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Climate, Neo-Spinozism, and the Ecological Worldview

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by

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Dedication

The least movement is of importance to all nature.
The entire ocean is affected by a pebble.

--Blaise Pascal (1623-1662)

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Abstract

The global community faces ecological problems with the natural environment and cultural impediments to solving them. Natural systems are constantly changing and so are cultural practices. Humans need to address both: the interaction between those dynamic systems, the natural and cultural, because what happens in one system changes things in the other. The changes to the ecosystems are rapid and sometimes irreversible while dealing with them has been inadequate. Environmental movements, including deep ecology, have been at the forefront of the efforts to engage the public, various groups, politicians, and world governments to address environmental problems on a coordinated large scale, but their efforts have not produced substantive results. Cultural, ideological, and other reasons provide some insights into the reasons why this has happened. They show that the ecological crisis is now at the point at which deep ecological principles offer a way out of the crisis more clearly, given that it offers a new, ecological worldview for humans to adopt. This worldview suggests there is inherent unity between the human and natural worlds based on the concept of interdependence. This paper attempts to show that such inherent unity exists and that humans need to use precaution because the risks are too great to ignore.

Introduction

The rapid, massive, and unsustainable changes in Earth's ecology indicate that humans need to re-examine their role in destabilizing its climate and choose a more sustainable path not only for their own preservation and flourishing but for other living species, and nature as a whole. The path to sustainability requires modification in humans' attitudes and practices; it requires a worldview shift from the currently dominant anthropocentric worldview to a broader, ecological worldview that seeks a more holistic understanding of how separate parts of Earth's ecosystem (including humans) function as a whole.

A worldview shift is necessary because major environmental challenges, such as climate change, deforestation, fresh water depletion, and population growth have been dramatically altering Earth's ecosystems at an ecologically unsustainable speed in the last several decades despite humanity's efforts to contain them. The pace of those changes is so fast that, in the end, it threatens the existence of not only the living species but of the ecosystems and the natural world as well.

An environmental philosophy, such as deep ecology, which considers humans an integral part of the natural environment and emphasizes human interdependence with nature and intrinsic value of all living beings and ecosystems is a more suitable model for handling ecological concerns than the anthropocentric model that often assigns intrinsic value only to humans. As a philosophy, deep ecology draws substantially on the work of Baruch Spinoza, who proposes a monistic worldview by equating God with Nature as one substance or a whole. Consequently, nature as a whole is all things and

thus unbiased toward all things, which means that humans do not hold a privileged position in nature. Humans are, therefore, subject to the rules of the whole from which they are inextricable. They are also vulnerable to the threat of extinction that has befallen many other species in Earth's long history. It would be, therefore, prudent for humans to re-examine their relationship to nature to assure not only their self-preservation but their flourishing or unfolding along with other living species and nature as a whole. Spinoza referred to the concept of self-preservation as *conatus* while deep ecology refers to it as *Self-realization*. Spinoza defines the *conatus* principle as species' continuous striving to preserve themselves in their own being to fulfill their highest potential. Arne Naess bases his concept of Self-realization on Spinoza's conatus and defines it as the right to live and blossom.

The aim of this dissertation is twofold: to examine to what extent deep ecology draws on Spinoza's philosophy and to explore how deep ecology, under Spinoza's influence, contributes to the ecological worldview, a view that recognizes nature as an interdependent whole in which humans are integrated within natural processes. Spinoza's philosophy helps envision human beings' relationship to Earth as members of its community, along with millions of other species that inhabit it, as opposed to being privileged members to whom different rules apply. This is important because climate change requires action to help humans and other species survive if the worst case scenario occurs, that is, if Earth heats up to such an extent that it tips the scale beyond the point of reversal. Deep ecology appropriates Spinoza's holistic vision of the world by extending intrinsic value to nature as a whole and Spinoza's concept of *conatus* to assign equal rights to life and blossom to all species and ecosystems. In the final analysis, however, this dissertation is an attempt to create an ecological outlook in the age of climate change. Rather than evaluating it as a scholarly analysis of either Spinoza

or Naess, readers should evaluate it, in its entirety and its parts, as an exposition of Naess' appropriation of Spinoza and the author's appropriation of Naess.

To this end, Chapter One provides a historical overview of the ecological crisis and climate change since the late 1960s, the missed opportunities to shift toward the ecological worldview since the early 1970s, and reasons for the lack of the necessary action to contain climate change. I argue that humans had an opportunity to shift to a more enlightened approach to the ecological crisis it still faces, specifically since the early 1970s. The 1970s was a promising decade for the global community in the sense that unlikely events inspired hope of a shift in human consciousness to see the planet as a whole rather than a mechanism serving human needs. NASA's Apollo 8 mission's surprise discovery of the beauty and fragility of Earth created a desire to protect it. The shift to the ecological worldview did not occur because environmentalists believed that environmental protection laws, the anthropocentric approach, and climate science findings would sufficiently change human conduct and attitudes toward the natural environment and limit further environmental decline. I also argue that skepticism about certainty of climate science findings delayed the shift toward the ecological worldview in the U.S. Small but powerful and politically influential industry groups succeeded in creating doubt about the certainty of science findings regarding climate change. These groups' denials prevailed by creating confusion among the public and derailed politicians' support for environmentalists' attempts to force a more comprehensive governmental action on the climate change threat. The main purpose of the chapter is to show that current approaches to address climate change have not produced the desired effect: they have not slowed global warming.

Chapter Two provides a brief history of the environmental movement and focuses on philosophy's efforts to address the ecological crisis and climate change.

Deep ecology's response is particularly relevant because, from its inception, it went beyond other approaches to the ecological crisis. Although deep ecology has things in common with other environmental philosophies, such as the concern about sustainability and intrinsic value of nature, the philosophical sense of deep ecology rests on the concept of Self-realization (expansive self as possible) and is partly based on Spinoza's concept of *conatus* or self-unfolding. I argue that implementation of concepts of Self-realization, intrinsic value based on the concept of interdependence, and ecocentric egalitarianism are necessary if humans are to succeed in changing their anthropocentrically oriented attitudes and practices toward the natural environment and mitigate the effects of climate change. The main point of this chapter is to show that a sustainable environment requires consideration of sustainability of the whole, not just some of its parts or some species.

Because deep ecology draws on Spinoza's monism and the *conatus* principle, Chapter Three offers a glimpse of the basic principles of Spinoza's *Ethics* within the context of the European Enlightenment. I argue that Spinoza's substance monism does not allow humans a privileged position in nature because everything in nature is subject to the rules of natural systems. I also argue that Spinoza's *conatus* principle, that everything strives to preserve in its own being or essence toward its unfolding or perfection is consistent with his naturalism. The main point of this chapter is to explore the parts of Spinoza's philosophy that might provide essential philosophical support for deep ecology's core principles such as intrinsic value, biocentric (or ecocentric) egalitarianism, and Self-realization.

To this end, Chapter Four explores two main ideas: Spinoza's *Ethics* as a support for deep ecology's core principles and faithfulness of Arne Naess' normative construction to Spinoza's claims, including the concept of unity in both Spinoza and

Naess. I argue that Naess and others believe that Spinoza's substance monism provides support for deep ecology's concept of intrinsic value and ecocentric egalitarianism and that Spinoza's *conatus* thesis provides the basis for deep ecology's concept of Self-realization as well as intrinsic value and ecocentric egalitarianism. The main purpose of this chapter is to evaluate to what extent or how well is deep ecology, particularly Naess' version, grounded in Spinoza's philosophy.

To determine how well deep ecology can advance the ecological worldview for dealing with climate change, Chapter Five explores the cultural and philosophical context in which Spinoza's and deep ecology's holistic, interdependent view of the world can lead to this worldview. I argue that deep ecology's principles of intrinsic value, Self-realization, ecocentric egalitarianism, and, particularly, the concept of interdependence in the natural world can foster the shift to the ecological worldview, which builds on the concept of sustainable social and cultural environments. It also requires consideration of moderate communalism, the idea that a well-functioning society requires both individualism and communalism as the right social structure for dealing with global climate change.

Given that current approaches to contain global warming and climate change—mainly oriented toward meeting human needs—have not reduced global emissions, the main culprits in global warming and climate change thus have not lessened the risk of profoundly different life for present and future generations: world governments ought to consider shifting toward a more ecologically sustainable worldview. Deep ecology focuses on the health of the whole. It tries to find the basis for this orientation in Spinoza's substance monism and the *conatus* principle to support the ecological worldview. This view includes an equal concern for the nonliving natural world, including the interests of nature as a whole, as well as the needs of humans. Without considering

the interests of the whole, no single species, including human beings, are likely to survive and flourish in a world where nature as a whole provides a diminishing support for sustainable life conditions.

Chapter One: Modern Environmentalism and Climate Change

Introduction

Although from space Earth still looks like a living planet, its surface temperature and climate have been changing to such extent that human intervention to maintain the planet's ability to sustain life has become necessary and urgent. The planet is still breathtakingly beautiful, inviting to life with its diverse ecosystems, blue oceans, green forests, brown deserts, and white ice cover. Furthermore, Earth's surface temperature has a life supporting average temperature of 15°C (59°F). Earth's climate, however, has been changing—it has been warming globally, significantly, and rapidly—over the last 125 years because it is absorbing increasingly more solar radiation than what it emits (Ruddiman 4). This global warming is disrupting Earth's heat equilibrium and leading to dramatic changes in the natural world, such as migration of species, melting glaciers, and acidification of oceans. With the exception of the North Pole summer melt-off, so far those changes have been almost imperceptible. From a human perspective, they still appear gradual. From a planetary time scale, however, these changes are occurring too fast to allow time for species, including human beings, to adapt adequately (Starke 5). It is the fast pace of these changes in the natural world that has worried climate scientists, particularly since the late 1960s. One of their main concerns is the rise in Earth's average surface temperature of 0.74°C (33.3°F) since the 1800s with further increases almost certainly to continue (325-26). Although scientists have considered natural factors in global warming such as tectonic, orbital, and millennial-scale forcing, rapid

global warming over the last 125 years is due to emissions of greenhouse gasses from human activities. Consequently, they have been warning that humans need to act urgently to slow down this rapid global warming and the resulting extreme changes in weather and climate.

While environmentalists have been willing to act on this warning and have been successful to some extent, powerful industry groups, such as oil, coal, and gas, have been trumping the scope of necessary actions needed to address global warming. These groups have a stake in the status quo. They view attempts to address climate change as an attempt to increase regulation, which they consider as harmful to their economic and political interests. As a result, either they deny the relevance of global warming or that human activities are the cause of it, particularly in the United States. Denying that a problem exists, however, does not cause its disappearance or amelioration, yet it worsens an already serious situation that behooves a rapid response. Emissions from burning fossil fuels continue to increase and so do risks of global warming. The United States and the world thus face great challenges in responding to those risks, which relate directly to the nature of climate change. Denying that climate change is a threat is dangerous because, even though it is fundamentally environmental in nature, climate change affects “all spheres of existence” on Earth (“Background on the UNFCCC: The International Response to Climate Change”). It affects global issues, including economic development, population growth, sustainable development, resource management, and poverty. Solutions, therefore, must come from “all disciplines and fields of research and development (i.e., including philosophy)” (“Background”).

Environmentalists alone cannot save humans from an impending disaster if they (i.e., humans) do not act to slow down global warming and make changes toward a more ecologically sustainable existence, which applies not only to current but also to future

generations. The global community will have to consider the consequences of its decisions to those generations as well. All segments of society will need to engage in a national and global effort to do so. Consequently, understanding the global climate change is important because the overwhelming scientific evidence suggests that Earth is overheating, a threat to all living beings. Humans, therefore, need to act while they can to stop this existential threat and save themselves, other living species, and ecosystems on which they wholly depend.

The aim of this chapter is to examine the current global warming situation, the trends that have led to this precarious state, how humans are addressing climate change, and why it is important that they act toward nature in an ecologically responsible way. I will argue that humans had an opportunity to shift to a more enlightened approach to the ecological crisis they still face, specifically since the early 1970s, but they did not because they trusted that environmental protection laws, the anthropocentric approach, and that climate science findings would sufficiently change human conduct and attitudes toward natural environment and limit further environmental decline. I will also argue that skepticism about certainty of climate science findings delayed the shift toward the ecological worldview. To address these arguments, the first part of the chapter focuses on how humans historically dealt with the ecological crisis, from the 1970s through the 1990s, and reviews missed opportunities to shift to the ecological worldview. The second part analyzes the current climate situation, starting with the historical and cultural reasons for climate change, following with climate science findings, outlining the unknowns, and ending with skepticism about climate change.

Climate and Weather Distinction

Discussions about climate require clarification about differences between climate and weather. Both measure variations in weather conditions but the time spans are different. The *average weather conditions* refer to changes in "Earth's air, water, ice, vegetation and other properties," such as "temperature, amount of rainfall or snowfall, snow and ice cover, wind direction and strength, as well as other factors" (Ruddiman 370, 4; Hayhoe and Farley 56). *Climate* refers to the averages weather conditions of a region over a long period of time, decades, centuries, or thousands of years. *Weather*, in contrast, describes variations in those conditions but on a shorter time span (e.g., hours, days, weeks, or from year to year) (Hayhoe and Farley 56; Ruddiman 4). To determine how much Earth's climate has changed through time, climatologists (more precisely paleoclimatologists) study past climate patterns using evidence from ice sheets, tree rings, sediment samples, corals and rocks, and modern instruments like satellites and computer modeling. These studies have found that Earth has undergone various periods of stable climate patterns, as well as periods of climate disruptions ("Earth's Changing Climate: How Do We Know What We Know?"). An unusual weather event may still be consistent with the long-term climate pattern; for instance, an exceptionally cold winter occurred in the Northern Hemisphere in the first part of 2007-2008. Despite this and similar events, however, Earth's average temperature is still rising. As paradoxical as this sounds, exceptionally cold winters in the Northern Hemisphere are a direct consequence of the changing weather patterns in the rapidly warming Arctic. A combination of global warming and unique feedback loops[1] that are a part of the Arctic

[1] Feedback loops in climate refer to "A process internal to Earth's climate system that acts either to amplify changes in climate (positive feedback) or to moderate them (negative feedback)" (Ruddiman 367). Positive feedback amplifies any initial warming. For instance, warming keeps more water in the air. More water vapor in turn traps more heat. Negative feedback reduces warming. For instance, increased sea ice

climate system, have increased Arctic temperatures at a rate approximately twice as fast as the global rate. The extra heat in the atmosphere destabilizes climate and may have led to unusual weather events in recent years, such as unusually cold or prolonged cold spells in Europe, heavy snows in Alaska and in the northeastern U.S., and a severe drought in Russia in 2010 (Francis). The changes in weather happen continuously in various places around the world but they are compatible with global climate change. These weather changes tell the story about the weather of individual places while climate tells the story about the planet (Hayhoe and Farley 56).

Nature as an Interdependent Whole

Ecological problems, such as climate change, have shown that humans need to study and view nature as a whole, as a system. A view of nature as an integrated whole with many interdependent phenomena—as the whole in which everything is embedded in and depends on the processes of nature—provides humans a model to address the current ecological crisis. This model, with roots in Spinoza's philosophy and deep ecology in the last 40 years, may prove to be more successful in handling the climate change crisis than handling it from a human perspective alone, which has dominated human response since 1800s and since the early 1970s in a modern environmental era.

Tracing the ecological crisis from a historical perspective will show just how interconnected the processes of nature are, and how humans as a species and as active agents interfere with them. First, population expansion led to a massive increase in the use of fossil fuels that powered the Industrial Revolution and permitted the "mechanization of agriculture that enabled those additional billions to be fed"

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reflects more sun light back and thus reduces the absorption of solar radiation. This in turn leads to more cooling.

(Zalasiewicz et al. 2229). Since the early nineteenth century, the human population increased from less than one billion to seven billion now and projected to be over nine billion by 2050 (Zalasiewicz et al. 2229; “Executive Summary” 1). Second, chemical and biological effects of human activity are profound; that is, the effects of carbon dioxide (CO_2) (from fossil fuel burning and deforestation), methane (CH_4) (from fossil fuel mining and distribution, livestock, and landfills), and other gasses are leading to global temperature rise, which has a negative impact on polar ice sheets and ensuing sea level rise. If temperatures rises by 2-5°C, as the majority of scientists predict, polar ice sheets will melt more quickly than scientists earlier anticipated, and the sea level rise might be as much as several meters. Third, global temperature rise will lead to migration of species (depending on their ability to do so) to a climate belt more suitable for their survival. Oceans show more pronounced trends in this situation. For instance, when larvae serve as food for other animals, change in larval hatching times can cause cascading changes in whole ecosystems. Fourth, the ultimate effect of climate change and other human stressors, such as habitat fragmentation, invasive species and predation, is a sharp increase in the rate of species extinction. An already huge extinction rate is likely to increase ten-fold by the end of this century, and it appears likely to be “Earth’s sixth great extinction event” (2229).

Finally, given that increased atmospheric CO_2 leads to its increased dissolution in the ocean, world oceans are acidifying. Additional drops in oceanic pH will lead to serious deleterious effect on calcifying organisms such as reef corals. This factor alone may significantly alter marine ecosystems in this century (Zalasiewicz et al. 2229). Besides calcifying organisms such as reef corals and mollusks (e.g., snails, octopuses, squid, clams, scallops, oysters, and chitons), a recent international collaboration by researchers from Australia, Canada, and the USA suggests that non-calcifying species,

such as fish, may also experience adverse effects of ocean acidification. Increased ocean acidity has subtle but important effects because organisms' behaviors rely on chemical clues, which changes in pH might disrupt. Experiments with clownfish and damselfish, for instance, have shown that larvae reared at higher-than-normal CO_2 levels, illustrating riskier behavior in both the laboratory and the wild. These fish ventured further from the reefs and became food for predators at a rate nine times higher than larvae reared at present-day CO_2 levels (Cobb). For these and other living species, including humans, it is safe to say that a temperature rise of 2°C or more (35.6°F or more) would have catastrophic consequences. Given that human population will continue to increase and, with it, burning of fossil fuels, more atmospheric carbon dioxide and methane will unavoidably lead to more global warming unless humans find a way to decrease emissions from fossil fuel burning or find other sources of energy. If they do not, melting of the polar ice sheets will lead to rising sea levels, migration and extinction of species, acidifications of oceans, and damage to coral reefs and marine ecosystems. These are *known* risks of global warming; however, humans need to be concerned about the *unknown* risks as well.

The prevailing concern is about global tipping points for Earth: the situations when gradual changes shift abruptly and irreversibly into another state once they reach critical thresholds. One of the major unknowns is about methane stored in permafrost: scientists do not know how much methane is trapped in the melting of permafrost or in the sea-beds of now-warming oceans. They also do not know what effect the partial or complete release of methane would have on global temperature and climate. According to Kevin Schaefer, a permafrost scientist at the National Snow and Ice Data Center (NSIDC) who studies the carbon cycle or the movement of "carbon from air into plants, from plants into ground, and then back into the air," there are two potential sources of

methane in the Arctic. The first is methyl clathrate, molecules of methane frozen into ice crystals under high pressure and low temperature, underwater or deep in the Earth. If the temperature or pressure changes, the ice that holds the methane locked up will break apart, and the methane will escape. It is not clear “how much methane is trapped in methyl clathrates, or how much is in danger of escaping” (“Methane and Frozen Ground”).

A similar situation might occur if the organic matter (i.e., dead plants and animals frozen in permafrost for millenniums) in the Arctic thaws out:

> As long as this organic matter remains frozen, it will stay in the permafrost. However, if it thaws, it will decay, releasing carbon dioxide or methane into the atmosphere. This is why permafrost carbon is important to climate study. (“Methane”)

Knowing how much carbon is stored in the permafrost would help governments around the world anticipate future effects and help them decide what to do about them. They would know, for instance, how much reduction in emissions from fossil fuels from human activities is necessary to counter the effects of methane release from permafrost. According to Schaefer, the Earth’s atmosphere contains about 850 gigatons of carbon (“Methane”). Scientists estimate the amount of carbon stored in the permafrost to be about 1,400 gigatons, about 60% greater than currently present in the Earth’s atmosphere. This does not mean that all of the carbon will decay and end up in the atmosphere. What is still unknown is “how much of the frozen carbon is going to decay, how fast, and where.” Russia also has significant deposits of permafrost, so the Arctic is not the only major concern regarding permafrost and methane release (“Methane”).

Finding the answers to the amount, speed, and location of future carbon decay is important because, currently, the Arctic acts as a carbon sink, i.e., it absorbs more

carbon than it releases into the atmosphere (“Climate and Frozen Ground”). In other words, during the growing season, plants take up more carbon than they release through decay, which could change if the Earth continues to warm and much of the permafrost thaws. If this happens, the Arctic would become the source of atmospheric carbon rather than the carbon sink it is today (“Climate”).

Humans need to keep these possibilities in mind because, in the last several decades, Earth’s climate has changed so dramatically from a planetary perspective that some scientists, including Paul Crutzen, the 1995 Nobel Prize winning atmospheric chemist, claim that Earth has entered the Anthropocene, a new geological epoch in which human activity dominates (Starke 5; Crutzen and Stoemer 17). Crutzen and his colleague, Eugene Stoermer, first introduced the term in 2000, at the time when humans were beginning to realize that “human activity was indeed changing the Earth on a scale comparable with some of the major events of the ancient past.” In their view, some of these changes are now permanent, “even on a geological time scale” (Zalasiewicz et al. 2228). Earth has entered the Anthropocene epoch because of the global environmental effects of increased human population and economic development. Moreover, Earth has left the Holocene, the warm interglacial period that began about 10-12,000 years ago and allowed human civilization to develop (Crutzen 23). While the warming of the Holocene era has been desirable, Earth is now warming to such extent that some extraordinary things are happening that have never previously happened in “recorded human history” (5). Since 2006, for instance, toward the end of the northern summer, a large stretch of open water around the Arctic that lasts only a few weeks makes it possible to pilot ships directly from the Atlantic to the Pacific Ocean. The usual route is through the Panama Canal or around the Cape of Good Hope (5). Although this open route around the Arctic is possible only for a short time in the summer, it is still significant

because it indicates a continuing loss of permanent ice cap at the North Pole. The Arctic sea ice level in 2010, for instance, was the third lowest sea ice level, with 2007 and 2008 as the other two lowest levels since measurements began in 1979 (“Arctic Sea Ice Reaches Annual Minimum Extent”). On September 19, 2012, scientists from the National Snow and Ice Data Center reported that the Arctic sea ice level fell to its lowest level ever recorded in over three decades of satellite measurements. The previous lowest sea ice level was on Sept. 18, 2007. Additionally, the six lowest seasonal minimum ice levels “have all occurred in the last six years (2007 to 2012)” (“Arctic Sea Ice Extent Settles at Record Seasonal Minimum”). Furthermore, this is the largest summer ice loss on record, “more than one million square kilometers greater than in any previous year” (“Arctic Sea Ice Extent Settles at Record Seasonal Minimum”).

Most scientists believe that greenhouse gases that result from human activities and propelled into Earth’s atmosphere are leading to warming temperatures that shrink Arctic sea ice (“Arctic Sea Ice Reaches Annual Minimum Extent”; “Arctic Sea Ice Reaches Lowest Extent Ever Recorded [Update 2]”). Climatologists that study Arctic sea ice claim that “the sea ice decline in recent years is well outside the range of natural climate variability,” and that this drop indicates that “the Arctic sea ice cover is fundamentally changing” (“Arctic Sea Ice Reaches Annual Minimum Extent”). The decline in sea ice is problematic because Arctic sea ice “keeps the polar region cold and helps moderate global climate” (“Arctic Sea Ice Reaches Lowest Extent Ever Recorded [Update 2]”). This cooling effect occurs because the white Arctic sea ice surface reflects “up to 80% of the sunlight back to space” (“Arctic Sea Ice Reaches Lowest Extent Ever Recorded [Update 2]”). An increase in the open ocean surface in the Arctic would yield a positive feedback effect, leading to ocean warming and consequently to an increase in sea ice melt. An open ocean surface would absorb “about 90 percent of the sunlight that

strikes the Arctic“ (“Arctic Sea Ice Reaches Lowest Extent Ever Recorded (Update 2)”). Skeptics would questions the claim that human-activities are the cause of global warming temperature. What evidence can scientists provide that can isolate it to human activities?

Climate Fingerprints

Climate scientists have a high degree of confidence in the anthropogenic cause of climate change because they now have reliable tools that help them distinguish between the human and natural causes. Other factors include extensive scientific work and reproducible results. One of the indicators that determines whether human activities or natural causes lead to global warming are distinct patterns or “fingerprints” that climate scientists can identify as causes of climate change. An example of a fingerprint is the warming of the troposphere, the lowest level of the atmosphere, and the cooling of the stratosphere, the atmospheric layer above the troposphere. This is due to the deepened “greenhouse effect” as “increasing amounts of heat-trapping carbon dioxide from fossil-fuel emissions built up in the atmosphere,” the exact fingerprint that scientists have been predicting would occur since the 1960s (Shulman). If an increase in Sun’s energy output was the cause of Earth’s warming, than warming would be occurring from “the top of the atmospheric column straight down to the surface” (qtd. in Shulman’s “Climate Fingerprinter”). Since warming is occurring from the bottom of the atmosphere, it points to human activity as a cause. Furthermore, according to Benjamin Santer, a physicist and atmospheric scientist and one of the best known “fingerprinters,” “natural causes cannot provide a convincing explanation for the particular patterns of climate change [scientists] see” (qtd. in Shulman’s “Climate Fingerprinter”). Scientists have a high degree of confidence in their understanding of climate change causes because “all

the climate fingerprinting research to date" has drawn this same conclusion, "[n]ot because of the claims of any one individual, but because of the breadth of scientific work and reproducibility of the results" (qtd. in Shulman's "Climate Fingerprinter"). Climate fingerprinting is now more developed, and, in addition to determining atmospheric patterns of warming, it can now show "human causation in the measured changes in ocean temperatures, Arctic sea ice, precipitation, atmospheric moisture, and many other aspects of climate change" (Shulman). This development promises even more confidence in the scientific findings and even more extensive knowledge about climate change.

Responding to Climate Change

The response to the ecological crisis since the 1970s focused on science and human interests. Climatologists noticed in the 1950s that concentrations of CO_2 in the atmosphere were increasing and that it correlated with a steady increase in global temperatures. They were the first to issue warnings about rising concentrations of CO_2 in the 1960s and 1970s. The basis for climatologists' concern was the evidence from ice core research as well as anecdotal evidence, which began to accumulate by the 1960s. This data was coming in from "scientists in many disciplines, farmers and fishermen, and amateur nature observers and enthusiasts" ("Feeling the Heat: Climate Science and the Basis of the Convention").

To deal with rising pollution in air, water, soil, and living beings, the loss of species and deforestation due to acid rain, world governments agreed to form a United Nation's body in charge of coordinating a global response to these challenges. The United Nations created the Environment Programme (UNEP), after the United Nations Conference of the Human Environment in Stockholm in 1972. The United Nations

originally created UNEP to coordinate its activities regarding environmental issues and "to provide the science to member states on emerging trends in environmental change" ("UNEP and the Green Economy--Four Decades in Development"). UNEP's emphasis on science might be among its most important contributions in addressing emerging environmental crises, which has led governments to negotiate key global treaties ("UNEP and the Green Economy"). The Stockholm Conference adopted the Stockholm Declaration and produced the Action Plan for the Human Environment.

Among the UNEP's other important accomplishments was the establishment of the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987. The protective ozone layer was thinning over Antarctica because of the production and use of ozone depleting chemicals, mostly chlorofluorocarbons (CFCs). These are volatile compounds used as refrigerants, solvents, and propellants (in aerosol applications) that deplete ozone in the upper atmosphere. Additionally, the UNEP and the World Meteorological Organization (WMO) established the Intergovernmental Panel on Climate Change (IPCC) in 1988 to continue to provide nations with "a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts" ("History"). The UNEP was also instrumental in initiating the United Nations Framework Convention on Climate Change (UNFCCC) in the 1990s. This is an international treaty that was ready for signing at the Earth Summit, formally known as the 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, June 3-14, 1992. The stage was set to engage science in an international effort to deal with the consequences of climate change by protecting human interests.

The 1970s: The Environmental Promise

The 1970s was a promising decade for the global community in the sense that unlikely events inspired hope of a shift in human consciousness to see the planet as a whole rather than a mechanism serving human needs. One of the significant events that could have led to this shift was NASA's Apollo 8 mission's surprise discovery of the beauty and fragility of Earth. The three astronauts, Commander Frank Borman, James Lovell, and William Anders, were on a "tightly planned mission" making specific observations about the moon (Poole 2). They encountered a substantial surprise on the fourth orbit as they were emerging from the far side of the moon, as "the Earth appeared on the lunar horizon" (2). Upon seeing the Earth coming into view, Apollo 8 Commander Borman described it as

> the most beautiful, heart-catching site of [his] life, one that sent a torrent of nostalgia, of sheer homesickness, surging through [him]. It was the only thing in space that had any color to it. Everything else was either black or white, but not the Earth. (2)

Borman realized how unified a world the Earth was despite human discords, challenges, and different ecosystems that are a part of Earth's makeup. He later commented, "Raging nationalistic interests, famines, wars, pestilences, don't show from the distance" (2). Referring to the Earth, he stated, "[Earth is] one hunk of ground, water, air, clouds floating around in space. From out there it really is 'one world'" (2). NASA's Apollo 8 mission was about discovering more about the moon, but it turned out to be a significant discovery about the Earth by a crew of toughened test pilots. Anders captured what he saw in a photograph that became one of the most memorable and influential images, called *Earthrise*. It shows the Earth rising above the gray and lifeless lunar horizon against the backdrop of black and white of the cosmos: a blue and white marble floating

in space, the only thing that had any color, and the only thing that looked alive (McKie). *Earthrise* enabled humans to see their planet as something different from continents or oceans; it enabled them to see it as a whole (McKie). It evoked a longing, which was surprising given the scientific nature of the mission. It brought about consciousness of the home planet that everyone could appreciate, whether an astronaut, environmentalist, or poet (McKie). The late wilderness photographer Galen Rowell called *Earthrise* "the most influential environmental photograph ever taken." Along with *Blue Marble,* the first photograph of the whole Earth that the crew of Apollo 17 took on December 7, 1972, *Earthrise* arguably has been influential.[2]

Earthrise has since tugged at human hearts, inspiring some to consider humans' ephemeral existence and their identity in the cosmos, which could arguably have led to a holistic view of nature. The poet Archibald MacLeish considered the view of the Earth from space depicted in the *Earthrise* photo as a tipping point. He predicted, optimistically, that this image would lead to a shift in worldview: "To see the earth as it truly is, small and blue and beautiful in that eternal silence where it floats, is to see ourselves as riders on the earth together" (MacLeish 1). MacLeish's prediction has not come true—the shift to the ecological worldview has yet to occur, and, although the photograph initially influenced human consciousness, it did not lead to long-term transformation on the scale necessary to support long-reaching actions to deal with the ecological crisis. It is unlikely that environmentalists embraced Spinoza's view of nature as a whole as an ecological model in the late 1960s, and Arne Naess and other philosophers did not start to develop deep ecology until the early 1970s.

[2] *Blue Marble* is "one of the most famous photographs ever made of the Earth" ("The Next Generation Blue Marble") and the most widely reproduced single image in human history (Poole 82).

Earthrise tapped into the emerging cultural consciousness about vulnerability, from the home planet to the energy of anti-war protesters and the problems on Earth. At the time, the world was already tense due to various environmental and political events, which eventually gave birth to a new environmental consciousness. First, Rachel Carson's 1962 seminal monograph, *Silent Spring,* explicating specific dangers of pesticides "raised public awareness and concern for living organisms, the environment, and public health" ("Earth Day: The History of a Movement"). Additionally, the assassinations of Martin Luther King, Jr. and Robert Kennedy in 1968, the student anti-war movement, and the ravages of the 1969 massive oil spill in Santa Barbara, California, further contributed to tensions about humans' and Earth's vulnerabilities. In Europe, Soviet and Warsaw Pact nations' tanks crushed Alexander Dubcek's attempt to humanize Communism in former Czechoslovakia in 1968 by allowing people more freedom of expression and tolerance of social and political organizations outside Communist control. The world was ready for some uplifting news, and the realization that humans reached the moon provided it. Apollo astronauts' photos of Earth invoked a desire to protect it.

