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United States population policies and environmental ethics: Addressing population growth from the biocentric perspective

Philip Davis MacWilliams
University of Nevada, Las Vegas

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U.S. POPULATION POLICIES AND ENVIRONMENTAL
ETHICS: ADDRESSING POPULATION GROWTH FROM
THE BIOCENTRIC PERSPECTIVE

by

Phil MacWilliams

Bachelor of Science
Xavier University
1996

A thesis submitted in partial fulfillment
of the requirements for the

**Master of Arts Degree
Ethics and Policy Studies
College of Liberal Arts**

**Graduate College
University of Nevada, Las Vegas
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Phil MacWilliams

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Ethics and Policy Studies

Examination Committee Chair

Dean of the Graduate College

Examination Committee Member

Examination Committee Member

Graduate College Faculty Representative

ABSTRACT

U.S. Population Policies and Environmental Ethics: Addressing Population Growth from the Biocentric Perspective

by

Phil MacWilliams

Dr. Barbara Brents, Examination Committee Chair
Professor of Sociology
University of Nevada, Las Vegas

When the environmental movement began to surge in the 1960s, concerns were raised over the prospects of the U.S. population growing to an unsustainable level and causing irreparable harm to the environment and our quality of life. Unfortunately, population growth has not been given the priority it deserves not because it is not an important issue, but because of our failure to view population growth, and all environmental issues, from a biocentric outlook. It is this paradigm shift towards biocentrism that we as moral agents should be making and which will subsequently cause us to view population growth in a new way. This argument is made by illuminating the inadequacies of the traditional anthropocentric ways of defining environmental issues, and then presenting and defending the biocentric ethics that we should use to supplement our traditional outlook on our place in the environment and how we treat it and its nonhuman inhabitants.

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CHAPTER 1

INTRODUCTION

The human population continues to grow at an exponential rate across the earth. Although substantial efforts to halt this growth have been made in the last few decades (and have in many ways enjoyed some success), the global population continues to increase at a rate of ten thousand people per hour. The vast majority of this population growth occurs in the Third World (now commonly referred to as "Least Developed Countries") and these nations are impacted the most by problems that result from rapid population growth. Subsequently, there has been a substantial amount of attention directed towards Third World population growth and the problems that seem to inevitably come along with it. At the same time, however, many countries in the developed world have achieved population stabilization and in some cases are even experiencing a decline in population. There is, though, a glaring exception to the norm of First World population stabilization: the United States. The U.S. is currently the third most populous country in the world behind China and India, respectively. And with an annual rate of growth that is the highest of any industrialized nation, the current U.S. population of 270 million may very well reach the 400 million mark by the middle of the 21st century.¹

¹ Bouvier, Leon F. and Grant, Lindsay. *How Many Americans? Population, Immigration, and the Environment*. (San Francisco: Sierra Club Books, 1994), 62.

This thesis will focus on U.S. population growth and will argue that the United States, taking into consideration that no further population growth is needed to ensure our survival or our quality of life, should stabilize its population. Note that the term "should" is used instead of "needs to." The reasons for this will become clear as the thesis progresses. Also note that the term "population stabilization" is used instead of "population control." Although these terms are unfortunately (and incorrectly) used interchangeably, there is quite a difference. Not only is population stabilization a much more mild term than population control, they also differ in the purpose that each has and subsequently the policies that each result in. This will also be emphasized and expanded on throughout the thesis as well. Although this thesis does not attempt to define what the "optimum population" for the U.S. would be and for the most part refrains from engaging in that sort of utopian fancy, as a generalization it can be said that achieving a total fertility rate of 1.5 and an annual immigration level of about 500,000 per year would create conditions that allow us to live according to ethical principles that are espoused in this thesis.

Having stated the purpose of this thesis, there are three questions that immediately come to mind, and it is best to address them from the start. First, if we are worried about environmental damage, why should we focus on U.S. population growth instead of the populations in the developing world? After all, this is where the vast majority of 21st century population growth will occur and where most of the environmental destruction is likely to occur. Second, why focus on population instead of consumption? Many argue that we have a consumption problem instead of a population problem, and in many ways there is great truth to this statement. Third, even if it is agreed that population

stabilization is something we should attempt to attain in the U.S., what kind of policies would such an endeavor require? Any talk of population growth tends to conjure up images of restrictive population policies of such nations as India and China, and these are legitimate concerns. I will address each of these questions in turn.

Why Focus on U.S. Population Growth?

There are three general reasons for writing a thesis that focuses on the U.S. population instead of the developing world: the practical, the political, and the ethical. Practically speaking, few would argue that the developing world does not have a population problem. The many problems that are created by the rapid population growth in those areas of the world, with environmental damage being just one of them, are well documented. By comparison, U.S. population growth- which is quite rapid when compared to our industrialized counterparts- has received very little attention yet creates many problems that must be addressed. Of course, what we perceive these problems and their severity to be is subject to what branch of environmental ethics we subscribe to. This is a point that will be made numerous times throughout the thesis. The point is, though, that U.S. population growth is a problem that has not received the attention it warrants, and this thesis is a vehicle for changing that. Within the circle of environmentalism, population growth is seen as a problem that must be addressed, but outside of that circle and within the general public it is not as recognized as certain “major” issues such as global warming or rainforest destruction. Furthermore, and perhaps more importantly, the attention that it has received is unsatisfactory not just in its scope but also in its depth. The arguments that are made for population stabilization are

often based on individual notions of what a model society should look like, nostalgia, and an examination of environmental damage purportedly linked to population growth that is not nearly critical enough. Most of these arguments are good at grabbing one's attention, but are not satisfying when scrutinized as closely as they should be. Not only that, those who do argue that population stabilization is a critical element of environmental protection often treat it as an assumption rather than something that needs to be thoroughly supported. Therefore, there clearly is a need to take this issue and address it in a fresh way and in a more detailed and critical way than is normally done.

Politically, the U.S. must realize that it is a world leader. Perhaps the only true world leader at this point in time. This requires us to set the example in everything we do, including how we address population growth. The U.S. has been instrumental in helping many developing nations to create programs and policies to curb their population growth. Although the U.S. growth rate is much slower and our problems of a lesser magnitude, it is still hypocritical to tell other nations to stabilize their populations while we do little about our own.

