves as Bahá'ís. See Robert H.
Stockman, The Bahá'í Faith in America: Origins 1892-

1900,
(Bahá'í Publishing Trust, Willmette, 1985) p.163

[23] Robert Stockman, The Bahá'í Faith
in America: Early Expansion, 1900-1912,
(George Ronald, Oxford,

1995) p. 385 The writing of so many tablets cannot
be attributed to one simple reason, but a combination

of historical conditions such as the rapid growth
of the faith in America, the lack of any representative

authority from the family of Bahá'u'lláh, a series
of challenges to administrative unity, particularly in the

Chicago community, and Abdu'l-Bahá's own affection
for the American Bahá'ís.

[24] Elected every five years by the National Spiritual Assemblies throughout the world, which represent Bahá'í administration at the national level.

[25] This is in the sense of its diversity of representation. According to the Encyclopedia Britannica 1992 and the World Christian Encyclopedia 1982, the Bahá'í Faith represents the second most widespread and diversely represented body of peoples on the planet (exceeded only by Christianity). And when one considers that there are no significant denominations or schisms in the Bahá'í Faith, it is indicated that the Bahá'í Faith likely ranks as the most diverse organized body of people on the planet.

"It has more than five million followers in at least 235 countries and dependent territories. Bahá'ís reside in more than 121,000 localities around the world and they represent a cross section of humanity, coming from virtually every nation, ethnic group, culture, profession and social or economic class. More than 2,100 different ethnic and tribal groups are represented." From article by BIC (Bahá'í International Community) About Us, viewed at http://www.onecountry.org on December 19, 1999.

[26] "The first [principle] is the independent investigation of truth; for blind imitation of the past will stunt the mind. But once every soul inquireth into truth, society will be freed from the darkness of continually repeating the past." (`Abdu'l-Bahá: Selections From the Writings of `Abdu'l-Bahá, p. 248)

[27] "The diversity in the human family should be the cause of love and harmony, as it is in music where many different notes blend together in the making of a perfect chord. If you meet those of different race and colour from yourself, do not mistrust them and withdraw yourself into your shell of conventionality, but rather be glad and show them kindness. Think of them as different coloured roses growing in the beautiful garden of humanity, and rejoice to be among them.

Likewise, when you meet those whose opinions differ from your own, do not turn away your face from them. All are seeking

truth, and there are many roads leading thereto. Truth has many aspects, but it remains always and forever one."

(`Abdu'l-Bahá, Paris Talks, p. 53)

[28] See: Robert White, Spiritual Foundations for a Ecologically Sustainable Society, Association for Bahá'í Studies, Ottawa, 1989, William P. Gregg, Jr., "The Bahá'í Faith and Biospheric Sustainability" (Authors personal copy), Arthur Dahl, The Eco Principle: Ecology & Economics in Symbiosis,(George Ronald, Oxford, 1996 and Unless and Until: A Bahá'í Focus on the Environment, George Ronald, Oxford, 1996

[29] Arthur Dahl, The Eco Principle: Ecology & Economics in Symbiosis, p.xi-x,

[30] This understanding of the relational context of the importance of unity in diversity of the human species is essentially related to the Bahá'í concept of "progressive revelation".

[31] Universal House of Justice, The Promise of World Peace, p.158 (1986, Oneworld Publications, London)

[32] A critique of the concept of sustainable development will be offered later in the thesis.

[33] "Primary Health Care in Villages", p.9, One Country, June-August 1989, Vol.1, Issue 3

[34] "Perspective: Microfinance: A Powerful Tool For Social Transformation" One Country, Volume 8,

Issue 3, October-December, 1996

[35] "Bahá'í Education: A Distinctive Approach" p.4-5, One Country, Spring 1989, Vol.1, Issue 2

[36] "Bahá'í Development Projects: A Global Process of Learning", http://.bahai.org/article-1-9-1-1.html,

viewed 25/06/00.

[37] Ibid

[38] Ibid

[39] Ibid.

[40] "Reforesting a Mountain Desert on Bolivia's Altiplano", p.4, One Country, October-December 1995,

Vol.7, Issue 3

[41] Such as HRH Prince Michael of Kent from England

[42] "In Greece NGO's organize a diplomatic event to protect forests", One Country, April-June 1997 vol.9,

issue 1

[43] The Bahá'í Community was one of the first religious communities to be granted consultative status as an

NGO with the United

Nations.

[44] Environmental Philosophy: From
Animal Rights to Radical Ecology, 1998,
Prentice Hall, Upper Saddle

River, New Jersey, p.4

[45] Bahá'u'lláh, quoted by Edward
Granville Browne, A Traveller's Narrative Written to Illustrate the

Episode of the Bab, p. xl, 1891, Cambridge, Cambridge University Press

[46] "From this thou canst imagine the
magnitude of the Bahá'í cycle -a cycle that must extend over a period

of at least five hundred thousand years."
Abdu'l-Bahá, quoted by Shoghi Effendi in World Order of

Bahá'u'lláh,
p. 102

[47] Bahá'u'lláh, Gleanings, pp. 342-343

[48] Shoghi Effendi, World Order of
Bahá'u'lláh, p. 202

[49] Bahá'u'lláh, Gleanings, p. 200

[50] 'In every age and cycle He hath,
through the splendorous light shed by the Manifestations of His wondrous Essence, recreated all things, so that whatsoever reflecteth in the heavens and on the earth the signs of His glory may not be deprived of the outpourings of His mercy, nor despair of the showers of His favors. How all-encompassing are the wonders of His boundless grace! Behold how they have pervaded the whole of creation. Such is their virtue that not a single atom in the entire universe can be found which doth not declare the evidences of His might, which doth not

glorify His holy Name, or is not expressive of the effulgent light of His unity. So perfect and comprehensive is His creation that no mind nor heart, however keen or pure, can ever grasp the nature of the most insignificant of His creatures; much less fathom the mystery of Him Who is the Day Star of Truth, Who is the invisible and unknowable Essence."

Bahá'u'lláh, Gleanings, p. 62

[51] Similarly 'Abdu'l-Bahá writes: "The first [teaching] is the independent investigation of truth; for blind imitation of the past will stunt the mind. But once every soul inquireth into truth, society will be freed from the darkness of continually repeating the past."

(`Abdu'l-Bahá: Selections ... `Abdu'l-Bahá, page 248)

[52] "A sprinkling from the unfathomed deep of His sovereign and all-pervasive Will hath, out of utter nothingness, called into being a creation which is infinite in its range and deathless in its duration. The wonders of His bounty can never cease, and the stream of His merciful grace can never be arrested. The process of His creation hath had no beginning, and can have no end."

(Bahá'u'lláh: Gleanings, page 61 (From the Lawh-i Tawhid (Tablet of Unity), Written during `Akka period)

"This infinite universe is from everlasting. The sovereignty, power, names and attributes of God are eternal, ancient. His names presuppose creation and predicate His existence and will. We say God is Creator. This name Creator appears when we connote creation."

(`Abdu'l-Bahá: Promulgation of Universal Peace*, pages 158-159)

"As the divine entity is eternal, the divine attributes are coexistent, coeternal. The divine bestowals are, therefore, without beginning, without end. God is infinite; the works of God are infinite; the bestowals of God are infinite."

(`Abdu'l-Bahá: Promulgation of Universal Peace*, page 159)

[53] "...Divinity Who has organized this infinite universe in the most perfect form, and its innumerable inhabitants with absolute system, strength and perfection."

(`Abdu'l-Bahá: Some Answered Questions, page 123)

[54] This is to allow that 'infinite' may sometimes be used as a relative term, particularly in the spatial reference, in that it may not technically indicate limitless boundaries, but rather alludes to limits and complexity beyond the reach of human comprehension.

[55] "As to thy question concerning the worlds of God. Know thou of a truth that the worlds of God are countless in their number, and infinite in their range."

Bahá'u'lláh: Gleanings, pages 151-152, from the Suriy-i Vafa (Tablet of Fidelity), `Akka.)

"worlds" in this passage refer not to planets, but to planes of reality or dimensions of spiritual existence. This world represents the first in an "infinite range" of worlds. In the Bahá'í Faith, the next world is referred to as the "Abha Kingdom". "Abha" meaning "light" or "glory". This will be further discussed in the thesis.

[56] Shoghi Effendi, The Promised Day is Come, p.v., (1941, Bahá'í Publishing Trust, Wilmette, Illinois, 1980 printing)

[57] Most commonly translated from the Arabic as "Glory of God", although it can also mean "Splendour" or "Light of God". Born Mirza Husayn Ali, b.November 12, 1817, d. 29 May 1892

[58] From the Arabic "Servant (or Slave) of God". Born Abbas Effendi May 23, 1844 d. 28 November, 1921

[59] b. March 1, 1897, d. 4 November, 1957

[60] Such uniqueness
may or may not warrant consideration. This is not stated to indicate any superiority of the

quality of its
"revelation". As for Bahá'ís all Manifestations of God reflect the one Divine Reality, and to

assert the superiority of
one over the other would deny the essential oneness of that reality. Rather this

phenomenon is an
indication of its historical context within our current period of social evolution, and

perhaps an indication of
the conscious Divine orientation of those universal spiritual principles present in all

Faiths towards the
exigencies of this modern context.