Environmentalists successfully organized Earth Day, a day devoted to raising awareness about the Earth and the issues that affect it. The idea was a brainchild of Gaylord Nelson, a U.S. Senator from Wisconsin (D), on April 22, 1970. In massive coast-to-coast rallies, 20 million Americans across the U.S. went to the streets, parks, and auditoriums to demand a healthy, sustainable environment. Students and teachers at 12,000 high schools, 2,000 colleges and universities, and thousands of community groups organized protests against the deterioration of the natural environment. The protests united disparate groups that had been fighting against specific environmental problems such as "oil spills, polluting factories and power plants, raw sewage, toxic

dumps, pesticides, freeways, the loss of wilderness, and the extinction of wildlife." They realized "they shared common values" ("Earth Day"). Earth Day achieved rare, widespread support, including support of politicians from the Democratic and Republican Parties, wealthy and poor, city residents and farmers, magnates and labor leaders ("Earth Day").

Many people associate Earth Day with the birth of the modern environmental movement, which pushed for change in the political and legislative arenas. The federal government took responsibility for clean air and water from the states in 1970 because of their growing economic and environmental concerns. The push from cities and towns, sportsmen and other local groups, as well as other political figures such as Maine's senator Edmund Muskie, led to the formation of the Environmental Protection Agency (EPA) on December 2, 1970, whose mission is to protect "human health and the natural environment—air, water, and land—upon which life depends" ("Ecological Condition"). Two months earlier, on October 3, 1970, the U.S. Congress created the National Oceanic and Atmospheric Administration (NOAA). Then President Nixon proposed its creation in July 1970, claiming that it would server a national need

> for better protection of life and property from natural hazards [. . .] for better understanding of the total environment [. . . and] for exploration and development leading to the intelligent use of marine resources." ("NOAA Historical Background")

Other important legislation in the 1970s included the Clean Air Act, the Water Pollution Control Act Amendments (1972), the Endangered Species Act (1973), the Safe Drinking Water Act (1974), the Resource Conservation and Recovery Act (1976), and the Water Pollution Control Act Amendments (1977), which became known as the Clean Water Act. Finally, in 1980, the U.S. Congress passed the Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA), also known as the Superfund Act, the program designed “to clean up the nation’s uncontrolled hazardous waste sites, to protect the environment and the health of all Americans” (“Cleaning Up Nations’ Hazardous Wastes Sites”). These achievements established the United States as the world’s environmental leader at the time and strengthened the environmental movement with an excellent momentum to build on for future advances in the attempt to protect the natural environment and living species.

On the international front, the U.N. Conference on Environment and Development was a groundbreaking event because it started “a new global partnership for sustainable development,” based on the idea that that environmental protection and development are inseparable (“U.N. General Assembly Nineteenth Special Session”). While this was a great start, the Stockholm Declaration adopted the human-centered approach to global ecological crisis and focused on conservation and an instrumentalist attitude toward the environment. This is apparent in the several introductory paragraphs and in the Declaration’s Principles, particularly in Principles 1, 2, and 5. Principle 2, for instance, states that humans must safeguard Earth’s natural resources, such as “the air, water, land, flora and fauna, and especially representative samples of natural ecosystems, for the benefit of present and future generations.” The Declaration does not mention the concept of nature as an integrated whole in which all life is interconnected, the principle of ecological science that deep ecology adopted as a foundation. By adopting this principle, deep ecology attempts to shift human consciousness toward a view that human beings are an integral part of nature, as did Spinoza, centuries before. Arne Naess introduced deep ecology to the world in 1972, and it was in the 1970s that humans had the best chance of transforming the way of seeing the home planet. Discoveries of the physical threats to the planet and NASA’s Apollo moon missions’

photographs helped humans realize the vulnerability of its existence on the only living planet in its immediate surroundings. The response materialized in the form of federal laws and agencies foci on protecting human interests. Although there were attempts to deal with worsening environmental problems in the 1980s and 1990s, there has not been a time since the 1970s that has surpassed the enthusiasm about science and discovery that stocked humans' desire to protect the planet, as much as it did then.

The 1980s: International Cooperation

In the 1980s, one natural and several human-caused environmental disasters in various parts of the world forced a continuing international conversation about climate change risks facing humans. This conversation led to formation of the Montreal Protocol treaty to handle the depletion of the ozone layer and form the IPCC to help disseminate accumulated scientific knowledge about climate change. The decade began with an explosive eruption of Mount St. Helens volcano in Washington State in May 1980. Other disasters were due either to human errors or to human activities: the Bhopal gas leak in India occurred in 1984; scientists discovered a hole in the ozone layer above Antarctica in 1986; a nuclear leak in Chernobyl, Ukraine, happened in 1986; and, the Exxon Valdez oil spill in Alaska's Prince William Sound followed in 1989.

While all disasters whether natural or human-caused were troubling, the anxieties over thinning of the ozone layer, the layer that protects the Earth from ultraviolet (UV) radiation, ran high. Increases in UV radiation could cause a host of ailments in humans from sunburn to cataracts to skin cancer. They could also interfere with plant growth, marine ecosystems like phytoplankton productivity on which aquatic food webs depend. Finally, they could affect "terrestrial and aquatic biogeochemical cycles thus altering both sources and sinks of greenhouse and chemically important

trace gases e.g., carbon dioxide (CO_2), carbon monoxide (CO), carbonyl sulfide (COS) and possibly other gases, including ozone" ("Health and Environmental Effects of Ozone Layer Depletion").[3] If these changes occurred, they would add to biosphere-atmosphere feedback mechanisms or loops "that weaken or reinforce the atmospheric buildup of these gases" ("Ozone"). In light of this information from scientists, individuals and nations took a decisive action, which led to the Montreal Protocol on Substances that Deplete the Ozone Layer, a protocol to the Vienna Convention for the Protection of the Ozone Layer. It is an important international treaty (signed on September 16, 1987 and taking effect in January, 1989) that addressed the thinning of the ozone layer over Antarctica. The intent behind the Montreal Protocol was to reduce the production and consumption of ozone-depleting chemicals, mostly chlorofluorocarbons (CFCs), used in spray cans, refrigerators, and air conditioners, to reduce their level in the atmosphere, and thus protect the earth's fragile ozone layer. The treaty is still in effect today and represents a rare success in international cooperation because it achieved a universal ratification, the only United Nations treaty to attain that status. As Jeff Turrentine says, the scientists' findings set in motion "a national moment of concerted effort, the likes of which the world has not seen since then."

At the time though, there was another attempt to utilize science to human benefit with a goal of increasing understanding of climate change. In 1988, the UNEP and the World Meteorological Organization (WMO) established the Intergovernmental Panel on Climate Change (IPCC) with a goal "to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts" ("History"). In order to accomplish this goal, the IPCC reviews

[3] "Biogeochemical cycles are pathways for the transport and transformation of matter within four categorical areas that make up planet Earth (biosphere, hydrosphere, lithosphere, and the atmosphere)" (Moses).

and evaluates the most recent scientific, technical, and socio-economic information from worldwide research, but "[i]t does not conduct any research nor does it monitor climate related data or parameters" ("History"). The IPCC collects data from all relevant researchers in various fields, including science, economics, political science, and finance. Those researchers use "historical observations and known links to create models and project outcomes" ("Feeling the Heat: Climate Science and the Basis of the Convention"). In other words, the IPCC attempts to offer a comprehensive overview of global warming from the best science data available. It is a scientific and intergovernmental panel, and, as such, it is in a unique position "to provide rigorous and balanced scientific information to decision makers" ("History"). Since its inception, the IPCC issued its *First Assessment Report* (FAR) in 1990, which reflected the views of 400 world scientists and led to the creation of the UNFCCC. The FAR's main message was that global warming is taking place and that humans needed to act. The IPCC issued the *Second Assessment Report* (SAR) in 1995, the *Third Assessment Report* (TAR) in 2001, the *Fourth Assessment Report* (AR4) in 2007, and it will release the *Fifth Assessment Report* (AR5) in 2013-2014. The AR4, "Climate Change 2007: The Physical Science Basis," delivered the scientific point of view of the changes in climate to the world community. It propelled climate change into the popular consciousness because evidence of drastic changes in the natural environment became undeniably noticeable. For instance, Arctic sea ice and mountain glaciers' snow cover are disappearing; rain fall patterns are changing worldwide, days and nights are hotter, and weather patterns are now extreme; warming trends are forcing migrations of plants and animals; and, there are climate induced changes in hundreds of physical processes and biological communities ("Synthesis Report Summary for Policy Makers"). The AR5 will provide "an update of knowledge on the scientific, technical and socio-economic aspects of climate

change" ("Fifth Assessment Report"). Additionally, the AR5 will place "a greater emphasis on assessing the socio-economic aspects of climate change and implications for sustainable development, risk management, and the framing of a response through both adaptation and mitigation" ("Fifth Assessment Report").

The establishment of the IPCC gave science a prominent role in evaluating the global warming threat to the natural environment, national economies, and human societies. Thousands of scientists contribute to its assessment reports, which reflect the results of their research and findings. The IPCC's role is apolitical in character, providing an essential counterweight to "the often highly charged political debate over how to respond to climate change" ("Feeling the Heat: Climate Science and the Basis of the Convention").

Although the IPCC does a valuable service on "communicating the importance of climate change," for which it received a Nobel Prize in 2007, its work is not flawless. After a series of errors, it implemented important changes in its procedures to preserve confidence in its work. In 2009, critics of the IPCC panel pointed to "a series of blunders" most notably for the mistaken estimate in the AR4 that Himalayan glaciers would likely melt by 2035 ("Evolving the IPCC" 227). While the errors led to the questioning of "the panel's credibility and transparency" of its procedures in evaluating climate change science, it also led to important advice for the necessary improvements "to the structure and functioning of the IPCC" (227). The problem was that the panel experienced an exponential increase in the workload in the two decades since its creation "without any resources to match the workload" (227). After the InterAcademy Council, an international scientific body, issued its recommendations, the IPCC adopted a conflict-of-interest policy with a main goal to be mindful of independence and bias within it to preserve the confidence in its processes and publications. To counter unavoidable author bias, the

new policy requires the inclusion of various expertise and affiliations. Additionally, a disclosure is required if there is a conflict of interest relating to an author's potential financial gain from an IPCC product (227).

The 1980s demonstrated that international community can be effective in solving global environmental problems. This is important because no single individual and no single nation will be able to prevent further warming of the planet. It will require global effort, which means only collective actions will help solve the problem. The Montreal Protocol showed that complicated international agreements are possible and successfully implemented. All countries of the world are participants, and many countries, in both developed and developing world, have "exceeded expectations and met their phase-out targets before deadlines" ("Montreal Protocol on Substances That Deplete the Ozone Layer 2007: A Success in the Making"). Additionally, global observations confirm that atmospheric and stratospheric levels of "key ozone depleting substances" are decreasing and should return to the pre-1980s level by 2050-2075, "with full implementation of all of the provisions of the Protocol" ("Montreal Protocol"). One of the hallmarks of the Montreal Protocol was the flexibility in implementation of numerical reduction targets of specific chemicals within specific timeframes. The countries were able to experiment with different approaches and then develop, manage, and adjust their implementation plans to meet the reduction targets most efficiently.

The 1990s: Efforts to Reduce Emissions

In the 1990s, the international conversation about global warming and other environmental problems continued but with less success in reaching binding agreements to handle continued global warming risks than with the *Montreal Protocol*. This protocol is a landmark model of international cooperation for handling pressing ecological

problems. The global community came together with a shared goal to solve a problem by trusting the scientific community's findings. This level of trust in science and cooperation has not materialized in other international negotiations.

To address continuing and expanding global ecological problems, the United Nations Conference on Environment and Development (UNCED) organized the first international Earth Summit in Rio de Janeiro in June of 1992. The focus was on "urgent problems of environmental protection and socio-economic development" ("Earth Summit+5"). More than 100 world leaders assembled and signed three documents, the U.N. Framework Convention on Climate Change (UNFCCC or FCCC), the U.N. Convention on Biological Diversity (UNCBD or CBD), and the U.N. Convention to Combat Desertification (UNCCD or CCD). They endorsed the Rio Declaration on Environment and Development, "a series of principles defining the rights and responsibilities of States for environmental protection and achieving sustainable development," the Forest Principles, a set of principles developed to support the sustainable handling of forests worldwide, and adopted Agenda 21, "a 300 page plan for achieving sustainable development in the 21st century" ("Earth Summit+5"). To oversee and report on enactment of the Earth Summit agreements, world leaders agreed to a five-year review of how well countries, sectors of civil society, and international organizations responded to the Earth Summit challenge. The United Nations General Assembly held a special session for this purpose in 1997 ("Earth Summit+5"). The drawback of the Rio Declaration is the same as for the Stockholm Declaration, i.e., it uses a human-centered approach: Principle 1 unequivocally states that "[h]uman beings are at the centre of concerns for sustainable development." It seems paradoxical that limited anthropocentric orientation of the two declarations has not produced desired results, i.e., reductions in greenhouse gasses in Earth's atmosphere.

The United Nations Framework Convention on Climate Change (UNFCCC), an international environmental treaty became effective March 21, 1994. The ultimate objective of the UNFCCC treaty, according to its Article 2, is to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." Furthermore, this stabilization should occur "within a time-frame sufficient to allow ecosystems to enable economic development to proceed in a sustainable manner." Today, almost all of the world's countries (195) have ratified the treaty and are, thus, the Parties to the Convention ("First Steps to a Safer Future: Introducing The United Nations Framework Convention on Climate Change"). It is important to note that the UNFCCC treaty is not legally binding on the member countries because it does not establish fixed limits on greenhouse gas emissions, and it does not have any enforcement mechanisms.

Given that a reduction of emissions is at the heart of the response to climate change, the UNFCCC negotiated the Kyoto Protocol on December 11, 1997. It is the first international agreement that commits its members to the internationally binding emission reduction goals. The Kyoto Protocol took effect on February 16, 2005 but nations could ratify it through December 2012 ("Kyoto Protocol"). The intent was to encourage the 37 industrialized nations "to specified, legally binding reductions in emissions of six greenhouse gases (GHGs)," to 5% below the year 1990 level during the first commitment period, 2008 to 2013 ("Kyoto Protocol").[4]

Unlike the Montreal Protocol, which all countries ratified, the Kyoto Protocol produced mixed results. Although there are 192 Parties to the Kyoto Protocol, the U.S., signed but never ratified it, even though until 2007 it was the top emitter of CO_2

[4] The six gasses are carbon dioxide (CO_2) methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), derfluorocarbons (PFCs), and sulphur hexafluoride (SF6).

emissions. Currently, the U.S. is the second top global emitter of CO_2 emissions at 16% (China is first at 29% in 2011). Three months before the Kyoto Protocol became final, two U.S. senators, Robert Byrd (D) and Charles Hagel (R), introduced a resolution to block the protocol's passage in the Senate. The resolution passed by a vote of 97-0, effectively killing the mitigation of global warming politically in the U.S., even though, scientifically, it is an established truth (Oreskes and Conway 214-15). While the U.S. is still on the sidelines on the issue of the Kyoto Protocol and Canada withdrew in 2012, the United Nations Climate Change Conference of the Parties to the UNFCCC is pressing forward in whatever capacity is possible. in Doha, Qatar in December 2012, 37 industrialized nations and the European Union signed on to the second commitment period of the Kyoto Protocol, from 2013 to 2020, with the goal to reduce GHG emissions by 18% below the year 1990 levels ("Kyoto Protocol"). While the second commitment period of the Kyoto Protocol is important, the pledges of the countries to decrease emissions, whether under non-binding UNFCCC treaty or under the binding limits under the Kyoto Protocol, are not enough to guarantee that the temperature will stay below the $2^{\circ}C$ that scientists view as safe level of increase. There is a continuous discrepancy between actions of the countries and what scientists believe is necessary to reduce the risks of climate change.

Although the 1990s were fruitful in producing international agreements to deal with global warming and other pressing environmental problems, focusing on human interests did not reduce global warming, and other problems, like deforestation, are getting worse. While the more holistic approach that deep ecology espouses seemed radical then, given humans' strong reaction to the events in the 1970s it is possible that the protective stance that they took toward Earth might be a factor to consider in devising specific plans to deal with environmental problems now. They seem too

abstract and distant to engage widespread interest among the public. A more effective way might be to engage local communities with a shared goal to connect with wild nature so that they might realize how interconnected they are with it, as Naess would have advocated with principles of local autonomy and decentralization and the development of a personal ecophilosophy.

Current Climate Situation

In the 21st century, global climate change is a defining issue and the concern about its effects is growing because dramatic changes such as melting glaciers, heat waves, and droughts across the globe are realities rather than just theoretical possibilities. Weather extremes are more common. The U.S. experienced the hottest year on record in 2012, and wildfires and droughts in much of the Midwest seriously affected corn crops. Climate scientists like James Hansen, of NASA's Goddard Institute for Space Studies, claim that there is a direct link between extreme weather events (e.g., severe tornados, hurricanes, excessive rainfall, droughts, and cold waves) and climate change, citing an example of hot and dry summers in 2010 in Moscow and in 2011 in Texas and Oklahoma. According to Hansen, these events are "a consequence of global warming, because global warming has dramatically increased their likelihood of occurrence" (1). Without global warming in the mix, the likelihood of those events occurring, is "exceedingly small" (1). Scientists, including Hansen, who retired from NASA in June 2013 to spend more time on legal and political pursuits to limit emissions from greenhouse gasses, still believe that if humans act urgently and decisively, they can avoid the worst effects of climate change. The two recent science reports, the AR4 and *America's Climate Choices,* provide a window into what is happening with climate change.

The AR4

The IPCC's most recent report, the AR4, *Climate Change 2007,* brought to the world some new and troubling information: climate change is definitely occurring, it is anthropogenic or human-caused, and the global struggle to keep greenhouse gases (GHGs) sufficiently low is wholly inadequate ("Synthesis Report"). According to the AR4, there are fundamental, well-documented facts as to the causes of global warming. First, the global climate system is unequivocally warming, evidenced by observations of global average increases in air and ocean temperatures, widespread melting of snow and ice, and rising global average sea levels ("SPM" 5). Second, ice cores that span thousands of years show that global concentrations of GHGs—carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O)—show a distinct increase due to human activities since 1750 and greatly surpass pre-industrial levels. Fossil fuel and land use are primarily responsible for the global increases in carbon dioxide concentrations while agriculture is the primary reason for increases in methane and nitrous oxide ("SPM" 2).

Third, there are numerous long-term changes in climate at continental, regional, and ocean basin scales:

> These include changes in Arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones. ("SPM" 7)[5]

Fourth, the warmth of the last 50 years is unlike that of the previous 1,300 years and Paleoclimate data support this conclusion. The significance of this is that drastic changes in the polar regions, for instance, may lead to a huge increase in sea level rise.

[5] The amount of rain, snow, hail, etc., that has fallen at a given place within a given period, usually expressed in inches or centimeters of water.

About 125,000 years ago, the last time those regions were significantly warmer than now for a prolonged period, reduced "polar ice volume led to 4 to 6 meters of sea level rise" ("SPM" 9).[6] Fifth, the AR4 confirms that "[m]ost of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations" (10). The language in this statement is different from the conclusion stated in the Third Assessment Report (2001), which asserts that "most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations" (10). In other words, the AR4 links increases in greenhouse gas concentration to human activity. It also states that human influences are now noticeable in other facets of climate, such as "ocean warming, continental-average temperatures, temperature extremes and wind patterns" ("SPM" 10). Following the release of the report, an almost unbroken dozen of the hottest years on record occurred. From 1995-2006, 11 of the 12 years were the "warmest on instrumental record of global surface temperature (since 1850)" ("SPM" 5).

It is important to note that GHGs such as carbon dioxide (CO_2) methane (CH_4), and nitrous oxide (N_2O) occur naturally and are essential to the survival of living species, including humans. They keep Earth livable by allowing the sun's energy to enter Earth's atmosphere and warm it while also allowing some of the energy to escape back into space as infrared waves. This process keeps Earth's surface temperature hospitable to life at a pleasant 15°C (59°F). The concentration of these and other GHGs in the atmosphere has increased substantially since industrialization began about 150 years ago, which includes clearing of the forests and industrialized farming. The cumulative level of emissions growth correlates with a growth of the world population, world economies, and standards of living. The effect of the *increased* atmospheric

[6] The climate of some former period of geologic time.

concentration of GHGs is trapping a lot of infrared radiation that would normally escape into space. Consequently, the temperature of Earth's atmosphere and oceans is getting perilously warmer. According to the AR4, the average temperature of Earth's surface has risen by 0.74°C (33.3°F) since the late 1800s, and scientists expect it to increase another 1.8-4°C (35.2-39.2°F) by the year 2100 if humans take no action. From a geological time perspective, that is a fast and extreme change. Even if temperature increase stays at the lower end of the spectrum, around 1.8°C, that would represent "a larger increase in temperature than any century-long trend in the last 10,000 years" ("Feeling the Heat: Climate Science and the Basis of the Convention"). Additionally, about 20-30% of plant and animal species is likely at a higher risk of extinction if the global average temperature increases by more than 1.5-2.5°C above 1980-1999 levels ("Synthesis Report" 19).

Since the AR4 release, the daily mean atmospheric concentration of CO_2 surpassed a milestone level of 400 parts per million (ppm). On its website, the NOAA reports that on May 9, 2013, at Mauna Loa, Hawaii, "the primary global benchmark site" for monitoring CO_2 increases, milestone levels of CO_2 registered for the first time since the measurements started in 1958. Scientists have seen similar increases all over the world. The NOAA reported that all Arctic sites in its network reached 400 ppm for the first time in 2012. Comparatively, the global average CO_2 before the Industrial Revolution started in the 19th century was about 280 ppm and, according to NASA scientist James Hansen, the safe level of CO_2 is 350 ppm. Once oceans and atmosphere absorb CO_2, it will remain there for 1,000 years, even after emissions stop, making it difficult to avoid additional substantial climate change (Ewald). This increase in CO_2 concentration means that global efforts to contain emissions so far have been unsuccessful. Undoubtedly, humans are facing a hotter and otherwise dramatically changing world for generations to

come. The concern for future generations ought to guide policy regarding actions on climate change.

The IPCC received a Nobel Peace Prize in the same year (2007) along with Al Gore. The prize was “for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change” (“The Nobel Peace Prize 2007”). The AR4 further increased public awareness and acceptance that global warming is a serious ecological problem. The science has done its job: it has provided the best information available about climate change risks. It is now up to the world leaders to make climate change a national cause and develop specific response plans.

America’s Climate Choices

In May 2011, the distinguished scientific advisory group the National Research Council, part of the National Academy of Sciences, issued its fifth report on climate change, *America’s Climate Choices* (ACC). Its key findings confirm that global warming is occurring and that it poses significant risk to humans and the environment, with human activities as the most likely primary cause because of “the release of carbon dioxide and other greenhouse gasses into the atmosphere over the last several decades” (“America’s Climate Choices: Report in Brief”). The report also confirms that natural factors such as “internal climate variability or changes in incoming energy from the sun” cannot explain the warming trend (“Choices”). Additionally, the report states that “the impacts of climate change on human and natural systems” will intensify with increasing greenhouse gas emissions (“Choices”). The most severe risks to the U.S. “include more intense and frequent heat waves, rising sea levels in coastal communities, additional drying in the Southwest, and increased public health risks” (“Choices”).

The ACC finds that the significant risks that climate change poses to human society and the environment provide a strong motivation to move ahead with substantial response efforts. Although the report acknowledges that current efforts in local, state, and private sectors are important, they are unlikely to achieve results comparable to "what could be achieved with the addition of strong federal policies that establish coherent national goals and incentives, and that promote strong U.S. engagement in international-level response efforts" ("Choices"). The ACC recognizes that climate change contains inherent complexities and uncertainties and states that the best way to deal with them is by using an iterative or repetitive risk management approach and making efforts to

> significantly reduce greenhouse gas emissions; prepare for adapting to impacts; invest in scientific research, technology development, and information systems, and facilitate engagement between scientific and technical experts and the many types of stakeholders making America's climate choices. ("Choices")

This comprehensive iterative management approach requires national policies to engage people and communities in a shared goal to address climate change. It requires a commitment to deal with global warming and to implement a sustainable development.

America's Climate Choices did not produce big headlines because its conclusions are consistent with the previous scientific findings about global warming. That consensus acknowledges some uncertainty to the extent to which climate change is the result of human activity and how bad global warming will be if humans take no action. Nevertheless, the report says that "uncertainty is not a reason for inaction," and the most effective national response to climate change would be to "substantially reduce greenhouse gas emissions" ("Choices").

Given the severity of heat waves and other extreme weather events, nations' leaders will have to consider scientists' findings about climate change risks seriously, as Russian President, Dimitri Medvedev, did in 2010 after a severe heat wave in Moscow and other parts of Russia. Moscow's heat wave lasted seven weeks, temperatures were over 100°F, a level Moscow never reached before. Thousands of fires and smoke shocked and traumatized Russian people. After declaring that "practically everything is burning" in the parts of Western Russia, Medvedev declared that "[w]hat's happening with the planet's climate right now needs to be a wakeup call for all of us" (Brown 4). On the economic side, in Russia's most extreme weather in the 130 years of record keeping, the country lost a standing forest whose restoration will cost about 300 billion. Russia's grain harvest decreased to 60 million tons from the usual 100 million, forcing it to ban grain exports to limit rising domestic food prices. In just two months, mid-June-mid-Aug, the price of wheat on the world market increased 60% (Brown 4). What just this one situation shows is that, despite warnings from scientists since the late 1960s and international attempts to organize a response to looming risks of climate change, humans are ill prepared to handle the extreme weather events that are now more common and more devastating.

In the U.S., recognizing the threats associated with climate change, President Obama presented a plan on handling climate change on June 26, 2013. It calls for a national action and for the United States to be a global leader in efforts to combat climate change. The basis he provided for this call to action on is that addressing climate change is a moral obligation to future generations. While the focus on future generations is important, his plan comes up short because he focuses on regulation, conservation, and adaptation strategies without mentioning the need for a change in cultural practices, such as limiting consumerism and treating the natural environment as an extension of

being human. Nevertheless, given that the U.S. is the world's largest economy and second largest producer of CO_2, this call to action on climate change based on moral grounds is a welcome development for the world community and for future generations. Any extensive national action, though, is highly unlikely given that there is too much skepticism and too little respect for climate science on the political right in the U.S.

Skepticism about Climate Science

This section will provide a detailed account of climate change denial. This is important for several reasons. First, dealing with climate change is imperative for humans' collective survival and well-being. Second, dealing with climate change requires a fundamental change in human culture, as deep ecology suggests. Third, this change, according to deep ecology, points to Spinoza's style of cognitive-ethical evolution. Finally, the mitigation, the change, and the evolution are not compatible with the United States' cultural identity at present. Thus, climate change denial—the American Disenlightenment—is the conceptual opposite of the Spinozist vision of deep ecology.

A resistance to science happens when industry perceives new scientific findings as a threat and responds in a predictable manner: it starts a campaign that confuses the issue at hand, and it "attacks the messenger." Attacks on both, the science and scientists, are coming from a very vocal and powerful group of retired American physicists and scientific advisers to industry and political leaders. They vehemently and successfully denied the global warming risks by planting doubt about scientific certainty behind those issues. The main figures, among others, are Frederick Seitz, S. Fred Singer, Robert Jastrow, and William Nierenberg: all retired physicists. These scientists have strong connections in industry and politics and successfully ran effective campaigns for forty years "to mislead the public and deny the well-established scientific

knowledge" (Oreskes and Conway 7). This group's mission was to spread doubt. They successfully slanted public understanding of some of the most important issues of the current era by using ideology, corporate interest backing, and compliant, unquestioning media (7).

They used customary uncertainty that is a part of scientific discovery to "undermine the status of actual scientific knowledge" (Oreskes and Conway 7). In other words, they took the main component of science—doubt—and used it against science itself. Given that science is about a process of discovery, uncertainties are always a part of that process. Scientists ask new questions and explore new uncertainties in order to discover something new. For instance, scientists know that smoking causes cancer, but they do not fully understand the mechanism that leads to its occurrence. Doubt is a necessary component of science if it is a form of curiosity, or healthy skepticism—it leads to advancement in science. Doubt, however, makes science susceptible to misrepresentation because "it is easy to take uncertainties out of context and create an impression that *everything* is unresolved" (34). In the case of the tobacco industry, for instance, a tobacco executive wrote in 1969: "[d]oubt is our product, since it is the best means of competing with the 'body of fact' [linking smoking with disease] that exists in the mind of the general public. It is also the means of establishing a controversy" (Oreskes and Conway 34; "Smoking and Health Proposal"). The tobacco industry defended smoking by developing doubt about its harms. Other groups used the same tactic, and sometimes the same people, in other fights against scientific facts: they repeatedly used the same argument, that science is not certain. They claimed that "the science of global warming is not settled, denied the truth of studies linking [. . .] coal smoke to acid rain, and CFCs to the ozone hole" (Oreskes and Conway 7).

Attacks on messengers, i.e., scientists, happened after Carson published *Silent Spring* in 1962, which discusses the negative effects of toxic chemicals, and it happened to F. Sherwood Rowland after he and his protégé and colleague, Mario Molina, discovered in 1974 that CFCs damage the ozone layer. Rowland, who died in March 2012, received a Nobel Prize in Chemistry in 1995, along with Molina and Dutch atmospheric scientist Paul Crutzen "for their work in atmospheric chemistry, particularly concerning the formation and decomposition of ozone" ("The Nobel Prize in Chemistry 1995"). It also happened to Michael Mann, the climate scientist who, along with his team, developed the "hockey stick" graph in 1998, which represents the recent and dramatic increase in global mean surface temperatures over the last 1,000 years, and the unusually "fast rise of temperatures in the last 150 years" (Prothero). Consequent science investigations and reconstructions repeatedly vindicated Mann's hockey stick graph.

This denialist group also attacked scientists such as Benjamin Santer, whose research contributed to the historic "discernible human influence" conclusion of the IPCC's 1995 Second Assessment Report, for which he authored Chapter 8, "Detection of Climate Change and Attribution of Causes," a summary of evidence that greenhouse gasses caused global warming. Since the mid-1980s, Santer's research was on understanding the workings of Earth's climate and whether human activities are altering it. He has shown that they are (Oreskes and Conway 1). Seitz and Singer led the group of scientists accusing Santer of doctoring this report to make the science appear more certain than it was. Santer did make changes to the report but only in response to fellow scientists' review comments. Nevertheless, Santer's attackers wrote articles discrediting Santer in publications such as *Energy Daily, Investor's Business Daily,* and an op-ed piece in the *Wall Street Journal,* which accused him of making changes with intent to

deceive the public and policy makers. They spread their accusations extensively by writing to lawmakers, editors of scientific journals, and officials in the Department of Energy. They also tried to get Santer fired from his job by pressuring their contacts in the Energy Department. They did not succeed, but they damaged Santer's impeccable scientific reputation (3). Besides a personal toll these scientists experienced, attacks on Mann, Santer, and other climate scientists slowed down their work on climate change and have forced them to fight back. The threats and attacks on Mann and other climate scientists continue because, as Turrentine says, the skeptics are selling the idea that science and, by default, scientists, are lying (Turrentine).

The science denial groups succeed in spreading doubt about global warming among the public through the public relations' manipulation of the media and its reporting on climate science (Oreskes and Conway 2; 214-15). Despite the overwhelming scientific consensus regarding climate change since the mid-1990s and agreement among world science academies that "the world's climate is changing dangerously and the humans are to blame," the mainstream media reported doubt about global warming at every turn, acting as though for every scientist who sounded alarm, there was another equally qualified scientist who denied it (2). This was a case of false equivalence because those who denied science were often not climate scientists but paid "talking heads" for fossil fuel industries, which had a stake in denying global warming. The public relations specialists were using their skills, training, and intelligence to twist the truth and perpetrate confusion and doubt about climate change and thus harming the international discussion attempting to solve the problem (Hoggan). Moreover, the variance between the state of the science of global warming and the way major media presented it, made it possible for the U.S. government to avoid acting on the problem. There was an appearance of momentum in 1988 to act on global warming,

but, by the mid-1990s, it disappeared. The Byrd-Hagel resolution in the Senate to block the passage of the Kyoto Protocol three months before it became final helped to freeze actions on global warming in the U.S. (Oreskes and Conway 214-15).