Addressing the ethical aspect of why we should stabilize population growth is what forms the bulk of this thesis. Taking into consideration the high quality of life in the U.S. (at least materially speaking) as well as our relative success in preserving and protecting the environment, it would seem as if population growth is a "Third World" problem. In many ways, however, the quality of life enjoyed in the United States will stand to suffer if the population continues to grow as much as the Census Bureau projects it will. One can easily envision the congestion and overcrowding that such growth (barring any drastic change in our lifestyles, of course) may cause. In the past, "surplus"

populations could emigrate to newly discovered continents or venture out towards the frontier. More recently, aided by the affordability of the automobile, Americans have been able to create a new type of living area called the suburbs and thus escape the increasingly crowded urban areas. But it seems as if we are approaching the end of the line when it comes to finding new outlets for a growing population. There are fewer places left that have not become subdued, altered, and inhabited by humans, and there is a strong and growing desire among many Americans to allow those areas that have not to remain as nature made them. Therefore, it seems as if the next 100 million-plus Americans will be forced to share the same cramped living spaces that we currently have. The prospects of such living conditions has many Americans yearning for a stabilization of the population. In one poll taken, 93% of those polled felt that the U.S. population was either currently at its optimal level (meaning further growth is undesirable) or was already too big. This attitude shared by many Americans is undoubtedly linked to the general feeling of overcrowding, traffic congestion, increased noise pollution, crowded and overused recreation areas, and lack of serenity, to name just a few.

The inconveniences that have resulted from population growth are certainly not the only problems that population growth causes and are probably not sufficient reasons to warrant the creation of population policies aimed at stabilizing our growth. To support such an argument there must be evidence that human population growth will cause problems of such magnitude that they will no longer merely be an inconvenience, but will breach our ethical duties. There are many serious problems that stem from population growth (as either a direct cause of or an important factor in) that would rise to this level. For instance, it has been argued that population growth can hinder a society's ability to

educate its members sufficiently, that population growth has in some cases resulted in extreme poverty, and that population growth can lead to instability because of the friction created as neighbors converge and feud over resources. All of these are serious dilemmas that have received attention in a variety of forums. But the most well-known and distressing aspect of population growth (that also fuels the most debate) is its contribution to environmental deterioration, and this is the aspect of population growth upon which this thesis will focus. In this thesis I am making the argument that we have an ethical duty to stabilize our population out of our duties to protect the environment. To be more specific I am arguing that we should stabilize our population based on the demands created by a shift to a more biocentric outlook- a shift that should be made. Although population growth is the topic of this thesis, such a shift in thinking will not just color how we view population growth, but how we view all environmental issues.

Why Focus on Population Instead of Consumption?

This thesis does not argue that the U.S. should focus on population in lieu of its efforts to alter consumption habits and develop better technology. Rather, it is arguing that the environmental ethics we should adopt require us to address population in addition to consumption and technology, whereas the traditional approach has been to forego any mention of population and address only the latter. In fact, the principles set forth in this thesis could certainly be used to argue for greater efforts at curbing consumption. It is often argued that the environmental problems facing the U.S. are not the result of a population problem but of a consumption problem, and our efforts should be aimed at curbing consumption. In other words, there is a consumption problem, not a population

problem. There is, of course, truth to this argument. The U.S. does have the highest consumption rates in the world, we consume at an unsustainable level, and many of our environmental problems are a result of this consumption and could perhaps be addressed without having to bring about a stabilized population. So why argue that population stabilization is necessary along with addressing consumption and technology instead of just focusing on our consumption habits and technological advancement? This question goes to the heart of this thesis, especially when the environment is apparently protected to the point where we still have a high quality of life in the U.S. and the problems we do face because of population growth are not nearly of the same magnitude of those faced by developing countries. The best way to address this criticism requires us to realize that to say that we have a high quality of life in the U.S. and relative success in preserving and protecting the environment begs two questions. First, what is our measure of success? Second, through what type of outlook (anthropocentric or biocentric) has this measure of success been created?

The measure of success is not how well we can prevent harm to the environment and all of the natural habitats and nonhuman species that it encompasses, but how well we can prevent it (or contain it) so that humans do not become any worse off. Clearly this is a very anthropocentric-oriented measure of success which comes as no surprise since, as it will be explained further in this thesis, the anthropocentric outlook has always been and is still to a large extent the dominant outlook. So to say that we have had relative success in preserving and protecting the environment means that we have enacted measures sufficient at keeping pollution at an acceptable level for humans, in terms of both health and aesthetics, and displacing or containing other types of problems.

Moreover, this has been accomplished in the wake of a growing population. If this is the right measure to have, then population growth in the U.S. may not need be an issue. However, this thesis argues that this is not the right measure of success, and that if we are to truly protect the environment to the right extent and for the right reasons- one that is focused not just on humans but on the protection and preservation of nonhuman species- then population stabilization becomes a necessary factor in environmental protection alongside consumption and technology. Stabilizing the population becomes something we should do instead of merely something that is convenient in our efforts to protect the environment. To make this argument, this thesis will apply biocentric environmental ethics to the population issue. (Note: A further explanation of "biocentric" and "anthropocentric" will be given in the next chapter). It will justify the creation of comprehensive policy aimed at bringing about the eventual stabilization of our population based on the ethical demands placed on us by biocentric environmental ethics. As this thesis will show, the argument for population stabilization requires us to make a paradigm shift that will allow us to view our population growth, and ultimately our species as a whole, in a whole new way- a way that is quite different from the traditional way of viewing population growth and a way that forces us to frame the population issue in a very different manner.

Concerns Over Population Policies

Perhaps the greatest obstacle to a debate on population growth has been the negative images that come to mind. This is certainly understandable since we immediately think of the restrictive one-child population policy of China, and the

intrusive measures used to limit fertility in India. So before this thesis progresses any further it is important to clearly state that those types of initiatives are not what are being proposed here. Although the main purpose of this thesis is to argue that we should stabilize our population because of the demands placed on us by biocentric environmental ethics, a secondary purpose is to make sure that it is very clear that population stabilization can be achieved without restrictive and involuntary policies. It is possible to achieve population stabilization while still leaving the intimate decisions of whether to have children, when to have them, and how many to have completely unfettered. This nation has a long history of respecting the autonomy of individuals in this type of decision, and the need to stabilize our population does not mean this has to stop. While it is important to realize that we should stabilize our population, we should never lose sight that how we go about doing it is equally important.

Roadmap of the Thesis

So far I have stated what this thesis is arguing, and why such an argument needs to be made. The rest of this Introduction details exactly how this argument is made, and what purpose each chapter serves in the overall framework of the thesis. The next chapter elaborates on three vital aspects of the population issue. First, there is the fundamental demographic data that must be understood before any serious argument (both for or against) population stabilization can take place. This section of the chapter describes the reasons for past population growth (or lack thereof in some cases) and future growth. To determine the best way to go about addressing population growth one must have a firm grasp on our demographic past. This chapter also offers various

population projections for the future since we must understand what the future may hold in store when determining if population is a serious issue. Finally, Chapter 2 explores the various fertility determinants in modern societies. Although this thesis is primarily concerned with environmental ethics and the policy aspect of addressing population growth, is very important to focus on this demographic material from the beginning. Any discussion about population growth requires an understanding of the fundamentals, and it is the information found in this section of the chapter that is used for laying the foundation for creating policies aimed at stabilizing population growth. Furthermore, it offers a presentation of the demographic information in a level of detail and precision that is lacking in most other writings on this topic.