[61] Shoghi Effendi, letter written to
High Commissioner for Palestine, June 1933Quoted by Universal

House of Justice, letter to individual, 13,
August 1997 found at

http://www.bahai-library.org/uhj/science.religion.html. viewed May 16, 2000..

[62] Bahá'í Scholarship: A Compilation & Essays, Hossain Danesh, "Bahá'í Scholarship", pp.62-63,

Association for Bahá'í Studies – Australia,
1993

[63] Ibid, p.65

[64]`Abdu'l-Bahá, Selections
From the Writings of `Abdu'l-Bahá, page 144)

[65] Meaning "Dawning place of the praise of God."

[66] Abdu'l-Bahá, Star of the West, Vol. 21, No. 1, 1930, p. 20

[67]`Abdu'l-Bahá, Paris Talks, pp. 130-131

[68] `Abdu'l-Bahá, Promulgation of Universal Peace, p. 394

[69] `Abdu'l-Bahá, Abdu'l-Bahá in London, pp. 28-29

[70] The manner of God's revelation is not a simple concept, and occurs through infinite levels of expression. From the periodic and personal release of spiritual forces through individuals considered as "manifestations of God" akin to perfect mirros, such as Buddha, Christ, Muhammad, Bahá'u'lláh and others. To the evolving spirit of a universe continually disclosing more sophisticated expressions of the virtues of God. To the direct relationship between the souls of the next world and this. "The light which these souls radiate is responsible for the progress of the world and the advancement of its peoples. They are like unto leaven which leaveneth the world of being, and constitute the animating force through which the arts and wonders of the world are made manifest." Bahá'u'lláh, Gleanings, p. 157

[71] `Abdu'l-Bahá, Promulgation of Universal Peace, p. 49

[72] `Abdu'l-Bahá, Paris Talks, p. 143

[73] Shoghi Effendi, World Order of Bahá'u'lláh, pp. 203-204

[74] Universal House of Justice, Letter
to individual, 19 May, 1995 quoted in letter 13, August 1997 found at

http://www.bahai-library.org/uhj/science.religion.html.
viewed May 16, 2000.

[75] Shoghi Effendi writes in a number of
places that the goal of scholars should be to correlate the principles of the Bahá'í Faith 'with the current thoughts and problems of the peoples of the world'

[76] This concept will be more fully
explored in the section on metaphysics in the last chapter of this thesis.

[77] -Bahá'u'lláh, Tablets, pp.
141-142

[78] (Bahá'u'lláh: Aqdas: Notes, page
176)

[79] Bahá'u'lláh: Prayers and
Meditations, section CLXXVI, p. 272

[80] Bahá'u'lláh, Kitab-i-Iqan, p. 100

[81] `Abdu'l-Bahá, Huququ'llah, p. 509

[82] "So you will find the smallest
atoms in the universal system are similar to the greatest beings [meaning planets and stars according to other passages] of the universe. It is clear that they come into existence from one laboratory of might under one natural system and one universal law; therefore, they may be compared to one another."

`Abdu'l-Bahá, Questions, page 182

[83] `Abdu'l-Bahá, Star of the West,
8:138

[84]
`Abdu'l-Bahá, Selections, p.27

[85] Bahá'u'lláh, Hidden Words, p. 73

[86] Ibid, p.39

[87] Ibid, p.40

[88] It is not meant to completely
objectify these qualities as negatives. They are necessary qualities which themselves are transformed in this process of resurrection. Lust becomes passion for the Divine, anger becomes replaced by righteousness, revenge by justice
etc. These 'negative' qualities are not replaced by different ones, but are transformed and reborn into Divine qualities.

[89] `Abdu'l-Bahá: Selections ...
`Abdu'l-Bahá, pp. 283-284

[90] Donella H. Meadows, Dennis L.
Meadows, Jorgen Randers, and William W. Behrens, III, The Limits to

Growth, New York:
Universe Books, 1972

[91] For example see Walter Nicholson Microeconomic Theory: Basic Principles and Extensions, 4th
ed.

(Chicago: Dryden, 1989), pp. 22-24. Where he makes criticisms such as World3's failure to model a

variety of prices, such as differences between energy sources and its lack of modelling potential

improvements in labor through such influences as education. The classic critique of Limits of Growth was

by Cole, H.S.D., Christopher Freeman, Marie Jahoda, and K.L.R. Pavitt. Models of Doom: A Critique of

The Limits to Growth. Universe Books, 1973.

[92] For example, doubling the estimated resource base extends the industrial collapse by 50 years, but it only

extends the rapid decline of the global human average of life expectancy by several years. This is

because although resources exist for continued economic expansion, industry produces much higher

levels of pollution which affects many other variables negatively.

[93] All members of the original team were available for the project except William W. Behrens, III.

[94] Donella H. Meadows, Dennis L. Meadows, and Jorgen Randers, Beyond the Limits, New York:

Doubleday Press, 1992.

[95] Liu Yonggong and John B. Penson, Jr., "China's Sustainable Agriculture and Regional Implications,"

presented to the symposium on Agriculture, Trade and Sustainable Development in Pacific Asia: China

and its Trading Partners, Texas A&M University, College Station, TX, 12-14 February 1998; Dennis

Ingi (Project Manager), China Infrastructure

Initiative, Sandia National Laboratory,

http://mason.igaia.sanida.gov/igaia/china/water.html,
viewed 8, December, 1999. (page last updated

March 31, 1999)

[96] David Seckler, David Molden, and
Randolph Barker, "Water Scarcity in the Twenty-First Century"

(Columbo, Sri Lanka: International Water
Management Institute, 27 July 1998)

[97] Ibid.

[98] United Nations, World Population
Prospects: the 1996 revision (New
York:1996)

[99] "The Worldwide Magnitude of
Protein-Energy Malnutrition: An Overview from the WHO Global

Database on Child Growth," WHO, January 1998

[100] 23 million Africans have AIDS and
in several African countries more than 20% of the population is

infected. See Joint United Nations Programme on
HIV/AIDS (UNAIDS), AIDS Epidemic Update:

December 1998
(Geneva, December, 1998)

[101] Lester R. Brown, "Challenges of the
New Century", State of the World 2000: A Worldwatch Institute

Report on Progess Toward a Sustainable Society, (W.W. Norton & Company, New
York, 2000), p.5

[102] Lester R. Brown, "Falling Water

Tables in China May Soon Raise Food Prices Everywhere", a

Worldwatch Issue Alert, 02 May 2000,
www.worldwatch.org/chairman/issue/000502.html

[103] Ibid

[104] Ibid

[105] Dirk Bryant, Daniel Neilsen, and
Laura Tangley, The Last Frontier Forests
(Washington D.C.: World

Resources Institute, 1997

[106] D. Evan Mercer and John Soussan,
"Fuelwood Problems and Solutions," in Narendra P. Sharma ed.,

Managing the World's Forests (Dubuque, IA: Kendall/Hunt Publishing Company,
1992)

[107] Ted Trainer, "The Death of the Oil
Economy", Earth Island Journal, Spring

1997. Reproduced
at http://dieoff.com/page116.htm

[108] Scott Baldauf, "World's Oil May
Soon Run Low," Christian Science Monitor,
23 September 1998

[109] Copied from Ted Trainer, http://dieoff.com/page116.htm

[110] Oil production peaked in the year
1999 at 65.6 million barrels a day, and will decline to 52.6 million

barrels a day by 2010. By 2050, the 1994 report said,

world oil production would drop to 17.5 million

barrels a day, just above what it was in the 1950s.

[111] The World Oil Supply 1990-2030, Campbell and Laherre, 1995

[112] Ted Trainer, "The Death of the Oil Economy", p.1

[113] Cited in "New Oil Price Shock Seen Looming as Early as 2000" Wind Energy Weekly, Vol. 15, #684, 12

February 1996, p.1, reproduced at www.igc.apc.org/awea/wew/684-1.html

[114] A term used first by the Limits to Growth report which indicates that the pattern of overdevelopment and

resource depletion, rather than being a gradual loss of resources, represents a sudden drop in availability

as exponential increase in demand eventually causes the prices for extraction and processing to exceed

the value of the resource being exploited.

[115] Paul Brown, "British Report Forecasts Runaway Global Warming," Guardian (London), 3 November,

1998, quoted in State of the World 1999

[116] 70% of the coral reefs in the Indian Ocean have died due to temperature increases. See Paul Epstein et

al., "Coral Reefs", Marine Ecosystems: Emerging Diseases as Indicators of Change,

http://heed.unh.edu/heedreport/coral/coral001.htm, revised December 12, 1998. Viewed June 30, 2000

[117] Global Sea Ice Extent and Concentration: What sensors on satellites are telling us about sea

ice, State of the Cryosphere, A report by the National Snow and Ice Data Center,

http://nsidc.org/NASA/SOTC/sea_ice.html, viewed June 30, 2000

[118] Ibid

[119] Obtained from NASA's Global Change Master Directory,

http://cdiac.esd.ornl.gov/trends/temp/jonescru/graphics/nhshglob.gif, viewed June 30, 2000

[120] 1999 was slightly cooler, but this primarily due to the counter-effects of the shift from El Nino to

La Nina effects that year. These statistics from P. D. Jones,1 D. E. Parker,2 T. J. Osborn,1 and K. R.