The public relations campaigns against climate change were successful and well documented, as James Hoggan asserts. These campaigns relied on a two-fold formula: first, to determine what the target group thinks and understands and identify the gaps in knowledge; second, to then nudge them closer to the desired position. Hoggan points to the works of Ross Gelbspan who explains the whole disinformation campaign, identifying and naming specific sources.[7] John Stauber, Public Relations Watch founder, tracked the bogus campaigns and linked "various pseudo scientists to their energy industry funders" (Hoggan). One of the best examples of climate change disinformation campaign is a memo from political consultant Frank Luntz to the U.S. Republican Party in November 2002, warning that, although the scientific debate remains open, it was closing and that public opinion would follow in that direction.[8] He advised that the lack of scientific certainty needed to remain the main issue in the debate. Luntz, however, never specifically denied the validity of the science: "[t]he scientific debate is closing [. . .] but is not yet closed" (Hoggan).

At the time Luntz wrote this memo, among those who disagreed with that assessment were the 2,500 scientists of the IPCC, the U.S. National Academy of Sciences, the U.S. National Oceanic and Atmospheric Administration, the U.S. Geological Survey, the Royal Society of London, and the Royal Society of Canada" (Hoggan). Nevertheless, Luntz wrote that "[t]here is still a window of opportunity to challenge the science." His recommendation to his Republican Party clients was to do

[7] "The Heat is On" and "Boiling Point."
[8] This is located in a section titled "Winning the Global Warming Debate."

just that and encouraged them to find their own “scientists” to contest the issue at every opportunity. Luntz “urged them to plead for ‘sound science’ a twist of language of the sort that George Orwell once said was ‘designed to make lies sound truthful and murder respectable, and to give an appearance of solidarity to pure wind.’” Luntz’s goal was “to manufacture uncertainty and to politicize science,” which, as Hoggan suggests, the Bush Administration embraced enthusiastically (Hoggan). A couple of years later, Luntz backed off this position, claiming that “the evidence of climate change was overwhelming” (Hoggan). As Hoggan points out, however, it is difficult to tell who is being purposely blind and who, like Luntz, “was falling victim to gross negligence in the way they ignore the science—and in the potential catastrophic risks that they promote” (Hoggan).

Given such strong rejection of science on the part of the climate change in the United States and the complicit actions of those who serve their interests, the path toward finding the right response to climate change risks will be a difficult one. Climate doubters’ recent denial focused on the fact that over the past 15 years, global warming has slowed down. The much anticipated IPCCC’s Fifth Assessment Report (AR5) addresses the issue. It acknowledged that scientists do not fully understand this slowdown but that this is not unusual because such pauses in warming have occurred in the past. The natural variability trends in climate have always existed and will continue to occur mostly randomly. Due to this variability, global mean surface temperature shows significant “decadal and interannual variability. Since natural variations dominate short periods, such as 15 years, the IPCCC cannot accurately predict them based on short records. The important point that

> trends based on short records are very sensitive to the beginning and end dates and do not in general reflect long-term climate trends. As one

> example, the rate of warming over the past 15 years (1998–2012; 0.05 [–0.05 to +0.15]°C per decade), which begins with a strong El Niño, is smaller than the rate calculated since 1951 (1951–2012; 0.12 [0.08 to 0.14]°C per decade). (“Summary for Policy Makers”)

Other important highlights from the AR5 include the following: (1) scientists now assign 95-100% probability that human influence has been the main cause of global warming since the mid-20th century, as opposed to the earlier estimate, 90-100% certainty; (2) natural external forcing, such as the sun, added almost nothing to the warming since the 1950s; (3) the last 30 years were probably the warmest on record of the last 1,400 years; (4) a substantial part of the warming will be irreversible; and, (5) a much more rapid sea-level rise is occurring—the projection is now (28-97 cm by 2100) which is 50% higher than the previous projections (18-59 cm by 2100) when comparing the same time frames and emissions situations. These data again confirm that the time for global community to engage in comprehensive and vigorous action to reduce emissions is now. The United Nations secretary general, Ban Ki-moon, declared that he will call a meeting with heads of state in 2014 to push forward a treaty on global emissions reduction. Given that President Obama has now embraced climate change publicly and that world economies are more stable than at the time of such high-level meetings in Copenhagen in 2009, the results of such a daring attempt might turn out better. There are additional reasons to hope that the proponents of action regarding climate change will prevail.

The public’s awareness of climate change consequences and an innate human connection with nature and all living beings will play a critical role in the direction of the debate and humans’ subsequent actions regarding this issue. The human community needs to realize it is facing disastrous consequences if it does not address climate change. Scientists are doing all they can to warn the public and decision makers about

their findings regarding climate change risks if no response or insufficient responses occur. Given the enthusiastic response to the first photographs of the planet in the 1970s, *Earthrise* and *Blue Marble,* it is likely that humans have a deeper connection with nature than they realize. These photographs evoked a caring response toward Earth and nature then: they tapped into something deeper in the human psyche of which humans are unaware, but they can access with certain stimuli. That innate connection to nature or that *something* in the human psyche is what biologist Edward O. Wilson calls *biophilia, "*a sense of connection with all living things" or "love of nature" (Thiele 171-73; Wilson 139). Anthony Barnosky, a paleontologist, also alludes to human connection to nature, claiming that nature means *something* to most people. For Barnosky, this holds true whether the human view of nature is based on impressions, hard facts, or other infinite number of variations in between. In his view, humanity's impressions of nature and the facts about nature (or the ecosystems that make up nature) intertwine in the sense that impressions of nature are feelings but that nature itself evokes those feelings. Human experience of nature changes as ecosystems change and create a different "feel of a place" (Barnosky 18-19). Whether future changes in the ecosystems and, consequently, the conceptions of nature will be outside all previous human experience is the relevant factor in Earth's warming related changes. For Barnosky, there is no dichotomy between humans and nature: humans constitute Earth's ecology as well as nature, along with 10 to 30 million other species with whom they have been riders of the planet. As he points out, it is interactions between humans and other species in the living world and their interactions with nonliving parts of the planet that enable life, define ecosystems and, in the end, nature itself (18-19). If Wilson and Barnosky are right, if there is an innate connection between humans and nature, certain events appear to

trigger a sense of connection between humans and nature, and those are the times when they respond in a protective fashion towards nature, as they did in the 1970s.

Conclusion

The planet Earth has been undergoing serious changes because of human activities, such as the production of greenhouse gasses due to emissions from burning fossil fuels. Climate scientists are certain that human activities are responsible for Earth's warming climate, as their peer-reviewed research shows. Their findings suggest that humans need to take urgent action to deal with the effects of climate change so that current and future generations can avoid perilous consequences of global warming, such as water and food shortages, rising sea levels, and extreme weather conditions. Scientists have been calling for a corrective response since the late 1960s. The question is whether humankind will choose to heed the warnings about risks of its current practices that are harming the natural world and choose a different approach given that its actions heretofore have not led to the desired results, that is, a decrease in global warming.

Humans are now at a crossroad: they can stay on their current path, rely on environmental protection laws and the human-centered approach with the hope that Earth does not reach the tipping point, that an irreversible damage does not occur before they adapt to the new hotter world or find technological fixes that would sufficiently mitigate climate change risks. Most climate scientists believe that there is still time for humans to act to prevent the worst effects of climate change. They thus can seek a more enlightened approach regarding the risks they face. They can focus on transforming their cultural practices and develop different worldviews that would lead to a more harmonious path with nature, seeing themselves as integrated in the web of life.

There was a promise of transformation of human consciousness toward seeing its world through a new lens in the 1970s after discoveries of the physical threats to the planet but also after seeing the photographs of the whole Earth that NASA's Apollo missions produced. The success of the groups who deny global warming shows an even greater need for a deeper, more enlightened approach to being in the world. That promise of transformation was most apparent in the 1970s and abated in the following decades. From space, Earth looks like one world, a whole that Spinoza might have envisioned, or the interconnected world that Naess perceived.

Humans seem to need constant reminders that they are a part of nature, that nature is within each human and other beings, that they are wholly dependent on nature, and that their actions can significantly harm nature, themselves, and millions of other living species. Humans thus need to tread carefully, especially given the significant unknown risks they face about Earth's future climate changes. Additionally, given that focusing on science and environmental protection, although desired and necessary, has not been enough to inspire stronger interest among the public and policymakers to support broader and quicker action on global warming, a more ecologically inclusive approach is necessary. It is time for humans to consider a more enlightened way of looking at the world, expand their consciousness, and think of themselves as part of a larger whole. To that end, the next two chapters will respectively offer ethical and holistic models of thought that humans might want to consider in order to address the existential risks they face. Chapter Two will examine environmental philosophy's, particularly deep ecology's, approach to addressing environmental problems, which focuses on the idea of interdependence of nature and humanity's self-realization through caring about nature. Chapter Three will focus on Spinoza's monism and naturalism in the context of the seventeenth-century European Enlightenment, to show that the concept of nature as

a whole, as one substance, disallows humans a privileged position. They face the same risks as other species if conditions on Earth dramatically change to the extent that Earth can no longer sustain life.

Chapter Two: Environmentalism and Climate Change

Introduction

Chapter One examined the science behind climate change, humanity's populist, social, and international responses to those risks. It showed that science findings indicate that human activities are the main driver of Earth's warming climate, which leads to harmful consequences for human and nonhuman species as well as to entire ecosystems on which they depend. Climate change is a complex and challenging problem that requires contributions from various disciplines (e.g., physical, life, political sciences, and others) in designing acceptable solutions, in which ethics plays a fundamental role (Gardiner 555; Gardiner 397; Jamieson 459). That is, discussions regarding climate change must include ethics because human actions are subject to moral assessment, various interests matter (human—close and distant, nonhuman, nature), and on a practical level both elements require consideration in policy decisions (Gardiner 398).

This chapter examines philosophy's efforts to address the ecological crisis and climate change. Deep ecology's response is particularly relevant because, from its inception, it went beyond other approaches to the ecological crisis. Although deep ecology has things in common with other environmental philosophies, such as the concern about sustainability and intrinsic value of nature, the philosophical sense of deep ecology, rests on the concept of Self-realization (expansive self as possible) and on Spinoza's concept of *conatus* or self-unfolding. Implementation of concepts of Self-

realization, intrinsic value based on the concept of interdependence and ecocentric egalitarianism are necessary if humans are to succeed in changing their anthropocentrically oriented attitudes and practices toward the natural environment and mitigate the effects of climate change by adopting the concept of ecological sustainability, the type of social and economic development that supports and improves the natural environment and social equity.[9] I argue that deep ecology is the most viable way to pursue sustainability because its holistic approach and focus on Self-realization, which are unique to deep ecology, are crucial to an ecologically sustainable future.

The first part of the chapter outlines responses to the ecological crisis, which includes a brief historical development of the environmental movement in the United States framed through the four waves of environmentalism (*conservation, containment, co-optation,* and *convergence or coevolution*) and its current direction. The next part discusses nature and the scope of environmental philosophy and environmental ethics. The focus is on the study of nature from the perspective of interdependence, which environmentalists consider the cornerstone of the environmental movement. The last part of this chapter focuses on deep ecology, its response to the ecological crisis, and how it can contribute to the resolution of climate change risks.

Responses to the Ecological Crisis and Global Climate Change

The worldwide awareness about the ecological crisis spurred a variety of popular responses. Collectively, they constitute the environmental movement, which has been at the forefront of addressing the ecological problems and, as Warwick Fox and Paul Thiele point out, it has been important and socially and politically influential on local, national,

[9] Based on Mark Diesendorf's broad definition of sustainability, in "Sustainability and Sustainable Development," *Sustainability: The Corporate Challenge of the 21st Century*, ed. J. Beneveniste D. Dunphy, A. Griffiths and P. Sutton (Sydney: Allen & Unwin, 1999) 19-37.

and international levels (Fox 4; Thiele xvii). Along with peace and social justice, the environmental movement is one of the three important social movements for global responsibility in the twentieth century (Drengson, Devall, and Schroll 101; Naess 1; Thiele xvii). In the U.S., the environmental movement led to important legislative successes, particularly in the 1970s. There were also international attempts to contain the environmental crisis with the Montreal Protocol as the most successful, enforceable agreement.

The environmental movement is a complex and diverse response to the ecological crisis, whose *main* challenge, philosophers agree, is to transform humanity's attitudes and behaviors to preserve diverse natural environment where life can flourish. As Thiele claims, the prominence and importance of the environmental movement is likely to increase in the twenty-first century and beyond because dramatic changes in climate will force humans to act to assure its survival amid rapidly changing conditions, such as rising sea levels and severe droughts that lead to food and water shortages (xvii). For this, humanity's engagement with conservation and preservation approaches alone will be insufficient to address these problems adequately. Humankind needs to explore the nature of its relationship with the natural world, and consider it as an interdependent in the sense that there is a link between its survival and flourishing and the natural environment. A brief historical overview shows that the environmental movement has progressed toward this concept.

In the U.S., the environmental movement developed in four waves: *conservation*, *containment*, *co-optation*, *and coevolution* or *convergence* (30). There are no strict divisions between the periods, and each new wave builds on the previous one(s). The c*onservation* period lasted from the mid-1800s until the 1960s and concentrated on two opposing goals: preservation of nature that John Muir (1838-1914) favored and

conservation by an efficient management of its resources, a view that Gifford Pinchot (1865-1946) favored (Norton ix-x; Thiele xviii-xxv). Both orientations are still in effect today. The c*ontainment* period lasted from the 1960s to the early 1980s and defines an effort to limit damage to the natural environment, which is inevitable with industrial economies. It is during this period that deep ecology introduced its preservationist approach to nature, similar to Muir's. The next period, *co-optation*, lasted from the early 1980s to the early 1990s, and the popularization or mainstreaming of the environmental movement characterized it, in the sense that the political establishment, business interests, and general public embraced environmental values, at least in word if not in action. Finally, the *coevolution* or *convergence* period began in the late 1980s and early 1990s. It is a synthesis of earlier efforts but also offers a new co-evolutionary perspective, the integration of human beings into the natural world, based on the idea of shared existence and recognizing interdependence between humans and nature (Bortz 20; Merchant 20; Thiele 31-32). This effort to implement the concept of interdependence into practice is a move toward sustainable development, which the *Brundtland Report,* also known as *Our Common Future,* defines as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (*Our Common Future: Report of the World Commission on Environment and Development* 15; Thiele 31-32).

In the coevolution wave of environmentalism, the concerns of the environmental movement over time—the "conservation of resources, the preservation of wilderness and biodiversity, and the containment of pollution and population"—have matured into an integrated work that support the interdependent relationships of adaptive social and ecological systems on the planet (Thiele 32). The shift toward the study of nature from the perspective of interdependence is significant for environmental philosophy; Bryan

Norton calls it the “linchpin” of the environmental movement because of the hope that it would “inspire a shift to a new perspective” (253). Given that the notion of interdependence between humans and the natural environment is at the core of deep ecology, it is the environmental philosophy to consider in helping humans resolve the ecological crisis including climate change.

Publications Supporting Human Interdependence with Nature

Major publications in the 1960s and 1970s such as Carson’s *Silent Spring* in 1962, Lynn White’s “The Historical Roots of Our Ecological Crisis” in 1967, and *The Limits to Growth* and *A Blueprint for Survival* in 1972, pointed out the dangers of humanity’s ongoing practices that focused mainly on human needs. Alan Drengson and others credit the American ecologist Aldo Leopold’s publication of “Land Ethic,” published in *A Sand County Almanac* in 1948 and Carson’s *Silent Spring,* as also the beginning of the deep ecology movement. Leopold was the first to express an actual ecocentric worldview, which some consider to be the first expression of a deep ecological worldview (Drengson, Devall and Schroll 102; Taylor 456). Leopold strongly believed that humanity’s vision of nature must include integrated humanistic and scientific values and that human beings need to act in ways that promote the thriving of all ecosystems and subsystems within them (Leopold xviii). He urged that humans consider whether something is ethically and aesthetically correct as well as economically advantageous when considering actions that affect the natural environment. Leopold’s well-known phrase, “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community,” captures this point of view (Leopold 224).

Similarly, Carson warned that a conservation movement for land, resource, and wilderness, which was in place when her book appeared, was not enough to assure

human well-being. She cautioned about the dangers of pesticides by showing how the use of DDT to control mosquitos led to decline in some bird populations. She argued that healthy, whole biotic communities are crucial for the functioning of complex food webs and networks of biotic relationships (Carson 45; Drengson, Devall and Schroll 102). Both Leopold and Carson respected science and realized that human actions affect humans and other living beings as well as the entire ecosystems. They realized the interconnectedness of all living beings in nature—one of the fundamentals of deep ecology—and wanted to create awareness about it in order to mitigate human effects on natural systems. Moreover, while Carson was concerned with the biological damage humans were imposing on the natural environment, she also condemned the idea that humans "control nature" as arrogant, "born of the Neanderthal age of biology and philosophy when it was supposed that nature exists for convenience of man" (Carson 297; Fox 5). This was a warning to humans to reexamine the idea of being the dominators of nature.

Another condemnation of the view of humans as dominators of nature came from the medieval historian Lynn White, Jr., who claimed that the Western form of Christianity carried a huge responsibility for the ecological problems because it "established dualism of man and nature" (1205). Moreover, White argued that Christianity maintained that humanity's exploitation of nature is God's will (1205). This is not to say that White was against religion, only that he was against the anthropocentric view of the relationship of humans and nature, in which the latter serves the former. White suggested an alternative view of nature within Christianity, that of Saint Francis of Assisi, who proposed the idea of equality of all nature's creatures, including humans, rather than humans as dominators. Saint Francis did not succeed, but his idea of spiritual autonomy of all beings, for White, make him "a patron saint for ecologists" (1207).

The Limits to Growth presented a forecast analysis of 12 possible future situations about the potential growth in human ecological footprint from 1972-2100. The central scientific conclusion of the study is that unrestrained economic growth would overshoot planetary resource limits before the human ecological footprint would slow down if the global community delayed making a decision on enacting ecologically responsible economic growth. Once the economic growth crosses the planetary limits, the global community would have to reduce the rate of resource consumption and the rate of emissions. The global community could either manage this decline by organizing this reduction, or economic forces will lead to the human system collapse. The study emphasized that that the global community cannot stay in an ecological unsustainable mode permanently because human consumption cannot keep exceeding the amount nature produces every year (Meadows, Randers, and Meadows). *A Blueprint for Survival* warned that the industrial way of life, which requires constant expansion is unsustainable. A continuous increase in population and consumption per capita are disrupting ecosystems and depleting resources, says the report, thus making a radical change both necessary and inevitable. The authors argue that humans need to form small, stable societies that could be sustainable indefinitely and provide optimal fulfillment. Such societies would have (1) minimal disruption of ecological processes, (2) maximum conservation of energy and resources, (3) a population growth would equal loss, and (4) a social system in which its members would enjoy these conditions rather than feel restricted by them (Goldsmith and Allen).

These writings caution that human-centered attitudes toward the natural environment is unsustainable. They suggest, either implicitly or explicitly, that humans ought to consider the concept of interdependence with nature, which is the central concept of deep ecology along with Self-realization. These authors also claim that

equality of nature's species and current human practices will require a drastic shift to a more sustainable way of life for human beings that will be less disruptive to nature's processes. The necessity and inevitability of the looming change requires humans to adjust to the new ecological reality—that Earth's resources will not last forever given increases in human population, consumption of natural resources, and current structures of human economic and social systems built on profit maximization and overconsumption, respectively. The new, ecologically mindful worldview that considers interests of nonhuman beings is undoubtedly necessary, and philosophers could play a significant role in its development.

Philosophy's response to the ecological crisis is newer and more hesitant than that of the environmental movement, which has been actively involved in addressing environmental problems since the late 1800s and its modern segment since the late 1960s and early 1970s. Environmental philosophy emerged as an academic discipline in the early 1970s (Brennan and Lo 5; Fox 8; Jamieson xv). According to Fox, who prefers the term ecophilosophy[10] to environmental philosophy or environmental ethics, the environmental thought in philosophy developed vigorously in the 1970s, becoming an institutional force in the contemporary philosophy in the same decade. Fox suggests that the environmental thought matured with Eugene Hargrove's publication of *Environmental Ethics* in 1979, the first professional academic journal dedicated to "the philosophical aspects of environmental problems, broadly conceived" (9). Nevertheless, environmental philosophy has remained a peripheral instead of mainstream field, says Fox, a fact that other philosophers like Dale Jamieson, confirm. In 2003, Jamieson wrote that

[10] Fox prefers the term ecophilosophy over environmental philosophy or environmental ethics for two reasons: (1) the prefix "eco" stands for "ecology," which refers to the relationships between organisms and their environment, while the term "environment" refers to the external environment; (2) his account includes concerns that transcend environmental ethics and includes metaphysics, epistemology, and social and political philosophy (Fox 8). Given that environmental philosophy is a multidisciplinary approach to the ecological crisis, Fox's use of the term is common with other philosophers' use.

environmental philosophy “has yet to become fully defined as a field,” stating that in the 1980s, good literature on the subject was difficult to find but that has improved.

Additionally, the environmental philosophy field is evolving in the sense that climate change has forced discussion about climate ethics, which is generating interest among philosophers. According to Martin Schönfeld, Stephen Gardiner’s article, “Ethics and Global Climate Change,” generated much interest among philosophers in the ethics of climate change, the topic that was more of “a niche interest.” Schönfeld also anticipates that climate change will likely lead to the development of Climate Ethics as a replacement to Environmental Ethics because the existential interests of humans and nonhumans are beginning to converge (Schönfeld 3). Whether Climate Ethics develops to the extent that it could replace Environmental Ethics, as Schönfeld suggests, is something the future will tell. At present, and for the foreseeable future, Environmental Ethics and Environmental Philosophy are and will be philosophy’s fields dealing with the ecological crisis, including climate change. Before proceeding, some clarification is necessary regarding these two fields.

The Nature and Scope of Environmental Philosophy and Environmental Ethics

Philosophers refer to the late 1960s to early 1970s as the periods when both environmental philosophy and environmental ethics emerged as new academic disciplines in response to the environmental crisis and humanity’s anthropocentric response to it (Brennan 1-3; Brennan and Lo 5; Jamieson xv). Often there is no clear distinction between environmental philosophy and environmental ethics in published literature, and, often, writers conflate the meanings, occasionally with an explanation (Warwick Fox) but mostly without it. This lack of clarity between the terms might be because, as Bryan Norton says in his May 2013 review of Sahort Sarkar’s

Environmental Philosophy: From Theory to Practice (2012), philosophers accidentally named the field of environmental philosophy as environmental ethics (404).

Recognizing the difference between the two is important because, some work in environmental ethics belongs to other disciplines in philosophy. According to the publisher's description, Sarkar's book is the first extensive treatment of environmental philosophy. It provides more clarity about the nature and scope of environmental philosophy, beyond environmental ethics by addressing the philosophical underpinnings of environmental thought and policy. Similarly, Mark Colyvan[11] claims that although philosophers have billed much of the philosophical work as environmental ethics, the main focus of environmental ethics—implementing ethical environmental strategies under conditions of uncertainty (about the state of the world and about pertinent values)—involve epistemology and decision theory and consequently belong to environmental philosophy (95). Given that a clarification of the scope of environmental philosophy and environmental ethics brings something interesting to the discussion for seasoned environmental philosophers like Norton, it should make a very significant difference to those new or interested in understanding its relevance to the problem of climate change.

Environmental ethics addresses ethical issues that arise from the relationship between humans and their nonhuman counterparts such as plants, animals, inanimate objects, and entire ecosystems, in the natural environment. It attempts to extend the moral concern to these nonhuman entities by considering various normative concepts such as their intrinsic value and moral status (Brennan and Lo 1; Sarkar 4; Colyvan 95). This expansion of moral concern to the nonhuman world represents a theoretical

[11] Mark Colyvan is a Professorial Research Fellow in the Department of Philosophy at the University of Sydney. Colyvan delivered this lecture to the Arts Association on 25 October 2007 and published it in 2012.

dimension to environmental ethics. Before proceeding to the discussion of moral status and intrinsic value, three normative concepts found in environmental philosophy need clarification.

The majority of literature concerning the ecological crisis mentions three major normative concepts: anthropocentrism, biocentrism, and ecocentrism (or holism). Some philosophers such as Paul Thiele do not distinguish biocentrism and ecocentrism as separate categories and include ecocentrism under biocentrism while others keep these separate because biocentrism addresses concerns about living beings, and ecocentrism includes living and nonliving entities such as ecosystems. Anthropocentrism emphasizes reverence for nature without ethical or spiritual identification with nature. It advances the idea that "human life deserves a unique and privileged status within the biosphere" and that "human beings bear the rights and responsibilities of the stewards of the earth" (Thiele 176). Furthermore, anthropocentrism assumes that human values serve as the basis for all values (Sarkar 61). Those who are against anthropocentrism argue that it is self-serving, and, from a practical standpoint, it has led to a dangerous climate change situation (Fox 14). Others argue that anthropocentrism

> unjustly subjugates nonhuman life to human standards, values, uses and Inevitably abuses [. . . and] takes the first step toward the domination, exploitation, and destruction of nature [. . .] when it bifurcates the world into (higher, rational) human subjects and (lower, nonrational) natural subjects. (Thiele 176)

Biocentrism, on the other hand, assumes that all individual living organisms deserve moral considerations and thus possess intrinsic value (Sarkar 60). It emphasizes equal rights for all life, an idea based on the premise that "all organisms and entities in the ecosphere, as parts of the interrelated whole, are equal in intrinsic worth" (Devall and

Sessions 67; Thiele 176). Those who object to biocentrism's focus on nonhuman life argue that biocentrism is antihumanist and, as such, undermines the value of human life, which, consequently, leads to the destruction of social conditions that sustain better ecological care. Additionally, critics claim that biocentrists advance or at least do nothing to stop "the political and economic inequalities and injustices that inevitably translate into ecological degradation" (Thiele 176). Ecocentrism or holism goes further than biocentrism and includes entire ecosystems in the realm of moral domain nature as a whole, as well as individual organisms that makeup the ecosphere. Philosophers who argue against ecocentrism such as William Frankena, Kristin Shrader-Frechette, and Bryan Norton, for instance, argue that actions that serve the interests of humans also serve interests of nature as a whole in the long run and vice versa (Frankena 3; Norton 240; Nelson 36-37; Shrader-Frechette 17). While it is theoretically correct that by harming interests of nature humans unavoidably harm themselves, this is not a helpful argument because it assigns moral standing or value only to humans. If nonhuman living species and the ecosphere as a whole do not have moral standing, as they do in deep ecology, humans do not have corresponding duties as moral agents to respect their interests. Human interests would be primary and those of the ecosphere secondary, even if the ecosphere has moral standing. This leaves in place dualism between humans and nature in favor of human interests over others. Given that this attitude has led to and continues the ecological crisis, expanding a moral concern to the nonhuman world is an obvious next step.

Moral Status and Intrinsic Value

Moral standing (or status) and intrinsic value are interrelated, central concepts in environmental ethics. They are interrelated in the sense that, as Espen Gamlund

asserts, the concept of moral status assumes the concept of “moral status value,” or, as John O’Neil claims, moral standing is one of the various senses of intrinsic value (10; 165). Assigning moral status to entities such as humans (anthropocentrism), all individual living beings (biocentrism), or ecosystems (ecocentrism or holism), indicates that humans must show “a direct moral concern and respect toward them” (Gamlund 3). Ethical decisions require consideration of various stakeholders such as people at immediate and distant locations, people of the present and future generations, other living beings, and the natural environment itself. The stakeholder concept requires consideration of moral standing of each stakeholder, whether it is a human being or other living beings, like plants, animals, and ecosystems (Warner and DeCosse).

The main approaches to assigning moral standing to entities are utilitarian and deontological. The utilitarian approach, such as Jeremy Bentham’s (1748-1832), relies on the idea of maximizing happiness (pleasureless pain for all parties). This is a sentient approach, which assumes that all living beings capable of feeling pleasure and pain have moral standing. In the deontological ethics, moral responsibility is based either on duties or rights. Under the duties approach, only entities to whom humans have direct duties to have moral status. Under the rights approach, entities that have basic rights have moral status (Gamlund 4). The virtue ethics approach to moral standing in the natural environment appears to have received little attention so far (Gamlund 4) but Gamlund attempts it while partly relying on Spinoza’s concept of *conatus*. Gamlund’s position on moral standing from the point of virtue ethics depends on human beings’ conception of themselves: if that conception is interpersonal and holistic, humans will recognize certain resemblances between humans and other beings, such as “striving for self-preservation.” In accepting this ability as part of their self-conception, humans then have the basis for recognizing its prescriptive importance as “grounds for extending

moral status from [humans] to other living organisms, species populations, ecosystems, and the biosphere as a whole" (22). By acknowledging the common traits humans have with nonhuman nature, humans can transition from a position that nature has an instrumental value serving human interests to being "part of [the] moral community and worthy of [. . .] moral consideration" (22).

The prevailing perspective on who has moral status has been anthropocentric or limited to all or some humans. If they (humans) ascribe any value to nonhuman nature, it is only in the instrumental sense that serves human purposes. Nonhumans are thus outside the moral realm (Gamlund 5). The human-centered perspective ascribes intrinsic value to human beings alone, in a strong sense. In a weak sense, anthropocentrism ascribes "a significantly greater amount of intrinsic value to human beings than to any nonhuman things" (Brennan and Lo 3). In the latter case, "the protection or promotion of human interests or well-being at the expense of nonhuman things turns out to be nearly always justified" (3). This is an instrumental value of nature to humans. The problem with the anthropocentric view is that it will not help resolve the ecological crisis or climate change because the instrumental view of nature created the problem in the first place.

Nonanthropocentric approaches are more inclusive in the sense that they extend moral status to nonhuman entities, which could be either individual organisms or wholes, such as species and ecosystems. Peter Singer allows moral standing to individual living organisms if they are sentient while Tom Regan argues on the basis of all living beings as "subject to life" or "animal rights view" (Gamlund 5; Schönfeld 353). There are those who attempt to extend moral status to all individual living organisms even if they are non-sentient, which defines the biocentric or life-centred position found in Albert Schweitzer, Paul Taylor, and Jon Wetlessen as the main supporters (Gamlund 5). This is problematic because, from this perspective, squirrels and human beings have equal

moral value and deserve the same consideration, the same protection of their interests as, for instance, human beings. Some suggest that hierarchical ordering will solve this problem.

From an ecocentric or holistic perspective, individual wholes such as species-populations and ecosystems have moral status (Gamlund 5; Schönfeld 353). Leopold's land-ethic, deep ecology, and Holmes Rolston represent the ecocentric or holistic view. Rolston asserts that environmental quality may not be a sufficient condition in human life, but that it is a necessary condition. In contrast to other species, such as squirrels, who adjust to the environment as they find it, humans dramatically change their environment and create culture. This ability to reshape the natural environment, however, does not change humans' need for basic things that squirrels or other living species need. As Rolston says, humans live out their lives in a space where natural resources, such as "soil, air, water, photosynthesis, climate, are matters of life and death" (1).

These entwined destinies of interdependence between humans and nature form the basis for an environmental ethic, which goes beyond merely applying human ethics to nature and viewing nature in a useful sense. Instead, environmental ethic, in the "*primary*, naturalistic" or physical sense, addresses questions about an appropriate respect and duty to nature. To treat nature with respect is, as Rolston points out, to see the intrinsic or inherent value of nature and "to understand, appreciate, and enjoy nature far beyond [the] biological uses of it" (2). Humans can expand their view of nature beyond their immediate, pragmatic needs and view it as the whole. In other words, *valuing* nature may lead humans on a transcendental path from an immediate reality to an expanded view of the universe.

Besides intrinsic values, nature has instrumental values that are essential to human well-being and include life-support, economic, scientific, recreational, and many other values (Barnosky 156; Rolston 3; Sarkar 41). Life support values include airflow, water cycles, and ozone layer. Economic values refer to human labor mixed with natural resources, such as oil and various ores. Scientific values include studying nature for its own sake, regardless of its economic value as a worthwhile pursuit; science also explains the nature of things and how they work. Recreational values are about humans enjoying being in nature for the pleasure of simply being there, connecting to something outside of the physical dimension of nature, contemplating while experiencing the objective realm (3).