Chapter 3 offers historical insight into past ideas surrounding population growth and how this has influenced the American policy process as it pertains to the population issue. After giving a very in-depth definition and explanation of the term "population policy," this chapter looks at the dominant views on population and how this has influenced the way in which the problem has been framed. In doing so it uncovers a cycle that the population debate has always followed and points out that this cycle is based on a strict anthropocentric outlook and on a growth ethic that originated in times and conditions that are no longer relevant to those in which we find ourselves today. Ultimately this chapter culminates with the assertion that population growth would have been viewed much differently (and hence dealt with much sooner) if a different branch of environmental ethics had been more pervasive in Western thought. Naturally, then, this is followed by the argument that this biocentric branch of environmental ethics- which

asserts that all life has inherent value and should be protected- should have been followed when approaching the population issue instead of the predominant anthropocentric one.

Chapter 4 is the most important chapter. There is a lengthy presentation of the traditional and prevailing arguments for population stabilization. In this chapter it is conceded that the traditional arguments do not provide a strong response to the claim that we have a consumption problem instead of a population problem. This is because the most prevalent arguments for population stabilization based on environmental reasons are grounded not just in anthropocentric environmental ethics but, more specifically, an anthropocentric-based utilitarianism. By critiquing these anthropocentric-based utilitarian arguments for population stabilization and by taking a realistic look at the way in which we in the United States go about determining whether we are actually being harmed by something, this chapter reaches the conclusion that this type of purely anthropocentric argument will continue to fail to bring the population issue to the policy agenda. Therefore, a more biocentric approach must be adopted if we as a society will ever address population growth. That is not to say that there are no anthropocentric-based arguments that could be convincing. As mentioned, there are many areas other than environmental protection that population growth affects. But as far as environmental protection is concerned, anthropocentric-based utilitarian arguments for population stabilization are weak, and this chapter exposes their weakness. It is because of this weakness that population growth has not been given more attention, and not because population growth is not a serious problem. The approach that I argue should be taken is the adoption of a more biocentric outlook. So the basic schema of this thesis can be presented in the following way: 1) Anthropocentric ethics have dominated Western

thought, and have therefore shaped how we view population growth and how we wish to address it, 2) Anthropocentric-based utilitarianism has not proven to be a strong argument for efforts at stabilizing the population in the interest of environmental protection (although other anthropocentric-based arguments may provide a good argument for population stabilization for reasons perhaps related to but not solely focused on environmental protection), 3) Biocentric ethics, on the other hand, would require us to view further population growth in a new way and lead us to the conclusion that a long term effort aimed at population stabilization is the right thing to do, 4) And, to keep the argument from being circular, the biocentric outlook is what we, as moral agents, should adopt. From this schema it is apparent that an argument for population stabilization, once anthropocentric-based utilitarian arguments are dismissed, is a two-step process. First, it must be demonstrated that a more biocentric outlook is one that we, as moral agents, should adopt. It is not enough to merely reject the old approach. The argument for biocentric ethics does not gain strength merely from the weakness of anthropocentric ethics, so it must be defended based on its own merits. Second, it must be demonstrated that the biocentric outlook does in fact require us to stabilize our population once population growth is no longer necessary to ensure our survival and quality of life. The fact that biocentric environmental ethics require population stabilization at a certain point would be irrelevant if it is an indefensible position. However, a comprehensive defense of the biocentric outlook is a rather ambitious undertaking and numerous books have been devoted to doing so. An attempt to do so would be beyond the scope of this thesis. Therefore, this thesis will only go as far as giving a historical development of the biocentric outlook and then analyzing and critiquing the prevailing arguments for

biocentric ethics (as well as their counterarguments) in order to demonstrate that biocentric environmental ethics provide viable and defensible ethical theories that are worthy of serious consideration. Since this branch of environmental ethics is something that most people have never even considered or been made aware of, this level of analysis will suffice for the purpose of this thesis.

Finally, this thesis culminates in Chapter 5 with a brief look at the various ways in which our demographic future can be influenced. It is one thing to recognize that we should stabilize our population at a much lower number than is projected, it is another to devise ways to do it that are in keeping with our many interests and the traditional Western values we wish to protect. A realistic look at what it will take for the U.S. population to stabilize is a reduction in fertility rates to 1.5 (compared with the 2.1 we presently have), and an immigration level holding steady at 500,000 per year. This are by all means attainable and fair goals, that do not in any way infringe upon the liberties we enjoy and are entitled to. While this chapter does not offer a specific policy proposal that is purported to be the definitive answer, it offers recommendations on what the U.S. should do over the long term. Interestingly, it does not require that we do anything drastically different than what we are already doing. Actions most likely to have an impact on fertility rates (as mentioned in Chapter 2) are those that should be taken anyway for several other reasons, regardless of whether population growth is seen as a problem. The fact that population growth is a problem only adds to the list of reasons for doing them and making them a higher priority. And just as importantly, this chapter dispels some of the fear and misconceptions that tend to surround any talk of addressing population growth.

A Final Note Before Reading

Before reading this thesis a comment should be made regarding the style and the intended audience. A large portion of this thesis is historical in the sense that it devotes a lot of attention to the historical progression of thought concerning population growth and environmental ethics. Also, there is a lot of attention devoted to explaining certain ideas ethical theories that are ultimately rejected and substituted with others, especially in Chapter 4. The reason for this approach centers around the fact that although addressing population growth is certainly not an unheard of aspect of environmental protection, the approach used in this thesis is relatively novel in so far as it relies on the tenets of biocentric environmental ethics to demonstrate the need for population stabilization instead of the anthropocentric norms traditionally used. Therefore, it is important to firmly establish the historical aspect for two reasons. First, we have a tendency to resist making a complete break from traditional ideas unless they are blatantly wrong. Instead of completely throwing out old ideas and replacing them with new ones, we prefer to modify and build upon the old ones, and not simply switch to ideas that are radically different. The historical overviews show that although a new approach to population growth is being used, much of it is in many ways rooted in the traditional thought that we are not quite ready to depart from. The second reason, which is actually the opposite side of the same coin, is that some aspects of this thesis to some degree do advocate a break from traditional thought. Before a reader is likely to embrace such a departure, there must first be a thorough review of the old approach before we can feel comfortable that it is time for a change. This is especially true in Chapter 3 with the examination of the

times from where this “growth ethic” to which we still adhere to today emerged. To put forth as thorough of an argument as this issue deserves, it is important to take a very critical look at the times and circumstances where the ideas we adhere to today originated from. If the circumstances today no longer resemble those where continual population growth was deemed necessary, then why should we blindly adhere to this “growth ethic”?