Briffa1, "Global and hemispheric temperature anomalies--land and marine instrumental records", Global

Change Master Directory, http://cdiac.esd.ornl.gov/trends/temp/jonescru/jones.html, viewed June 30,

2000

[121] Anne Platt McGinn, "Charting a New Course for Oceans", p.83 State of the World 1999: A Worldwatch

Institute Report on Progess Toward a Sustainable Society, (W.W. Norton & Company, New York, 1999)

[122] Lester Brown, "Challenges of the

New Century", p. 8

[123] David Schneider, "The Rising Seas,"
Scientific American, March 1997

[124] Tom M.L. Wigley, The Science of
Climate Change: Global and U.S. Perspective
(Arlington, VA, Pew

Center on Global Climate Change, June 1999)

[125] John Pernetta, "Rising Seas and
Changing Currents" People & The Planet,
vol.7, no.2 (1998)

[126] Neelesh Misra, "Asia Floods Raise
Questions About Man's Impact on Nature," Associated Press, 19

September, 1998, quoted in State of the World 1999

[127] Robert T. Watson, Marufu C.
Zinyowera, and Richard H. Moss, eds. Climate Change 1995: Impacts,

Adaptations, and Mitigation of Climate Change:
Scientific-Technical Analyses, Contribution
of Working

Group II to the Second Assesment Report of the
IPCC (New York: Cambridge University Press, 1996)

[128] World Wide Fund for Nature, The
Year the World Caught on Fire, WWF
International Discussion Paper

(Gland, Switzerland: December 1997)

[129] Rachel Carson, Silent Spring, Cambridge, MA: Riverside Press

[130] David M. Raup, "A Kill Curve for Phaerozoic Marine Species," Paleobiology, vol.17no.1 (1991).

This is also supported (one extinction every few years) by Edward O. Wilson "Threats to Biodiverstiy",

Scientific American 261 (September 1989) 108-116

[131] Nigel Stork, "Measuring Global Biodiversity and Its decline", in Marjorie L. Reaka-Kudla, Don E.

Wilson and Edward O. Wilson, eds., Biodiversity II: Understanding and Protecting Our Biological

Resources (Washington D.C.: Joseph Henry Press, 1997)

[132] Ibid, E.O Wilson, supra note 130

[133] Chris Bright, Life Out of Bounds (New York: W.W. Norton & Company, 1998)

[134] The correlation between "natural" and "good" will be discussed later. For discussions of the

philosophical concern for the "naturalistic fallacy" see one of the first discussions G.E.Moore, Principia

Ethica (London: Cambridge University Press, 1903), and more recent classic is W.D. Hudson, The

Is/Ought Question (New York: St. Martin's, 1970). For a discussion of the topic more directly related to

the concerns in this thesis, see Charles Birch , "Eight Fallacies of the Modern World and Five Axioms

for a Postmodern Worldview", Perspectives in Biology and Medicine, 32, 1, Autumn 1988.

[135] J. Baird Callicott, In Defense of the Land Ethic: Essays in Environmental Philosophy, (State University

of New York Press, Albany, 1989) p.129. Callicott cites for this information: Norman D. Newell, "Crises

in the History of Life," Scientific American 208 (1963):76-92; David M. Raup and J. John
Sepkoski, Jr.,

"Mass Extinctions in the Marine Fossil Record," Science 215 (1982), 1501-03

[136] United Nations: World Urbanization Prospects: The 1996 Revision (New York: 1998)

[137] Here we have both social and philosophical trends which facilitate a callous response to this loss of

biodiversity and which make the endeavors by the radical ecological groups at education and public

discussion all the more necessary. The philosophical aspects of this hyperseperation will be further

discussed throughout the thesis.

[138] Aldo Leopold, A Sand County Almanac, pp.6-7, (1949; New York:Ballantine, 1970)

[139] Ibid, supra note136

[140] Charles Birch, Supra note 134, pp. 25-26

[141] This may appear a rather utilitarian argument, that is, stating that species extinction is undesirable based

on the loss it represents to human interests, but there is also implicit the wider assumption that natures

intrinsic value is independent of human concerns

or consciousness. There is still the concern of

instrumental rather intrinsic value in seeing
nature as "manifestions" of aspects of God, in other words

value defined in relation to another Being,
particularly when that Being is the Source of "dispensing"

value. This will be discussed after the section examining
the Bahá'í writings on the subject.

[142] "...the perfection of man is entirely
due to the composition of the atoms of the elements, to their

measure, to the method of their combination, and
to the mutual influence and
action of the different

beings."
(emphasis added) `Abdu'l-Bahá, Some Answered Questions, p. 179 Earlier in the passage,

Abdu'l-Bahá makes it clear that those beings
include "all these endless beings which inhabit the world,

whether man, animal, vegetable, mineral - whatever
they may be..."

[143] December 31, 1990 to December 31,
1999, Dow Jones & Company,

http://averages.dowjones.com/frameset.html,viewed
June 30, 2000

[144] Herman Daly, Steady State
Economics, 248-250 (1992)

[145] Holmes Rolston, III, "Challenges in
Environmental Ethics", Environmental Philosophy, (Zimmerman)

p.153

[146] The anthropocentrism here is of a
more exclusive and extreme model, commonly referred to as "strong"

anthropocentrism. It should be noted that within the range of models, there are more moderate and inclusive constructions of "self-enlightened" anthropocentrism, known as "weak" anthropocentrism.

[147] The radical ecological movements of Deep Ecology, and more particularly ecofeminism, offer more sophisticated and extensive critiques of both anthropocentrism as well as a fuller discussion of a variety of other philosophical, historical, economic, cultural and political deficiencies which contribute to ecological dysfunction and devastation.

[148] Tim Hayward, Ecological Thought, p.68, (Cambridge, U.K., Polity Press, 1995)

[149] Here we see one example of why economic models can have a dramatic effect on the human relationship with nature. For Bahá'í suggestions on positive economic models which facilitate harmonious ecological relationships see: Fariborz Moshirian, "National financial policies, global environmental damage and missing international institutions.", pp. 1255-1270, International Journal of Social Economics, Vol. 25, No.6/7/8. Also see Arthur Lyon Dahl, The Eco Principle: Ecology and Economics in Symbiosis, (George Ronald, Oxford, 1996)

[150] J. Donald Hughes, "Francis of Assisi and the Diversity of Creation", Environmental Ethics, (Vol.18, Fall 1996):320

[151] Ibid, p.315

[152] Roberta Hill-Burdett, "Can Saints Preserve Us? Reconsidering St. Francis' View of Nature", The Maine Scholar 7 (Autumn 1994): 201. Quoted in Hughes, "Francis of Assisi", p.313

[153] "Francis of Assisi", p.313

[154] Denis Edwards, "Theological Foundations for Ecological Praxis", Ecotheology 5 and 6 (1998-99), pp.129-30. Edwards cites Bonaventure, Iteneraium Mentis in Deum 5.2, 6.2 For the Latin Text with translation, see Philotheus Boehner (trans.), Saint Bonaventure's Itenerarium Mentis in Deum: With an Introduction, Translation and Commentary (Saint Bonaventure, NY: The Franciscan Institute, 1956).

[155] Ibid, p.130

[156] Cited by Edwards, p.130. "Unde Creatura non est nisi quoddam simulacrum sapientia Dei, et quoddam sculptile" (Hexaemeron 12)

[157] Ibid. "Omnis enim creatura ex natura est illius aeternae sapientiae quaedam effigies et simultudo" (Itinerarium 2.12)

[158] Ibid, p.131. Hexaemeron 13,14.

[159] Ibid

[160] Ibid, Breviloquium 2.11.2

[161] For example, towards returning to
God from a state of sin, "...I therefore reveal unto thee sacred and

resplendent tokens from the planes of glory, to
attract thee into the court of holiness and nearness and

beauty, and draw thee to a station wherein thou
shalt see nothing in creation save the Face of thy

Beloved One..." Bahá'u'lláh, Seven Valleys and
Four Valleys, p. 3

[162] Aldo Leopold, Sand County
Almanac, "The Land Ethic", p262

[163] Scott Lehmann writes, "Although
Leopold claims for communities of plants and animals a "right to

continued existence," his argument is homocentric,
appealing to the human stake in preservation.

Basically it is an argument from enlightened
self-interest, where the self in question is not an individual

human being but humanity –present and
future- as a whole..."

From "Do Wildernesses Have Rights?" p.131, Environmental
Ethics 3 (1981)

[164] Aldo Leopold, Sand County
Almanac, p.??? to be found

[165] That Leopold is not strictly
non-anthropocentric is based on his references to nature serving human

interests, but in a non-dominating fashion.
"Abraham knew exactly what the land was for: it was to drip

milk and honey into Abraham's mouth." Ibid.

[166] Ibid

[167] See Richard Sylvan, "Is there a
Need for a New, an Environmental, Ethic", Proceedings of the XV

World

Congress of Philosophy, No. 1. Varna, Bulgaria, 1973, pp.205-210

[168] See Peter Singer "Animal
Liberation", The New York Review of Books,
April 5, 1973

[169] At this stage, consideration, for
the most part, was given only to animals of the higher order.