One criticism of the holistic view is a denial of interests of inanimate objects. Schönfeld, for instance, claims that entities that have moral standing are those

> whose continued existence and well-being or integrity are ethically desirable and whose interests in them have positive moral weight (provided that the entity can meaningfully be said to have interests). (353)

In his view, all living beings, whether human or nonhuman, have moral standing. Since humans cannot attribute the concept of interest or well-being to inanimate objects or to collections of such objects, such as land or ecosystems, these do not have moral standing, and humans owe them only indirect duties (361).

Which concept of moral standing or intrinsic value should humans employ? The anthropocentric approach seems inadequate given that it has not produced desired results, that is, it did not contain the ecological crisis. It appears that humans ought to expand the realm of moral standing to include other entities, but which ones? Which criteria should they use? From a perspective of human interdependence with nature, the ecocentric view appears to be the best choice. If every organism within a natural system

has moral standing, than the system as a whole ought to have moral standing. If anything affects a single organism, it affects the whole. If actions of a single organism affect the whole, then questions about sustainability of human practices come to the fore.

Sustainability

Sustainable development has been the main focus of the efforts to act on the overwhelming scientific evidence that the planet is at peril given various environmental concerns such as climate change, and resource and technological limits. Humans have made amazing technological advances in the last two centuries that enabled them to build cars, skyscrapers, satellites, computers, airplanes, and even travel to the moon. As amazing as these achievements are, there are limitations humans have not overcome: they completely depend on the proper functioning of the natural systems for fundamental life supporting things such as oxygen, water, and food. Experiments with artificial ways to produce food such as hydroponics, for instance, show that humans cannot replace growing food on top soil because it is too expensive and limited to few types of produce, such as lettuce and tomatoes. Thinking in terms of sustainability is thus necessary.

What is sustainability? There are many definitions of sustainability, and they usually refer to three criteria: limits or a concern about resource depletion, interdependence or interconnectivity of all life, and equity or leaving the planet in the condition that could support future generations ("Definitions of Sustainability"). The United Nations World Commission on Environment and Development (WCED) issued the *Brundtland Report,* also known as *Our Common Future* in 1987, which first presented the idea of sustainability. When this report speaks about sustainability, it refers to sustainable development and defines it as "development that meets the needs

of the present without compromising the ability of future generations to meet their own needs" (*Our Common Future: Report of the World Commission on Environment and Development* 15). This concept of sustainable development contains two main ideas:

> the concept of "needs," in particular the essential needs of the world`s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment ability to meet present and future needs. (37)

This definition addresses the principle of intergenerational equity specifically between the present and future generations. The focus on "needs" addresses the principle of social justice, and the idea of limitations promotes social organization concerned about technology and environmental capacity to support the needs of all in the present and future. This definition assumes that needs of future generations are sufficiently knowable at the present time although it is safe to assume that they would want the same basic things as present generations, such as clean air and water, food and, so on. Additionally, although the report as a whole includes a conservation of the natural environment in the concept of "needs," this is not included in the definition itself and thus appears to be anthropocentrically oriented. If the definition included the word "ecologically" before the "sustainable development," it would have been clearer that it included a concern for the natural environment and that the ecological aspect is primary.

Although the report's concept of sustainable development includes the ecological, economic, and social aspects, it provides no specific blueprint for this. It claims that "economic and social systems and ecological conditions differ widely among the countries" (*Our Common Future: Report of the World Commission on Environment and Development* 39). While flexibility is desirable in application of specific policies or agreements, the problem is that without any specifics, governments are likely to ignore

them. The report acknowledges that economic growth always carries a risk of damage to the natural environment and expects world economies to be mindful of their ecological roots. It also expects them to protect and nurture their ecological roots in order to support long-term growth. In this sense, the protection of environment is inherent in the concept of sustainable development (39).

Nevertheless, there has been more emphasis on economic growth and efficiency without considering the costs of such growth to the natural environment. Although a healthy economy is desirable and necessary, economic interests have been trumping all others. Economic growth without enough concern for its ecological impact is an overriding value to those who view it as the most important or, even, as the only relevant consideration in policy decisions. Focusing on economic issues alone is problematic because, as Jamieson points out, “economic efficiency is one value, and it may not be the most important one” (143).

Jamieson is correct because humans care about a wide-range of things, such as family and friends, as well as politics, religion, and morality. As he asserts, they are also willing to sacrifice their own interest for something they view as the greater good (144). Riding a bicycle in cities with high car traffic and few bicycle paths, in order to help reduce emissions, is serving the greater good. Additionally, in some situations, making commitments based on economic gains is inappropriate or simply wrong because it is dishonest and manipulative, such as selecting spouses, lovers, or friends, or making political or religious pledges for economic benefit. Similarly, regarding nature as a pathway to economic gains is exploitative. Not surprisingly, environmentalists want societies to view nature as a friend or partner with whom they share their lives (144). Environmentalism’s appeal to these broader human values is what made it an important social movement of the twentieth century.

Considering humans' interest in broader values, it is safe to assume that they are interested in more than just economic sustainability. But again, what is sustainability? Moreover, as Willis Jenkins asks, "what must [humans] sustain?" (xxi). The current functioning of human economic, political, and technological systems threatens the ecological systems on which they depend, which is counter to the fundamental concept of sustainability, "the ability of an activity to endure without undermining the conditions on which it depends" (xxi). Since human activities are undermining their own basis for survival and flourishing, they need to decide whether they want to continue with this practice. In making this decision, they need to consider whether they just want to survive or blossom as well as survive. This brings up issues about value of other species, the economic and social goals, and the kind of future they want. Sustainability is thus the goal of the drive for the ecologically sustainable development. The motivation for the development of deep ecology was and still is the ecologically sustainable development, which also brought attention to the concept of the whole or the interdependence of all species and their drive for Self-realization or Self-unfolding.

Deep Ecology

Deep ecology is a social movement and an environmental philosophy that offers a nonanthropocentric, ecocentric or holistic view of the world, with the intent to address the ecological issues of the current era. Some philosophers (Katz et al.) write about deep ecology from a philosophical perspective, consider it an ecophilosophy, and claim that it is an interdisciplinary field of study that includes ecology, philosophy, environmental policy, and ethics (Katz, Light, and Rothenberg xi). Others (Warwick Fox) characterize it as an ecophilosophy and a social movement while yet others (Alex Guilherme) think of it as a social movement.

As a social movement, deep ecology originally started as a call to ecological activism in the early 1970s when the anthropocentric approaches, based on policy reform and resource conservation, were the main ways humans used to address environmental problems. Naess introduced the phrase “deep ecology” at the Third World Future Research Conference in Bucharest in 1972 (Jacobsen 1149). He first expressed his ideas in print in his 1973 article “The Shallow and the Deep, Long-Range Ecology Movement,” published in an interdisciplinary journal *Inquiry* (95). Naess was convinced that a fundamental change was necessary in the way human view and value the natural environment to foster a true sustainability (Barnhill 132). The change he envisioned involves, at least in part, spiritual values and assumptions because deep ecology emphasizes individuals’ development of personal worldviews based on ecological principles rather than on changing social structures (132). In other words, the intent behind deep ecology is to transcend preservation and conservation of planetary resources needed to sustain humans that characterized the modern environmental movement prior to and since the 1970s. Instead, since its inception, deep ecology promoted the idea that a deeper connection between humans and the natural environment was necessary to address the ecological crisis, which included expansion of humans’ view of themselves as part of a larger whole.

Deep Ecology Platform

In response to inquiries from those interested in the deep ecology movement, Naess and George Sessions developed the platform of eight core principles of deep ecology in 1984 (Naess 60). The inquiries were about clarification of the fundamental thought or guiding philosophy behind deep ecology and whether deep ecology is just a movement with “exasperatingly vague outlines?” (Naess 60). Naess and Sessions had

two goals in mind: (1) to clarify the essence of the deep ecological view and (2) to motivate individuals to engage politically regarding issues concerning nature (Katz, Light, and Rothenberg xiii). Religion or philosophy, including ethics, can serve as a source of the eight principles. The platform is brief, direct, employs simple language, and Naess and Sessions designed it for developing the deep ecology movement; it represents a pragmatic meaning of deep ecology. Rather than being merely summative, the platform represents related ideas and general policy prescriptions that comprise the philosophy of deep ecology (xiii). The eight principles express the following ideas:

1. The flourishing of human and nonhuman life on Earth has inherent value. The value of nonhuman life-forms is independent of the usefulness of the nonhuman world for human purposes.
2. Richness and diversity of life forms are also values in themselves and contribute to the flourishing of human and nonhuman life on Earth.
3. Humans have no right to reduce this richness and diversity except to satisfy *vital* needs.
4. The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.
5. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.
6. In view of the foregoing points, policies must be changed. The changes in policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present and make possible a more joyful experience of the connectedness of all things.

7. The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent value) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.
8. Those who subscribe to the foregoing points have an obligation directly or indirectly to participate in the attempt to implement the necessary changes. (Naess 67)

Naess clarifies these points as follows. (1) The principle of inherent value in deep ecology applies to nature as a whole, not only the living beings. It includes entities such as rivers, landscapes, cultures, ecosystems, and Earth as a whole. Therefore, the term "ecosphere" is better suited for deep ecology than "biosphere." He considers this renaming as necessary because in the Western world, the terms *life* and *living* have a narrower, biological meaning than in other cultures. Many cultures use slogans such as "Let the river live," which indicates a broader treatment of what it means to be alive (68). (2) The platform indicates that all forms of life, even the simplest form of life have value in themselves or intrinsic value, not just instrumental value to human ends. This is a rejection of the idea that complex species, namely humans, are more valuable. Complexity, as referred to in the platform, is different from complication. Urban life may be more complicated than life in a natural setting without being more complex in the sense of multi-faceted quality. The platform also emphasizes that diversity is not enough and that richness of species is important because the survival of a kind of species is not enough. Human interference may destroy too many valuable species while still meeting the biodiversity requirement (68).

(3) The concept of *vital* needs is significant because it recognizes the need of humans to survive and flourish, without excessively destroying the diversity and richness

of the ecosphere for nonessential needs. Although the term “vital” is vague, this is on purpose, to allow the room for cultural and other factors in determining a vital need. (4) The platform recognizes the need for stabilization of the human population and even reduction over time. It cautions that the sooner global community takes steps toward it, the less drastic measures humans will need to take further in the future. Naess does not elaborate on the type of drastic measures needed so this is open to interpretation but he is right to assert that there will be substantial decreases in diversity and likely the richness of species as well as hugely increased rates of their extinction, perhaps the largest in Earth’s history (Naess 69). As Chapter One has shown, the IPCC’s reports indicate that this is likely to occur in the future.

(5) While cautioning that humans excessively interfere with the natural environment and that this interference is rapidly worsening, Naess recognizes that the materially richest nations cannot reduce this interference quickly. Nor is he suggesting that humans should not modify Earth’s ecosystems because all other species have done so in the past and will do so in the future. Naess’ concern is that “the nature and extent of such interference,” particularly in case of wilderness (Naess 70). Dedicated wilderness or near-wilderness areas on the planet are not large enough to accommodate the continued evolution of plants and animals. He thus encourages the efforts “to preserve and extend areas of wilderness or near-wilderness” and focus on the basic ecological processes in these area (70).

(6) The idea behind the claim that social policies must change is the need to enable implementation of the first five principles. Economic growth in the industrial countries, as it is today, for example, is incompatible with the first five principles of the platform. A different model is needed with emphasis on “self-determination,” “decentralization,” “local community,” and “think globally, act locally.” While Naess

recognizes the need for local autonomy, he also understands the global nature of the ecological crisis and acknowledges the need for role of central government authorities to provide guidance to communities who, for instance, favor development without implementing ecologically wise development. Naess also recognizes importance of providing support for the non-governmental organizations (NGOs) because they have the ability to act globally on a grassroots level, and thus reduce the need for governmental interventions (Naess 70). (7) Additionally, Naess claims that quality of living is that it is not quantifiable, therefore, it seems vague to traditional economists. (8) While obligating the followers of the platform principles to implement the necessary changes in order to address the ecological crisis, Naess recognizes that there will be differences of opinion and priorities but that cooperation is possible. What Naess hoped to accomplish by commenting on the eight principles is to clarify the place of deep ecology within other movements with similar goals so as to foster discussion and cooperation while recognizing the possibility of disagreements (71).

The intent behind the eight principles is inclusiveness and flexibility in interpretation, support of various worldviews, ecosophies or personal ecophilosophies, and religions. Naess and Sessions invite those who agree that the Earth is at peril and that humans need to act to join the international movement while at the same time preserving individual and cultural diversity (31). That is, Naess and Sessions start from a position of respect for individual beliefs and ideas regarding solutions to the ecological crisis. Given that Naess' upbringing reflects traditions that respect local customs and enjoyment of nature (Drengson 26), this approach to the platform mirrors that attitude. Furthermore, these principles have always been open to revision. Naess and other supporters of deep ecology invite suggestions for revisions. Individuals can adopt these principles as part of their own personal ecosophies or worldviews. Many independent

and grassroots organizations around the world have included the principles of the deep ecology platform into their mission statements. Additionally, although the platform emphasizes sustainability, there is an implicit spiritual dimension to the platform in that it enables people with different worldviews and spiritual values related to nature, to develop an agreement on principles that would lead to action. Indeed, diverse groups support these principles such as Buddhists, Shintoists, Taoists, Shamanists, Christians, and ecofeminists (31).

The basic aim of the platform seems to be an invitation to a dialogue, to a conversation aimed at finding common ground among various groups for an agreement to serve a larger cause. This invitation is to people of all occupations and lifestyles who are interested in practical actions regarding the ecological crisis. The aim of the authors is not to address more specialized groups like philosophers or other academics that are looking for specific arguments and supporting information so they can evaluate those using criteria of philosophical analysis such as assumptions, coherence, consistency, completeness, and consequences. The authors' purpose was most likely to inspire using common language, which is consistent with the way social movement operate while also introducing important philosophical concepts that interest philosophers such as intrinsic value and flourishing of both human and nonhuman life.

Deep Ecology's Philosophical Perspective

From a philosophical perspective, deep ecology attempts to analyze and understand humans and their "relationship with the natural environment" (Katz, Light, and Rothenberg xi). In other words, deep ecology goes beyond the preservation and conservation attempts of the planetary resources needed to sustain humans; instead, it examines the nature of human interaction with the natural world and provides an

alternative, more encompassing, holistic viewpoint. What constitutes the philosophy of deep ecology are the “basic principles, motivations, and justifications of the deep ecology movement” (x).

There are various versions of deep ecology, but they have at least six essential characteristics in common. First, deep ecology rejects strong anthropocentrism or the idea that human life is the center of all value. Second, it accepts ecocentrism or holism (the idea that the biosphere and the entire ecological systems are the primary foci of value) as a replacement for anthropocentrism. That is, instead of valuing only humans or nonhuman species in addition to humans, deep ecology adopts a holistic view of value and respects the entire natural systems as having value. Third, it promotes identification with all forms of life (or seeing other life forms or nature as parts of being human). Fourth, it stands for caring about nature as part of Self-realization (or considering the interests of nature as their own and thus becoming more mature, self-realized human beings). Fifth, deep ecology critiques instrumental rationality (the focus on efficiency and quantifiable results as the aim of human activity). Finally, it emphasizes individual development of a worldview (Katz, Light, and Rothenberg xiii). These principles distinguish deep ecology from other environmental philosophies because their purpose is to question the prevailing beliefs, values, and practices to arrive at ultimate norms and hypotheses of ecological responsibility.

Unlike environmental ethics, which seeks only to guide human action and, therefore, is anthropocentric and normative (Guilherme 61), deep ecology is primarily about *ontology* or the basic nature of things, while ethics and politics are secondary (Katz, Light, and Rothenberg xiii-xiv). In other words, deep ecology is about “the nature of the world, about human place in the world, or the human relation to the world (e.g., as part of it or apart from it)” (xiii-xiv). Its focus is on the basic “ontological relatedness and

identification of all life forms, natural objects, and ecosystems" (xiii-xiv). This focus on ontology and interdependence rather than ethics is what differentiates deep ecology from other approaches to the ecological crisis.

Deep ecology is neither one of the positions in environmental ethics nor is it one of the many environmental ethical theories, such as animal rights theory or biocentric individualism.[12] It is an environmental *philosophy,* a philosophy of nature, or the philosophy of human ecology. It is a *cosmology* or a *worldview,* which gives it its depth (Katz, Light, and Rothenberg xiv). The development of a *worldview* is the main component of deep ecology, which refers to the worldview that considers the place of the human beings in the world. The worldview combines the scientific knowledge of reality with human values, emotions, experience, or commitment. In other words, worldview is "a normative description of reality, an understanding of the world that merges objective empirical observations (scientific descriptions) and personal values" (xi). More precisely, the purpose of the development of the worldview is to address "the human relationship to the nonhuman natural world and connect this normative understanding directly to action" (xi) The purpose of one's worldview is to serve as the guiding principle of all decisions in relation to an individual's life (xi). The development of one's worldview for Naess, and most deep ecologists, starts with "personal experiences of connection to and wholeness in wild nature, experiences which are the ground of their intuitive, affective perception of the sacredness and interconnection of all life" (Taylor 456).

This personal experience is what Naess calls *deep experience,* one of the three main principles of Naess' personal ecophilosophy, Ecosophy T, with others being *deep*

[12] Biocentric individualism refers to a view that all individual living beings have intrinsic moral worth and that species and ecosystems have moral standing only as a collection of individuals (Taylor Ethics 1981:197-218).

questioning and *deep commitment*. The idea behind these principles is to show how human beings can discover their *ecological self,* that is, the self that is in harmony with nature, which would than assist them in the development of their worldview. *Deep experience* refers to a spontaneous yet intense event followed by profound change or conversion that directs a person toward a deep ecological path. Leopold provides a remarkable instance of this in *A Sand County Almanac* after killing a wolf and seeing fierce fire in a dying wolf's green eyes. This experience had sufficient intensity to transform Leopold's life work. As a wildlife manager, he thought of wolves as predators only and that less wolves meant more deer for hunters. He gradually came to realize that predators play an important and necessary role in the overall balance in any ecosystem (Leopold xxi-xxii).

The main point of these spontaneous experiences is the recognition of gestalts, or networks of relationship, that nothing exists in isolation but rather everything is a component of a vast web of interconnections (Naess 6). Deep experience leads to a strong sense of profound identification with what human beings experience in the sense that this identification includes an elevated sense of empathy and an expansion of human concern with nonhuman life forms. This experience also leads to a realization of how important the well-being of nature is for human physical and psychological well-being. Additionally, for Naess, identification with nonhuman life would help humans experience a natural inclination to protect nonhuman life without feelings of obligation and coercion to do so (173).

This process of identification with other beings is a part of Naess' concept of Self-realization or Self-unfolding, common to all beings, from microbes to multicellular life-forms to ecosystems and watersheds, to Earth as a whole (Naess 163). The concept of Self-realization refers to the development of broader human identification with greater

wholes, without limitations of a personal ego ("S" is, therefore, capitalized in Self-realization) (6). When humans identify with greater wholes, they take part in "the creation and maintenance of this whole. *[They] thereby share in its greatness"* (173). This broader identification involves a transformation of consciousness or experiencing one's expanded or "ecological self": the self that is inseparable from and not superior to all else but rather is a part of the entire universe. The crucial point here is that interests of nature as a whole become a part of human interest when humans experience expanded, ecologically conscious self (9). If humans could expand their consciousness to include interests of nature as a whole, altruism and ethics would be unnecessary.

Naess modeled the concept of Self-realization after Spinoza's concept of *conatus,* persevering in one's own being, not just staying alive, without providing a sustained scholarly discussion of the concept. He basically appropriates the *conatus* principle from Spinoza and builds his own philosophical concept of Self-realization. In this sense, Naess' philosophy is Neo-Spinozist. With this in mind, for Naess, being alive means the "creative evolution" to the ecological consciousness that is capable of "understanding and appreciating its relations with all other life forms and to the Earth as a whole"(Naess 166). To incorporate Spinoza's meaning of *conatus*, an active preservation of one's essence, the concept of Self-realization is more befitting over self-preservation because it reflects active progress to some higher state of being rather than just maintaining a certain state, which suggests passivity (166). Moreover, striving of all beings in their own ways is a universal right for Self-realization or Self-unfolding (164). As integral part of this larger whole, humans must realize they are intimately bound with it just as they are with the society within which they live. They must recognize that other beings in nature have the same right to unfold. In the process of unfolding, humans can change the natural environment but they cannot change it without changing themselves

in the process (165, 173). That is, as part of the greater whole, whatever changes the whole, changes humans in some way. They cannot remain unaffected. The same is true of other species, they make changes in the natural word, and those changes affect them as well as other species.

Additionally, Self-realized, ecologically minded humans would recognize the inherent value of all life forms, not only humans. They would recognize that all beings have an equal right to unfold their potentialities. For Naess, all ecosphere has intrinsic value, beyond any instrumental value that may serve other ends (167). He rejects ranking according to species' abilities to reason, whether they are conscious, or according to hierarchical ordering based on some evolutionary scale because he views these rankings as unjustifiable. In an interconnected world, in which everything is a part of a unified whole and affects its functioning, everything has a right to live and flourish (167).

Some would object that given the predatory nature of the natural world, noninterference with other species' unfolding is not realistic. While biological or evolutionary processes are a part of the natural world, some interference with other species' preservation and unfolding is unavoidable. What Naess and other deep ecologists are concerned about is not the satisfaction of *vital* human needs but rather the satisfaction of frivolous human wants that might cause unnecessary harm to other species or interfere unnecessarily with their unfolding. To this end, in Ecosophy T, Naess expands Immanuel Kant's maxim, "You should never use another person only as a means" to "You should never use any living being only as a means" (174).

Deep questioning, the next natural step after a deep experience helps to explain a coherent structure for clarifying basic beliefs that lead to action. This emphasis on action is the distinguishing feature of deep ecology as compared to other environmental

(Harding 16). Finally, principle of *deep commitment* is a dedication to an ecological worldview that follows as a result of combining deep experience with deep questioning. When people develop an ecological self or a worldview, they act from their whole being, which creates energy and commitment to take actions. As Harding points out, given that the nature of these actions is peaceful and democratic, they will lead to ecological sustainability. Discovering the ecological self leads to joy, to involvement, to wider identification with other life forms, and hence to deeper commitment directed to extend care to humans and to deepen care for nonhumans (17).

Solving environmental problems requires a new philosophy of the relationship between nature and humans, a new worldview (Katz, Light, and Rothenberg xiv). Consequently, Katz et al.'s definition of deep ecology as "a philosophical understanding and analysis of humanity and its relationship with the natural environment" is befitting (xi). Also befitting is their additional description of deep ecology as "a normative critique of human activity and institutions" because it "seeks a fundamental change in the dominant worldview and social structure of modernity" (ix). This change, says Naess, "is not a slight reform of [the] recent society, but a *substantial reorientation of [the] whole civilization*" (Naess 45).

Naess' Deep Ecology

Naess believed that resource conservation and policy reform, or "the shallow approach," was insufficient to deal with complex, short-term ecological problems. He proposed a deeper approach, the truly sustainable solutions to those problems, which require a fundamental change in the way humans view and value the natural world. In "The Shallow and the Deep, Long-Range Ecology Movement: A Summary," Naess calls for the ecologically responsible policies whose focus on pollution and resource depletion

is a part of broader concerns, which include seven additional concepts: (1) total field image, (2) biospherical egalitarianism, (3) diversity and symbiosis, (4) anti-class posture, (5) fight against pollution and resource depletion, (6) complexity rather than complication, and (7) local autonomy and decentralization (95).

First, Naess rejects the image of "the man-in-environment" and argues for what he calls "*the relational, total-field image*." He views organisms as "knots in the biospherical net or field of intrinsic relations." In other words, relations between organisms are fundamental. Without those basic relations, organisms are not the same (95). This is a system-thinking point of view: everything is interrelated and without relationships, organisms are different.

Second, *biospherical egalitarianism*, for Naess, meant that that all forms of life have an equal intrinsic value. He added "in principle" to avoid controversy because he realized that in practical terms this principle would require exploitation, suppression, and carnage, but it did not prevent criticism of biospherical egalitarianism as misanthropic. The idea behind it is Naess' deep respect for all life, not just human life. He believed that "*the equal right to live and blossom* is an intuitively clear and obvious value axiom" and that restricting it to humans had harmful effects on the quality of life of humans themselves. This is because, in Naess' view, humans are dependent on nature and can draw not only satisfaction and pleasure from it, but that by establishing a master-slave relationship, humans alienate themselves from their environment (95-96).

Third, with p*rinciples of diversity and of symbiosis*, Naess tries to show that an ecological model of life enhances diversity and thus enhances survival and the potential for new, richer life forms. He interprets the Darwinian notion of "the struggle of life and the survival of the fittest" to mean an ability to live and cooperate within complex relationships, rather than to live in an antagonistic mode of life with an orientation to "kill,

exploit, suppress" (96). Naess believes that the slogan "[l]ive and let live" is a stronger ecological principle than "[e]ither you or me" because the latter is destructive to both human and nonhuman populations while the first enhances diversity of human life (96).

Fourth, Naess uses the *anti-class posture* principle to draw attention to the problems associated with the diversity of human ways of life: that intentionally or unintentionally, it results from exploitative and oppressive practices of some groups. This is important because societal division of the exploiter and the exploited negatively affects both: it diminishes their potential for Self-realization, the concept that is at the heart of his philosophy. Besides diversity, ecological egalitarianism and symbiosis support the anti-class posture. Moreover, those three principles would work well in any conflict between groups, including those important conflicts "between developing and developed nations" (96-97). Finally, any future overall plans should include the three principles as a precautionary measure to stay consistent with wide and widening classless of diversity (96-97).

Fifth, with the f*ight against pollution and resource depletion* principle, Naess warns ecologists (by which he means activists) to avoid focusing on only the conservation component of dealing with the ecological problems. He argues that conservation practices are not enough to solve the ecological problems and can lead to even worse ones such as an increase in inequality. For instance, if a better quality of life requires an installation of antipollution devices, this increases the cost of living and consequently leads to inequality because the poor would not be able to afford such devices. An ethics of responsibility requires an implementation of all seven principles of deep ecology. Naess implies that activists need to be well organized so that they can reject jobs in places that offer limited ecological engagement (97).

Sixth, Naess' c*omplexity, not complication* principle introduces the concept of unity or systems thinking regarding organization of the natural environment. The term c*omplexity* refers to the law of ecology, which indicates that relationships in ecosystems are complex, that they exhibit certain order. In contrast, c*omplication* refers to the fragmentation of life that urban and industrial societies show. Naess believes that humans need to think in terms of multiple interacting factors that may operate together to form a unified system. Humans, for instance, include a variety of activities into their workday. Similarly, "[o]rganisms, ways of life, and interactions in the biosphere in general, exhibit complexity of such an astoundingly high level as to colour the general outlook of ecologists" (97). Given this complexity, Naess suggests that "thinking in terms of vast systems [is] inevitable" (97). He also points to a continuous perception of deep *human ignorance* (Naess' emphasis) of biospherical relationships and, consequently, of the effect of disturbances in the system (97). Applying the complexity-not-complication principle to humans means choosing integrated actions in which the whole person is active, not simply reactive. In other words, humans need to select complex economies and diversified yet integrated means of living by combining such things as intellectual and manual work, industrial and agricultural undertakings, work in a city and recreation in nature and vice versa. Additionally, an exponential growth of inventions and technical skill is necessary to implement ecologically responsible policies in a new direction, as is the need for support of research policy institutions (97).

Finally, Naess' principle of *local autonomy and decentralization* intends to protect vulnerable forms of life and to maintain an ecological equilibrium. To achieve this goal, he argues for strengthening local self-government and both physical and mental self-sufficiency. Of course, this leads to decentralization, but Naess believes that local governments are better equipped to handle pollution and other problems than distant

ones. If other important factors are constant, decentralization would reduce energy consumption. For instance, growing food locally or getting construction materials for homes requires less fuel use than importing those products. Additionally, reduction of the number of links in the decision-making chain strengthens local autonomy. Naess' example of a more efficient decision making would be a local-board, nation-wide institution and global institution. The idea behind this is to prevent local interest from being dropped if the chain of decision making is too long even if everyone follows the rules (98).

This section outlined Naess' introductory article providing a comparison between the resource conservation and policy reform movements, which he viewed as short term goals and the long-term approach, which he labeled the deep ecological approach. What Naess intended was to establish a different relationship between humans and nature by placing humans in nature and emphasizing the relational egalitarian approach for being in the world. Without humans realizing they are part of the larger network, it is not likely they could move away from the conservation approach alone and would continue to see themselves as separate from the natural world they inhabit. His biocentric egalitarianism, by which he assigns the equal right to live and flourish to all species, is an attempt to place humans in the natural world, to help them see themselves as part of the larger whole in which they are a part of community of thousands of other beings, including rivers, mountains, and other ecosystems. His personal experience of being at home in the river or feeling as the mountains protected him, arguably led to the view of humans being a part of nature, Moreover, given that Naess advocated the equal right to live a blossom, it is unlikely that he would have advocated elimination of one species to benefit others. More likely it is that humans are used to thinking more in hierarchical rather egalitarian and holistic terms, with humans being at the top of the perceived hierarchy

that leads some to think Naess is being misanthropic. He sees the world as network of complex, diverse relationships in which there is respect for other beings' way of life in cooperative rather than competitive relationships that benefit both humans and nonhumans. Social organization takes into account the network or systems approach and includes egalitarian principles, diversity and symbiotic relations between humans and the natural world, to design a way of life that respects individual species as well the entire communities. The whole way of life would be oriented toward organizing individuals' life to be in harmony with nature and local governments play a crucial role in achieving global ecological goals. These principles would have appealed to egalitarian minded individuals and groups but those who were more hierarchically oriented would have difficulties in accepting them. Chapter Five will address this issue in more detail.

Critiques of Deep Ecology

Critics of deep ecology claim that it lacks a systematic theory that philosophy requires and consequently has yet to gain respect in mainstream academic thought. This is partly because ecocentric orientation, which is at the heart of deep ecology, promotes the intuitive connection with nature, while an anthropocentric or humanistic orientation promotes a more intellectual relationship with nature. Biocentrism (by which deep ecologists mean ecocentrism), emphasizes equal rights for all of life, an idea based on the premise that "all organisms and entities in the ecosphere, as parts of the interrelated whole, are equal in intrinsic worth" (Devall and George Sessions 67; Thiele 176). Deep ecologists, like radical environmentalists, tend to view systematic philosophy as a problem because philosophy attempts to reduce the natural world to an abstract concept. Christopher Manes' view illustrates this point: "If anything, most radical environmentalists look at the systematic philosophy as the problem, as an attempt to

reduce the buzzing, howling, blossoming heterogeneity of the natural world to some abstract idea" (Manes 21; Thiele 185). In Manes' view, the watchword for radical environmentalism, if it has one, is probably the often repeated dictum "Let your actions set the finer points of your philosophy" (Manes 21; Thiele 185). While deep ecology is not a philosophy in the traditional sense, it is a philosophy, it attends to action, which is necessary if humans' goal is to create a sustainable future.

Additionally, deep ecologists use some principle as a rhetorical tool such as the biocentric egalitarianism. This creates confusion, which Naess acknowledges. He asserts that this criticism surfaces when "the rhetorics of a movement is treated like seminar exercises in university philosophy (Naess 26). The emphasis on equal rights for all of life, one of the major principles of deep ecology, and a central part of Naess' personal ecophilosophy, Ecosophy T, is meant to serve a "mythic function," to encourage preservation of ecosystems as interactive and diverse entities. Naess views mythic function as necessary because it adds meaning and general appeal to an idea that philosophy and science can also investigate as a testable hypothesis. One example of a sentence that has mythic function is "[a]ll living creatures are fundamentally one," which appeals to the idea of interdependence and justice, concepts that philosophers can investigate for the philosophical merit (Naess 165).

Conclusion

This chapter provided a brief history of the development of environmental movement, examined the nature and scope of environmental philosophy and its core concepts, moral standing and sustainability as part of philosophy's response to the ecological crisis and climate change.

Deep ecology's response is particularly relevant because from its inception it went beyond other approaches to the ecological crisis. Like other environmental philosophies, it employs the concept of intrinsic value and considers conservation and policy changes and nonhuman living beings as part of its overall approach to the ecological crisis. Deep ecology goes further in that it emphasizes a holistic approach, a concern for nature as an interdependent whole in which humans are inextricably integrated and gives moral standing to nonliving parts of nature as well. Moreover, deep ecology employs the concept of Self-realization (expansive self as possible), which rests on Spinoza's concept of *conatus* or the right of all species to preserve in their own being to reach their own highest potential. Implementation of concepts of Self-realization, intrinsic value based on ecocentric egalitarianism and interdependence in the overall approach to the ecological crisis and climate change is necessary if humans are to succeed in changing their anthropocentrically oriented attitudes and practices toward the natural environment and mitigate the effects of climate change.