The audience that is likely to be most receptive to the ideas put forth in this thesis have two characteristics: those who have had significant contact with the natural world and have some affection for it, and those who are politically sophisticated enough to realize the inevitable compromise that must accompany any translation of philosophical thought to policy initiatives. This thesis is unlikely to be persuasive to those who have never immersed themselves in nature and found themselves in awe of the wonder and beauty of the natural world and the variety of species that call it home. This is because many of the ideas presented in this thesis are based on a feeling of right and wrong that can come only through significant interaction with nature, instead of strictly relying on logical deduction. It is more likely that the ideas in this thesis will feel right than be attained by logical deduction. The reader must also be aware that in the policy arena there are always many competing interests to be considered, with some being apparent and others a little more subtle. Therefore, even though society as a whole may actually embrace an idea and wish to implement policies to achieve those ideals, it must always be remembered that just as there is a right thing to do there is a right way to do it, and that there are always other values to be protected and other causes of equal or greater importance.

CHAPTER 2

DEMOGRAPHY AND THE CAUSES OF POPULATION GROWTH

The population debate draws from three disciplines: ecology (which is used to study the effects of human population growth on the environment), environmental ethics (from which we can make a moral judgment on such effects), and demography (to explain the fundamental principles of population and thus what causes populations to grow and then stabilize). This chapter will provide an introduction to some historical demographic characteristics. Not only will it provide the necessary historical context for a discussion on contemporary population growth, it will introduce and define several key concepts and point to some of the factors that have traditionally caused (or prevented) population growth. Furthermore, it will explain what has caused the population explosion of the 20th century. Naturally, this section of the chapter will be centered on the role that health has played in hindering or enhancing population growth. Health, as it relates to population growth, is the proverbial "double-edged sword" as this part of the chapter will demonstrate. Next the focus will shift to the demographic patterns of the United States, the nation with which this thesis is most concerned. The past, present, and projected future population of the U.S. will be discussed followed by an explanation as to why we are still growing despite the fact that many of our counterparts in the developed world have since ceased to do so. This chapter will demonstrate that we have grown, are growing, and will continue to grow for quite some time. And finally, the modern

determinants of fertility for advanced societies will be explored. This will help lay a foundation for the chapter on possible policy alternatives.

History of Global Population Growth

There are three factors of population growth: fertility, mortality, and migration. This is explained by the equation: $\text{Population} = (\text{Fertility} + \text{Immigration}) - (\text{Mortality} + \text{Emigration})$. In other words, if the fertility rate (the number of live births per 1000 females) is higher than the mortality rate (the number of deaths per 1000 people), and net migration is zero, the population will grow. It is with this equation that the rate of population growth for a specific nation or region is determined. On the global level, migration is not a factor and the population growth is determined only by the difference between fertility and mortality. The size of the global population is projected to surpass the 6 billion mark by the end of 1999. It is virtually certain to grow to at least 8 billion in the coming decade. However, the human population has not always been this large and has not always grown at such a furious pace. In fact, until 200 years ago the size of the human population had remained fairly stable because the high birth rates were balanced with very high death rates.² To fully understand how much and how quickly we have multiplied, Ansley Coale's famous article "The History of the Human Population" is the best place to start. It offers insight into, as he put it, "the process by which a few

² Coale, Ansley. "The History of the Human Population." *Scientific American*. 231: pp. 41.

thousand wanderers a million years ago became billions of residents of cities, towns, and villages today."³

Accurate census taking is a relatively recent phenomena, so determinations of past populations are very difficult to make and are susceptible to error. The complexity of doing so is further exacerbated by the fact that there is really no way to determine when or how humans became distinct from their predecessors and thus no real way of determining an accurate number to start with. Nonetheless, based on what anthropologists know about the technological and social institutions that prevailed at given times, reasonable estimates can be made. For example, before the introduction of agriculture the world could have supported a hunting and gathering culture of approximately five to ten million people.⁴ During this period -from the dawn of humankind to the initiation of agriculture and the domestication of animals (generally regarded to be around 8000 B.C.)- the rate of growth was exceptionally slow with an addition of only fifteen people per million each year.⁵ Considering that a rate of growth of only 0.1% per year (with a starting population of only 100,000) would result in over billion people in only 12,000 years, the rate of growth during this period had to have been very close to zero.⁶ This period of human history was characterized by very slow growth and, at times, declines in population.

³ Coale, 14.

⁴ Coale, 15.

⁵ Coale, 17.

⁶ Ehrlich, Paul and Ehrlich Anne. *The Population Explosion*. (Simon and Schuster. New York, NY: 1990), 48.

Once humans began the gradual move from a hunter-gatherer society to an agriculture-based society, the rate of growth increased. It is estimated that by the year 1 A.D. the 8 million people that existed in 8000 B.C. grew to about 300 million, which represented an increase in the annual growth rate to about 360 per million.⁷ The growth rate continued to accelerate and between 1 A.D. and 1750 the population increased to somewhere between 500-800 million.⁸ But from 1750 onward is where the growth rate really accelerated. The annual growth rate from 1 A.D.-1750 A.D. is estimated to be at .56/1000, but from 1750 to 1800 it increased to 4.4/1000.⁹ This growth rate resulted in a global population of 1 billion in 1800, 1.3 billion in 1850, and 1.7 billion by 1900.¹⁰ During the first half of the 20th century the rate of growth significantly increased once again to about 7.9/1000 causing a world population of 2.5 billion by 1950.¹¹ What is even more astounding is that from 1950 to 1974 the growth rate jumped to 17.1/1000 with a subsequent global population of 3.9 billion.¹² From there, as previously stated, the population has since grown to its present day level of 6 billion.

Although the population has increased greatly since the beginning of humankind, it did not necessarily do so in a linear fashion. There were times when entire civilizations flourished and then vanished, leaving no discernible clues as to why. Other events caused fluctuations in the population, with perhaps the most well-known being the Bubonic

⁷ Coale, 17.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

Plague that decimated Europe in the 14th Century. Nevertheless, as Coale explains, the history of the human population can be divided into two periods: a very long era of slow growth and a very brief period of rapid growth.¹³ But why did growth occur in this manner? What factors caused the population to virtually remain static for so long and then triple within a period of 150 years? The answer to this question can be found in the advances made in human health. But before this can be fully understood and used to explain population growth, the concept of "epidemiological transition" must be defined since it systematically describes the avenues for growth.

The epidemiological transition consists of four stages and "provides a general picture of the major determinants of death that prevailed during several distinct periods in our epidemiological history".¹⁴ The first stage of the transition is referred to as the "Age of Pestilence and Famine" and often coincides with the first phase of the Demographic Transition Theory. Although a separate concept than the epidemiological transition, the Demographic Transition Theory, which will be explored in more detail later, consists of three phases: 1) high birth rates and high death rates, 2) the death rate begins to drop sharply with birth rates that ultimately fall too but only after a lag time of about 50 years, and 3) low fertility and low death rates.¹⁵ This first stage of the epidemiological

¹² Ibid.

¹³ Ibid.