[170] "Intrinsic Value, Moral Standing,
and Species", Environmental Ethics
(Vol.19, Spring 1997):45-52

[171] Ibid, p.46

[172] The complex concept of "rights"
will be further addressed in the following section.

[173] Ibid

[174] This is not to say that this is
universally agreed upon. A number of deep ecologists, including Arne

Naess make no exclusions, but even the leading
biocentric egalitarian, Paul Taylor, excludes domestic

animals.)

[175] The distinctions will be explored later in the thesis, but primarily reside in the consideration of all beings in an instrumental fashion in relation to the overall machrohistorical purpose of the universe. But the use of "noninstrumental" in the definition of "intrinsic value" is agreed upon in the sense of value existing regardless of the human valuing process or potential benefit of such intrinsic value to other beings.

[176] C, Hartshorne discusses this pansychism and its antithesis, the "prosaic fallacy"- a refusal to attribute to nature the capacity to feel. See Physics and Psychics: The Place of Mind in Nature. In Mind in Nature: Essays on the Interface of Science and Philosophy, eds. J. B. Cobb, D. Griffin. Washington D.C., University Press America, 1977

[177] Singer advises us that he uses Jeremy Bentham's understanding of sentience: the capacity to experience pleasure and pain. (no reference provided)

[178] Environmental Philosophy, p.6

[179] Regan "Animal Rights..." p.39

[180] Tom Regan, "Animal Rights, Human Wrongs", Environmental Ethics, Vol.2, No.2 (Summer 1980), 99-120.

[181] John Locke, Some Thoughts

Concerning Education, 5th ed.
(London, 1905), quoted by Tom Regan in

"Animal Rights, Human Wrongs"

[182] Ibid, p44

[183] Ibid

[184] Kenneth E. Goodpaster "On Being Morally
Considerable", The Journal of Philosophy,
LXXV, 6 (June

1978):316.

[185] Ibid,314

[186] Paul W. Taylor, "The Ethics of
Respect for Nature", Environmental Ethics, Vol.3, No.3 (Fall 1981):208

[187] Ibid, 217

[188]Taylor has often been criticized for
arbitrariness and indeterminacy because of his concept of biocentric

egalitarianism. (See: Gene Spitler, "Justifying a
Respect for Nature," Envrionmental Ethics 4

(1982):255-60; Bryan Norton, "Review of Paul
Taylor's Respect for Nature," Environmental
Ethics 9

(1987):261-67; Peter Wenz, Environmental
Justice (Albany: SUNY, 1988), chap.14;
Holmes Rolston III,

Environmental Ethics (Philadelphia: Temple University Press, 1988), p.119:
Joseph Des
Jardins,

Environmental Ethics (Belmont: Wadsworth, 1993), pp.152-60; J. Baird Callicott, Michael E.

Zimmerman et al., eds., Environmental Philosophy, (1993) p.8; Robin Attfield, Environmental

Philosophy, (Aldershot, Avebury, 1994) pp. 173-82; William C. French, "Against Biospherical

Egalitarianism", Environmental Ethics 17 (1995) p.40; Tim Hayward, Ecological Thought, p.66;)

However there are often overlooked elements of truth in this concept which will be discussed on the

section of this thesis related to the theme of human custodianship.

[189] Taylor, "The Ethics of Respect for Nature", p.217

[190] Note that Taylor appears to limit any moral obligations towards entities arising from such enlightenment

to wild entities only. "From the perspective of a life-centred theory, we have prima facie moral

obligations that are owed to wild plants and animals themselves as members of Earth's biotic

community." Ibid, 197. It should be noted that Robin Attfield disagrees with the opinion that Taylor

limits it to wild entities only. Attfield proposes that although the subcategory of "wild" is used, it is

within the context of the wider category of "members of Earth's biotic community" and so Attfield

proposes "The context makes it clear that all living creatures are included and not only wild ones."

Environmental Philosophy, p.174 However if Taylor's intention wasn't to indicate an exclusion of

"domestic" versus "wild", then why use the subcategory in the first place? Especially when the concept

of unqualified egalitarianism would have been conveyed without the apparent qualification.

according to Attfield would have been the same?

[191] George Sessions, "Deep Ecology and Global Ecosystem Protection", Zimmerman, (ed.), Environmental

Philosophy: From Animal Rights to Radical Ecology, pp.236-237

[192] For example, few within the ecofeminist ecological movement would agree with his propositions.

Deborah Slicer writes, "It is only marginally true that ecofeminists are 'in general agreement with the

constructive task of deep ecology'. That is, ecofeminists may agree with the deep ecological

recommendation that we be rid of anthropocentrism and favor some form of radical egalitarianism, but

(1) they have serious concerns with the specific sort of theoretical analyses that deep ecologists consider

constructive, "deep," or revolutionary, and (2) they have reservations about the deep ecologists rather

shallow conception of egalitarianism." Deborah Slicer, "Is There an Ecofeminism-Deep Ecology

"Debate"?", Environmental Ethics 17, 1995, p.164-165. This is echoed in numerous other ecofeminist

works such as Marti Kheel, "The Liberation of Nature: A Circular Affair," Environmental Ethics 7

(1985):135-49; Jim Cheney, "Ecofeminism and Deep Ecology," Environmental Ethics 9 (1987):155-145;

Val Plumwood, "Nature, Self, and Gender: Feminism, Environmental Philosophy, and the

Critique of Rationalism"Hypatia, VI, No.1 (Spring 1991), pp.12-17, and Feminsim and the Mastery of

Nature,

(Routledge, New York) 1993, pp.16-18.

[193] Arne Naess, "Simple in Means, Rich in Ends", The Ten Directions, (Los Angeles, Zen Centre, 1982)

reprinted in Zimmerman, ed., Environmental Philosophy, p.184

[194] Arne Naess, "The Deep Ecological Movement: Some Philosophical Aspects", Philosophical Inquiry,

Vol.VIII, No.1-2, 1983, p. 15

[195] Ibid, p.16

[196] Tom Regan, "The Nature and Possibility of an Environmental Ethics," Environmental Ethics 3 (1981):

30. Quoted by Naess, "The Deep Ecological Movement:", p16

[197] J. Baird Callicott, In Defense of the Land Ethic: Essays in Environmental Philosophy, (State University

of New York Press, Albany, 1989) p. 6

[198] J.Baid Callicott, "The Conceptual Foundations of the Land Ethic", (ed. Zimmerman), Environmental

Philosophy,
p. 117. Reprinted from J. Baird Callicott (ed.) Companion to A Sand County Almanac:

Interpretive and Critical Essays (Madison: University of Wisconsin Press, 1987)

[199] Ibid, p.117

[200] Whether it is nonhomeocentric or not is debatable, particularly when ethics is seen in the Darwinian framework. Here, ethics is seen as the biological evolution of social extension arising from awareness that to behave ethically enhances the individual and species survival.

[201] Ibid, p.120

[202] Although he admits reason can amplify and inform our feelings or sentiments which are the true source of ethics.

[203] Ibid, p.119

[204] Callicott, In Defense of the Land Ethic, p.126

[205] Callicott, "The Conceptual Foundations of the Land Ethic", p.117

[206] J. Baird Callicott, "Benevolent Symbiosis: The Philosophy of Conservation Reconstructed", Earth Summit Ethics: Toward a Reconstructive Postmodern Philosophy of Environmental Education, (ed.) J. Baird Callicott, et. al., (State University of New York Press, Albany, 1996): p. 157

[207] George Bradford, "Toward a Deep Social Ecology", Ibid. Bradford writes that he distinguishes himself from Bookchin's "suggestion in some of his work that technological relations are the consequence of

previously determined social relations, and his essentially irrational rejection of irrational and intuitive

aspects of our reconciliation with nature, aspects which have been admirably explored by some deep

ecology writers." p. 419

[208] Murray Bookchin, "What is Social Ecology?", (ed.) Zimmerman, Environmental Philosopy, p. 365

[209] This is a simplistic caricature of his sophisticated political critique. For example, there are a number of

other influences and considerations in his political theory such as radical heretical and millenarian

movements and in some modern revolutionary movements. It's brevity is required do to limitations,

however, it not believed to be disloyal to his vision.

[210] Ibid, pp. 371-372

[211] Janet Biehl, "Dialectics in the Ethics of Social Ecology", Ibid, p. 387

[212] Janet Biehl, Ibid. argues against "An ethical prescription superficially drawn from first nature which

argues that all life is sacred...", p.388

[213] Feminism itself has undergone a number of significant stages since the 1970s. From liberal feminism

and "uncrictical equality", to radical feminism and "uncrictical reversal", to other lesser known

movements of marxsist feminism, black feminism and third world feminism. This current discussion

only relates to the diverse approaches of ecofeminism within the general movement of "third wave feminism".

[214] Karen J. Warren, Michael Zimmerman (ed.), Environmental Philosophy, pp. 256-261

[215] Ibid, p.262

[216] Val Plumwood, Feminism and the Mastery of Nature, (Routledge, London, 1993)

[217] Sallie McFague, The Body of God,

[218] Fox, Warwick "The Deep Ecology-Ecofeminism Debate and Its Parallels" Environmental Ethics 11, 1 (Spring 1989) 5-25. For a direct response, see Deborah Slicer, "Is There an Ecofeminism-Deep Ecology "Debate"?", Environmental Ethics 17, 1995, p.164-165. Also see Supra note 192 for a list of similarly concerned critiques of deep ecology from ecofeminst persepctives

[219] See John Clark, "A Social Ecology", Environmental Philosophy: From Animal Rights to Radical Ecology, p.431

[220] Geoffrey B. Frasz, "Environmental Virtue Ethics: A New Direction for Environmental Ethics", Environmental Ethics, p.259, Fall 1993, Vol.15,3

[221] Ibid.