The question is whether deep ecology as the most viable environmental philosophy to address the ecological crisis including climate change. Can the world governments and people implement and accept respectively implement its principles? Can it contribute to a sustainable development? It appears that some world organizations have adopted deep ecological views. Offering support for deep ecology is the Earth Charter, which includes the concern for well-being not just of humans, but the larger community of life, as well as future generations. The Earth Charter Commission, an independent international organization, launched the Earth Charter in 2000 as a people's charter because thousands of people around the world were involved in drafting the charter over ten years. Its aim is to guide the transition to "sustainable ways of living and sustainable human development" ("What is the Earth Charter?"). It recognizes that

all humanity's goals are interconnected, whether environmental, cultural, economic, ethical, or spiritual because it is impossible to care for people if the natural world around them is collapsing. The Earth Charter started out as a United Nations initiative by the Brundtland Commission in 1987 and there was an effort at the 1992 Rio Earth Summit to adopt it. This effort failed because nations could not agree on the language and instead adopted the Rio Declaration, which is more oriented toward human interests. Like the Universal Declaration of Human Rights, the Earth Charter is a soft law document, which means it is morally, although not legally, binding of those governments that adopt and endorse them ("What is the Earth Charter?").

What this means is that deep ecological principles have become a part of the thinking about sustainability and sustainable development because individuals are looking beyond the dominant ways of handling the ecological problems. Conservation of resources and policy reforms are too minimal to address the climate change crisis. A much more engaged and active government and individuals who see themselves as part of the natural world are likely to care more about it than those who see themselves as separate from it. It is highly unlikely that humans can hope to have a sustainable natural environment without considering the whole. Deep ecology provides a route.

Deep ecology's philosophy draws substantially on Spinoza's monism and the *conatus* principle so the next chapter will explore these concepts as he outlined them in his *Ethics.* The following chapter will then examine how these two principles can serve as the basis for environmental philosophy, particularly deep ecology's core principles, intrinsic value, egalitarian biocentrism (more accurately ecocentrism), and Self-realization.

Chapter Three: The Enlightenment and Spinoza

Introduction

Chapter One outlined the seriousness of climate change risks and attempts to address them in the U.S. and on the international level. I argued that humans had an opportunity to shift to a more enlightened approach to the ecological crisis they still face, specifically since the early 1970s, but they did not because they trusted that environmental protection laws, the anthropocentric approach, and climate science findings would sufficiently change human conduct and attitudes toward the natural environment and limit further environmental decline. I also argued that skepticism about certainty of climate science findings delayed the shift toward the ecological worldview. In Chapter Two, I argued that deep ecology, which rests on the concepts of the whole and interdependent relationship between humans and nature as well as the concept of Self-realization (expanded ecological self), is the most viable environmental philosophy to address the ecological crisis including climate change because it is highly unlikely that humans can hope to have a sustainable natural environment without considering nature as a whole.

This chapter will explore Spinoza's system, namely his monism and the concept of *conatus*, in the context of the Continental Enlightenment, to determine if it can serve as the basis for environmental philosophy, particularly deep ecology. Spinoza provides an account of the nature of substance and human beings, the place of human beings in nature as a whole. The Enlightenment was an ambitious, unified, widespread, and

transformative philosophical, intellectual, social, and cultural movement in the seventeenth and eighteenth centuries. It was an era of secular humanism, which emphasized reason, scientific inquiry, freedom, equality and human fulfillment in the natural world. Spinoza's philosophy reflects this orientation and also challenges the dominant dualistic conception of the universe as mental and physical. His vision limits the universe to only one substance, God, which he equates with Nature, with two main attributes, mental and physical. Everything else is a mode of this substance, of which there are infinitely many, each striving for its own preservation and unfolding.

I argue that Spinoza's philosophy helps envision human beings' relationship to Earth as members of its community, along with millions of other species that inhabit it, as opposed to being privileged members to whom different rules apply. This is important because climate change requires action to help humans and other species survive if the worst case scenario occurs, that is, if Earth heats up to such an extent that it tips the scale beyond the point of reversal. The first part will examine the development and nature of the Enlightenment and Spinoza's system, as he outlined it in *Ethics*; it covers the Enlightenment and includes a discussion of events that led to it, as well as the nature of the Enlightenment and the role of philosophers in its development and sustaining power. The second part focuses on the brief background of Spinoza, Descartes' influence, and a discussion of *Ethics* focusing on Spinoza's substance monism and the concept of *conatus*.

Precursors to the Enlightenment

Vast cultural and intellectual changes took place in the 1500s and 1600s, which produced the social values that allowed the Enlightenment to spread through Europe in the late 1600s and 1700s. Increased questioning of the justness of absolute monarchy,

which ruled based on a divine or God given right, was a major change in Europe prior to the Enlightenment. The common citizens of Europe had little or no input in the functioning of their government for centuries. The idea that monarchs were infallible because God granted them the title began to weaken during the sixteenth and seventeenth centuries and various developments occurred that promoted the questioning of their absolute power: the Thirty Years War (1618-1648) was one of the most immediate catalysts of the Enlightenment that historians mention but the Scientific Revolution, exploration and imperialism, the encounter with China, and the declining influence of the church also played important roles.

The Thirty Years War

Traditional interpretations of the Thirty Years War describe it as a religious conflict that turned into a political one, or as a political conflict based on religious ideologies (Polišenski 31). Briefly, the most common interpretations claim that the Thirty Years War started in Bohemia (a region of the present-day Western Czech Republic) between German Protestants and Catholics in the Holy Roman Empire. It spread through Central Europe, to the Baltic in the northeast and to Swabia (a region in Germany) in the southwest and continued intermittently as dynastic, commercial, and territorial rivalries between various powers at the time fighting for political prestige, particularly between the Bourbon and Habsburg dynasties. The war started when the future Holy Roman emperor, Ferdinand II (1578-1637) who ruled from 1619-1637, tried to impose Roman Catholicism on his domains, and the Bohemian Protestants rebelled against the incoming Catholic king. According to Peter Wilson, the Czechs wanted to free themselves from Habsburg absolutism, which lasted about 300 years (24). In the battle between Protestants and Catholics, a third of the German population died over the

thirty years of war because of murder, famine, and disease. The population in other countries like Netherlands and Italy also suffered substantial losses. The war ended in 1648 with the signing of the Peace of Westphalia after widespread devastation of the whole region at the hands of mercenary armies (Polišenski 31-43). Given that the Thirty Years War was “the most destructive conflict in Europe, before the twentieth-century world wars” (Wilson 555), professional historians are still interpreting and raising big questions about it, such as its geographical and chronological scope, who really won, and “its causes and relationship to wider change” (Wilson 24). It is unclear “whether it was primarily a German or international conflict, if it involved religion or political power, and whether it expressed some deeper ‘General Crisis of the 17th Century’” (24). Given the duration and suffering the war inflicted, it is unsurprising that one consequence of the war was increased distrust in monarchies and religious authorities.

Exploration

Exploration and subsequent extension of the European empires overseas, especially in the Americas, led to political and cultural changes in Europe. Additionally, new transportation technologies enabled Europeans to explore already known places in Africa and Asia in more depth than before. These overseas explorations introduced Europeans to vastly different beliefs and lifestyles as the explorers came back from their travels with stories of peoples and cultures previously unknown. Even common European people, who were unable to travel, could not escape exposure to foreign influence because some explorers brought with them foreign visitors. Europeans were especially curious about the Orient, its religions, familial relationships, and scientific discoveries, which so amazed them that the emulation of Chinese culture became fashionable. This expanded worldview served as inspiration and impetus for change for

Enlightenment era thinkers. As Schönfeld has shown, Central Europeans (in the territories devastated by the Thirty Years War) were especially receptive to Confucian political philosophy and its imperial implementation as a state ideology in the Ming and Chin Dynasties of China, as the works on the topic, e.g., by Leibniz, Wolff, and Bilfinger (who coined the term “Leibniz-Wolffian School Philosophy”) testify. The encounter with Confucianism had an explosive impact on the conceptions of the relation between the Church and the State, as it constituted evidence that a state founded exclusively on principles of secular humanism and devoid of any Christian elements functioned perfectly well (Schönfeld 70-74).

The Scientific Revolution

The Scientific Revolution created bold innovations in philosophy and sciences such as physics, astronomy, earth sciences and mathematics. Moreover, there was a significant refinement of the *methods* of scientific exploration, i.e., the thinkers of this era developed the concepts of inductive and deductive reasoning and the methodology known as the scientific method based on observation, hypothesis, and experiment. These developments ultimately led to the work of Isaac Newton (1642-1727), who, as Berlinski claims, created or made a significant contribution to several disciples in the field of science: he developed rational and celestial mechanics, discovered calculus (independently of Leibniz), and made important as well as bold contributions to “pure mathematics, optics, and astronomy.” As Berlinski also claims, “[b]y showing that a mathematical investigation of the physical world was possible, he made the investigation inevitable” (xiii). Newton’s approach to the study of nature, however, focused on observation of effects rather than causes. Regardless of this deficiency, the scientific thought and method gained wide acceptance and found application in nonscientific

fields, which later-Enlightenment thinkers utilized. The curiosity about and investigations of the natural world eventually spread and led to additional discoveries. Religious authorities initially encouraged such investigations because they believed that studying nature represented piety and showed respect for God's creation.

During the Scientific Revolution, European thinkers tore down what they thought to be flawed scientific beliefs that the ancients established, and the Church maintained and sought new explanations about the workings of nature or the universe. They rejected Aristotle's cosmology that Earth was the center of a spherical, hierarchical cosmos that a prime mover set into motion. Scientists sought to discover and convey the true laws that govern the phenomena they observed in nature. Some of the most notable scientists were Nicolaus Copernicus (1473-1543), Galileo Galilei (1564-1643), Johannes Kepler (1571-1630), Francis Bacon (1561-1626), and René Descartes (1596-1650). Copernicus refuted Aristotle's cosmology and replaced it with the heliocentric theory of the universe with the sun rather than Earth as the center of the solar system, and the earth as one of the many celestial bodies moving around the sun (Berlinski 32). Galileo's approach to the study of nature was to introduce observation as a necessary component of the scientific method. His work in the field of mechanics and falling bodies broke new ground. He replaced Aristotle's theory of motion of material bodies as impetus with the principle of inertia. Kepler discovered the three laws of planetary motion, with the first, for instance, being that planets move in an elliptical rather than a circular motion around the sun, as had been the common wisdom at the time. Bacon confirmed Galileo's point about observation with his inductive model of science, which emphasized observation and reasoning for making general conclusions. Descartes, Bacon's later contemporary, continued where Bacon left off. He was interested in mathematics and philosophy and he ultimately combined the two. He merged algebra and geometry, which revolutionized

both fields and used a deductive approach for problem solving, utilizing math and logic and emphasizing a “clear and distinct foundation for thought,” a standard that still persists.

These developments were a primer for Newton, who used his predecessors’ accomplishments as a foundation for changing science and mathematics. He conducted experiments in physics and mathematics and discovered several natural laws that various thinkers previously assigned to the divine forces. In the *Mathematical Principles of Natural Philosophy* (1687), for instance, Newton explains a uniform force of gravity, which binds together the elements of the universe into an intelligible whole, and acts according to the three *laws of motion*: the law of inertia, the law of force and mass acceleration, and the law of reciprocal actions. Although Newton was able to explain the effects of the law of gravity, he could not explain the law of gravity itself because it is transcendent, i.e., its explanation is beyond the physical theories that explain the effect of the law of gravity in nature (xv). This holds true of other laws of nature, such as the Einstein’s general theory of relativity, Schrödinger’s wave equation in quantum mechanics, and the law governing the electromagnetic field: physical theory neither “predicts their existence nor explains their power. They exist beyond space and time” (xv). Individuals cannot observe them, they can only imagine them. Finally, other laws of nature cannot explain them because “[t]hey are what they are” (xv). In other words, even though it is not possible to demonstrate why some laws affect nature or the universe, their existence is undeniable because they are beyond the concept of space and time, the concepts humans rely on to understand nature. Additionally, as Paul Lauren claims, these discoveries of the laws of nature created a fertile intellectual environment that stimulated a belief among scholars that human reason could also reveal natural law in human matters (14). This is relevant to the Enlightenment and Spinoza because this

explosion of knowledge in science further served to undermine authority of the church and monarchy.

Secularization[13]

The year 1650 has a special significance for the Enlightenment because basic principles of the Western civilization shifted at this time. Up to 1650, from "the later Middle ages and the early modern age [. . .] faith, tradition, and authority" were the common core values of the western civilization (Israel 3). After 1650, philosophical reason takes center stage and philosophers questioned everything, even the most basic or deeply rooted concepts, and often challenged or replaced them with the "startlingly different concepts" that New philosophy and the Scientific Revolution inspired (3). Most intellectual debates centered on religious issues involving Catholic, Lutheran, Reformist, or Anglican issues. The main point of those debates was to determine which group had the authority to determine the truth and "a God-given title to authority" (3-4). In addition the Confucian influences that called into question the necessity of a church-guided state, sectarian conflicts within the religious community led to skepticism about the church, and its authority took hold. Tradition became a special target, and new concepts arose based on human ability to reason independently of religion and religious authorities.

This shift away from traditional reliance on religion for an explanation of reality toward autonomous thought on the part of individuals was apparent in the new conception of morality in the seventeenth century, as Nancy Kettle pointed out in "Informed Consent: Its Origin, Purpose, Problems, and Limits" (9). That is, the shift happened from the obedience view to the natural law view of morality.

[13] Portions of this section on Secularization have been previously published by Nancy M Kettle in "Informed Consent: Its Origins, Purpose, Problems, and Limits," University of South Florida, 2002, pages 8-12 and are utilized with permission of the copyright holder, Nancy M. Kettle.

Up to the seventeenth century, the established conception of morality was that of obedience to God (Schneewind 4). This view was based on the idea that not everyone had equal ability to see what morality required them to do.[14] Consequently, the obedience view held that even if the most basic laws of morality were in human conscience, most would still need instruction from some authority about what was appropriate in specific cases. Another characteristic of the obedience view is that most people do not usually comprehend the reasons for action that morality instructs them to take. Threats of punishment and offers of reward were necessary to insure a sufficient compliance to maintain moral order (Schneewind 4). In the seventeenth century, the dominant view of morality became the natural law view, beginning with Grotius (1583-1645) (Schneewind 11) and ending with Christian Wolff (1678-1754). The natural law theory was in flux since its earliest known origin with the Stoics who believed in life according to reason. They thought that the universe gave human beings reason as a distinguishing feature from other animals whose nature is to act on impulse. Because humans are by nature rational beings, living according to reason for the Stoics meant living according to the laws of nature (Inwood 191). Although the notion of right emerged from the Stoic philosophy of natural law and Roman philosophy of law (Wellman 1100), it underwent major transformations in the seventeenth century with the influential writings of Grotius and Hobbes. In the West, Grotius was the first natural law thinker who offered a theory that natural laws were

[14]Schneewind makes this important point here to differentiate morality as obligation from the later conception of morality such as Kant's conception of morality as autonomy, and from the contemporary conception of morality, which assumes that ordinary or normal choosers are capable of knowing what morality requires of them and choose an appropriate action without guidance from others.

> binding on moral agents independently of the existence of God (Schneewind 88). He also proposed a new way of understanding rights by claiming that all people have rights whether they belonged to any group and before being subject to any law (Schneewind 89). Additionally, Grotius' assignment of rights to individuals (103, bk.2, ch.2, sec.1) introduced a new way of "understanding the sphere of control belonging to individuals that is still important" (Schneewind 89). Hobbes, on the other hand, solidly affirmed the connection between the law of nature with the state of nature, as did Locke after him (Wollheim 452). Grotius argued that natural law, whether physical or moral, existed separately from authorities and political powers and served as a means of evaluation of the laws and practices of governments (Lauren 14). Locke argued that all human beings possessed natural rights such as life, liberty, equality, and property, prior to the existence of any civil societies, whose role of civil societies was to protect the natural rights of its members, not to suppress them. (Kettle 8-12)

Given these precursors and their aftermath, the four main ideas of the Enlightenment emerged from many developments in the scientific, cultural, social, and political fields in Europe during seventeenth century: *rationalism*, *individualism*, *equality*, and *universality*. Each signifies a specific value: *rationalism* is the conviction that with the power of reason, humans could arrive at the truth about the world and improve it; *individualism* represents the importance of individuals and their inborn or natural rights; *equality* is the concept that different individuals have equal worth; *universality* is the concept that the same truths, whether scientific laws or moral principles, hold throughout. These four ideas—humans' ability to reason, to make decisions for

themselves given their natural rights, to look past the dominating traditions and conventions, and to discern grand patterns in nature and morality, indicated that human intellect was separate and autonomous from God. This development led to new discoveries and ideas and threatened Europe's most powerful and long-standing institutions, such as the Church and monarchies.

Philosophers and the Enlightenment

At the forefront of the Enlightenment were philosophy and philosophers who wielded a remarkably powerful influence (Israel 2). Although philosophers seldom cause an extraordinary or exhilarating intellectual and spiritual upheaval or upheaval in the realms of knowledge and belief (with the historical exception of Marxism, according to Schönfeld), in the late-seventeenth century, to officials, educators, physicians, courtiers, and theologians it seemed that both philosophy and philosophers "burst upon the European scene" with frightening force (2).

Philosophers might have appeared "forceful" during the Enlightenment because they introduced bold or radical new ideas, such as secularism, humanity, and particularly various freedoms. According to Peter Gay, philosophers placed a particular emphasis on freedom, "freedom from arbitrary power," freedom of speech, trade, and freedom for individuals to make their own moral decisions (3). There was also an influx of new ideas from faraway places like China, which influenced the Enlightenment thinkers. Thomas Fuchs writes that, for these thinkers, who sought "emancipation from tradition [. . .] China served as a tool for interpreting the religious customs, the political system, and the social order on their own continent" (36). This was a dramatic shift because, historically, prescriptive texts such as the bible and theological and philosophical works of the classics, from Aristotle to Tacitus, guided the interpretation of reality and helped

integrate new knowledge. In the Enlightenment, Chinese texts gained a prescriptive model status (36).

The Enlightenment led to destructions of prevailing institutions and principles and replaced them with new ones. Its supporters attacked and demolished the traditional European culture by secularizing institutions and ideas, destroying the legitimacy of "monarchy, aristocracy, woman's subordination to man, ecclesiastical authority, and slavery, replacing these with the principles of universality, equality and democracy" (Israel v-vi). Additionally, the Enlightenment was a return to the paganism of classical antiquity with a special added dimension of the possibilities of power (Gay xi). The pagan dimension is important because the deep ecology approach is a return to the pagan view of nature that permeated the thought of ancient Greece and the Enlightenment eras. The paganism of the Enlightenment era was a struggle against Christian heritage and "dependent on the paganism of classical antiquity," but it was also a *modern* paganism, liberated from ancient paganism as well as of Christian dogma. Intellectual rebels of the Enlightenment learned the uses of criticism from the ancients and the possibilities of power from modern philosophers (xi).

Spinoza's Background

Spinoza wore many hats in his relatively short life (1632-1677), "a metaphysical and moral philosopher, political and religious thinker, biblical exegete, social critic, grinder of lenses, failed merchant, Dutch intellectual, Jewish heretic" (xi). While it is true that Spinoza was all those things, what makes Spinoza's life particularly interesting is that he was a part of various and sometimes divergent contexts, including the history of philosophy and the community of immigrants from Spain and Portugal. Many of the immigrants were former *conversos* or *marranos* (Jews who had to convert to Christianity

in Spain and Portugal but secretly practiced Judaism). They found a home and favorable economic conditions in the newly autonomous Dutch Republic, which, with its conflicting politics and sublime culture, was experiencing its Golden Age (xi).

Spanning roughly the seventeenth century, the Golden Age was the prime age for Dutch trade, science, and art. In art, for instance, dominant painters were Rembrandt (1606-69), Frans Hals (1583-1666), and Johannes Vermeer (1632-75). Descartes (1596-1650), who lived in Leiden from 1628 until 1649, dominated in mathematics and philosophy. Christiaan Huygens (1629–1695) was a well-known astronomer, physicist, and mathematician. In astronomy, Huygens contributed by developing an explanation of Saturn's rings when he was involved with telescopic research. He also contributed to the field of optics, experimenting with double refraction in Icelandic crystal. Spinoza admired Huygens work, and Huygens liked the quality of Spinoza's optical lenses he used in his microscope, describing them as having "admirable polish" and "very excellent."

Although Spinoza had a "solid grasp of optical theory and of the then current physics of light" and was competent enough to discuss the finer points of "the mathematics of refraction," his work in physical and mathematical sciences was insignificant (Nadler 183). Along with Grotius (1583-1645), Spinoza later dominated in the Natural Law theory in philosophy.

Although Spinoza grew up as an ordinary Jewish boy, he transformed himself into an extraordinary philosopher who challenged traditional religious and philosophical views, thus stirring controversy that meted him punishment from the Jewish community and delayed publication of his works. Nadler regards him as "one of the most important and famous philosophers of all time, and certainly the most radical and controversial of his own" (xi). A son of a merchant, Spinoza lived in Amsterdam's Portuguese-Jewish community where he excelled as a student. He was living a traditional life until 1656

when, at the age of twenty-three, the leaders of this community excommunicated him with the harshest punishment they had ever imposed. They accused him of “evil opinions and acts” and holding heretical views, without stating what the exact offenses were while also claiming that they tried to reform him but had failed (2). Spinoza consequently left the Jewish community, as well as Judaism. How Spinoza’s transformation from an ordinary Jewish boy to an extraordinary philosopher took place is impossible to know because, according to Nadler, only the excommunication document, the *cherem,* is available. It contains the oaths and slanders that community leaders wrote about Spinoza. Other than the *cherem*, very little material exists about the details of Spinoza’s life, especially before 1661 when his surviving correspondence begins, so little “that we can only speculate on his emotional and intellectual development and on the more mundane matters that fill out a person’s existence” (xi). As Nadler points out, this lack of information creates a room for speculation especially because the subject, Spinoza, is provocative (xi).

Spinoza lived in or near Amsterdam, then in Rijnsburg, Voorburg, and The Hague until about 1660. He chose to work as a lens grinder and lived modestly, managing to live on a series of bequests and lens grinding, which allowed him to devote much of his time to the development of his philosophy. While he lived in Amsterdam he published the *Short Treatise on God, Man, and His Well-Being.* Although he published it anonymously, it soon became apparent that he was the author of the work. Despite living in relative obscurity, other philosophers knew Spinoza and were curious about his radically different ideas about the nature of God. He corresponded widely, and other philosophers often visited him, among them Henry Oldenburg and Leibniz. In 1673, he received a professorship offer from the University of Heidelberg, which was one of the great universities of Europe before the Thirty Years War. Spinoza, however, chose to

maintain his peaceful life, particularly his independent thinking, and he died of tuberculosis. Spinoza held off publishing his most important work, the *Ethics*, because religious and secular authorities viewed his philosophy regarding God and Nature as offensive and atheistic. Spinoza's beliefs became apparent before his death from his other publications, namely the *Theological-Political Treatise*, as well as from his discussions and correspondence with other philosophers. His friends published the E*thics* after his death in 1677.

Similarly to Nadler, Michael Morgan has a high regard for Spinoza: he views him as "extraordinarily creative and novel" and marvels at the intensity and focus of his thought (vi). Spinoza was committed to the concepts of unity and wholeness of the universe in as comprehensive a way as any other thinker in Western philosophy. He was also dedicated to "the progress of scientific inquiry into the natural world," and to "the universality of the ethical life," without invalidating "the personal perspective of human experience." Spinoza lived in the complex, changing world of the seventeenth century, says Morgan, immersed himself in that complexity and found order in it. He understood religious traditions and reforms, orthodox and novel cultures, "the conservative political practices and liberal hopes and aspirations," and he understood risks. Spinoza equated human reason to "reason" or order in nature, the universal order that enabled human beings to understand themselves and the whole, and to live tranquilly within that whole. He used the religious terms in his works, thus never completely rejecting religious themes, beliefs, and vocabulary, although he did try to refine and reform them. For Spinoza, this ordered universe is the key not only to "science, ethics, and religion" but to "all of life" as well. Spinoza aimed to explicate this order to benefit the humankind. For Morgan, Spinoza was not only not an atheist, he was "a religious visionary, moral innovator, and philosopher-scientist" (viii). Given the obvious admiration for the

comprehensive nature of Spinoza's work and the enthusiasm he expressed for improving the human condition, it is not surprising that, for Morgan, Spinoza's writing and thought displayed beautiful, even breathtaking heroism, despite the sense of "abstract rigor and detachment" that a reader might feel when studying Spinoza (vi).

Descartes and Spinoza

Cartesianism was a dominant philosophical and scientific thought in seventeenth-century Europe; just as Aristotelianism was in previous centuries, Cartesianism was influential not only as a method of argument but as a whole vocabulary in seventeenth-century philosophy (30). Spinoza's interest in philosophy and sciences was intense around 1654-5, so it seems natural that he would have been interested in Descartes' writings as well as in his Dutch disciples. In Nadler's view, "Descartes' work in physics, physiology, geometry, meteorology, cosmology, and of course, metaphysics" was a popular topic "at the universities and urban intellectual circles" (112). This is not to say that all intellectual circles accepted Cartesianism. The more conservative Calvinist leaders in the Dutch republic violently opposed it. From the mid-1640s forward, "disputes over Cartesianism became intertwined with the basic ideological divisions that ran through Dutch society and basically split the members of its political and theological worlds into warring camps" (112). Descartes pervaded the minds of all educated citizens in the Dutch republic, even after his death in 1650, whether they agreed or disagreed with his views (112).

Several things sparked Spinoza's initial interest in Cartesian philosophy. First, most of his friends at the Amsterdam Exchange, during the period when he was running his father's business, Jarig Jellez, Pieter Balling and others, were devoted Cartesians. He could have heard the term "New philosophy" from them at the Exchange or at their

Collegiate meetings if he attended them, which often functioned as “philosophical discussion groups.” Second, Franciscus Van den Enden who was Spinoza’s Latin tutor, might have exposed Spinoza to Cartesianism. Van den Enden also provided humanistic education to his students, children of the urban, upper-middle-class families, to improve their skills in grammar, syntax, and style. Van den Enden was much more than a Latin tutor though. He would have assigned readings in “the ancient classics of poetry, drama, and philosophy—the literary legacy of Greece and Rome—as well as neoclassical works of the Renaissance” (Nadler 112). He might also have introduced his students, at least in a broad sense, to the philosophies of Plato, Aristotle, the Stoics, and also to Seneca, Cicero, Ovid, and possibly to ancient skepticism principles. The “great epics, tragedies, comedies, and histories of antiquity” were other literary works that Van den Enden might have assigned. Spinoza’s writings are filled with “references to classical Latin authors” and that his modest library contained works of “Horace, Caesar, Virgil, Tacitus, Epictetus, Livy, Piny, Ovid, Homer, Cicero, Martial, Petrarch, Petronius, Sallust, and others—testimony to a passion that was probably aroused during his time with Van den Enden” (109). Van den Enden’s contemporaries perceived him as an atheist and a Cartesian. If Spinoza was studying with him around 1654-5, which Nadler believes he did, Van den Enden would have exposed him to Descartes’ writings (112). Among those texts would have been “Descartes’ *Discourse on Method* along with the mathematical and scientific essays that accompanied it; *Meditations on First Philosophy;* the treatises on human physiology, and the human passions” (112). The readings would have definitely included

> the *Principles of Philosophy,* Descartes’ attempt to compose a full-length text of philosophy based on Cartesian rather than Aristotelian-Scholastic principles, beginning with the most general elements of metaphysics and

> culminating in the mechanistic explanation of particular natural phenomena (such as magnetism and human sensory perception). (112)

What Nadler's sketch shows is that although Spinoza likely had a good exposure to various philosophical texts, including those of the Ancient Greek philosophers, as well as Descartes' text while studying with Van den Enden, the pervasiveness of Descartes philosophy in his time might have created Spinoza's strong interest in Descartes' philosophy. This is not to say that Spinoza follows in Descartes' footsteps in developing his own philosophy. Their philosophies are very different, even though Spinoza uses some of the same concepts as Descartes.

Spinoza studied Descartes' philosophy extensively and at first subscribed to Descartes' belief in dualism, that there are two separate substances, thought and extension or mind and body. He later changed his view and maintained that there is only one substance and that thought and extension are two different attributes of the same substance, among infinitely many others. He produced a methodological exposition of Descartes' philosophy, *Metaphysical Thoughts,* his first written work. Spinoza, however, rejected Descartes' conclusions because he thought it contained radical incoherencies and proceeded to develop his own philosophy. According to Hampshire, Spinoza thought he discovered demonstrable contradictions in Descartes' view of substance, of error, of free will and necessity, of the relation of thought and extension, of the relation of God and the created universe, and of the distinction between intellect and imagination (30). Moreover, as Michael Morgan points out, for Spinoza, Descartes was the connecting link between "the philosophical tradition and new philosophy and new science" (xii). Spinoza blended traditional philosophy, Descartes' accomplishments, and his own commitment into a new metaphysical worldview, which in one sense is an extension and modification of Descartes' metaphysics while in another it has its own,

very different character (xii). Given the strong influence of Descartes' philosophy and Spinoza's keen interest in it, it is conceivable that Spinoza might not have produced the philosophy he did if Descartes did not produce his. It might be that the weaknesses in Descartes' philosophy produced a creative spark in Spinoza's mind. As Hampshire points out, "Descartes' unsolved metaphysical difficulties …. were always a deciding influence in the formation of Spinoza's doctrines" (63).

Finding criticisms of Descartes in Spinoza's writings, however, is not a simple task because, as Harry Wolfson suggests, they were for the most part implied:

> Since the *Ethics* [. . .] is not the result of syncretism of traditional philosophy but rather the result of criticism, and since this criticism, though implied, is not explicitly expressed, [readers] shall have to supply it [themselves]. (4)

In "Letter 2," however, there is specific textual evidence of what he views as errors in Descartes' (and Bacon's) philosophy. Spinoza sites three errors in Descartes's philosophy in order of importance: (1) Descartes' knowledge in relation to first causes and the origin of all things, (2) failure to understand the true nature of human mind, and (3) failure to grasp the true cause of error. Spinoza viewed knowledge of those points as critical (Spinoza 762). It appears then that Descartes' writings, including those outside philosophy, served as a positive influence on Spinoza, and at the same time, led him to criticize it, albeit, usually reluctantly.

Descartes' advancement of the application of the mathematical method of pure reasoning in philosophy might be one of the influences on Spinoza's use of the geometric method in the *Ethics.* Although Descartes favored the geometric method, he made very little use of it in his writings. According to Israel, Spinoza was the first to use it to present his system (160). Choosing a particular method of presentation usually has a

purpose attached to it, which in Spinoza's case might have been two-fold: a desire for clarity in communicating ideas and using a method that indicates consistency with one's overall philosophy or the philosophy of the time. First, Spinoza chose the geometric method for the *Ethics* because he strongly believed, more than any other philosopher, that individuals must formulate "all problems, whether metaphysical, moral or scientific [. . .] as if they were theorems in geometry [. . .] as a succession of propositions with supporting proofs, lemmas and corollaries" (Hampshire 32). Second, mathematics and the rationalist way of thinking seemed to go hand-in-hand in seventeenth-century philosophy. Hampshire postulates that if being a rationalist means advocating the mathematical method of pure reasoning as a solution to all problems of natural knowledge, Spinoza was uncompromising in applying the method, and that in this sense, Spinoza was more of a rationalist than Descartes (32). Furthermore, Spinoza's choice of the mathematical method is almost an expectation, given that he developed a novel way of looking at the world at the time of the rising popularity of mathematics and sciences. His vision of God, however, is different from predecessors,' including Descartes. Rather than the transcendental creator of the universe who governs it with foresight and benevolence, Spinoza equated God with Nature, which in his metaphysical system is a necessary, infinite, and deterministic order in which human beings are participants.