¹⁴ Olshansky, S. Jay and Ault, A. Brian. "The Fourth Stage of the Epidemiologic Transition: The Age of Delayed Degenerative Diseases." *The Milbank Quarterly*. Vol 64, No 3, 1986: pp. 356.

¹⁵ Overbeek, Johannes. *History of Population Theories*. (Rotterdam, Netherlands: University of Rotterdam Press, 1974), 15.

transition is characterized by very high mortality rates (especially infant mortality) and very high fertility rates. People, especially the very young, were at the mercy of epidemics and infectious diseases. Since death struck at such young ages, this stage saw a life-expectancy that hovered between twenty and forty years.¹⁶ The second stage of the epidemiological transition is the "Age of Receding Pandemics." During this stage, mortality rates decreased (especially among infants), thus causing the life-expectancy to increase dramatically (as does the median age of the population). The population, if not met with a corresponding decrease in fertility rates, will see a rapid increase in population during this stage. The reason for this shift is largely due to the increased knowledge of infectious-disease prevention. Historically, societies that progressed to this stage were able to do so through several public health initiatives such as public and private sanitation improvements and the use of antibiotics and inoculations.

The third stage of the epidemiological transition, the "Age of Degenerative and Man-Made Diseases" is also characterized by an equilibrium in mortality, but at a level much lower than at the first stage.¹⁷ The major causes of death are no longer infections and epidemics but chronic degenerative diseases such as heart disease, cancer, and strokes. Since these are diseases that kill rather close to what is perceived to be the end of natural life (the human lifespan) then, once again, mortality occurs at an even older age. In other words, people live much longer and an increase in population ensues since the effects of mortality on population are, at least temporarily, mitigated. The main reason

¹⁶ Olshansky and Ault, 357.

¹⁷ Ibid, 358.

why this is conducive to population growth is not so much that people are living longer lives, but that the vast majority are at least living to childbearing age.

And briefly, the fourth stage of the epidemiological transition, of which we may be on the verge of moving into (at least for certain segments of the population), occurs when people are no longer susceptible to infection or chronic diseases and die only from a "natural death" that is inevitable when a living being reaches the end of its biological lifespan. This will have much the same effect on population as the third stage.

It is important to keep in mind that the epidemiological transition does not apply uniformly to the entire human population at the same time. Because of a host of complex variables, different societies experience transitions at different times and at different rates. For almost the entire history of the human population we have been in the first stage of the epidemiological transition. For most of history there were high birth rates (relative to contemporary norms) but very little population growth because of the balancing effect of high death rates. This is because of the precarious circumstances under which humans lived, especially in prehistoric times when humans were not only subject to infectious diseases but accidents and predation as well. But for the most part it was poor health practices and little knowledge of health to which high mortality was attributable. And with such high mortality, high fertility was necessary to merely maintain the meager growth rates and prevent the population from disappearing. Often when natural fertility was the norm, such high fertility rates were only enough to merely repopulate. Natural fertility is defined as the number of births a female would have when there are no

deliberate attempts to limit fertility (i.e., through the use of birth control devices).¹⁸ Cultural constraints, such as proper age at which marriage and childbearing is deemed acceptable, and health-related constraints, such as the female not having a sufficient diet to support fecundity or having to breast feed the baby due to lack of alternative food supplies, are what dictate the natural fertility. Taking this into consideration it becomes apparent why natural fertility is virtually always lower than the human biological maximum. Thus, early living conditions that seriously limited natural fertility combined with high mortality rates (which resulted in many women not living to their reproductive years) resulted in a very slow population growth. Factor in the occasional epidemic and it is a wonder that humans survived at all. Although it is quite rare, even today some of the most remote and undeveloped societies in the world still find themselves in this first stage of epidemiological transition.

It is hard to pinpoint exactly when the second stage of the epidemiological transition was first experienced but many believe that it began to emerge as agricultural knowledge allowed people to live as collective societies. At times this may have actually posed a public health threat via the easier transmission of communicable diseases- and subsequently caused a temporary reduction in population- but for the most part it allowed for more security and more abundant food supplies (which aided fertility). Living in a collective society also allowed an exchange of ideas that lead to new technological endeavors such as the building of roads, new tools, channeling of water supplies, and

¹⁸ Cochrane, Susan Hill. *Fertility and Education: What Do We Really Know?* (Baltimore: The Johns Hopkins University Press, 1979), 54.

eventually even ways to maintain adequate health. In turn, mortality rates fell and the setting for the emergence of the third stage of the epidemiological transition was set.

It is evident that over a significant period of time humans were able to lower mortality through "death control" measures; otherwise the population would not have grown to its present size. But the mediums through which we did so are a matter of debate. There are several models demographers use to explain why mortality rates were able to be brought under control with the two most relevant to this topic being the medical model and the standard of living model. The medical model holds that mortality declined with and because of the advances of modern medicine and related technology.¹⁹ The standard of living model, on the other hand, holds that health improved because of an increase in public health. This includes an increased food supply, nutrition, and public sanitation, as well as personal health and hygiene.²⁰ Whether one subscribes to a particular model or some hybrid of each, the important thing to bear in mind is that for most of human history population growth was mostly affected by mortality rates. But once the transition occurs and death is much more under control, fertility rates become the dominant factor in the rate at which a population grows (or declines). If "death control" is not met with "birth control" then rapid population growth ensues. This explains the rapid growth since WWII, especially in much of the developing world that was able to benefit from imported Western medicine and health practices. In other words,

¹⁹ Easterlin, R. "Industrial Revolution and Mortality Revolution: Two of a Kind?" *Journal of Evolutionary Economics*. Vol 5: 393-408.

²⁰ McKinlay J. and McKinlay S. "Medical Measures and the Decline in Mortality." *The Sociology of Health and Illness*. Conrad P. and Kern R. (eds). St Martin's Press. New York, NY: 1990.

a move to the second and third phase of the demographic transition must occur for population stabilization (or very slow population growth) to become the norm again.

U.S. Population Growth

Thus far this chapter has focused on some of the fundamental concepts and principals of population including the three components of population growth, the epidemiological transition, and the natural limitations on population growth that apply to the population as a whole at any given time and place. A brief history of human population growth was laid out with a specific emphasis placed on the role played by health. This was done to provide the necessary foundation from which to work when studying the population growth of a specific country or region and the determinants of the fertility within that population. This chapter will now shift from focusing on population in the abstract to the U.S. population in particular. In this section there is a brief history of U.S. population growth (which will illustrate its rate of growth), its population at various points in history, as well as demographic projections of how large its population may become in the foreseeable future.