[222] Kirkpatrick Sale, "Deep Ecology and Its Critics," The Nation, May 14, 1988.

[223] For example, cultural eco-feminism often takes the domination of women to represent the essential principle responsible for the entire range of ecological problems. (See Charlene Spretnak "Toward an Ecofeminist Sprituality", Healing the Wounds, (Judith Plant ed.) Philadelphia, PA: New Society Publishers: 127-32) while social ecological feminism considers the domination of women to be one of many forms of domination responsible for the ecological crisis. (See Bell Hooks, Talking Back, Boston, MA: South End Press, 1989

[224] See Murray Bookchin, "Social Ecology Versus Deep Ecology", Socialist Review 99 (1988): 11-29. In this article Bookchin may be accused of taking statements by a controversial and non-representative deep ecologist Dave Foreman, and generalizing certain "eco-fascist" comments as being representative of a number of Deep Ecologists. Another non-representational Deep Ecologist, Garret Harding has also been the focus of Bookchins criticism of Deep Ecology in general. See Garret Harding, "Living on a Lifeboat," Bioscience 24 (1974): 561-68.

[225] John E. Kolstoe, Consultation: A Lamp of Universal Guidance, George Ronald, Oxford, 1985, p9. The process of Bahá'í consultation is a well developed concept, which is beyond the capacity of this thesis to examine in depth. Some pre-requisites to Bahá'í consultation are purity of motive, radiance of spirit,

detachment, attraction to the infinite qualities of God's spirit, humility, patience, and an attitude of service. Among the procedures of consultation are spiritual devotion, courtesy, dignity, care and moderation. One of the most important facets of Bahá'í consultation is that of detachment from ones own views, so that once an idea is offered, it is placed "on the middle of the table" and is owned by all for further consultation.

[226] Bahá'u'lláh: Gleanings, page 94, XLIII, Lawh-i Dunya (Tablet of the World), late 'Akka, between 27 June and early August, 1891. For original text see Majmu`ih-yi Alvah-i Mubarakih 285-301

[227] Plumwood, Val, Mastery, p.160

[228] Murray Bookchin, "What is Social Ecology", Zimmerman, (ed.) Environmental Philosophy, p.371

[229] Joseph R. Des Jardins, Environmental Ethics: An Introduction to Environmental Philosophy, pp.253-254 (Wadsworth, Belmont, CA, 2nd ed., 1997)

[230] The Bahá'í concept of fulfilling specific goals understands a unity of action in which each person potentially contributes a unique specialization towards that overall goal. See UHJ letter (find specifics)

[231] The introductory propositional statement taught to me in first year systematic theology course. It comes from the neo-orthodox tradition of Thomas Torrance.

Although it has wider applications for

interdisciplinary studies, it comes from his
definition of theology as a science which is "developing its

distinctive modes of inquiry and its essential
forms of thought under the determination of its given

subject-matter."

Thomas Torrance, Theological Science (Oxford University Press, 1969), p. 281

[232] Not all tensions
can be reconciled. This is evident due to the proponents co-commitment to not only a

principle, but to
the philosophic tradition which is historically associated with the formulation of that

principle. The
mistake is made in assuming that the principle is some essential and unique

manifestation exclusive to, and solely possible in the context of a particular tradition, as if in the

platonic sense the
principle was an archetypal extension of the Form which that philosophy uniquely

represents. When in
reality the principle merely has a coincidental historical association with the

philosophy in which
it arose and could potentially have arisen from a number of other associated

contexts.

[233] Paul Davies, The Mind of God:
Science and the Search for Ultimate Meaning,
(Harmondsworth,

Penguin, 1992)

[234] Universal in the sense of applicable and inclusive to all of
reality.

[235] Absolute meaning that while the states of relationship may change, the principles governing those

relationships don't.

[236] Eternal in that these principles are grounded in mathematical structures which underpin reality.

[237] Omnipotent as the principles have the capacity of applicability to all of reality.

[238] See Paul Taylor, Respect For Nature, (Princeton, N.J., Princeton University Press, 1986) Taylor

indicates that moral respect needs to be based on reason and cognition, not emotion or personal

feelings. "If one seeks that end solely or primarily from inclination, the attitude being expressed is not

moral respect but personal affection or love." p.85 As Val Plumwood puts so well, "The Kantian

account of ethical universalisation as derived from reason alone disguises and denies the dependency

of ethical judgement on empathic elements." Plumwood, Feminism and the Mastery of Nature, p.168

[239] Immanuel Kant, Critique of Pure Reason, Transcendental Aesthetic, translated by Norman Kemp Smith,

(New York, St. Martin's Press, 1929) first section conclusions (A. 28).

[240] W. Norris Clarke, "Is a Natural Theology Still Possible Today?", Physic, Philosophy and Theology: A

Common Quest for Understanding, ed. Robert J. Russell, et. al., (Vatican Observatory, Vatican City

State, 1988) p. 105. For similar observations
see: Langdon Gilkey, Nature, Reality and the Sacred: The

Nexus of Science and Religion, (Minneapolis, Fortress Press, 1993) p. 67
where he
says that "affirming

that a metaphysical analysis is nevertheless
possible beyond the range of scientific empirical enquiry.."

is "non-Kantian".

[241] Keith Ward, Images of Eternity, (Oxford, England, Oneworld Press,
1987,1993) p. 176

[242] Warwick Fox, "The Deep
Ecology-Ecofeminist Debate", p.18

[243] Ibid.

[244] Ibid, footnote 39.

[245] Karen J. Warren, Environmental
Philosophy, p. 261

[246] Originally developed by Elizabeth
Dodson-Gray in Green Paradise Lost,
(Roundtable Press, Wellesley,

MA, 1979) p.4

[247] Murray Bookchin, "What is Social
Ecololgy", p. 355

[248] Ibid

[249] J. Baird Callicott, "The Conceptual Foundations of the Land Ethic", p. 113

[250] Ibid, Callicott himself is not of the opinion that ethics finds its source in reason, but he illustrates here the dominant philosophical assumption.

[251] Ibid

[252] J. Baird Callicott, In Defense of the Land Ethic, p. 154

[253] Ibid, p. 138

[254] David Hume, An Enquiry Concerning Human Understanding and Concerning the Principles of Morals, (Oxford, Clarendon Press, 1975) sec 7.3

[255] Alfred Whitehead, Science and the Modern World, Cambridge University Press, Cambridge, 1933, p.224

[256] This is not to insinuate that such a theory is not possible, but rather that if it is, this thesis could only serve at the most minimal level of alluding that the reconciliation of philosophy, science and theology is possible by understanding the non-essential nature of their interpretational conflicts.

[257] For two of the earliest works from a positivist scientific framework, which embody the post-Darwinian popularization of this view see John William Draper, History of the Conflict Between Religion and

Science,
(New York, Daniel Appleton,1874) and Andrew Dickson White, History of
the Warfare of

Science with Theology in Christendom, 2 vols. (London, Macmillan, 1896)For a
more recent
classic see

Bertrand Russell, Religion and Science, (Oxford, Oxford University Press, 1961)
or E.O.
Wilson, On

Human Nature
(Cambridge, MA, Harvard University Press, 1978) where he explains

religion as a product of evolution which will
eventually become replaced by "scientific materialism.

(chaps. 8 & 9)

[258] For a modern example from the
religious side which facilitates a "two sides at war" view see Henry

Morris, The Long War Against God

[259]Nebelsick, Harold, Theology and
Science in Mutual Modification, Christian Journals Limited, 1981, p.26

[260] Alister E. Mcgrath, Science and
Religion: An Introduction, (Oxford, UK,
Blackwell Publishers, 1999)

[261] Ernan McMullin, "Natural Science
and Belief in a Creator: Historical Notes", (ed.) John Russell, et.al.

Physics, Philosophy and Theology: A Common
Quest for Understanding, p.59

[262] This concept of denied dependency
comes from the ecofeminist critique, particularly that of Val

Plumwood.

[263] Val Plumwood, Feminism and the Mastery of Nature, pp. 48-49

[264] For example, of Thomas Aquinas's "Five Ways", proofs for God's existence, the third is an obvious and direct modification of one of Avicenna's theories focusing on metaphysical proofs for God's existence. While elements of Averroes proofs for God's existence based on physics also influenced him. See Eteinne Gilson, Elements of Christian Philosophy, (New York, Doubleday, 1959) pp. 80-87.