Spinoza's *Ethics*

In the *Ethics,* Spinoza provides an account of the nature of substance and human beings, the place of human beings in nature as a whole, and conditions for their true happiness (Allison 985; Della Rocca 23). To achieve this aim, he provides a bold, systematic, and harsh critique of "the traditional philosophical conceptions of God, the

human being and the universe, and above all, of the religions and the theological and moral beliefs" on which they are based (Nadler).

According to its contents, the *Ethics* covers three disciplines: metaphysics, psychology, and ethics. From a historical perspective, Spinoza was justified in using the title *Ethics* for at least three reasons. First, philosophers have historically covered these topics under the title of ethics, particularly Aristotle in *Nicomachean Ethics,* among others. Second, the classification of disciplines kept changing over time (Wolfson 37). Third, those parts of Spinoza's *Ethics* that focus on the theory of human motivation and provide detailed, extensive analysis of survival and happiness are issues that belong to the domain of morality (Bennett 11; Morgan 1-2).

Ethics has five parts, and Spinoza uses an axiomatic style to lay out his philosophy. He starts with the metaphysics of substance and continues with an account of human nature, knowledge, motivation, and the ethical goal of human life (freedom and understanding). He hopes to motivate readers to live the best life possible according to "the best conception of what that life can and should be" (Morgan 1-2). Additionally, *Ethics* expresses an early modern naturalism, which Morgan defines as "a set of principles underlying a rational, scientific view of religion, nature, psychology, and ethics" (1-2).

In Part I, "Concerning God," Spinoza clarifies his metaphysical conceptions of substance, attribute, mode, God, and eternity. In Part II, "On the Nature and Origin of the Mind," Spinoza presents the two attributes—thought and extension—that help humans understand substance, explains how substance reveals itself in human experience, and explains the physical and mental scopes of nature with the aim to clarify human cognition and experience. In Part III, "Of Human Bondage, or the Strength of the Emotions," Spinoza turns to psychology, focusing on human emotions, feelings, and

striving. He grounds his psychology in physics, and in *conatus* or the striving of each being for self-preservation or power. Part IV, “Of Human Bondage, or the Strength of the Emotions,” continues to investigate human conduct and in both Part IV and Part V, “Of the Power of Intellect, or of Human Freedom,” Spinoza provides the basis for a proper ethical argument. The last section of Part V focuses on the eternality of the mind and the traditional notion of the immortality of the soul.

By using all three disciplines – metaphysics, psychology, and ethics, Spinoza provides a significant insight into the nature of the universe, by which he means God or Nature (Part IV, Preface), as a necessary rational order, which at least, in principle, the human mind can know, and in which human beings play a part. Spinoza also gives an account of human nature in Parts III, IV, and V, with the intent to help human beings gain an insight into their own nature. He wants humans to have the best life possible. In his view, the highest good for human beings consists of the knowledge of the nature of God (IVP28) and of their own nature as well so that they can structure their lives, their constant striving or *conatus* (an innate propensity of all species) in a way that leads to joy and fulfillment or happiness (IV Appendix 4).

Substance Monism

The monistic conception of reality is that in some important sense, all is one. In Spinoza’s metaphysical system, his claim that there is only one substance, illustrates this idea. Why does Spinoza argue for a monistic conception of the universe? Spinoza does not have an introduction to the *Ethics*, so he does not state the purpose of the work, but, from its overall contents, it is apparent that he wanted to propose a new concept of nature as a whole, the nature of human beings, their place in nature as a whole, and conditions for their true happiness. To achieve this aim, he dismisses the

previous philosophical conceptions of God, humans and the universe, and the religious and moral beliefs that provided the basis for these conceptions. At the time, Cartesianism dominated in philosophy with its dualistic conception of the universe, which was still tied to the religious thought of the time. Additionally, the Enlightenment was about human freedom and sciences were making big inroads into providing an explanation of the workings of the universe. Spinoza appears to have been seeking a way to unify the changes occurring in his time and offer a new theory that would provide a new basis for human contentment in the world by naturalizing the divine, making it present in the world and everything in it. He was seeking unity in the world in which traditions were a thing of the past and new dawn was arising offering a new view and new hope of a more peaceful world. It was a risky and daring attempt to separate from the traditions that were falling apart but still influential.

Spinoza's essential argument for monism in the first part of the *Ethics* begins with definitions and ends in IP14[15] that only one substance, God, exists: "There can be, or be conceived, no other substance but God." This clarification of Spinoza's argument for monism begins with the examination of relevant definitions, followed by relevant propositions, with particular attention to those that support the IP14, and examining demonstrations of IP14.

Four definitions in Part I of the *Ethics* provide most support Spinoza's argument for substance monism: ID3, ID4, ID5, and ID6 respectively defining substance, attribute, modes, and God. For Spinoza substance is "what is in itself and is conceived through itself, that is, that whose concept does not require the concept of another thing, from which it must be formed." Three things about this definition stand out. First, the first part

[15] References to Spinoza's *Ethics* are noted in the text using the following system of abbreviations: upper case Roman numerals I-V denote one of the five parts of the *Ethics;* "D" denotes definition," "P" denotes "proposition," "A" denotes "axiom," "DM" denotes "demonstration" or "proof," "C" denotes "corollary," "PS" denotes "postulate," "S" denotes "scholium," and "L" stands for lemma.

of this definition, substance is “what exists in itself,” indicates existence and second, it indicates that this existence is independent of anything else; that is, the substance does not inhere in anything else, it is not a property of something else, as other things are. The second part of the definition, that substance is conceived through itself, suggests that it does not require something else in order to be conceived. Spinoza’s substance is thus both ontologically and conceptually independent.

For Spinoza, an attribute of a substance represents its essence: “By attribute I mean that which the intellect perceives of substance, as constituting its essence” (ID4). Since an attribute is the essence of a substance, Spinoza does not differentiate between the two, they are inseparable. In ID5, Spinoza defines modes, which he considers as something that exists in something else and conceived through that other thing: “By mode I understand the affections of a substance, or that which is in another through which it is also conceived.” That is, in Spinoza’s system, modes are modification of a substance and thus inseparable from it, which means they depend on substance for their existence. Finally, in ID6 Spinoza defines God, by which he means an infinite substance that has an infinite number of attributes, each expressing an infinite and everlasting essence: “By God I understand a being absolutely infinite, that is, a substance consisting of an infinity of attributes, of which each one expresses an eternal and infinite essence.”

With these definitions in place, Spinoza sets up propositions regarding substance to later demonstrate that only one substance exists and that that is God. Propositions IP5 and IP11 provide the main support for IP14. In IP5 he claims, “In the universe there cannot be two or more substances of the same nature or attribute.” He explains that if more than one substance existed, they would have to be different in the sense that either their attributes or modifications would be different. They could not be different because of their modifications since substances are prior to their modes. This means

only substance attributes would differentiate them, but they cannot be the same attributes for both substances. If two substances were to exist, they would have to be entirely different. Next, in IP11, he argues that “God, or a substance consisting of infinite attributes, each of which expresses eternal and infinite essence, necessarily exists.” To explain this proposition, he appeals to IP7, which says that the nature of substance is to exist. But since two different substances cannot produce one another, then there is only one substance and it must be self-caused and its nature is existence. Therefore, to imagine, by IA7 that a substance or God does not exist is absurd.

IP14 is crucial for Spinoza’s substance monism: “Except God, no substance can be or be conceived.” The support for this proposition is IP11, that God exists and ID6, which claims that God has every attribute. Any substance that exist would have to have the same attributes as God; however, since no more than one substance can exist with a common attribute (ID5), only one substance, God, exists.

Spinoza identifies God with Nature, thus making Nature equivalent to God. He expresses this identification of God with Nature in a Latin phrase *Deus sive Natura* (God or Nature). Instead of a creator/creation distinction used in classical theism, which he rejects, Spinoza speaks of Nature as active or productive (*Natura naturans*) or Nature naturing and passive terms, *Natura naturata* (Nature natured), which represents modes (IP29S). What this means is that there is existential unity between God and modes and that each mode modifies God or Nature. It also means that there is a causal relationship between God or Nature and its modes, which the active and productive aspects indicate. This also means that God or Nature is engaged with the modes, an active force that produces and supports them (IP26C). Given that there God or Nature and its modes are existentially unified, and its presence in nature is immanent or inherent rather than transitive IP18). That is, there is no outside creator of God or Nature, it is self-caused.

There are two types of modes in Spinoza's system: infinite and eternal modes, and finite and temporal modes. The first type is ubiquitous in the universe, and follows from the divine nature of one of God's two attributes, thought or extension (IP21). Examples of the first type are motion and rest, which follow from the attribute of extension and infinite intellect, which follows under the attribute of thought The second type of modes are individual things present in the universe and also follow from the divine nature but might be modified by some of God's attributes to the extent that another finite and temporal mode caused this modification. Some instances of finite and temporal modes are individual bodies, which belong to the attribute of extension, and individual ideas, which belong to the attribute of thought. Spinoza does not appear to offer much in terms of an explanation for these types of modes, but it might have something to do with the laws of nature under which such things as motion and rest fall.

A further characteristic of Spinoza's modes is that they are predisposed to act in certain ways according to the rules or laws of the universe. He describes this in IP29: "In nature there is nothing contingent, but all things are from necessity of the divine nature determined to exist and act in a certain way."

Spinoza's God or Nature exists necessarily, not contingently, because it is the nature of substance to exist. Additionally, modes also exist necessarily because God or Nature exists necessarily, whether these modes follow from the absolute nature or from one of God's attributes or from other of God's attributes to the extent that a finite mode modified another finite mode. If only one substance, God or Nature exists, and its modes exist in the universe, no contingency exists in this closed system. Spinoza contributes an appearance of contingency to a flaw in knowledge, which could be a faulty knowledge of God or Nature or of the nature of causes.

The last point about the nature of Spinoza's modes is whether finite modes that fall under one attribute, e.g., thought, can act and determine finite modes that belong to another attribute, e.g., extension. Spinoza argues against it because causal relations in his system exist only among modes that belong to the same attribute. He clarifies this in IA4: "The knowledge of an effect depends on, and involves, the knowledge of its cause." What this means is that a finite mode that causes change in another finite mode but under a different attribute could not have God or Nature as a cause of this change if God falls under a different attribute.

By claiming that there is only one substance, Spinoza dismisses Descartes' dualism that there are two created substances, thinking things (minds) and extended things (bodies), which depend on God for their existence. Spinoza's substance is a self-creating cause whose essence is existence: "that whose essence involves existence or that whose nature can be conceived only as existing" (ID1). Spinoza's God is also an absolutely infinite being or substance with unlimited number of attributes, each representing eternal and infinite essence: "By God I understand a being absolutely infinite, that is, a substance consisting of an infinity of attributes, each of which expresses an eternal and infinite essence" (ID6). An absolutely infinite being means there is only one, single substance, and it also means both that God holds an unlimited number of attributes and that it holds all possible attributes. Everything else that exists is a mode of the one substance, God: "Whatever is, is in God, and nothing can be or be conceived without God" (IP15). In other words, essential characteristics of Spinoza's substance is that it exists, it is infinite in that it includes all attributes, and is a unique, unified whole, which includes modes.

Moreover, Spinoza's substance is self-caused, which means there is no outside creator of the universe. Spinoza's God is ontologically the same as the universe or

nature, rather than a distinct substance, self-created rather than a work of an outside being that creates and subsequently governs the universe. By equating God with Nature, Spinoza rejects classical theism, which maintains that God is a being that created the universe but is outside it and rules it from outside. Spinoza's identification of God with Nature indicates that Nature is no longer a power different from, and secondary or inferior to, God but rather a power that is one and the same with divine power, which means that "God is the immanent, not the *transitive* cause of all things" (IP18). That is, God's causal activity confines itself within the divine substance and does not produce external effects, as it would if God were a creator in the traditional sense.

God's causal activity is entirely within the divine substance, designed to create various modes that make up the modal system. To explain this concept, Spinoza compares God's causal activity to the way in which the nature of a triangle produces its own essential properties: "From God's supreme power, or infinite nature, infinitely many things in infinitely many modes, that is, all things, have necessarily followed, or always follow, by the same necessity and in the same way as from the nature of a triangle it follows, from eternity and to eternity, that its three angles are equal to two right angles" (IP17S1). What this means is that, for Spinoza, the entire modal system, *Natura naturata* or Nature natured or its created aspect, follows immanently from the divine nature, the creative aspect, *Natura naturans* or Nature naturing.

Modes are modifications of a substance, and they are an integral part of it. Spinoza defines them as "the affections of a substance, that is, that which is something else, and is conceived through something else" (ID5). In other words, mode is something that exists in another thing and individuals can conceive it through another thing, which in Spinoza's systems means through God. He defines God as "what is in itself and conceived through itself, that is, that whose concept does not require the concept of

another thing" (ID3). The first part of the definition indicates that Spinoza's God is not a property of anything else and the second part indicates that it is an independent being that does not require conception through something else like modes do. Everything else is an attribute (property or quality) that only appears to be separate, defining attribute as "that which the intellect perceives of substance as constituting its essence" (ID4). Thought and extension are the two main attributes of the one substance, and they can be limited, but only specifically: only a thought can limit another thought, and only a body can limit another body. A body cannot limit a thought, and thought cannot limit a body: only things that have the same nature can limit one another since they are finite (ID2). By declaring that there is one substance, Spinoza dismisses Descartes' dualism that there are two created substances, thinking things (minds) and extended things (bodies), which depend on God for their existence. In Spinoza's system, God is a self-creating cause, by which he means "that whose essence involves existence or that whose nature can be conceived only as existing" (ID1). Spinoza's God is also an absolutely infinite being or substance with unlimited number of attributes, each representing eternal and infinite essence: "By God I understand a being absolutely infinite, that is, a substance consisting of an infinity of attributes, each of which expresses an eternal and infinite essence" (ID6). An absolutely infinite being means there is only one, single substance, and it also means both that God holds an unlimited number of attributes and that it holds all possible attributes.

Moreover, all modes are subject to the same laws of nature that affect all finite modes in the same way. This indicates a naturalistic conception of the universe, which means that, as Michael Della Rocca asserts, the same principles govern everything in the interconnected universe, and there are no different rules for things that are

interconnected (5). One of the clearest statements defining Spinoza's naturalistic conception of the universe is in the Preface to *Ethics* Part III:

> in Nature nothing happens which can be attributed to its defectiveness, for Nature is always the same, and its force and power of acting is everywhere one and the same; the laws and rules of Nature according to which all things happen and change from one form to another are everywhere and always the same. So [human] approach to the understanding of the nature of things of every kind should likewise be one and the same; namely, through the universal laws and rules of Nature. (Spinoza 278)

The concept of self-causation indicates that something has power. Spinoza's God or Nature has two aspects of power, an active or productive power, which he calls *Natura naturans* or *Nature naturing*, and Nature as derivative or produced aspect, *Natura naturata* or *Nature natured* (IP29S1). He identifies Nature naturing with God or the divine attributes, and Nature natured with the system of modes. Spinoza's use of these formulas has a twofold significance. First, his double use of "Natura*"* implies the existence of the ontological unity between God and the system of modes. Each mode within the system is a modification of the very substance that is God or Nature. In other words, each mode is Nature or God modified, and each mode interacts with Nature or God. Second, Spinoza's use of the active "naturans" and the passive "naturata" indicates a causal relationship between God and the modal system in which God is an active power that produces and supports them, not merely the subject of modes. That is, God or Nature is a creative power but its modes are also active in the sense that they interact with God or Nature, which also makes God or Nature a product of creation or self-

creating. An external creator has no place in this self-contained system, which means that God is an immanent rather than transitive cause, as Spinoza indicates in IP18.

This distinction is important because God or Nature, as self-caused, is free in its own creativity. That is, Spinoza's conception of immanence involves a view of God as the eternal cause of the universe, in contrast with the transient cause, which implies temporality (Hampshire 45). This would indicate an event or events as in "the temporal order of natural events," which would mean that natural events require an explanation in terms of effects of supernatural causes. In Spinoza's system, claiming that God is the immanent cause of the universe means that everything in terms of belonging to a self-contained, all-inclusive system, God or Nature, requires an explanation. In Spinoza's system there is no cause, not even the first cause, that somehow exists outside of or independent of the order or events of God or Nature. As the eternal cause of the universe and of itself, God or Nature must be free in its self-creative activity because, as Spinoza claims in ID7, "The thing that is said to be free, which exists solely from the necessity of its own nature, and is determined to action by itself alone." As Hampshire claims, "this definition applies to God or Nature as a whole and can apply to nothing else" (45-46). Its existence and attributes are explanatory only as a self-creating substance; because only God or Nature as a whole is self-creating, is absolutely free. This argument leads to what Hampshire calls "the most far-reaching proposition of Spinoza's philosophy," "Nothing in nature is contingent, but all things are from the necessity of the divine nature determined to exist and to act in a definite way" (IP29). In other words, everything that exists within Nature, "if intelligible at all," is determined in the sense that individuals must be able to deduce its existence, directly or indirectly, from within the system of God or Nature as a unique substance (Della Rocca 77; Hampshire 45-46). It appears that Spinoza is more of a necessitarian rather than a

determinist because a determinist can allow some contingency, whereas a necessitarian cannot, as is apparent in IP16, which states that "[f]rom the necessity of the divine nature, there must follow infinite things in infinite ways, (that is, everything that can come within the scope of infinite intellect)."

It is on the strength of this argument that Spinoza can claim the traditional notions of cause and substance (depending on the strict use of the notions) so that "any other assumption or interpretation must infallibly lead to contradiction" (Hampshire 40). To show that God is the free, originating cause, Spinoza had to show that his system was logically consistent, free of contradictions. Spinoza's attempt to dissolve the distinction between the creator and his creation, between God and Nature, is particularly important because it attempts to resolve the problem that has plagued philosophy from the beginning. That is, to resolve the contradiction inherent in the conception of the universe as a plurality of substances (38-43). Substances have specific essential properties that make them what they are. If there is a plurality of substances, they somehow interact, which involves the concept of an external cause. Spinoza's concept of substance is that it acts according to the laws of its own nature, so the cause is inseparable from the substance and its attribute, which is apparent in the very beginning of the *Ethics.* He defines attributes as "what the intellect perceives of a substance, as constituting its essence" (ID4). This is to say that the association of a particular attribute to the substance is so close, they make up its essential or necessary properties (as opposed to accidental or contingent properties), that Spinoza denies any real difference between them. If individuals can deduce all attributes and modifications of a substance from its own essential nature, which makes them necessary as opposed to contingent, then they can say that that substance is the "cause of itself" or self-caused. For Spinoza,

there is only one such substance, and individuals must identify this substance with the universe as a whole.

The argument that concludes that the conception of the plurality of substances involves a contradiction, as Hampshire points out, must have a restriction in the definition of substance and Spinoza provides one (40). The traditional conception of plurality of substance maintains the distinction between the necessary and contingent properties (essential and accidental properties in Spinoza's terminology) to account for a change in attributes that stem from their interaction with other substances. The distinction is necessary to keep account of the changes that occur because of substances' own essential nature and those that occur as a result of interaction with other substances (40). Spinoza offers such restriction in ID3: "By substance I mean that which is in itself and is conceived through itself: that is, that the conception of which does not require the conception of another thing from which it has to be formed." Propositions 1, 3, and 4, show the full meaning of this definition. IP2 says that "[t]wo substances, having different attributes have nothing in common"; IP3 says that "[w]hen things have nothing in common, one cannot be the cause of the other"; and, IP6 says that "[o]ne substance cannot be produced by another substance." In support of IP6, Spinoza writes in IA4 that the "knowledge of an effect depends on, and involves, the knowledge of the cause." Therefore, by ID3, it would not qualify as a substance. In other words, as Hampshire argues, Spinoza's definition of substance is so tight that nothing can qualify as a substance if its attributes are a result of external causes (41).

In Spinoza's system, only self-caused things qualify as substances, and only God or Nature is such a substance. If the universe consisted of two different substances, as Descartes suggests, an explanation would be necessary to show why only two (or more) substances exist because everything would be an effect of some cause (Hampshire 41).

In other words, substance interactions produce effects, as Spinoza states in IA3, “From a given determinate cause there necessarily follow and effect; on the other hand, if there be no determinate cause, it is impossible that an effect should follow,” and in IA4, “The knowledge of an effect depends on, and involves, the knowledge of the cause.” To abandon the system of causes as an explanation of effects would be to abandon a rational understanding of the universe, because a rational system of knowledge depends on the explanation of effects from some cause. To accept the concept that a plurality of substances exist would be to explain the nature of substance as an effect of causes outside that substance. This would be a contradiction. In Spinoza’s system, only one substance exists, and everything that exists is either some attribute or modification, or, as Hampshire suggests, it is “in some way inherent in this single substance” (41).

It follows then that in terms of understanding nature, humans must view it as a self-caused, intelligible whole that does not depend on classical theism for interpretation. Spinoza rejects the idea that God created the universe, that God is ontologically distinct from it, or that It transcends it, and that it governs it according to Its own will. By rejecting the concept of a transcendent God, Spinoza frees human beings to use their reason to acquire knowledge about the universe. This attempt to free human thinking is consistent with the overall goals of the Enlightenment, which insisted on gaining various freedoms to pursue their aims.

Spinoza’s doctrine that God or Nature as one and the same substance, that the creator and its creation are one, inherent in everything and thus unbiased toward all things, invites various labels, such as mysticism, materialism, or pantheism. As Michael Della Rocca claims, he was “an arch rationalist,” committed to intelligibility of things (1,12). And while it is true that all philosophers seek intelligibility of the world, they expect to run out of explanations eventually. Spinoza never had such worries. He was

"thoroughly committed to intelligibility of everything" (1,12). Consequently, Hampshire is right to argue that in Spinoza's system, the essential identity of the creator and its creation is pantheistic and logical rather than mystical and anti-scientific because it leads to a logical conclusion that everything in the cosmos is necessarily a part of "a single intelligible causal system" (47-48). A complete knowledge of the entire order of nature is necessary to attain the complete knowledge of the cause of existence or activity of anything. That is, humans must be able to infer the existence and activity of a thing of study "from the essential attributes and modes of the self-creating God or Nature." Instead of being mystic, Spinoza's doctrine could rather be the metaphysical assertion of the ideal of a unified or completed science in which it would be possible to show that every natural change has a specific effect within "a single system of causes; everything must be explicable within a single theory." Spinoza did not envision unified science in the contemporary sense, says Hampshire, "if only because he did not mean by 'cause' and 'knowledge' what [contemporary philosophers] mean in this context." His conception of the unity of Nature, which reason can comprehend as the effect of a cause, "is, on any interpretation, a thesis of scientific optimism and an invitation to rational inquiry" rather than an appeal to mystical intuition (Hampshire 47-48).

The most relevant takeaway from Spinoza's monism for the purpose of this paper are that as part of one substance, God or Nature, humans are subject to the laws of this one substance, God or Nature. Besides substance, there are modes, which include humans. As modes, humans are comrades to other modes, that is, living and nonliving beings—plants, animals, rocks—all subject to the laws of nature. Modes express God's or Nature's essence and power, in the form of modes' *conatus*, defined as the universal or inherent striving for self-preservation or unfolding on which deep ecology builds its notion of Self-realization.

The Conatus *Principle*

Spinoza introduces the concept of *conatus* in Part III of his *Ethics.* The *conatus* principle refers to striving or endeavoring of each thing to persevere in its being or essence is not unique to Spinoza. Cicero used it to express Aristotle's and the Stoics' notion of impulse (*horme)* (Morgan 66). Spinoza's immediate predecessors, Descartes and Hobbes, both wrote about it, but Spinoza provides his own interpretation, which, according to Della Rocca, Spinoza "deepens [. . .] and extends in ways his predecessors dreamed of" (137). Spinoza builds the notion of striving on his earlier propositions that God or Nature is always the same and that it operates according to the rules and laws of Nature. Everything occurs and changes form according these laws and rules (Part III Preface). In other words, these laws and rules of Nature are universal and apply to both mental and physical states. In Spinoza's view, then striving is universal to all things. The universal nature of Spinoza's concept of striving of all entities makes it consistent with his naturalism, that is, all modes are subject to the same laws that regulate the one substance, God or Nature. All things strive to fulfill their highest potential.

Spinoza's key proposition regarding striving is that "[e]ach thing, insofar as it is in itself, endeavors to preserve in its own being" (IIIP6). To better understand this concept of striving, two previous propositions are relevant, IIIP4 and IIIP5. In IIIP4, Spinoza claims that "[n]o thing can be destroyed except by an external cause," which he thinks is self-evident because definitions support rather than refute any entity's essence. Nothing can destroy another thing as long as the focus is on a thing itself rather than on external causes. What Spinoza seems to claim is that annihilation of a thing involves things other than its essence because, as he has shown in IP7, the nature or the essence of a thing is to exist and by IIIP6, to preserve itself. The striving of each thing to preserve itself is "the actual essence of the thing itself" (IIIP7). Furthermore, Spinoza calls striving an

appetite and it happens whether an entity is consciousness of it or not, that is, striving is *inherent*. If the striving is conscious, Spinoza regards it as a desire (IIIP9S). Given that the purpose of the *Ethics* is to help humans find happiness, the overall point of the *conatus* principle in Spinoza's system seems to be to help humans reach fulfillment and that striving for fulfillment is a way to get there.

Conclusion

This chapter explored Spinoza's system, namely his monism and the concept of *conatus*, to determine if it can serve as the basis for environmental philosophy, particularly deep ecology. Spinoza provides an account of the nature of substance and human beings, the place of human beings in nature as a whole in the era of Continental Enlightenment, an ambitious, unified, widespread, and transformative philosophical, intellectual, social, and cultural movement in the seventeenth and eighteenth centuries. Secular humanism, with its emphasis on reason, scientific inquiry, freedom, equality and human fulfillment in the natural world was the dominant philosophy, which Spinoza's philosophy reflects. He challenges the dominant dualistic conception of the universe as mental and physical and limits the universe to only one substance, God, which he equates with Nature, with two main attributes, mental and physical. Besides God or Nature, there are modes or modifications of the substance and there are infinitely many, each striving for its own preservation and unfolding.

I argued that Spinoza's philosophy classifies human relationship to Earth as members of its community, along with millions of other species that inhabit it rather than privileged beings to whom different rules apply. This is significant because climate change requires actions to help humans and other species survive if the worst case scenario occurs, that is, if Earth warms up to such extent that an irreversible situation

occurs and species, including humans, and natural systems go extinct. To avoid such situation, humans need to rethink their current attitudes toward nature and adopt a new philosophy of life that might help them reach fulfillment in a new way. To this end, Chapter Four will examine how well Spinoza's *Ethics* supports the core principles of deep ecology, namely the intrinsic value, biocentric egalitarianism, and Self-realization.

Chapter Four: Spinoza, Naess, and Deep Ecology

Introduction

Spinoza's monism arguably makes him well-suited to act on a metaphysical foundation for holistic approaches to environmental philosophy. Some environmental philosophers argue that his monism and the *conatus* principle are particularly well-suited to support deep ecology's concept of Self-realization. Naess and other contemporary philosophers concerned with ecological problems, as well as human understanding and appreciation of the natural world, turn to Spinoza to find a strong metaphysical basis for new ethical approaches toward nature.

Spinoza's philosophy seems in agreement with basic aims within the environmental movement, such as the view of nature as a whole that includes an infinite variety of diverse species and operates according to the laws of nature that apply to all species, without privileging human beings. The whole represents a community of beings that are in an interdependent relationship with each other and cohere in a unified world in which the divine and natural are one and the same. If humans can conceptualize that they are members of an interdependent community with many diverse members, including non-living beings, they might realize that what affects the planet as a whole will affect them as well. The harmful effects of climate change do not privilege one species over another. The purpose of this chapter is to examine the conceptual connection between Spinoza's and Naess' philosophies. The main focus of this examination is to explore how Spinoza's *Ethics* supports deep ecology and faithfulness of Naess'

normative construction to Spinoza's claims. I argue that Spinoza's substance monism provides support for deep ecology's concept of intrinsic value and ecocentric egalitarianism, and that Spinoza's *conatus* thesis provides the basis for deep ecology's concept of Self-realization as well as intrinsic value and ecocentric egalitarianism.

Deep Ecology as a Conceptual Consequence of Spinoza's Ethics

Spinoza's metaphysical monism and a view of nature as a whole, as outlined in the first part of *Ethics,* "Concerning God," could serve as a philosophical basis for the philosophy of deep ecology, whose goal is, in Naess' view, to "modify human attitudes towards nature and the whole conception of the relations of culture to nature" (418). At least two aspects of Spinoza's philosophy, his monism and God's immanence, are immediately apparent to be amenable to the basic principles of deep ecology.

Given that philosophers have historically viewed rational thought as "the quintessential human attribute justifying anthropocentrism," environmental philosophers welcome Spinoza's substance monism, the claim that only one substance exists, God or Nature (Houle 419), Spinoza's monism reclassifies human beings' relationship to Earth as members of its community rather than as privileged beings, ontologically pairing the mind with matter. First, Spinoza collapses Descartes' dualism of thought and extension by declaring the existence of only one substance, God or Nature (IP14). This ontological pairing emphasizes that human beings have no privileged position in nature. Second, Spinoza's God sheds the transcendent character found in the Judeo-Christian doctrine and also sheds any anthropomorphism, or the conception of God in the image of a human being. Will and intellect may be the characteristics of human beings, however, for Spinoza, "[N]either will nor intellect pertain to the nature of God" (IP17S). Spinoza's God is impersonal and thus infinitely less knowable to human beings than the personal God

within the traditional Judeo-Christian doctrine, in which the divine is a species of human prejudice, prepared to “direct the whole of Nature so as to serve his blind cupidity and insatiable greed” (Ethics I: Appendix). Additionally, Spinoza’s God or Nature is all things and consequently unbiased toward all things. As Houle points out, this is a defining thing about Spinoza’s God: “it revolves around God’s immanence in and coequivalence with nature” (420). These two concepts, Spinoza’s monism and God’s immanence are crucial to the holistic worldview that deep ecology emphasizes. If humans can envision the natural world as divinity embedded in it and regard other living and nonliving beings in that world as divine rather than as creations of a transcendent divine being, it can develop and nurture the respect and protection of these beings in nature.

Besides Naess, other philosophers who write about deep ecology have sought support for their own personal *ecosophies* in Spinoza’s metaphysics such as Freya Mathews, Eccy De Jonge, Warwick Fox, Bill Devall, and George Sessions. These writers developed their own particular personal *ecosophies* by adopting some parts of Spinoza’s thought and linking these aspects with other philosophical perspectives. The common themes to their ecosophies are *intrinsic value*, the view that everything has a value in itself, and this value is not dependent on usefulness to humans, *biocentric egalitarianism*, the view that all entities in nature, from cells to ecosystems and nature as a whole have equal value, and S*elf-realization*, the view that everything seeks to self-realize to its highest potential in the sense of persevering in its being or essence as long as possible and fulfilling its own purpose.

As Chapter Three has shown, the main point of Spinoza’s *Ethics* in Part I is his monism, the view that the universe is one substance, God or Nature, and that everything else is a mode of this substance. God or Nature represents the highest form of being and contains all the modes. Since it contains all modes, God or Nature is impartial to all

its modes, which includes humans who cannot hold a privileged position given the impartiality of God or Nature. If God or Nature showed partiality toward humans it would take anthropomorphic form, seeking some sort of end purpose and that is not what Spinoza intended. In the appendix to Part I of the *Ethics,* Spinoza explicitly states that "Nature has no fixed goal and that all final causes are but figments of the human imagination." If God or Nature was to have a purpose it would mean that it is imperfect, which is also counter to Spinoza thinking; in his system, God represents perfection. If God or Nature is impartial that means it does not prefer one mode over the other, therefore, it does not assign value to any mode. Since, however, all the modes are a part of God or Nature, all modes are interconnected to each other and to the larger whole, they are equally and inherently valuable. In an interconnected world everything affects everything else. That is, every action produces a chain reaction. If everything affects everything else, this supports deep ecology's insistence on biocentric egalitarianism, more precisely ecocentric egalitarianism, that all entities in nature from simplest to most complex have equal value. Moreover, since all modes are a part of God or Nature and since God is perfect, the highest form of being, everything that is a part of it is inherently valuable.