With a population of about 270 million the U.S. is currently the third most populous nation in the world, and it is expected to remain so until the year 2020.²¹ It only ranks behind China and India, respectively. And although its population size will consist of a decreasing share of the world population, the U.S. is still expected to grow

²¹ Murdock, Steven H. *An America Challenged: Population and the Future of the United States*. (Boulder: Westview Press:1995), 11.

substantially well into the 21st century (unlike our counterparts in the developed world), thus continuing its tradition of rapid population growth. Of course the U.S. population did not begin with such a large population. The first census in the U.S., taken in 1790, counted about 4 million Americans (although it should be noted that Native Americans were not counted, African Americans were only counted as 1/3, and the methods used were probably less reliable than those used today).²² Since then the U.S. population has grown at an average of two percent per year which is the highest rate of growth ever maintained by an industrialized nation for so long.²³ In recent history (since 1950) the annual rate of growth has fallen to 1.3 percent per year, but that is still the highest rate of growth for any industrialized nation. These numbers may not seem as if there is a high rate of growth, and compared to the growth rate of many developing nations such a growth rate is relatively low, but that should not deceive one into thinking that a growth rate of one to two percent per year does not result in high population growth. Because population grows exponentially, if it is growing at 1.3 percent per year, each year that will be 1.3 percent of an ever increasing number. Exponential growth also explains why a population can see a decrease in immigration and fertility rates, but will still see an increase from year to year in sheer numbers of people. As mentioned earlier, the estimated population in 1790 was 4 million. By 1890, one hundred years later, the population reached 50 million and just a decade later in 1900 it grew to 70 million.

²² Bouvier, Leon F. and Grant, Lindsay. *How Many Americans? Population, Immigration, and the Environment*. (San Francisco: Sierra Club Books, 1994), 62.

²³ Ibid, 63.

What has happened since the turn of the 20th century is truly remarkable. From 1900 to the present, the U.S. population has managed to grow by almost 200 million people. What has caused such a population boom? It was previously mentioned that population increase is caused by two factors: natural increase (when the number of births exceeds the number of deaths) and net migration increase (when the number of immigrants exceeds the number of emigrants). It is well known that this second factor (immigration) has certainly played a major role in U.S. population growth. In fact for many Americans it instills a great sense of pride. It is estimated that since 1900 almost 43 million people have immigrated to the U.S.²⁴ Furthermore, immigration contributes to population growth in a secondary way. Once here, immigrants will have children and therefore add to the population's natural increase. When viewed this way, over ninety percent of today's population can be considered descendants of immigrants who arrived here after 1776.²⁵

There can be no doubt that the U.S. population would be much smaller without immigration. However, those who wish to blame U.S. population growth solely on immigration should take note that natural increase (i.e., high fertility rates) is responsible for the vast majority of growth. In fact, with the exception of the decade of 1900-1910 (in which immigration contributed to about fifty percent of U.S. population growth), the proportion of population growth caused by immigration is much smaller in the 20th

²⁴ Murdock, 12.

²⁵ Gibson, Campbell. "The Contribution of Immigration to the Growth and Ethnic Diversity of the American Population." Paper presented to biannual American Philosophical Society, 7 Nov 1991.

century than it was in the nineteenth. In the decades 1930-40, 1940-50, 1950-60, 1960-70, and 1970-80, the percentage of U.S. population change attributable to immigration was 7.4 percent, 4.6 percent, 8.9 percent, 13.5 percent and 18.8 percent, respectively.²⁶ The rest of the population growth during these decades came from natural increase. This leads to a very important question: What caused such a large natural increase? The first reason is the high fertility rates that have persisted throughout most of the 20th century. Although they were lower than those of the previous century (and became even lower once the U.S. completed its transition from an agriculturally-based rural society to an industrial-based urban society), U.S. fertility rates are far higher than its European counterparts and they have almost always been well above the replacement level fertility of 2.1. Similar to immigration, fertility rates do not remain constant. When viewed in ten-year increments (after an all-time low during the Great Depression) fertility rates have fluctuated from 2.3 in 1940, 3.1 in 1950, 3.7 in 1960, 2.5 in 1970, 1.8 in 1980, and 2.1 by 1990.²⁷

Furthermore, when studying the effects of fertility on population growth, population momentum must be considered. Population momentum causes the population to grow for several decades even though the total fertility rate (TFR) is at replacement level. This is a result of high fertility in the past. The women now at childbearing age may be choosing to have less children than past generations, but the former high fertility rates ensured that there is an ever increasing number of women in their childbearing

²⁶ Murdock, 12.

²⁷ Ibid, 16.

years. Therefore, the sheer increase in size of this portion of the population base more than makes up for the decrease in fertility rates. Population momentum is now underway in the United States because of the post-World War II "baby boom." Even if all immigration were to cease and the total fertility rate (TFR) remained at 2.1 (replacement level fertility), the U.S. population would still soar to well over 300 million before it stabilized. In the next several decades to come much of what is now considered the developing world will find themselves in a similar situation, although perhaps on a much larger scale. Because of their current high fertility rates (which in some countries exceeds six live births per woman), their populations will continue to increase once replacement level fertility is achieved.

Both past and present fertility rates will continue to influence the demographic characteristics of the U.S. well into the 21st century, but what has perhaps played a more important part of the 20th century population growth than immigration and fertility is the great decline in mortality that this century has witnessed. Life expectancy at birth in the U.S. has increased from 47.3 years in 1900 to 75.7 years in 1994.²⁸ Furthermore, the certainty of life has increased as well. Ninety-five percent of all women can expect to live to age fifty (i.e., the full span of childbearing years) whereas in 1900 fewer than sixty percent reached that age.²⁹ Much of this increase in life expectancy is attributable to a dramatic decrease in infant mortality. In 1940 the infant mortality rate was at 54.9/1000. In the decades to follow the infant mortality rate became progressively lower from

²⁸ White, Kevin M. and Preston, Samuel H. "How Many Americans Are Alive Because of Twentieth Century Improvements in Mortality?" *Population and Development Review* 22(3). Sept 96:pp. 415.

33/1000 in 1950, to 27/1000 in 1960, to 21.4/1000 in 1970, to 12.9/1000 in 1980, and finally to 9.2/1000 in 1990.³⁰ Simply put, the certainty of life and the age to which one can expect to live have greatly increased. What we have witnessed is the epidemiological transition as it applies to the U.S. In early U.S. history, very high birth rates were met with very high mortality rates that struck very early in age. As the society modernized and progress was made in the medical field and, more importantly, the public health field, people lived healthier lives and death came much later in life. This is especially true of the post-World War II generations that benefited from mass immunizations.

This rise in life expectancy that stemmed from advances in health is probably the greatest human achievement to date, but it obviously has not come without demographic implications. In addition to making the U.S. a much older society (as demonstrated by the rise in median age as well as the proportion of the age structure comprised by the elderly), there are many more people alive today than there would have been had life expectancy not made such a dramatic increase. In fact, it is estimated that if mortality had remained at 1900 levels throughout the century (and holding all other factors constant) the population in the year 2000 would be only 139 million,³¹ which is only half of what it actually is. Similar to immigration, there is a primary and a secondary affect on population: direct deaths avoided through mortality decline, and births from those people who may otherwise have not survived to childbearing age. It is also interesting to

²⁹ Ibid.