[265] John Bowker, Voices of Islam, (Oxford, England, One World Press, 1995) p. 142

[266] David S. Noss, Humanity's Religions, (New York, New York, Macmillan Publishing Company) p. 470

[267] However, several hundred years before Copernicus, a Muslim astronomer, ..., proposed a heliocentric model. This theory had support from the Quran: "The sun moves in a fixed place...and each star moves in its own heaven." 36:37-38. Although within Islamic culture, this theory did not become popular. While in the Bahá'í tradition, Abdu'l-Bahá states that "Though Pythagoras, and Plato during the latter part of his life, adopted the theory that the annual movement of the sun around the zodiac does not proceed from the sun, but rather from the movement of the earth around the sun, this theory had been entirely forgotten, and the Ptolemaic system was accepted by all mathematicians." `Abdu'l-Bahá: Some Answered Questions, p. 23

[268] This is due to at least three factors. First, his work was published in the last year of his life, second he indicated it was to be considered as only a mathematical exercise, therefore placing less tension on it as a competing model, and third his model was not comprehensive enough to yet offer a complete challenge to the Ptolemic model.

[269] John Polkinghorne, One World: The Interaction of Science and Theology, (SPCK, 1986) pg.2

[270] See for example, Owen Gingerich, "The Galileo Affair", Scientific American, August 1982.

[271] Owen Gingerich, from personal notes taken at his public talk at the Symposium on Theology and Science at Knox Theological College, University of Otago Dunedin, New Zealand, 1992.

[272] Galileo Galilee, Quoted by L. Fermi and G. Berardini, Galileo and the Scientific Revolution, (New York, Basic Books Inc., 1961) p.80

[273]R.J. Forbes gives the following rough tabulation of the contents of the contents of Newton's library:("Was Newton an Alchemist?", Chymia, II 1949, 28-8.)

Theology and Philosophy	515 titles-32%
History and chronology	215 titles-14%
Classical authors	182 titles-11%

Chemistry, mineralogy 165 titles-10%

Mathmatics, physics, astronomy, 268 titles-16%

[274] Alistair E. McGrath, Science and Religion, p. 17

[275] From Newtons Principia, translated and quoted by Michael J. Buckley, "The Newtonian Settlement and the Origins of Atheism," Physics, Philosophy, and Theology, p.85

[276] Newton to Bentley, December 10, 1762, in The Correspondance of Isaac Newton, edited by H.W. Turnbal (Cambridge, Cambridge University Press, 1959) 3:233. Quoted by Buckley. Ibid, p.86

[277] Isaac Newton, "A Short Schema of the True Religion," in Sir Isaac Newton. Theological Manuscripts, selected and edited with an introduction by H. McLachlan (Liverpool, University Press, 1950) p. 49

[278] Ernst Mayr, The Growth of Biological Thought: Diversity, Evolution, and Inheritance, (Cambridge, Harvard University Press, 1982) p. 141

[279] Roger Cotes, quoted by Florian Cajori in the introduction to his revision of Andrew Motte, (1729) Sir Isaac Newton's Mathematical Principles of Natural Philosophy and His System of the World, (Berkely, University of California Press, 1962) p.xxxiii.

[280] Anjam Khorsheed is particularly astute at appreciating the traditional interpretations of Descarte, particularly that of his radical dualism although Khorsheed proposes a tripartate orientation. This critique is implicit throughout his book, but particularly see pg. 166-167. Anjam Khursheed, The Universe Within: An Exploration of the Human Spirit, (Oxford, England, Oneworld Publications, 1995)

[281] Rene Descartes, Mediatations on First Philosophy, translated by Laurence J. Lafleur (Indianapolis, Bobbs-Merrill, 1978) p. 7

[282] Rene Descartes, quoted by Jaques Maritain, The Dream of Descartes, translated by Mabelle J. Andison (New York, Philosophical Library, 1944) p.205

[283] Michael J. Buckley, "The Newtonian Settlement and the Origins of Atheism", p. 93

[284] Ibid.

[285] Roger Hahn, "Laplace and the Vanishing Role of God in the Physical Universe," The Analytic Spirit: Essays in the History of Science in Honor of Henry Guerlac, ed. Harry Woolf (Ithaca, Cornell University Press, 1981) pp. 85-86

[286] David S. Noss, p. 475

[287] Of course there are a variety of causes, but the historical influences are mentioned as it is less common for them to receive treatment in this area.

Certainly the atheistic reinterpretations of Newton by Laplace, Lagrange and others in mainland Europe was substantially less influential in England; and Newton's assumptions of the harmony of natural theology and science remained the dominant popular and theological view until after 1859 with Darwin's first publication. Of even greater significance towards the removal of the balance between theolgy and science, were its interpreters who possessed their own anti-religious agenda, such as Thomas Huxley.

[288] While in England the popular assumption of the absolute mechanistic and material understanding of reality did not truly take hold until the end of the 19th century, it had happened a hundred years earlier in Germany.

[289] Adrian Desmond and Jim Moore, Darwin, 1990, Blackwell, London

[290] Charles Darwin, The Autobiography of Charles Darwin, , ed. Nora Barlwo (London: Collins, 1958), pp. 85-87

[291] In the same passage, Darwin specifically mentions the Tower of Babel and the flood.

[292] Alistair McGrath, Science and Religion, p.23

[293] Quoted by Neal C. Gillespie, C.Darwin in a letter written to Asa Gray, p. 87

[294] Ibid, p. 128

[295] Keith Ward, God, Chance and Necessity, (Oneworld Publications, Oxford, 1996) p.88

[296] Ibid, p. 92-93

[297] Charles P. Henderson Jr., God and Science, Chapter 3 last page. (Still to get other publishing details.)

However it is important not overemphasize the "stranglehold" as absolute, merely to indicate its

Significance as a dilemma which Darwin strongly responded to and therefore affected how he framed

his model.. There were a number of Anglican theologians who were contemporaries of Darwin and who

represented positive attempts at positing a spiritual view of evolutionary theory.

[298] Charles Darwin, Origin, p.500

[299] Charles Darwin, The Descent of Man, (New York, A.L.Burt 1874), p. 694

[300] Charles Darwin, The Origin of Species, pp. 505-506

[301] Ibid, p. 91

[302] Ibid, p.88-89

[303] Interestingly, William Paley argued
the examination of the human eye was a cure for atheism. Natural

Theology: Evidences of the Existence and
Attributes of the Deity, Collected from the Appearances of

Nature,
(Boston, Gould, Kendall and Lincoln, 1849)

[304] Charles Darwin, The Origin of
Species, (Harmondsworth, Penguin, 1968) p.205

[305] Neil Gillespie, Charles Darwin
and the Problem of Creation, p.87

[306] Quoted in Anjam Khursheed, Science
and Religion: Towards the Restoration of Ancient Harmony,

(London, Oneworld Press, 1987) p. 91, from a
conversation between Abdu'l-Bahá and Dr. Fallscheer,

recorded in Sonne der Warheit, No. 1, March 1921, p.9

[307] Alfred N. Whitehead, Science and
the Modern World, Cambridge, Cambridge
University Press (1933)

[308] Jucas, J.R. "Wilberforce and
Huxley: A Legendary Encounter", Historical Journal 22 (1979) pp. 313-

314

[309] John Canning, ed., One Hundred
Great Events That Shaped the World,
"Charles Darwin's Bombshell:

The Book that Revealed Evolution as the

Master-Key to Nature's Secrets" (London, Odham Books,

1965) p.473

[310] Alistair McGrath, Science and
Religion, p.25

[311] Charles Birch offers a number of
similar categories in his article, "Eight Fallacies of the Modern World

and Five Axioms for a Postmodern Worldview", Perspectives
in Biology and Medicine, 32, 1, Autumn

1988, He calls this the "The fallacy of
objectivity", pp.17-18

[312]
J. Baird Callicott, In Defense of the Land Ethic, pp. 132-133

[313] See, Polanyi,
Michael, The Tacit Dimension, (Routledge and
Kegan Paul Ltd., 1967) p. 77

[314] Leslie Newbigin, The
Gospel in a Pluralist Society, (WCC Publications,
1989) pp. 30?33

[315] Albert Einstein
quoted by Leslie Newbigin, The Gospel in a Pluralist Society, pg. 31

[316] Owen Gingerich, "Is There a Role
for Natural Theology Today?"

[317] Francis Crick, Of Molecules and
Men (Seattle, University of Washington
Press, 1966) p.10

[318] Charles Darwin, The Origin of
Species, p. 89

[319] Ibid, p.507

[320] Ibid, p.507-508

[321]
Plumwood, Feminism and the Mastery of Nature, p.168

[322] Intellectual love is a specific
manifestation of a conscious element of the relational quality of love that all beings, capable of sentience or not, participate in. The relational nature of this model will be more fully explore in the following chapter.

[323] Charles Birch, "Eight Fallacies of
the Modern World and Five Axioms for a Postmodern Worldview"

p.12

[324] Ibid

[325] The expression of this concept as
found in the Duhem Quine thesis and in Michael Polayni's work will

be discussed later.

[326] Carl Sagan, Cosmos,(New York, Random House, 1980) p.4

[327] Ian G. Barbour, "Ways of Relating
Science and Theology", Physics, Philosophy and Theology, p.23

[328] Jacques Monod, Chance and

Necessity, (New York, Vintage Books, 1972)
p. 180

[329] Ibid, p. 110

[330] Jacques Monod, quoted from BBC
lecture in John Lewis, ed., Beyond Chance and Necessity (London,

Garnstone Press, 1974) p. ix.