This type of metaphysical/ontological holism, that individual organisms as well as ecosystems are "intricately entwined within a matrix larger than either their individual selves or the biotic community collectively" is what Michael Nelson calls *interest* or *well-being* holism (45). According to this view, individuals and the biotic community or ecosystems are part of a larger whole in which the whole provides for the well-being or interests of individual parts within it. While metaphysical holists disagree on the extent to which parts are embedded into the whole, they concur that a whole or community "supports, sustains, and shapes" individuals within its bounds (45). Moreover, while the

whole includes the individual parts or organisms, they (individual parts or organisms) cannot be physically completely removed from the context in which they developed. This means that the survival and well-being of living organisms is tied to the healthy functioning of their ecological whole. As Nelson argues, Leopold's land ethic represents this type of metaphysical holism (45). Leopold tries to balance the good of the community with the good for individual members of the community or the whole, which he enlarges to include the land—"soils, waters, plants, and animals" (204). Members of this biotic community, of which humans are members and compete instinctively to meet their individual needs but given that they are part of a community of beings, from an ethical perspective they must also cooperate in that that they must show respect for the community itself as well as individual members. The well-being of the community depends on the proper balance between individual organisms and entities meeting their own needs. Without this respect for the community and individual members, excessive drive to meet personal needs could eventually lead to the destruction of entire communities, the bedrock that sustains all its members. This is something that humans must take into consideration when they argue for the dominant Western view, which allows them to view themselves as the dominant species.

Nelson, however, mentions another type of metaphysical holism, *logical* or *radical* holism*,* which is different from *interest* or *well-being* holism in that logical or radical holism assumes that being a part of a larger whole basically eliminates the individual, that ecological interconnectedness or the reality of the whole erases the individual (44). One way of recognizing logical or radical holism, according to Nelson, is specific wording such as "all is one" or "web of life" with a "web" as complex relationships in which there is no recognition of an individual within the web. He cites Fox' versions of deep ecology published in *The Ecologist* where he claims that there is "no ontological

divide in the field of existence …. that the world simply is not divided into independently existing subjects and objects, nor is there any bifurcation of reality between the human and the nonhuman realms" (Nelson 44; Fox 196). Fox's views are troubling because they go too far—without context and recognition of entities within a whole, it becomes impossible, for instance, to protect any particular endangered species from extinction such as Florida panthers or polar bears. His views do not represent the main thrust of deep ecology. Criticisms of various views within deep ecology have led to its refinement as an environmental philosophy and formulated a holism that does not dismiss existence or the value of individuals in the ecological context.

Some philosophers object to the interpretation of Spinoza's understanding of humans as inextricable from nature and the concept that what is moral is what is in human interest. Spinoza's rejection of animal rights is particularly problematic for environmental philosophy because it nullifies the idea of equal value of all species and it establishes humans as dominators, which allows them to exploit animals. In IVP37S1, Spinoza states that humans should consider their own advantage by relating to other humans rather than to animals because they are different species than humans, even though they share some characteristics with them such as a lust to procreate (IIIP57S). Some philosophers such as Genevieve Lloyd defends Spinoza's position in the *Part of Nature,* claiming that the difference between humans and animals justify exclusion of animals from the moral community. Lloyd bases this on Spinoza's explanation in IVP35C, which states that what is most useful to humans is the living according to the laws of their own nature, that is, according to reason. What this means is that, for Spinoza, the best thing for humans is to associate with humans, not animals because their nature and emotions are different from those of humans (IVP37S1) (Lloyd:155-156).

Naess, on the other hand, dismisses Spinoza's claims in these particular propositions because human and animal natures are not completely different: he asserts that "there is no abyss between men and beast such as would make it always unprofitable for humans 'to associate (*jungere*) with beasts", provided 'associate' is not taken in a narrow sense of 'associate as fellow citizen'" (Naess:318). He considers Spinoza's statements in IVP37S1 and IIIP57S as too harsh because he is convinced that "the structure of [Spinoza's] system admits to a considerable softening of the harsh words in that personal note" (318). He believes that Spinoza meant that establishing human societies and states that include the rule of law and that the basis of these structures represents certain traits that belong only to humans, not to animals (318). By dismissing Spinoza's own position regarding animals as lower than humans, Naess is establishing his own philosophical position that includes the spirit of Spinoza's motifs but is actually his type of Neo-Spinozism. Elsewhere In the same article, he states that "Spinoza is unsuitable as a 'patron philosopher' of any contemporary movement, including the environmental and ecological. His system and his thinking in general are overwhelmingly complicated"(318). Spinoza, however, might be "an inexhaustible source of inspiration" for those who look for a philosophical basis for the attitudes and assumptions of deep ecology within the global environmental movement (318). It might have been prudent if he stopped there rather than try to add meaning to Spinoza's positions that simply was not there. Rather, Naess could have labeled his position Neo-Spinozist, which would have made him more intellectually honest.

Besides Spinoza's monism, deep ecologists, including Naess appropriate Spinoza's *conatus* principle, the striving of species for self-preservation, which many philosophers interpret as psychological egoism and as a befitting description of human nature. Naess appropriates the concept to develop a theory of Self-realization or the

process of broader human identification with greater wholes. Given that Spinoza's self-preservation is in the context of a whole or community, that is, that self-preservation is a universal characteristic of all modes, not just humans; certain amount of egoism is necessary to survival and flourishing of any species. Humans realize that others are striving to preserve themselves in their own being as well for as long as possible (Bennett 299-307; Guilherme 73; Lloyd 74-76). Consequently, the best thing for all within a whole is to cooperate with others to reach a mutually beneficial partnership. Otherwise, they would only compete with each other, which would lead to disputes and perhaps violence and thus threaten their survival. By cooperating, humans can assist each other to endure for as long as possible. So the individualist striving thus ends up striving as a community of beings, each striving for Self-realization, which, according to Jonathan Bennett and Genevieve Lloyd, makes Spinoza a communitarian (Bennett 299-307; Guilherme 73; Lloyd 74-76).

Four propositions from the *Ethics* support this view. IVP31: "In so far as a thing is in agreement with our nature, to that extent it is necessarily good." IVP35: "In so far as men live under the guidance of reason, to that extent they always necessarily agree in nature."IVP36: "The highest good of those who pursue virtue is common to all, and all can equally enjoy it." Finally, IVP37: "The good which every man who pursues virtue aims at for himself, he will also desires for the rest of mankind, and all the more as he acquires a greater knowledge of God." What these propositions indicate is that Spinoza counts on humans to use their reason and knowledge of God or Nature to choose what is best for them, and that best for them is to live as a community. Additionally, it is in humans' interest to do so, an idea that Naess supports.

This has significant implications for deep ecology, which insists that the world is interconnected or a network of relationships. Since Spinoza's monism maintains that

everything is a mode of God or Nature and thus interconnected, it is in humans' best interest and natural to view their life as part of the community of beings, human, nonhuman, and nonliving. Since everything is interconnected, what affects one affects all, so if a particular species of ecosystem gets destroyed, it will have an effect on all other members of community. Naess, for instance, clarifies that deep ecology's insistence on the commonality or identification with other living and nonliving entities includes recognition of the uniqueness of human beings such as their ability to reason and create cultures as well as the necessity to sometimes kill other living beings to satisfy *vital* needs such as alleviating hunger (168-169). What he does not support is a hierarchical division among life forms that would assign a higher value to one form over another, which would give the right to the supposedly more valuable form "the right to kill and injure the less valuable" (168). The right to kill other life forms thus comes with an obligation to do so only when necessary for self-preservation. By seeking commonality with other entities, he is referring to ecology's emphasis on the common feature in established ecosystems, that is, on "an interdependence for the benefit of all" (168). By this he means that humans ought to find a form of commonality with nature that is to their "own greatest benefit" (168). The greatest benefit would be to serve the greater Self, not only the individual self, that is, acting in ways that benefit other species as well as the self. This expands humans' circle of care to include other life forms in the natural environment. This is apparent in the claim that humans can wish the best for plants and animals just as they can for other human beings (168). Given that humans sometimes care more about their dogs than they do about other people, Naess' conception of humans as being capable of expanding the circle of care, empathy, and cooperation is on the mark.

Faithfulness of Arne Naess' Normative Construction to Spinoza's claims

Naess saw Spinoza as a source of inspiration in finding a way to ecological equilibrium. He received a copy of Spinoza's *Ethics* in the original Latin in high school and studied it with great care and attention from then on throughout his life. He strongly

identified with Spinoza's *Ethics* and believed that Spinoza's worldview and life's philosophy had shown the way to deep inquiry and practical action that leads "to community, friendship, and joy" (Drengson 9). His philosophy is faithful to Spinoza's in a broad sense, although there are differences in terminology, and there are other important differences. This section will briefly explore Spinoza's concept of nature as a unified whole to which Naess adheres from two perspectives: Spinoza's as well as the perspective of ecology, which Naess calls the concept of gestalts or interconnectedness.

In "Spinoza and Ecology" Naess claims that Nature is all-inclusive, creative, (as *Natura naturans*), "infinitely diverse, and alive in the broad sense of pan-psychism, but also manifesting a structure, the so called laws of nature" (Naess 419). The difficulty for Spinoza's system (and for Naess since he subscribes to it) is precisely his main concept of God or Nature as unity, totality, and wholeness. The question is, how can God or Nature be a unified whole with many diverse parts that somehow cohere together? Spinoza attempts to explain this view in his response to Henry Oldenburg's epistemological question, "how we know the way in which each part of Nature accords with the whole, and the manner of its coherence with other parts?" (Spinoza 848). Although Spinoza believed "that each part of Nature accords with the whole and coheres with other parts," he admitted that he lacks the precise knowledge of the actual way that the whole and the parts cohere and agree with each other. For that, he claims, he would have to know "the whole of Nature and all its parts," which he does not but offers that the "coherence of parts" means that "the laws or nature of one part adapts itself to the laws of nature of another part in such way that there is the least possible opposition between them" (848). That is, Spinoza believes that the laws of nature guide connections in nature specifically to create some sort of harmony between them. In terms of the relationship between the whole and the parts, Spinoza makes a similar argument; he

considers “things as parts of a whole to the extent that their natures adapt themselves to one another so that they are in the closest possible agreement” (848). This means that parts are constantly adapting to the new changing or changed environment to acquire balance. In the natural environment, parts of the environment would seek a way to adapt to the whole. For instance, organisms would adapt to the changed environment to survive.

Naess agrees with Spinoza’s views in “Letter 32” in that he sees his perspective from the gestalt or relational point of view, that parts adapt themselves to the new environments in a way that create least opposition (Naess 10). Areas, where things flow together smoothly, are the places where meaningful wholes form. With each relational whole humans discover, they can look for a reflection of a larger structure. In Naess’ view, this is all the information humans need; more information will not make a difference. This refers to Spinoza’s admission that he does not know everything about the workings of Nature and that he would have to know all the parts that make up Nature as a whole to completely understand the way Nature functions. For Naess, complete knowledge of nature, however, may not be necessary. Naess’ interest to help humans make a shift in thinking to learn to appreciate what they can learn from simple and specific things by recognizing their relations with other things (10). This is consistent with Spinoza’s view, but it is also the ecological approach or method to which Naess subscribes, that “all things hang together,” that everything is interconnected. Naess’ deep ecological principle, the relational, total-field image, applies here in that a relationship of the parts to the whole is, intrinsic or fundamental, and without it individual organisms or ecosystems would be different. This is not to say that relationships between parts and the whole would not change. What Naess advocates is that humans needs to re-think the way they see nature and appreciate what they can learn from

simple and specific organisms by recognizing their relationship with other living organisms and ecosphere as a whole.

These explorations would further lead humans to identify with other living organisms, which could lead them to feel as one with other beings. By identifying with other beings, humans would realize that parts of nature are part of them, and that they, i.e., humans, cannot exist without them. This concept extends to the whole of nature. If humans try to exist separately from nature, e.g., attempt to dominate it, they would block their own Self-realization and thus exist only marginally rather than fully. By identifying with nature, Naess clarifies that by seeing everything as parts of being human, does not mean that humans become non-existent but rather that all beings have an equal status and exist independently from humans and their valuing, that all parts of nature have intrinsic value (10). Naess applies the biospherical egalitarianism principle here, which other philosophers criticized because literal application of this principle would mean that humans and fleas, for instance, have equal value. This, of course is absurd, and Naess meant it in principle. What he likely wanted is for humans to develop an understanding that world is a complex whole of which humans are an inextricable part. What affects the whole affects the parts and vice-versa. For Naess, this is where the challenges of ecology and philosophy meet: “the placement of humanity in nature, and the search for new kinds of explanation of this through the use of systems and relational perspectives” (10). The relational perspective between humans and nature, for Naess is a descriptive study of the problems that engage both philosophy and ecology.

Spinoza’s concept of Nature as a whole, motivates those who promote the deep ecology movement because of its basic philosophical and spiritual premises and the implicit concept that “all living beings have intrinsic value” (238). The concept of intrinsic

value implies that humans ought to care about these beings for their own sake, regardless of the instrumental value they have to humans.

Naess espouses Spinoza's position that God is immanent or inherent in natures and calls it "a key expression" (Naess 233). For Naess, as it did for Spinoza, the term God or Nature in *Ethics* has a dual function: it represents an infinite, eternal whole and infinite number of modes or finite, albeit creative beings, that express the parts of the whole (238). The whole represents unity in the pantheistic sense. If pantheism, defined as "the belief that every existing entity is, only one Being: and that all other forms of reality are either modes (or appearances) of it or identical with it,"[16] is the quintessential expression of divine immanence, as Michael Levine suggests, this is not surprising. Spinoza's substance monism, God or Nature, fits this definition of pantheism. Naess, however, refers to Spinoza's pantheism in the *Ethics* as panpsychism without explaining how he understands that term, so it is not clear whether they have the same meaning for him. Panpsychism is defined as "[e]ither the view that all parts of matter involve consciousness, or the more holistic view that the whole world is 'but the veil of an infinite realm of mental life'" (Blackburn 275-76). In other words, the universe or Nature produces living beings and hence humans ought to think of themselves as itself "an alive and animated organism," which can literally mean as having reason, emotion, and a "world-soul," or the moving force of the universe (275-76). The most intelligible contemporary version of this view is that for environmental purposes and it would be prudent to think of the world as a complex conscious organism or Gaia, "whose unity is as fragile as that of any living thing" (275-76).

It is unclear whether Naess subscribed to this view of panpsychism because he did not provide one. He claims that all that Spinoza's ''panpsychism" says is that it is the

[16] H.P. Owen's definition (qtd. in Levine *Pantheism* 121).

creativity of living beings, “however modest, that justifies calling them living beings.” He pointed out that in some way *Natura naturans* or nature naturing is simply a term that expresses an unequally distributed but intimately interrelated creativity of individual beings (Naess 238).

Anticipating an objection that this interpretation renders God as finite, and thus directly contradicts what Spinoza would accept, Naess responded that it would not because the infinite creative aspect of the whole includes both *Natura naturans* or nature naturing and *Natura naturata* or nature natured. In other words, God as nature naturing and nature natured do not exist separately but are part of the whole (238). This seems to muddy the waters as he now seems to refer to Spinoza’s conception of the divine in pantheistic terms. It might be safe to conclude that when Naess mentions Spinoza’s panpsychism he means pantheism.

Levine’s objection is that equating pantheism with panpsychism does not suffice because pantheism is a much broader theory than panpsychism and quite different from it. Levine admits that it is easy to see why some scholars link pantheism with panpsychism or animism. Like pantheism, both panpsychism and animism express pervasive immanence—“mind” in panpsychism and “living soul,” “spirit,” or “animal life” in animism. In Levine’s view, “What immediately sets panpsychism apart from pantheism is its belief that mental activity is all-pervasive.” This mental activity is usually the kind of which humans can be mildly aware but only at times. Although such supposition is not necessarily inconsistent with pantheism, Levine clams that it is not part of pantheism. The problem with Levine’s position is that he uses a wrong definition for Spinoza’s position.

Pantheism does not imply rejection of the material/immaterial or organic/inorganic divisions. It does not reject these distinctions but implies that Unity

ranges over such divisions. Levine claims that an explanation of pantheistic Unity may need to be in terms of divinity. In relation to Spinoza, the all-inclusive whole may constitute Unity because it is divine in itself (Levine). In other words, Spinoza's substance, God or Nature, is divine in itself and, therefore, an all-inclusive whole.

What is the definition of "divine" and why would pantheists want to ascribe the divine to Unity? According to Levine, the usual meaning of "divine" relates to God, but it also stands for "sacred" and "holy." As Levine claims, what is divine evokes a spiritual experience and this is the same whether humans experience God in the theistic sense or in the sense of pantheistic Unity. Experiencing nature as divine or sacred could improve human well-being and open the door to an ethic that includes all beings, living and non-living. Pantheists such as John Muir, Robinson Jeffers, D.H. Lawrence, and Gary Snyder believed that close association and identification with nature and the natural environment is necessary for human well-being. Moreover, the belief in and identification with a divine Unity is the basis for an ethic and a way of life that includes a nonhuman and non-living things. Excluding them would be inconsistent with the concept of divine Unity as all-inclusive. This has important implications to the relationship between humans and the natural environment, and others, like Harold Wood, Jr., a founder of the Universal Pantheistic Society, support it. As Wood says, "If humankind is to develop better relations with the environment, a renewed sense of reverence for nature will certainly aid that relationship" (151). To achieve this, humans need "a new recognition of the sacredness of the natural world," the sense of which they can best achieve through experiential means. As Wood suggests, "Pantheism provides a means to experience the divine in nature, and as such deserves consideration as a method promoting sound environmental ethics"(151).

Naess' views regarding pantheism, along with those of other deep ecologists, do not appear to be particularly clear, even though he talks extensively about unity and identification with nature. There are some scant direct references to Spinoza's panpsychism in relation to Naess' view of nature, however, pantheism and panpsychism appear similar but are not the same. Moreover, specific, in-depth literature on the subject on pantheism in Spinoza and deep ecology also seems to be scant. Nevertheless, examining Spinoza's pantheism in deep ecology and examining whether the pantheistic vision of divine Unity can help humans develop the sense of respect and care for nature as an active, creative entity of which humans are a significant component.

Conclusion

In this chapter, I argued that Spinoza's metaphysical monism and a view of nature as a whole, as outlined in the first part of the *Ethics,* "Concerning God," could serve as a philosophical basis for the philosophy of deep ecology, whose goal is to modify human attitudes towards nature as well as to provide a different conception of the relationship between culture and nature. Spinoza's monism and the *conatus* thesis provide support for the core principles of ecology, intrinsic value, ecocentric egalitarianism, and Self-realization. The *conatus* principle offers the strongest support for the Self-realization principle and an additional support for intrinsic value and ecocentric egalitarianism because in an interconnected world, everything affects everything else. Humans thus need to consider themselves as members of a community and support each others' ambitions. It is in their interest as well as in the interest of the community that includes nonhuman and nonliving beings to do so. Thinking in terms of being members of a community of beings has been a challenge for humans, and they have mainly focused on their own interests. Deep ecology provides an opportunity to shift to a

different worldview, a more ecologically focused worldview of being in the world, in which humans respect their commonality with other beings and entities while recognizing their own as well as other species right to live and blossom to fulfill their highest potential, and become mature, Self-realized beings.

To see how well deep ecology can advance the ecological worldview for dealing with climate change, Chapter Five focuses on the cultural and philosophical context in which Spinoza's and deep ecology's holistic, interdependent view of the world can lead to the ecological worldview.

Chapter Five: Embracing the Ecological Worldview

Introduction

Most scientists believe that humans still have time to avoid the effects of climate change but that that window is closing. There are five major future threats humans need to consider in determining their future course: large-scale extinctions of animal and plants, drops in agricultural yields, spread of diseases to new areas, water related stresses, and more intense weather related disasters ("Synthesis Report" UNFCCC Science). These threats alone suggest that humans need to act urgently to avoid the worst effects of climate change, i.e., they need to respond to the physically changing natural world and address the cultural impediments to solving them. Given that *culture*, defined as "that complex whole which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of society" (Tylor 1) stands in the way of humans taking action, they must examine and change those aspects of culture that need changing such as overconsumption and individualism as the dominant social structure.

The previous chapters have shown that deep ecology draws on Spinoza's holistic view of nature, which does not allow humans a privileged position on the planet because what affects other species and planet as a whole, affects humans. Moreover, everything in nature is inextricably connected, and deep ecology, with its insistence on the concept of expanded, ecological self or Self-realization, would lead humans to accept a more enlightened view of its role in the natural world. This chapter explores how deep ecology,

under Spinoza's influence, contributes to the ecological worldview, including the cultural and philosophical connections between Spinoza, climate change, and deep ecology. I argue that deep ecology's principles of intrinsic value, Self-realization, ecocentric egalitarianism, and particularly the concept of interdependence in the natural world can foster the shift to the ecological worldview, which builds on the concept of sustainable social and cultural environments. It also requires consideration of moderate communalism, the idea that a well-functioning society requires both individualism and communalism as the right social structure for dealing with global climate change.

Climate Change and Sustainability

The perception of the nature of climate change as a subtle, distant rather than an immediate, visceral threat (Leiserowitz; Schönfeld 160) is one of the reasons for the lack of a more comprehensive action regarding climate change. This is because the fundamental causes of global warming like carbon dioxide emissions are invisible and seemingly faceless unlike a visible physical attack by terrorists. Moreover, global warming did not appear to have an immediate impact on the present but rather on future generations because it has the long term consequences. Therefore, other immediate threats such as the war on terrorism, the financial crisis of 2008, and the debt ceiling crisis have been taking precedence in recent years (Leiserowitz). Contrary to this perception, Chapter One has shown that as scientists have warned since the 1960s, human activities will lead to significant changes in the natural world, such as migration of species, melting glaciers, acidification of oceans, and extreme weather conditions, are a reality and are likely to continue to get worse. The Intergovernmental Panel on Climate Change's *Fourth Assessment Report: Climate Change 2007* (AR4) advises of five major future threats humans need to consider. First, large-scale extinctions of plant and animal

species are likely to happen because pollution and loss of habitat have already weakened them. Second, drops in agricultural yields in most tropical and subtropical regions as well as temperate regions will happen if the temperature increases more than a few degrees. The key factors affecting agricultural yields are changes in rainfall patterns, changes in river flows because of the ice packs that feed melt water into rivers, the proliferation of pests due to warmer winters, the availability of beneficial species needed for pollination and pest-control, and herbicides' effectiveness. Third, diseases could spread to new areas in the world, particularly those that organisms, such as mosquitos, carry to new locations. This is dangerous because those populations in new areas would lack proper immunity to fight off disease that mosquitos bring with them. Mosquitos thrive in hotter temperatures but heat strokes and food-related illnesses present a big risk to human population in hotter areas ("Synthesis Report" UNFCCC Science). Fourth, millions of people are likely to experience water related stress from too little or too much mountain snow ice packs or rapid snowmelts in rivers, resulting in droughts or floods that cause massive damage to surrounding areas ("Synthesis Report;" "The Water Cycle: Snowmelt Runoff"). Fifth, weather related disasters are likely to be more intense. Coastal communities will have a particularly hard time because of the rising sea levels and other climate related stresses ("Feeling the Heat: Climate Science and the Basis of the Convention"; "Synthesis Report"). In light of these threats, humans need to develop a plausible plan to reverse climate change and avoid future threats like the ones that the IPCC mentions. One of the goals that ought to be a part of a plausible plan is sustainability, an important policy perspective that deep ecology emphasizes. Sustainability is an important policy goal because it addresses important issues such as intergenerational equity and justice.

As mentioned in Chapter Two, the *Brundtland Report* defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (*Our Common Future: Report of the World Commission on Environment and Development* 15). This concept of sustainability includes the ecological, economic, and social aspects, without a specific blueprint because “economic and social systems and ecological conditions” are different in each country (39). And while the *Brundtland Report* acknowledges that economic growth always carries the risk of damage to the natural environment, it expects world economies to be mindful of their ecological roots. It also expects them to protect and nurture their ecological roots in order to support long-term growth. In this sense, the protection of environment is inherent in the concept of sustainable development (39).

The transition to the more sustainable worldview is inevitable whether humans are actively engaged in the transition or not because global warming-related crises, such as extreme weather and water and food shortages, will drive this transition. Humans still have a choice: either they can drive transition to a sustainable future, or they can try to weather the forthcoming crises, which may lead to a permanent decline or collapse followed by rebuilding. This depends on humans’ “ability to anticipate the required changes and to develop new cultures and new institutions” (Constanza 90).

Sustainable development is an important policy goal. One way to achieve it is to shift away from the market economy with its attendant goal of maximizing growth, regardless of the cost to the natural environment. What is needed is an economy that maximizes sustainable well-being of humans as well as the nonhuman species and larger wholes such as ecosystems, and considers the economic value of the Earth’s benefits to humans such as various ecosystem services or natural values such as waste

assimilation. A shift in worldviews, institutions, and technologies that deep ecology advocates needs to happen to implement the new, sustainable, ecological worldview.

The transition to the ecological worldview is hampered by the state of rapid change and current prevailing worldviews, institutions, and technologies, formed during the early years of the Industrial Revolution, which are failing to address humanity's needs now. Rising food prices, biodiversity loss, rising sea levels, and the loss of life-sustaining ecosystem services are serious threats to humans now. During the early Industrial Revolution, human population was small in relation to the current seven billion and so was its infrastructure. Natural resources were plentiful, social settlements were thin, and the only limits on improving well-being were inadequate infrastructure access and consumer goods (Constanza 85). This no longer holds true. Population explosion, rising affluence, and breakthroughs in science and technology have led to not only increased consumption but also to overconsumption, which have consequently contributed to environmental problems, such as resource depletion and loss of biodiversity (Flavin xvii).

Consumerism, "the cultural orientation that leads people to find meaning, contentment, and acceptance through what they consume" (Assadourian 3), has taken hold in many cultures in the past half century. It has also led to exponential increase in demand for resources and accompanying production of waste. Human cultures shape and constrain humans embedded in them in the sense that cultural values, traditions, symbols, and norms become part of their nature. Attempting to change consumerist behavior is difficult and will require decades of effort from cultural pioneers "to work tirelessly to redirect culture-shaping institutions: education, business, government, and the media, as well as social movements and long-standing human traditions" (4). This is not to say that there is no action toward sustainability.

Although polarized, entrenched positions between the political right and left, or between non-believers and believers in climate change are stopping national policies toward sustainable development, on a more local level, efforts toward sustainable development are taking place (Flavin xvii). States are enthusiastically adopting renewable energy standards, "which require electric utility companies to produce a portion of their electricity from wind, solar, and other renewable sources," which has helped support energy advances in recent years (Kasper and Kenworthy). Mayors all over the United States are doing much to mitigate the problem. Chicago, for instance, is investing billions in public transit and helping public buildings save energy. Los Angeles plans to cut "carbon emissions from government sources by 35% below 1990 levels by 2030" (Volcovici and Rucker). Additionally, companies are changing their systems and getting the carbon dioxide and its emissions out of their processes because they find it actually makes them more efficient and profitable. Many citizens all over the United States are doing what they can individually to lessen the impact on the environment and are beginning to involve the political system to demand change (Leiserowitz).

Deep ecological concerns (focus on nature as an interdependent network of living things that includes humans, human identification with other life forms, considering interests of nature as part of human interests or Self-realization), seem to have taken an even further back seat to the traditional focus on economics based on the growth model regardless of the costs to the natural environment. This is unfortunate because deep ecological principles such as Self-realization could make a substantial contribution to any serious solution to global warming, whenever humans choose to pursue it. Naess' deep ecological view calls for a closer relationship between humans and nature by claiming that human beings are inextricable part of the natural world while recognizing individual species and entities within it. This view counters the anthropocentric

worldview, which focuses mainly on humans needs and treats the rest of the natural world as instrumental.

The ecological worldview is slightly different from the holistic model in the sense that both include the view of a “functional whole” (Capra 5-7). Under the holistic worldview, an airplane, for instance, represents a functional whole in the sense that there is interdependence between all its parts that make it fly. The ecological worldview would include airplane’s functionality in the holistic sense but it would also consider how an airplane fits into the natural and social environment—where and how it was manufactured, the raw materials that went into its production and how its use affects the natural environment and the communities that manufacture it, as well as air travel impact on climate. In the age of climate change, impacts of technologies on the natural environment and the communities are important because their effect can be severe, as David Suzuki, for instance, points out, compared to other types of travel, such as driving or traveling by a train, air travel has a greater climate impact per passenger per kilometer, including over longer distances and produces the most emissions. Implementation of the ecological worldview is important because, as Spinoza has shown, humans are no exception to the laws of nature that affect the world around them. What affects the natural world affects humans.

Climate Change, Science, Values, and Communication

In the U.S., efforts of environmentalists, climate scientists, and concerned citizens apprehensive about the perils of rapidly changing natural environment continuously meet strong resistance from those who disagree with the idea that climate change is a serious problem, even though all major scientific academies is the world have warned that it is. Some doubters completely dismiss the idea that the Earth is

warming; others agree that it is warming but reject human responsibility for the warming; finally some agree that human activities are a contributing factor but believe that Earth's warming is likely to be limited and that the impacts are manageable. This is not surprising given that different interests, values, philosophies, and ideologies play a significant role in social structures. Currently, there is not enough strong impetus in the U.S. to develop a plausible agreement on the idea that climate change is a problem that humans need to address urgently, and even less to organize the efforts to deal effectively with it on a large scale with the public and private sectors' and governmental support behind it.

In the late 1960s and early 1970s, Americans and the world were excited about the American space exploration, focused on landing on the moon, a scientific mission that inadvertently shed new light on Earth's beauty and vulnerability. This was particularly true after the release of *Earthrise* and *Blue Marble* photos the astronauts took from space looking back at Earth. The excitement and concern about the planet led to many fruitful legislative actions in the 1970s. The U.S. Congress passed several important environmental protection acts still in effect today such as the Clean Air, Clean Water, and Endangered Species Acts. It also formed agencies designed to protect and study the natural environment such as the EPA and National Oceanic and Atmospheric Administration (NOAA). Several decades later, in the U.S., doubt about the science behind global warming replaced the excitement and the desire to protect the home planet that the country experienced in the 1970s. In the name of economic growth, climate change concerns have diminished particularly since the Great Recession of 2008. Moreover, political polarization between progressives and conservatives regarding climate change has limited any serious national action on the issue.

Humans, however, face an existential threat with increased global warming and need to make different choices. Climate-friendly economic development is the first place to look to make the shift in thinking in revising the concept of economic growth at any cost to the ecologically sustainable model. This shift would not only lower the existential threat to humans and other living species, but it could revive the spirit of innovation and discovery that could stimulate and drive new economic growth. Furthermore, as Jim Yong Kim, the new president of the World Bank pointed out at the World Economic Forum, January 2013 at Davos, private sector engagement is crucial in this sustainable growth model; it also provides it a great opportunity to profit from developing new climate friendly technologies while simultaneously minimizing the effects of runaway climate change. The profit motive is important because it might bring into the fold those who are otherwise against doing anything about climate change.

Global warming is a crisis that makes all others crises irrelevant because of the severity of its impact. Climate scientists have laid out unequivocal evidence that climate change is putting the planet at peril. If humans do not handle global warming with intelligence and care, it is the end of the road for the world. The threats the planet are facing are more serious than forty years ago and becoming more so every year. Humans need to take unified, bold actions to protect its home planet, yet they have not taken them. Why humans are not acting to save themselves and the natural systems that support them, without which they cannot survive?

In the United States, part of the problem is the conflict between the political parties responsible for establishing the federal environmental policy. The United States Congress has not acted decisively on climate change because of the rhetoric on the subject as well as inadequate actions of the Democrats and harmful actions of the Republicans respectively. As Norton points out,

> Federal environmental policy whiplashes back and forth between rhetorical flourishes and weak action by Democrats, on the one side, and the Republican appointment of economic zealots who want to dismantle the system of environmental protection and turn resource management over to the private sector on the other. (ix-x)

As Norton also asserts, ideologies shape participants' understanding and experience when they address those problems. Environmental policy has been "the hostage to ideology, to right-versus-left and environment-versus-free-marketeering agenda shifts driven by the electoral politics" (ix-x). Although this division between right and left has been particularly noxious during President Obama's first term in office, this division in environmentalism is not new. It grew out of the battles between John Muir (1838-1914) and Gifford Pinchot (1865-1946), respectively, between preservation of nature and an efficient management of its resources. The problem with environmentalism based on ideologies is that it poses questions in terms of right-or-wrong or all-or-nothing thus enforcing an either-or dichotomy, offering humans a choice between doing right and doing well, between morality and economics. Norton argues for an alternative to the whiplash between a right and wrong in environmental discourse, suggesting that the way people communicate about environmental problems is the problem. As he suggests better vocabulary, focusing on the terms *sustainability* and *sustainable development*, might serve to "reformulate environmental problems as matters of more or less—of proper balance among competing social values—rather than clashes between right and wrong" (ix-x). Norton is right to point out that communication is a part of the problem, and the sustainability model might be a more effective way to communicate about environmental problems. Others cite communication as a problem as well.