³⁰ Murdock, 16.

³¹ White and Preston, 420.

note that the population growth produced by mortality decline during this century is double that produced by 20th century immigrants *and* their descendants.³²

U.S. Population Projections

During the 20th century the U.S. witnessed its transition into the third phase of demographic transition (from high births and high deaths to low births and low deaths) as well as the third (and possibly even fourth) stage of the epidemiological transition. Taking this into consideration, future U.S. populations can be projected. But this shift of focus from past population to future population should be preceded with a note of caution: there are limitations that yield population projections imprecise and sometimes flawed. This is because projections are only as good as the assumptions that go into them.³³ When it comes to fertility, mortality, and immigration it is easy to take present numbers and use them to predict the future, but there is no guarantee that the conditions that created the present numbers will persist in the future. A good example of this is the low birth rates during the Great Depression. This caused many to believe that population stabilization, and even a possible decline in population, would occur in the very near future. But the baby boom occurred and caused a population increase far beyond what anyone had expected. Nonetheless, population projections remain a vital tool for policy makers and although they should always be viewed with some skepticism, they offer good insight into the demographic future.

³² Ibid, 422.

³³ Fosler, Scott et al. *Demographic Change and the American Future*. (Pittsburgh: University of Pittsburgh Press, 1990), 37.

Demographic projections are made based on high, middle, and low assumptions of fertility, mortality, and immigration. Usually the source of these projections is the U.S. Census Bureau and since 1940 they have made such projections every few years based on demographic trends. For the purposes of population projections, the fertility rates are currently defined in the following way: low is 1.6, middle is 1.8, and high is 2.2. Mortality rates are defined as high being 77.4, middle 81, and low 85.9. And for immigration, high is 750,000 per year, 450,000 per year is middle, and low is 250,000. Using these assumptions, the Census Bureau created over thirty different projections ranging from a low population projection (for the year 2050) of 276 million to a high population projection of 507 million.³⁴ Using the middle projection, which is often deemed to be the most likely, there is a projected population of 383 million by the year 2050. Of course, it is difficult to say which scenario is the most likely and the further into the future the population is projected the more tenuous the outcome. Given current demographic trends, the U.S. population will reach 300 million by the year 2012, 350 million by 2025, and 397 million by 2050.³⁵ Regardless of which projection will occur, they all point toward one very interesting aspect of population growth: the U.S. population will be growing at its all time slowest rate (probably about 0.8%) but in terms of sheer numbers it will see its largest increases ever.

³⁴ Murdock, 51.

³⁵ U.S. Bureau of the Census, "Projections of the Population of the United States, by Age, Sex and Race: 1988 to 2080." *Current Population Reports*, P-25-1018. Washington, DC. U.S. Government Printing Office, 1989.

Modern Determinants of Fertility in Advanced Societies

There are several theories that explain why a society shifts from high fertility to low fertility as well as what factors people consider when determining family size. This section will serve as an overview of the prevailing theories of fertility determinants in advanced societies. In doing so it will establish the basis of knowledge from which policy alternatives could be created. Such policy initiatives could range from those that directly influence demographic behavior to those oriented toward trying to change social behavior and institutions which will then indirectly have an impact on population processes.

Fertility determinants are a complex intermingling of social, cultural, and economic factors that influence choice-making as it pertains to reproduction. But before it can truly be a choice, there are two necessary preconditions: maternal and child health, and adequate family planning services.³⁶ Unless all people have access to family planning services that are reliable, affordable, and convenient to use, fertility rates will more closely resemble those of the society's natural fertility than its desired fertility. With regards to health, the other side to the "double-edge word" mentioned earlier becomes evident. It was previously stated that once there are sufficient health conditions for women to survive to childbearing age (and for virtually all children to survive to adulthood) population will initially grow. But it has been firmly established that adequate health will eventually result in lower fertility rates. Conventional wisdom holds

³⁶ Weeks, John R. "How To Influence Fertility: The Experience So Far." *Elephants in the Volkswagen*. Grant, Lindsay (ed.). (New York: Freeman and Co., 1992),15.

that if the survival of a child to adulthood is virtually certain, parents become inclined to have less.

So once fertility is decided by rational choice, what are the factors that influence that choice? Perhaps the most widely used theory of fertility is the Demographic Transition Theory, the three phases of which were described earlier. According to this theory, in traditional rural agricultural societies, high fertility was necessary in order to offset high mortality and was advantageous since children were more of an economic asset. As a society modernizes, there are several economic and social changes that lead to children being viewed as a liability instead of an asset.³⁷ The rising cost of children in a modern urban setting coupled with their loss of economic value (and with the increased certainty of child survival) weakened the motivation to have large families. In other words, there is an intergenerational wealth flow.³⁸ Instead of wealth flowing from the children up to the parents, the reverse occurs. Hence the old adage "development is the best contraceptive."

However, as many demographers now assert, development itself is not necessarily a cause of fertility decline. Instead, there are more proximate determinants of fertility that ensue once a society develops, and it is these proximate causes that are responsible for fertility decline than development. Economic considerations are one of them. Once the demographic transition has taken place, economics becomes a large consideration for

³⁷ Bongaarts, John and Watkins, Susan Cotts. "Social Interactions and Contemporary Fertility Transitions." *Population and Development Review* 22(4). Dec 96, pp. 639.

³⁸ Caldwell, JC. "Toward A Restatement of Demographic Transition Theory." *Population and Development Review* 2:321-66, 1976.

parents. In general, economic theories of fertility hold two assumptions.³⁹ First, couples behave in rational ways when they decide on the number of children they want to have. Second, children are basically viewed by couples as consumptive goods. One example of a purely economic fertility theory was created by Leibenstein (in 1974). His theory described the development over time of different benefits and costs of children in order to explain the relation between changes of fertility and economic development. He distinguished three types of utility for which a child is wanted: 1) consumption utility- the child is a source of personal pleasure, 2) work or income utility- the benefits from the fact that the child will sooner or later enter the labor force and add income to the household, and 3) security utility- derived from the fact that the child will be a potential source of security and help for parents in their old age. Also, there are two types of disutilities that parents must consider: 1) the direct cost of children, such as feeding, clothing, housing, and education, and 2) the indirect costs of children, such as the earnings income lost (as well as other opportunities forgone by the parents) because of the time and effort necessary to raise and educate a child.⁴⁰ It is these utilities and disutilities that people consider, and as a society modernizes it becomes clear how the utilities are diminished while the disutilities are enhanced. Because of child labor laws and compulsory education laws, parents will not receive any income utility, at least not for a very long time. Laws such as these, which are rarely absent in a modern society, substantially increase the financial burden that children place on parents. Furthermore, as societies

³⁹ Andorka, Rudolf. *Determinants of Fertility in Advanced Societies*. (New York: MacMillan Publishing Co., 1978), 27.

advance and become more modernized, there tends to be more socialized policies such as Medicare and Social Security. These policies allow for greater independence of the elderly and it creates a situation in which they are no longer completely dependent on children (thus eliminating old age security as a reason for child bearing).