[331] Jacques Monod, Chance and
Necessity, p. 31

[332] Keith Ward, Defending the Soul, (Oneworld, 1992) p. 59

[333] Karl Popper, The Logic of
Scientific Discovery, New York, Science
Editions, 1961, pp.40-41

[334] An example of an application of
this principle is the Michelson-Morely experiment, in which an

experiment was conducted that disproved the theory
of lumineferous ether.

[335] See Willard Quine, From a
Logical Point of View, (Cambridge, MA,
Harvard University Press, 1953)

[336] Alistair McGrath, Science and
Religion, p.68

[337] Ibid, p.69

[338] Ibid, p.71

[339] Norris 1997 (218-47 and 265-94)

[340] Albert Einstein, quoted in F. Capra, The Tao of Physics, (Fontana, 1976), p. 49

[341] Niels Bohr, Atomic Physics and the Description of Nature, (CUP, 1934), p. 57

[342] Shoghi Effendi, The Promised Day is Come, p.v

[343] See Thomas Kuhn, SSR p. 11; 1970a, ET, p. 267

[344] Stephen Toulmin, "Rediscovering History: New Directions in the Philosophy of Science", Encounter 36 (1):53-64

[345] Barbour, 1990, 43; Peacocke 1993, 14.

[346] This is of course an idealistic expression. Value can also be determined by prejudice and hatred, but for the context of this thesis, those values are considered "anti-values" in that they are distorted representations of an incapacity to perceive value. Authentic value can only be perceived in a condition of loving relationships. (Discuss concept of good and evil using light metaphor)

[347] A primary focus of the Bahá'í
International Community is encouraging the use of the concept of'World Citizenship' in all levels of eduction. Michael Richard's- Comments that 'World Citizenship' acts as a primary empowering metaphysic for Environmentally Sustainable Development that both counteract's nationalism and provides an antidote for apathy, as it facilitates a motivating vision that stimulates patterns of behaviour which achieve positive social transformation.

[348] Bahá'u'lláh, Gleanings, p. 200

[349] 'In every age and cycle He hath,
through the splendorous light shed by the Manifestations of His wondrous Essence, recreated all things, so that whatsoever reflecteth in the heavens and on the earth the signs of His glory may not be deprived of the outpourings of His mercy, nor despair of the showers of His favors. How all-encompassing are the wonders of His boundless grace! Behold how they have pervaded the whole of creation. Such is their virtue that not a single atom in the entire universe can be found which doth not declare the evidences of His might, which doth not glorify His holy Name, or is not expressive of the effulgent light of His unity. So perfect and comprehensive is His creation that no mind nor heart, however keen or pure, can ever grasp the nature of the most insignificant of His creatures; much less fathom the mystery of Him Who is the Day Star of Truth, Who is the invisible and unknowable Essence."

Bahá'u'lláh, Gleanings, p. 62

[350] Alistair S. Gunn, "Preserving Rare
Species," in Earthbound, New Introductory Essays in Environmental

Ethics,
(ed.) Tom Regan, (New York, Random House, 1984) p.330

[351] Chapter two largely covered the
general history to the present, but further discussion, particularly including Christian eco-philosophers who posit a Theocentric model will be shortly.

[352] A fuller discussion of this
particular principle will be done later in this chapter.

[353] Perhaps prememinently among these
is Juan Cole's discussion "The Concept of Manifestation in the Bahá'í
Writings", Bahá'í Studies Monograph 9
(1982):1-38, (Association for Bahá'í Studies, Ottwawa, Ontario)

[354] For example Anjam Khorsheed, most
recently in the Universe Within: An Exploration of the Human

Spirit, Oneworld Publications, Oxford, 1995

[355] See Moojan Momen, Relativism: A
Basis for Bahá'í Metaphysics, He makes the
valuable contribution of indicating that while the majority of Bahá'í texts
are
dualistic in structure and apparent content, they are mitigated by a range of
texts which have strong monist implications. The apparent dominance of dualist
structures is rather due to the cultural context of the intended audience which
was likewise dualist. Yet the overall hermeutical circle of Bahá'u'lláh's
writings evince an awareness of a more equal balance or synergy between dualism
and monism, and the modality of metaphysics chosen is usually related to the
context of the discussion. Momen places a strong emphasis on the principle of
relativism as a basis for Bahá'í metaphysics in positing resolution of the
'dichotomy' apparent in the above mentioned patterns. Momen suggests a
relativism allowing a metaphysics that is both dualist and monist on an
ontologial level.

Also See Robert Parry.
"Rational/Conceptual/Performance—The Bahá'í Faith and Scholarship--a
discussion paper", Bahá'í Studies Bulletin. Where he proposes to resolve
this same tension by positing a dualist ontology and an ethical monism.

[356] See J.A. McLean, "Prolegomena to a
Bahá'í Theology", The Journal of Bahá'í Studies 5.1, 1992

"Relativity, moreover, should not fall into the trap
of absolutizing relativity, which would be tantamount to an ironic defeat of
its own purpose. Relativity itself is also relative and invites the imposition
of some limits on the concept...if relativity is pursued exclusively, without
defining its relation to the absolute, it takes on the function of an absolute
itself and results in contradiction.... Religious relativity acts then as a
bulwark against the one-way interpretation of dogmatism; implies that religious
truth although fundamentally one, is progressive, dynamic, infinite, and
ever-changing; and allows us to accept various interpretations of metaphysical

and theological questions, which would on the surface appear to be incompatible. It is thus an ally of a more inclusive view of reality, one that allows for a diversity of approaches. The relativity of religious truth also has
strong implications for reestablishing some measure of unity between science and religion or philosophy one of the most meaningful and potentially fruitful questions in our time" pp.40-41

[357] Seena Fazel, for example see "Understanding Exclusivist Texts", Scripture and Revelation, Bahá'í Studies Volume III, ed. Moojan Momen, Oxford, George Ronald, 1997

[358] This list of metaphysically related topics is not meant to be exhaustive, but rather indicative of range.

[359] Robert White mentions similarities between deep ecology and the Bahá'í position but it represents only a brief, uncritical generalization and no further discussion of the other 'radical' ecological movements is made.

[360] Although there have been indirectly related general discussions of the harmony of spiritual and physical reality.

[361] Owen Gingerich, "Is There a Role for Natural Theology Today?", p.18

[362] Abdu'l-Bahá, Some Answered Questions, p.197

[363] From a Bahá'í perspective this unfoldement would not be representative of God's essence, but rather a capacity for a relative reflection of secondary attributes.

[364] See E Mayr, The Growth of

Biological Thought, Harvard University
Press, Cambridge, Mass. (1982)

[365] Primarily seen in a compilation of
talks to a Western Pilgrim in Akka, Laura Clifford Barney, Some

Answered Questions. As well many of his talks from his journey through Europe and America
(1911-

1912) include such discussions.

[366] Keven Brown, p.31 (Although there
were divergences of thought within the Arab world, with some, such

as the editors of the Journal al-Muqtataf being accepting Darwins theory from a Deist
perspective.)

[367] For example see Anjam Khursheed, Science
and Religion – Towards the Restoration of an Ancient

Harmony,
Oneworld Publications, London, (1987) and also B.H.Conow, The Bahá'í Teachings – A

Resurgent Model of the Universe, George Ronald, Oxford, (1990)

[368] See email discussions on H-Bahá'í
Net, from 06/08/98 to 14/08/98.

[369] Keven Brown, p. 81

[370] Eberhard von Kitzing, p.1

[371] `Abdu'l-Bahá, Tablet to August
Forel, p. 16-17

[372] Mufavadat 128, Some Answered Questions, p. 181, translation by Keven Brown.

[373] `Abdu'l-Bahá, Kitabat 2:170-171, Promulgation of Universal Peace p225-226, revised translation by

Keven Brown.

[374] Here `Abdu'l-Bahá uses 'spirit' to refer to the human soul rather than the spirit of archetypal species

essence. Kitzing writes: "Because the ``spirit'' appears after the composition of the elements, it is likely

that `Abdu'l-Bahá refers to the individual human soul in this passage and not to the ``human spirit'', i.e.,

the human species essence." p.40

[375] SAQ, 52

[376] `Abdu'l-Bahá: Paris Talks, page 175

[377] Shoghi Effendi: Light of Divine Guidance Vol.2, page 82

[378] Kitzing, p. 56

[379] `Abdu'l-Bahá: Some Answered Questions, pages 246-24

[380] `Abdu'l-Bahá, Mufávadát 130; SAQ 183-184, revised translation by Keven Brown

[381] Admittedly it is not an impossibility, but `Abdu'l-Bahá's spiritual concerns and the veracity of his proposed principles are not dependent on such an interpretation. For a full discussion on the issues of parallel evolution see Kitzing pp.63 ff.,

[382] Kitzing, p. 63

[383] `Abdu'l-Bahá, Some Answered Questions, p. 179

[384] Letter written on behalf of Shoghi Effendi , Conservation , p. 15

[385] Bahá'u'lláh, Epistle to the Son of the Wolf, p. 44

[386] Bahá'u'lláh, Gleanings, p. 65

[387] Ibid, p.264

[388] Ibid, p.67

[389] Adib Taherzadeh, The Revelation of Bahá'u'lláh, Oxford, George Ronald , 1987

[390] Gleanings, p.190

[391] Cited by, Denis Edwards,

"Theological Foundations for Ecological Praxis", Ecotheology 5 and 6 (1998-99), p.131. (Hexaemeron 13,14.)