It has been puzzling why some cultural groups have not been able to accept facts when empirical evidence is indisputable like in the case of global warming. Research in neuroscience and human behavior offers some interesting findings. As Chris Mooney, a science journalist, political analyst, and commentator who writes extensively about climate science says, it illustrates how far humans have moved away from the Enlightenment ideal of seeking the truth by utilizing science and reason while tempering passions. Some researchers and writers about climate change argue that the lack of wider acceptance of climate change as a serious risk is partly related to communication. Anthony Leiserowitz, a research scientist at Yale University's School of Forestry and Environmental Studies and director of the Yale Project on Climate Change Communication, argues that communicating about climate change requires knowing the nature of the audience whom speakers want to reach because there is no single public or group in the United States but rather six different ones: the alarmed (16%), the concerned (29%), the cautious (25%), the disengaged 13%), the doubtful (13%), and the dismissive (8%). Each group requires different information in order to be open to hearing more about climate change. There are also the subgroups within each group like the Tea Party Republicans within the doubtful group. When speaking to this group, the best way to succeed is to listen and find out their aspirations and talk about the efforts of major religions that frame the issue of climate change as a moral and religious one. Besides communication, those who believe in global warming need to organize better and demand action from Congress, much in the way that global warming denial groups do (Leiserowitz). His findings about six different Americas regarding climate change, show defused interest and a lack of concerted effort to influence decision makers to act on the issue. As his findings also demonstrate, being organized and persistent, is more important than size.

Communicating by listening, showing interest and understanding others' aspirations, relies on the basic idea of respect for others' views as a starting point to an intelligent conversation about an important issue such as climate change. This is a common and also a deep ecological approach that could prove more fruitful than simply confronting an audience with scientific facts. Its platform's design, for instance, is meant to invite interpretations, and modifications to suit different audiences. Another example is Naess' insistence that everyone develops a comprehensive worldview, a personal ecophilosophy that considers the human beings' place in nature. By insisting on this he shows his interest and respect for others, inviting them to the table to address a common problem. Mooney also found that communicating effectively about climate change involves knowing and respecting others' views about an issue at hand. He particularly focuses on the reasons behind conservatives' resistance to accept global warming, as well as the science behind it.

Confronting conservatives who deny climate change with scientific facts about it directly, sometime can backfire – it will not only fail to change their minds, but they may hold on to their views more resolutely than previously. Communicating about facts first is thus a futile endeavor (Mooney). In order to convince, it is necessary to lead with values that conservatives hold such as "freedom, commerce, religion, guns," i.e., values other than those that environmentalists or scientists espouse in order "to give the facts a fighting chance." Improving communication with various groups while addressing their aspirations and values should lead to more fruitful discussions about climate change, but other factors may preclude the public's acceptance of scientific facts as well.

Recent studies in cognitive neuroscience and psychology suggest that individuals' preexisting beliefs can preclude their acceptance of scientific facts. Those findings show that "preexisting beliefs, far more than any new facts, can skew [human]

thoughts and even color what [humans] consider most dispassionate and logical conclusions" (Mooney 28). This type of reasoning, called "motivated reasoning," helps explain why some groups are so divided over things where science is unequivocal. It would seem that expecting facts to convince people is in opposition to the facts about reasoning about facts.

> "A man with a conviction is a hard man to change. Tell him you disagree and he turns away. Show him facts or figures and he questions your sources. Appeal to logic and he fails to see your point." So wrote the celebrated Stanford University psychologist Leon Festinger, in a passage that might have been referring to climate change denial—the persistent rejection, on the part of so many Americans today, of what we know about global warming and its human causes. (28)

Mooney draws his conclusions about "why people deny facts and resist persuasion" on published, peer reviewed research and interviews with specialists in the field of cognitive neuroscience and psychology (14). The theory of motivated reasoning started with a neuroscientist Antonio Damasio's important insight that reasoning is inseparable from emotion or affect. Moreover, conscious thoughts about people, things or ideas arise much more slowly while emotions rise much more rapidly, in milliseconds--fast enough to detect with an EEG device, but long before humans become aware of them. This is not a surprise because, from an evolutionary perspective, humans had to react very quickly to stimuli in their surroundings. They possess a basic survival skill, says political scientist Arthur Lupia of the University of Michigan. Humans tend to push away threatening information and readily accept information with which they agree. In other words, they apply fight-or-flight response to information itself, not just to predators (30).

Although affect is a part of human makeup, as Spinoza would concur, this does not take away from human ability to reason and deliberate. As Mooney points out, the problem is that reasoning is slower, comes later, and even then it does not function in an emotional void. Rapid emotional responses set humans on a path of highly biased thinking, particularly on the topics about which they deeply care. Dan Kahan's research at Yale University shows the reasons for a limited power of scientific opinion on shaping policy. He utilizes the *cultural cognition of risk,* a theory that helps explain the "public disagreement about the significance of empirical evidence generally" (Kahan, Braman, and Jenkins-Smith 2).

Kahan's study demonstrates that individuals' core beliefs about morality or about the organization of a society are strong indicators about whom people would consider as a real scientific expert, and, consequently, where they would consider the scientific consensus to be. Based on cultural values, Kahan classifies individuals as either "individualists" or "communitarians" and as either "hierarchical" or "egalitarian" in outlook. On three issues—climate change, nuclear waste disposal, and handgun regulation, Kahan's study shows that both groups' views "converged and diverged from the positions endorsed in NAS [National Academies of Sciences] 'expert consensus'" in a form that matched their predetermined views (Kahan, Braman, and Jenkins-Smith 167). If scientists' findings contradict with individuals' core beliefs, they reject those findings and risks associated with those findings. Similarly, individuals view experts as trustworthy if experts' views reflect their cultural stance (167). Moreover, another one of Kahan's studies shows that these individuals find it difficult to accept that their cherished beliefs would somehow harm society. For instance, hierarchical individualists cannot accept that the things they value such the free market economy, freedom to own a gun for protection, would somehow cause harm to others. On the opposite side, egalitarian

communitarians believe that free market economy and patriarchy in families is harmful and that people cannot safely handle their guns. Given that cultural cognition motivates individuals “of *all* worldviews” there needs to be a way out and that can be achieved by improving risk communication (135). Those who communicate about risks must be mindful not just about the scientific content of information but about the cultural meaning of that information to those they are addressing (169). Leiserowitz and Mooney similarly suggest that the key to engaging people who hold different worldviews is to be mindful of their cultural orientations. This is the idea that Naess promoted and the basis of deep ecology includes cultural concerns.

Effective communication is particularly important given that climate change requires massive national action that only a strong government backing can provide. Bringing everyone aboard is essential, whether they are individualists, communitarians, hierarchical, or egalitarian. Deep ecology has always appealed to an egalitarian principle directly, albeit more between species than between humans, and more implicitly to applying the principle of respect regardless of other’s views in order to find the common ground. Climate change is a collective problem and requires a collective action, that is, engaging a global community in which everyone will need to participate in order to insure humans’ survival and flourishing.

The Question of Individualism

Given that climate change is a global issue, it requires international community’s response. No single individual or nation will be able to prevent further warming of the planet, mitigate its effects, or innovate a way out. Containing climate change will require global actions, which means only collective efforts of all nations might contain it, or at least minimize its effects. This means that there needs to be clarity about the roles of

individualism and communitarianism or communalism in a society. Neither is more important than the other. Both are necessary in any well-functioning society. Dispelling the notion that one value is more important than another and finding the most suitable relation between individualism and society is particularly important in addressing climate change risks. The predominantly individualist societies or those that see themselves as individualist, as is the case in the U.S., present a challenge and need to see communalism as beneficial and inherent in societies rather than a threat to individual freedoms. There are no easy ways to overcome this challenge, partly because boundaries between the two are unclear, partly because cultural shifts take a long time.

The most fitting relationship between individuals and society is difficult to define (Gyekye 35). There are societies that practice moderate form of communalism that provides a balanced form of individualism and communalism. The difficulty comes from humanity's dual beliefs about the individual and society. First, individuals possess worthwhile values such as autonomy, freedom, and dignity, and society should respect them. Second, humans are not only members of society but also need society and all that it has to offer to realize their individual potential and live the most worthwhile life possible. The public conception of personhood reflects and influences the type of social structure that evolves in a particular society (35). A moderate communalism or communitarianism is an attractive option because it accommodates communal as well as individual values, social obligations, as well as responsibilities to oneself. It also articulates the idea that communalism accommodates individualism and that the two can be in a significantly cooperative relationship (76). This section will clarify the notion of moderate or restricted communalism[17] and explore how it can serve as a successful

[17] Based on insights that Kwame Gyekye outlines in chapter two, "Person and Community," of *Tradition and Modernity: Philosophical Reflections on the African Experience.*

social structure model. Moreover, it will be apparent that even societies that emphasize individualism, like the U.S., have very strong communitarian roots.

African models of moderate communalism suggest that it is futile to think that any society can properly function based on either the individualism or communitarianism model alone: they are simply too intertwined. The separation is artificial and leads to dysfunction whenever and wherever it prevails. The first section distinguishes different conceptions of communalism, the second addresses the idea of common good, the third part focuses on communal practices and individual autonomy, and the last part examines the notion of rights and responsibilities in a communal culture.

Some philosophers (Kwasi Wiredu) distinguish between "communalism" and "communitarianism" while others like Gyekye conflate them. For Wiredu, communalism defines a society or culture into which a human being is born and in which it becomes a person. In contrast, for Wiredu, communitarianism is a western theory of society that seeks more communalistic arrangement but philosophers that seek it are individualistic and seek it from within an individualistic society.[18] One example of this is a definition of communitarianism as a rejection of individualism, a liberal view that the rights of individuals are basic. According to this view, individualism justifies actions of coercive institutions as protection of these basic rights, while communitarianism maintains that the rights of individuals are not basic and that the community has rights that are independent or opposed to the rights of individuals (Sterba 629). For Gyekye, "communalism" is a theory of social organization and relations, which is a branch of Akan notion of humanism. The goal is the overall flourishing of the broader society or culture, without harming the individual (155). After discussing moderate communalism, it

[18] Kwasi Wiredu. Lecture in African Philosophy, University of South Florida, November 18, 2003.

would become obvious that Western liberal notions of individualism and communalism[19] are inadequate to address the global warming crisis and communalism, as practiced in African countries, might eliminate some misconceptions about individualism and communalism, which is particularly important in addressing global climate change issues.

The sense of community in African communalism is consequential to the communal social arrangement (Gyekye 36). In such social organizations, individuals think of themselves as members of community first and as unique individuals second. Jomo Kenyatta, for instance, writes about the traditional life in Kenya and explains that in Gikuyu's language of the Bantu family is that human beings are not isolated individuals in the sense that their uniqueness is a secondary rather than primary fact about them (Gyekye 36: Kenyatta 1965: 297). The first is that they are relatives and contemporaries to several people. Second, "individualism and self-seeking are ruled out. The personal pronoun "I" was used very rarely in public assemblies because "[t]he spirit of collectivism was [so] ingrained in the mind of the people" (Gyekye 36; Kenyatta 188). John Mbiti expresses similar observation and writes that "Whatever happens to the individual happens to the whole group, and whatever happens to the whole group happens to the individual. The individual can only say: *"I am, because we are; and since we are, therefore, I am"* (Gyekye 36-37; Mbiti 141). Applying this worldview, that humans are members of the community first and share the space on Earth with millions of other species, would help facilitate more effective action on dealing with global warming. It is also likely that Naess thought of humans as members of community first and as individuals second, while also respecting individual species rights to live and flourish. In

[19] For the purpose of the paper, I will use the terms communitarianism and communalism interchangeably.

the past negotiations on containing global warming, individual nations jockeyed for their own advantage and looked for ways to avoid responsibilities to take more comprehensive actions to lessen global warming by reducing emissions. Considering the well-being of nature as a whole first and everything else as integral part of it could help shift attitudes of those seeking individual advantage.

Although there is emphasis on communal values in African cultures, it would be a mistake to think that social relationships wholly define individuals. They are still morally autonomous and have freedom and the ability to choose or reassess the values that a culture shares (Gyekye 37). A moderate or restricted communalism recognizes "the intrinsic worth and dignity of an individual person, and recognizes individuality, individual responsibility and effort" (40). Using a tree metaphor, one Akan proverb illustrates the concept of individuality particularly well: "the clan is like a cluster of trees which, when seen from afar, appear huddled together, but which would be seen to stand *individually* when closely approached" (40). The cluster of trees represents community, and the individual trees represent the individuals within it. Also, even though the branches of the trees touch each other, each tree is individually rooted, which suggests that individuals, like the trees, have their own separate identity, and that they maintain that identity even though they are a part of the community. Other Akan proverbs show that acceptance of communal values includes acceptance or recognition of individuality: "Life is as you make it yourself," "It is by *individual* effort that we can struggle for our heads," and "The person who helps you carry your load [i.e., who places the load on your head] does not develop an hump" (40). In other words, in moderate communal societies, individuals are a part of community but retain their own identities, must carry out their obligations, and are responsible for their well-being.

In accepting the role of individuality in communalism, the idea of natural sociality as well as the individuality of human beings is a part of the equation. This necessitates recognition of the claims of both individuality and communality and integration of "individual desires and social ideals and demands" (Gyekye 41). In a social arrangement, of course, communalism and individualism apply as a matter of degree, and some societies are more individualistic than communal or vice versa. Nevertheless, individuals' development depends on community and the well-being of the community depends on the talents and leadership of individuals (41). What this attitude could mean for the global warming problem is that the well-being of the planet depends on individuals or individual countries to help find solutions to the problem and individuals depend on the global community to help solve it as a community. Both need to be active in finding a solution.

Community, Social Relationships, and the Common Good

One way of thinking about climate change would be to consider a sustainable environment as the common good. This section will outline the conception of the common good from the individualist and communal perspectives.

In communalism social structure, individuals are inherently social rather than isolated beings, enveloped in the context of social relationships and interdependence (Gyekye 41). In this context, individuals view their community as a reality rather than as an association based on contracts of individuals whose interests depend on agreements. Instead, they have interpersonal bonds not necessarily dependent on biology, view themselves mainly as members of a group, and "share common goals, values, and interests" (42). The difference between a community and an association of individuals is the common way of life overall. In other words, all members of the community recognize

“the existence of common values, obligations, and understandings” (42). They are committed to a community and express it through desire and willingness to promote common good, participate in a community life, and show concern for other members’ well-being. They have attachments on intellectual, ideological, and emotional levels to the goals and values, which they pursue and defend. Comparatively, in a non-communal social arrangement, the promotion of social good and concern for the well-being of others is not required as a normative socio-ethical agreement or principle (42-43).

A community represents a space in which humans as individuals develop their identities, gain knowledge of themselves in the context of relationships with others, rather than as isolated individuals (Gyekye 43). Traditions of a community or culture play at least a part in human development; therefore, they are part of the expression of a deep sense of personhood and individuality in important and indispensable ways (43).

The notion of community has an intrinsic connection to the notion of the common good, a good that all human beings universally can share, and a good that is essential for the basic functioning of individuals in a human community (Gyekye 45). As such, this conception of the common good is not in contradiction to the good of the individual members of a community because it is inclusive of the basic goods all its members desire such as “peace, freedom, respect, dignity, security, and satisfaction.” They are basic because every person needs them to function as a human being (46). In contrast, the notion of the common good among the individualist thinkers is something that would interfere with individual autonomy and freedom (45). For individualists, the search for common good represents an improper use of political power, as well as interference with the other conceptions of the good. Individualists view the notion of common good with suspicion because they view it as the composition of “the particular goods of individual persons.” In other words, for individualists, common good is a combination of all

individual preferences in which each preference has an equal value. This view originates from the individualist stance that individuals are prior to the community and, as such, have the conceptions of the good that is *wholly* different from that of the purposes of the community and the individual *always* arrives at them independently of the system of values that a community offers (45).

Individualists' attitude toward the common good as the collection of good of individual persons presents a significant problem for addressing climate change, given the fact that it requires massive government action to properly contain it. The last presidential election in the U.S. has clearly demonstrated this individualists' view. Changing their attitudes about this or perhaps convincing them that climate change will affect everyone to a higher or lesser degree whether individuals or communities have ownership of something.

Rights and Responsibilities in the Communal Structure

The view that the common good is a collection of privately owned goods for individualists presents a problem in addressing climate change because emergency responses to the future climate related crises such as extreme weather disasters will likely lag resulting in hardships for the affected communities. For instance, it took the U.S. Congress two months to approve a disaster aid after Hurricane Sandy hit the Northeast states. Moreover, the Heartland Institute, a think-tank of conservative thought, has maintained that climate change is a plot to redistribute wealth and wage class war. This is Heartlanders' biggest fear, according to Naomi Klein, who attended their conferences. The notion of rights thus will be crucial because it might mitigate the over the top concern for property rights that conservatives espouse.

Some communitarian thinkers (Menkiti) view rights as secondary to exercise of duties. Others in the West (Alasdair MacIntyre) dismiss them as fiction (Gyekye 62). Gyekye, on the other hand, thinks that rights represent the means of expressing individuals' talents, capacities, and identity, while admitting that social framework accommodates this expression the best. He believes that individual autonomy, which he thinks has a place in the communitarian framework, must recognize the ontology of rights. In his view, rights are conceptual allies (62).

Denying existence of rights or placing them in a secondary role would diminish the notion of moral worth of the individual, which would be inconsistent with moderate communitarianism (Gyekye 63). Individuals' membership in a community should not diminish their moral worth as an individual; it should not diminish the notion of respect for human dignity, which he considers to be a natural attribute of being human. The Akan proverb, "All human beings are children of God; no one is a child of the earth," represents something inherently valuable in God, and by default, in human beings. The concept of human dignity derives from the concept of intrinsic worth and respect. The proverb, says Gyekye, also hints at the idea of "equality of the moral worth of *all* human beings" (63). Consequently, concepts of human dignity, intrinsic worth, and equal moral worth create the basis for moral rights. If moral rights belong to all human beings by virtue of their being children of God, and are thus linked to the idea of natural or innate rights, then they are already connected to the conception of human dignity. Conceiving human dignity in such way compels cultures to recognize right in both individualist and in communal framework.

Additionally, the concept of human dignity and individual rights is derivable from reflection on human nature, especially from reflection on qualities that dispose humans to function at their best in a human society and fulfill their potential. Kant attempted to

ground the notion of human dignity or intrinsic worth in human capacity for moral autonomy. As autonomous beings, in Kant's view, humans deserve to be treated as ends, i.e., they deserve respect. Consequently, Kant's version of the categorical imperative, the principle of humanity, "Act in such way that you always treat humanity, in your own person, or in the person of any other, never simply as a means but at the same time as an end," leads to the notion of moral rights. Kant refers to these rights as innate, but everyone possesses them by virtue of human nature, which means they are natural human rights, the basic human moral end. Regardless of the source, whether it is theism or naturalism or humanism, derivation of rights is not confined solely to an individualistic framework.

Because communitarianism recognizes the dual feature of the self—the self as an autonomous being capable of evaluation and choice and as a communal being, it must recognize the intrinsic worth of the self and by default moral rights (Gyekye 64). This should lead to the acceptance of individual rights as a conceptual requirement for political morality and as a practical requirement because it allows an exercise of individual rights. Gyekye is right to say that, the exercise of "the unique qualities, talents, and dispositions of the individual, will lead to the cultural development and success of the community" (64). Given these conditions, Gyekye's construct of moderate communitarianism represents a consistent and viable moral and political theory, one that, although it incorporates individual rights, consciously and purposively utilizes other values of the community, all or some of which it may sometimes view as overriding.

In a communitarian society both rights and responsibilities are necessary to preserve the stability and integrity of the community (Gyekye 65). A community might justifiably trump the rights if they interfere with shared communal values. Nevertheless, although the community and the individual need each other, the claims of individuality

and community deserve equal moral consideration. Because the communitarian society requires a great deal of moral sensitivity and effort on the part of the individuals, they may not be obsessed with insisting on their rights. They may think that insistence on their rights might divert them from their responsibilities. In a social framework, which emphasizes “the importance of social relationships and such communal values as concern and compassion for others, insistence on rights (some rights) may not always be necessary or appropriate” (66). This is because in the communitarian morality, love and friendship or concern (compassion) for others may be the primary virtue of social institutions, rather than justice, which is basically about or connected to rights (66).

Given that communitarianism is concerned with the common good or welfare of a community, it considers responsibility as an important principle of moral theory (Gyekye 66). The term *responsibility* refers to a caring attitude that one feels one should have toward individuals in relation to their well-being. Such responsibilities include a duty to help others in distress, to show concern for their needs and welfare, a duty to avoid harming them. These responsibilities are not derivatives of contracts between individuals because they are natural rather than voluntary as in social contract theory, which is a mere association not a community of individuals responsible for each other’s welfare 66).

The concept of responsibility is important in the communitarian political morality because social and communal life requires it (Gyekye 67). Natural sociability of human beings orients them toward other persons with whom they must live. Individuals’ social and moral roles, obligations, commitments, and responsibilities are a part of living in relation to others, and they must fulfill them. Because humans are naturally relational beings, they are by default a part of a moral universe. Social life itself thus prescribes a morality that focuses on the responsibility for others and for community, on an

appreciation of shared, not only individual, goals. Given that social reciprocities should be the primary features on communal morality require concern for the interests and the rights of others (67).

This vision of communalism, a concern for the interests and right of others is what conservatives such as the members of the Heartland Institute abhor because their personal identity is tied to what Klein calls the dominance based worldview. They deny climate change or dismiss warming climate as trivial, are white and male, have higher than average incomes, and highly confident in their views, even when demonstrably inaccurate. Their dominance based worldview gives them the intellectual tools to simply write off large ports of humanity in the poorer areas of the world and a total lack of empathy toward victims of climate change (Klein). Obviously these types of conservative groups will do whatever they can to stop any action on climate change. There are, however, reasons to think that a shift toward communalism might happen. American individualism is historically rooted in communal values and the Millennial Generation's approach to life and politics is based on balance, community and service.

Individualism and Community in the United States

Despite being one of the top contributors to global warming, the U.S. has not employed massive efforts to deal with climate change because those who deny it have been successful in thwarting any attempts to do so. The skeptics about global warming have been successful because, to a large extent, Americans perceive themselves as an individualist nation. According to E. J. Dionne, however, historically, it cared about the community as well. Furthermore, Americans are "the nation of individualists that care passionately about community," and a "nation of communitarians who care passionately about individual freedom" (5). The current emphasis on individualism is partly due to

Americans experiencing a fear of decline, one of its oldest impulses, and perhaps more so than it needs to. (1). In attempt to regain a balance, they are struggling between their core values, American love of individualism and its reverence of community. What Americans are forgetting is that the U.S. gained global preeminence because of its commitments to both individualism and community and enabled them to see democratic government as "a constructive force in our national life and use it in creative ways" (5). In the time that the global community faces many challenges, it would be most helpful if the U.S. acts as a unified country that its founders envisioned. The alternative vision of government as "inherently oppressive, necessarily wasteful, and nearly always damaging to [American's] nation[al] growth and prosperity" that the Tea Party and its friends and supporters promote, is not consistent with what the Founding Fathers had in mind when they created a republican government based on checks and balances between its three branches. Dionne is right to argue that Americans must regain a sense of balance and recall its main role in their history as a nation of people who care passionately about individuals and community. While it is true that Americans believe in limited government, they also believe in "active and innovative government" (5).

While it is true that at least some Americans believe in an active and innovative government, the prevailing political forces have been successful in circumventing much of what such government could do. The current politically polarized climate, with acrimonious fights between democrats and republicans over the debt ceiling and the new healthcare law, which republicans are determined to repeal using whatever means they deem necessary, will not allow it. This, too, is a part of Americans' fear of decline. In *American Theocracy,* Kevin Phillips speaks to the issue this way. American power has reached its peak and is declining for several reasons: 1) "widespread public concern over cultural and economic decay," along with social polarization and an expanding gap

between rich and poor; 2) “growing religious fervor” manifested in a close state-church relationship and escalating missionary zeal; 3) “a rising commitment to faith as opposed to reason and a corollary downplaying of science”; 4) “considerable popular anticipation of a millennial time frame”; and, 5) “hubris-driven national strategic and military overreach” in pursuit of “abstract international missions that the nation can no longer afford, economically or politically.” Finally, (6) high national debt is a major concern (Phillips). All of the issue are still relevant, and have worsened after the near collapse of world economies in 2008. Schönfeld often speaks to these issues as part of American Disenlightenment, which is a part of his discussions about climate change.

Given that climate change represents a problem that requires massive government action, “an active an innovative government” is desirable and necessary. President Obama’s first public acknowledgment in June 2013 that climate change is a real problem that requires a government action and a promise that his administration will do everything it can do something about it, might help lead to the U.S. government more comprehensive address of climate change. The force of the U.S. government, however, is necessary to make substantive difference in mitigation of climate change. At present, conservatives’ abandonment of community and the idea of shared prosperity that gained America preeminence and embrace of hyper-individualism do not bode well for any extensive action on climate change in addition to the fact that they do not even consider it as an issue. The contributing factor is the Tea Party’s intent on rolling back democracy with its crisis creation and threats to shot down government and/or refusal to raise the debt ceiling if their demands are not met is not likely to move America forward on climate change issue.

There is a reason to hope that America will again embrace community ideals of respect for the rights and interests of others, shared prosperity, and individual

opportunity as well. As Dionne points out, the Millennial Generation is interested in a progressive, democratic government freed from the traditional wealthy elitist groups. It has extensive community engagement, highly developed skills in forming social networks, and a decade of war and economic stagnation have shaped its particular worldview (24). Furthermore, according to John Zogby, the Millennial Generation, whom considers the First Globals, is also more environmentally conscious, more internationalist, has more empathy, and is more consensus oriented. The Millennials are less likely to identify themselves by what they do or how they spend their money. It thus has, as Dionne says, a practical resilience to make the next great reforming generation in the American history (24).

Conclusion

This chapter explored how deep ecology, under Spinoza's influence, contributes to the ecological worldview, including the cultural and philosophical connections between Spinoza, climate change, and deep ecology. I argued that the concept of sustainable social and cultural environments requires consideration of moderate communalism, the idea that a well-functioning society requires both individualism and communalism as the right social structure but particularly when faced with global climate change.

Conclusion

In the preceding chapters I have tried to show the extent to which deep ecology draws on Spinoza's philosophy and how deep ecology, under Spinoza's influence, contributes to the ecological worldview, a view that recognizes nature as an interdependent whole in which humans are integrated within natural processes. The current climate change situation requires a more vigorous approach than the global community has been able to implement so far. In the final analysis, this dissertation is an attempt to create an ecological outlook in the age of climate change. Rather than evaluating it as a scholarly analysis of either Spinoza or Naess, readers should evaluate it, in its entirety and its parts, as an exposition of Naess' appropriation of Spinoza and the author's appropriation of Naess.

Major environmental challenges, such as climate change, deforestation, fresh water depletion, and population growth have been dramatically altering Earth's ecosystems at an ecologically unsustainable speed in the last several decades despite humanity's efforts to contain them. Humans, therefore, need to find a more sustainable path for their own preservation and flourishing but of other living species, and nature as a whole. Finding a sustainable path will not be easy because it requires modification in humans' current attitudes and practices and a shift from the currently dominant anthropocentric worldview to a broader, ecological worldview. Humans need a more holistic understanding how separate parts of Earth's ecosystem (including humans) function as a whole. A shift to the ecological worldview is necessary because the pace of

those changes is so fast that, in the end, it threatens the existence of not only the living species but of the ecosystems and the natural world as well.

Because deep ecology considers humans an integral part of the natural environment, emphasizes human interdependence with nature and intrinsic value of all living beings and ecosystems without diminishing the value of individual species or the biotic communities within the context of the ecological whole it is a more suitable model for handling ecological concerns, than the anthropocentric model that often assigns intrinsic value only to humans. Deep ecology may be particularly appealing to the Millennial generation whose value set is different from those of the previous generations. That is, this social group is interested in a progressive, democratic government, interested in community, has highly developed skills in forming social networks. It is also more environmentally conscious, more internationalist and egalitarian, it has more empathy, and is more consensus oriented. Additionally, the Millennials are less likely to identify themselves by what they do or how they spend their money; a decade of war and economic stagnation might have shaped their particular worldview. Because the Millennial Generation views the world in terms of networks, it is likely that its view of the natural environment would be more holistic, that is, it would view humans as an integral part of nature.

As a philosophy, deep ecology draws substantially on Spinoza, whose monistic worldview of nature as a unified whole in which God is present all things and consequently unbiased toward all things. This means that humans do not hold a privileged position in nature and are, therefore, subject to the rules of the whole from which they are inextricable. They are also vulnerable to the threat of extinction that has befallen many other species in Earth's long history. It would be prudent for humans to re-examine its relationship to nature to assure not only their self-preservation but their

unfolding along with other living species and nature as a whole, which Spinoza called the *conatus* principle and to which deep ecologists, including Naess refer to as Self-realization. Although Naess failed to produce credible Spinoza-scholarship, he succeeded in creating a philosophical outlook based on Spinoza's motifs.

Humans had an opportunity to shift to a more enlightened approach to the ecological crisis it still faces, specifically since the early 1970s when unlikely events inspired hope of a shift in human consciousness toward the vies of the planet as a whole rather than a mechanism serving human needs. NASA's Apollo 8 mission's surprise discovery of the beauty and fragility of Earth created a desire to protect the planet. The shift to the ecological worldview did not occur because environmentalists believed that policy reforms, the anthropocentric approach, and climate science findings would sufficiently modify human conduct and attitudes toward nature and limit further environmental decline. Furthermore, skepticism about certainty of climate science findings delayed the shift toward the ecological worldview in the U.S. Small but powerful and politically influential industry groups succeeded in creating doubt about the certainty of science findings regarding climate change.

Deep ecology has things in common with other environmental philosophies, such as the concern about sustainability and intrinsic value of nature. The philosophical sense of deep ecology, however, rests on the concept of Self-realization (expansive self as possible) and is partly based on Spinoza's concept of *conatus* or self-unfolding, which other environmental philosophies do not include. Implementing the concepts of Self-realization, intrinsic value based on the concept of interdependence, and ecocentric egalitarianism are necessary if humans are to succeed attitudes and practices toward the natural environment and mitigate the effects of climate change.

Providing substantial philosophical support to deep ecology's core principles such as intrinsic value, biocentric (or ecocentric egalitarianism, and Self-realization are Spinoza's substance monism and the *conatus* principle. Spinoza's monism does not allow humans a privileged position in nature because everything in nature is subject to the rules of natural systems supports the principle of intrinsic value and ecocentric egalitarianism. Spinoza's concept of *conatus*, that everything strives to preserve in its own being or essence toward its unfolding or perfection, provides additional support for concept of Self-realization, the right to live and blossom. This is not to say that Naess' scholarship of Spinoza is credible. By building on Spinoza's concepts, monism and the *conatus* principle, he succeeded in creating a philosophical outlook based on Spinoza's motifs.

In the end deep ecology's principles of intrinsic value, Self-realization, ecocentric egalitarianism, and particularly the concept of interdependence in the natural world can foster the shift to the ecological worldview, which builds on the concept of sustainable social and cultural environments. It also requires consideration of moderate communalism, the idea that a well-functioning society requires both individualism and communalism as the right social structure in light of the need for a strong international action to mitigate the effects of global climate change.

The global communities' current efforts to contain global warming and climate change, which are mainly oriented toward meeting human needs have not reduced global emissions, the main culprit in global warming and climate change. They also have not lessened the risk of profoundly different life for present and future generations. The world governments, therefore, need to consider shifting toward a more ecologically sustainable worldview. Deep ecology focuses on the health of the whole, the idea it built on Spinoza's substance monism and the *conatus* principle. It thus provides a basis for

the ecological worldview, which would include an equal concern for the nonliving natural world including the interests of nature as a whole as well as the needs of humans. Without considering the interests of the whole, no single species, including human beings are likely to survive and flourish in a world where nature as a whole provides a diminishing support for sustainable life conditions.

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