[392] Bahá'u'lláh,Gleanings, p.61 (xxvi)

[393] (Bahá'u'lláh: Gleanings, page 205)

[394] (Bahá'u'lláh: The Kitab-i-Iqan, page 34)

[395] (`Abdu'l-Bahá: Selections ... `Abdu'l-Bahá, page 27)

[396] Bahá'u'lláh, Kitab-i-Iqan, p. 100

[397] Bahá'u'lláh , Kitab-I-Aqdas, p. 176)

[398]At one point when Bahá'u'lláh was being interrogated by government authorities and was asked for his name and country of origin he replied: "My name is Bahá'u'lláh (Light of God), and My country is Nur (Light). Be ye apprized of it." Quoted by Shoghi Effendi in God Passes By, p. 190

[399] Bahá'u'lláh, Gleanings, p. 48

[400] Bahá'u'lláh, The Kitab-i-Iqan, pp. 29-30

[401] `Abdu'l-Bahá, Some Answered Questions, p. 295

[402] Shoghi Effendi, The Promised Day is Come, (1941) p.118

[403] Bahá'u'lláh, Gleanings, p. 62 (xxvi)

[404] `Abdu'l-Bahá, Promulgation of Universal Peace, p. 421

[405] Bahá'u'lláh, Gleanings, p. 189)

[406] Bahá'u'lláh, Ibid, pp. 184-185

[407] `Abdu'l-Bahá, Some Answered Questions, pp. 246-24

[408] See I J R Aitchison, Gauge Theories in Particle Physics, 1989

[409] As structure becomes interdependent upon both relationships with other beings, and the behavior that qualifies those relationships. The organic spiritual nature of beings means that their individual capacity for reflection is unfolded in response to relationships with others. This becomes more apparent in sentient beings that have a more explicit capacity for free will, as they can choose which reflective elements are emphasized in their growth patterns.

[410] Bahá'u'lláh, Arabic Hidden Words, p. 4

[412] "Ponder in thine heart the

revelation of the Soul of God that pervadeth all His Laws..."

Bahá'u'lláh, Gleanings, p. 160

[413] Acceptance of the universe as the evolving Body of God is not an essential principle for the argument of this thesis. It is a personal opinion gained by examining the hermeneuticle circle of principles related to evolution as used by Abdu'l-Bahá. It is revolutionary towards an appreciation of nature as sacred, and affects our macro-evolutionary understanding of purpose. However, a more minimal and 'orthodox' acceptance of the universe as evolving a greater capacity for the manifestation of the names and attributes of God in the contingent order achieves the same necessary assumptions to lend integrity to the proposals of this thesis.

[414] A term used by Eberhard von Kitzing

[415] Bahá'u'lláh, Gleanings, pp. 153-154

[416]
Bahá'u'lláh, Gleanings, p. 161

[417] Not all specific elements of the universe need manifest self-awareness to provide a level of complexity sufficient for 'attracting the Soul of God'. The human body itself represents specialized functions that are equivalent to the kingdoms found in nature. Tissues such as bones, teeth and nails possess qualities of the mineral kingdom, while other tissue possess qualities of the plant and animal kingdom. The primary indicator of the body's capacity for sentience is seen in the complexity of the brain functions. How this parallel function will develop on a macro-cosmic scale can only be considered conjecture. But perhaps such a macro level of sentience will occur when a sufficient diversity of human forms develops throughout the universe. Coinciding with a minimal level of expanded conscious awareness of such unity in diversity of the human species, as the potential vehicle of the Mind of God in the contingent order.

[418] "Hence the new age will be an age less masculine, and more permeated with the feminine ideals - or, to

speak more exactly, will be an age in which the

masculine and feminine elements of civilization will be

more evenly balanced." Abdu'l-Bahá, Bahá'u'lláh
and the New Era, 1976 U.S. edition, p.156

[419] `Abdu'l-Bahá,
Foundations of World Unity, p. 42

[420] Meadows et.al., Beyond the
Limits, New York: Doubleday Press, 1992.

[421] Meadows et.al., The Limits to
Growth, New York: Universe Books, 1972

[422] Geoffrey Palmer, "New Ways to Make
International Environmental Law", The American Journal

International Law,
April, 1992, pg. 259

[423] United Nations Convention of
Biological Diversity, June 5, 1992, S.
TREATY DOC, NO. 103—20

(1993), art.3

[424] Fariborz Moshirian, "National
financial policies, global environmental damage and missing international

institutions", International Journal of Social
Economics, p. 1255, Vol. 25, no.6/7/8

[425] Particularly referring to the
impact of a number of resource and pollution flows having exceeded their

limits of global sustainability which have been
extensively illustrated in Chapter 1.

[426] The concept of ecologically sustainable development (ESD) is often shortened to "sustainable development It first appeared in its modern expression in 1980 with the publication of the World Conservation Strategy (G.A. Res. 7, U.N. GAOR 36th Sess., Supp. No. 51, U.N. Doc. A/51 (1982)) by the International Union for the Conservation of Nature (IUCN), but its formulation brewed in the environmental debates of the 1960' to 1970's. (see also, J.G. Robinson, The Limits to Caring: Sustainable Living and the Loss of Biodiversity, 7 CONSERVATION BIOLOGY 20, 21-22 (1984)) and expressed more fully at the United Nations Conference on the Environment in 1972, which produced the Stockholm Declaration on Human Environment (U.N. Doc. A/C. 48/14 (1972), reprinted in 11 I.L.M. 1461 (1972). Yet the term 'sustainable development,' is most commonly traced to the World Commission on Environment and Development (WCED) or Brundtland Commission in the book, Our Common Future,1987.

[427] Gary D. Meyers and Simone C. Muller, "The Ethical Implications, Political Ramifications and Practical Limitations of Adopting Sustainable Development as National and International Policy", Buffalo Environmental Law Journal, Fall, 1996, p.2

[428] Helen Endre-Stacy, "Sustaining ESD in Australia", Chicago-Kent Law Review, 69, 1994 p.2

[429] Edward Christie, Environmental Legislation, Sustainable Resource Use and Scientific Terminology: Issues in Statutory Interpretation, 7 EPLJ

262, p.263 (December, 1990)

[430] Gary D. Meyers and Simone C. Muller, 1996

[431] Robert Allan, How to Save the World, p.23

[432] Margaret Thatcher, Speech to the Royal Society (September 27, 1988), quoted in Meyers, p.4

[433] See Edward Barbier, The Concept of Sustainable Economic Development, Environmental Conservation

101, 103 (1987), p.14, David Pearce, Sustainable Development and Cost Benefit Analysis (London

Environmental Economics Center Paper 88-101 (1988), J. Pezzy, Economic Analysis of Sustainable

Growth and Sustainable Development, World Bank Environment Development Working Paper NO. 15,

May, 1989

[434] Such as Robert Goodland & George Ledoc, Neo Classical Economics and the Principles of Sustainable

Development, 38 Ecological Modeling (1987). Norwegian Prime Minister Gro Harlem

Brundtland is also well known for such a focus.

[435] Richard B. Norgaard, Sustainable Development: A Co-Evolutionary View, Futures 606, 607(Dec.

1988)

[436] Meyers and Muller, 1996, p.15

[437] Agreement on Trade-Related Aspects
of Intellectual Property Rights, Including Trade in Counterfeit

Goods, Dec. 15, 1993, 33 I.L.M. 81 (1994)

[438] Supra, note 423

[439] Charles R. Mcmanis, The Interface
Between International Intellectual Property and Environmental

Protection: Biodiversity and Biotechnology, University
of Washington Law Quarterly, Vol.76, no.1,

Spring 1998

[440] Although as will be noted later,
criticism has been offered that it was formulated without the recognition

of many of the concerns of a number of minority
groups.

[441] Mcmanis, p.11

[442] Ibid, p.12

[443] Christopher Joyce, Earthly Goods:
Medicine-Hunting in the Raniforest, (1994) p.108 (cited by Mcmanis,

footnote 87)

[444] `Abdu'l-Bahá, Promulgation of
Universal Peace, p. 239

[445] Helen Endre-Stacy, "Sustaining ESD

in Australia", p.12

[446] Gary D. Meyers and Simone C.
Muller, "The Ethical Implications, Political Ramifications and Practical

Limitations of Adopting Sustainable Development as
National and International Policy", Buffalo

Environmental Law Journal, Fall, 1996, p.25

[447] Unless of course improvement means
the correction of previously caused degradation to an ecosystems,

but then such improvement can only be really
considered restoration of a previous baseline of ecological

relationships rather than an actual improvement
relative to pre-human interaction.

[448] Ibid, p. 27

[449] Alex Geisinger, "Sustainable
Development and the Domination of Nature: Spreading the Seed of the

Western Ideology of Nature" , Boston College
Environmental Affairs Law Review, p.3,
27, 1999

[450] Arthur Lyon Dahl, The Eco
Principle: Ecology and Economics in Symbiosis,
George Ronald, Oxford,

1996, p.85

[451] Ibid, p.22

[452] United Nations, 1993, p.9

[453] Warren, 1994 'Sustainable Development', Bioethics, pg. 2458)

— Examination of the Environmental Crisis: Specific Focus on the Balance Between the Instrumental and Intrinsic Value of Nature From