Certainly economic costs are a major consideration for parents in an advanced society, but it obviously is not the only explanation. If it were there would be no way of explaining why Americans would want children at all. Furthermore, it cannot explain the fertility differentials between the rich and poor. According to this theory alone, it would seem reasonable to expect the rich to have higher fertility than the poor, but the exact opposite is true. A more comprehensive theory would incorporate economic considerations as one factor instead of the only factor. One way of avoiding this mistake is to recognize that there are three basic determinants of fertility: demand, supply, and the cost of fertility regulation.⁴¹ Demand factors include the standard socioeconomic determinants of fertility, and it is here that economic considerations play a role. Supply is determined by environmental and cultural factors that constrain or promote fertility.⁴² And the cost of fertility regulation includes monetary, time, and psychological factors associated with the use of contraceptives. Essentially this theory emphasizes that only applying economics to fertility is an oversimplification. It was stated earlier that access to family planning services is a necessary precondition for all other restraints on fertility to take place, and this theory's emphasis on the cost of fertility regulation is an extension

⁴⁰ Ibid, 32.

⁴¹ Hirschman, Charles. "Why Fertility Changes." *Annual Review of Sociology*. 1994, No. 20: pp 215.

of that. More importantly, it is claiming that there are social and cultural factors that can influence the demand and the supply aspects of fertility.

One of the most important influences of fertility stems from the level of education on both the individual and societal level. The relation between education and fertility is assumed to be universally inverse and stable, but what causes this interaction? In other words, what are the channels through which education affects fertility? This question can be answered by applying education to the three determinants of fertility. As education increases, the demand for children tends to decrease. There are several reasons for this, many of which are related to the economic considerations with the most significant being that education can alter the preferences of people, thus changing the perceived costs and benefits of children.⁴³ It is proposed that as people become more educated and their world view expands, not only are they more able to grasp the difficulties and sacrifices inherent to child rearing (in terms of finances as well as opportunity), they also tend to strive for goals in life other than simply marrying early and starting a family. The "price" affixed to children moves beyond mere financial. Furthermore, as people become more educated and have the confidence that they will fare well enough for themselves, the perceived need for children as safety net (or anyone else for that matter) diminishes.

Education also serves to reduce the supply of children. There are three reasons for this. First, the infant mortality rates are largely dependent upon the education of the parents, especially the mother. And as already stated, low infant mortality rates are a necessary precursor for low fertility rates. Secondly, education often determines the age

⁴² Ibid.

of marriage. The more educated someone is, the later the age at which they decide to marry and raise children. This is because most people choose to delay marriage and child rearing until their education is complete, and often until they are well established in their subsequent careers. As studies of many European nations indicate, there is an inverse relationship between marriage and fertility rates.⁴⁴ Although there may be plenty of time to make up for these delays (since human reproductive spans last for so long), that does not occur. And third, the number of women who opt to never marry is influenced by the level of education of both them and the society. Again, this is a result of the affects that education has on changing ones aspirations as well as the social norms.

The third determinant of fertility, the cost of fertility regulation, is influenced by education is so far as it not only greatly reduces the financial burden of securing birth control, but also by the way in which it influences attitudes toward fertility regulation, knowledge of birth control methods, access to the various means of fertility regulation , and communication between husband and wife about family size goals.⁴⁵ Through education, people are less likely to avoid using contraception based on false information . This works on two levels. First, individuals will be more likely to take advantage of family planning services and, secondly, on the community level people will be more likely to incorporate and promote the use of such services.

Thus far the economic and educational constraints on fertility have been examined, but there is another constraint on fertility that may be even more important: the

⁴³ Cochrane, 114.

⁴⁴ Golini, Antonio. "How Low Can Fertility Be? An Empirical Exploration." *Population and Development Review* 24(1), March 98: pp. 61.

status of women. The status of women is a cultural characteristic instead of an economic one, and once again it demonstrates the incompleteness of theories that focus solely on economic development or financial costs. The role that women play in a given society largely dictates what they will do, when they will marry, and ultimately how many children they will bear. It also dictates whether there will be a son-preference among married couples. If there a strong preference for sons, then families are likely to keep having children until a son is born, thus increasing the fertility rate.⁴⁶ In societies such as India where women do not enjoy very much autonomy and their cultural norms dictate that they marry early and reproduce often, fertility rates will inevitably be very high. Women status is defined by three characteristics: 1) the extent of exposure to the outside world, 2) the extent of interaction with the outside world, and in particular, the extent of economic interaction, and 3) the level of autonomy in decision-making within and outside the household.⁴⁷ Similar to the benefits of education, exposure to the outside world increases a woman's receptiveness to new ideas (especially as they relate to new contraceptive technologies) can change preferences, and perhaps their own idea as to what the role of women should be. Also, as long as women hold some autonomy in the decision-making process, they will not necessarily have to maintain fertility levels dictated to them by their husbands, parents, or societal norms.

⁴⁵ Cochrane, 116.

⁴⁶ Mason, Karen Oppenheim. "The Impact of Women's Social Position on Fertility in Developing Countries." *Sociological Forum*, 1987: pp 718-745.

⁴⁷ Basu, Alaka Malwade. *Culture, the Status of Women, and Demographic Behaviour*. (New York: Oxford University Press, 1992), 53.

The extent of a woman's economic interaction seems to be the most important aspect of women's status as it relates to fertility rates, and possibly the most important fertility determinant overall. As improved economic opportunities for men may lead to faster family formation and higher fertility, improved opportunities for women engender the opposite effect.⁴⁸ When women fill roles other than wife and mother, fertility rates decline because of the impact on both the supply and the demand for children. If women engage in premarital employment, the age at which they marry goes up thus reducing the supply.⁴⁹ Also, as women have more economic involvement, the opportunities lost because of high fertility become great whereas before the opposite would be true. Furthermore, demand is also reduced by the fact that women who have income of their own no longer have to worry about old-age security. If they were strictly a wife and mother, then perhaps there would be the need to bear several children in case she was widowed. But it is important to note that it is not just the economic involvement of women that aids in lowering fertility. What is more important is type of economic involvement. If women plan on only being employed until the opportunity arises to marry and raise a family, then fertility will not be affected as much. Similarly, if it is the type of employment which is not impeded by high fertility then once again the affect on fertility is diminished. Therefore, it is not the current employment status of the woman that determines her future (or past) fertility, but the lifelong plans and experiences of employment. A woman who intends to be employed as continuously as possible and

⁴⁸ Lesthaeghe, Ron and Surkyn, Johan. "Theories of Fertility Change." *Population and Development Review* 14, No.1, Mar 1988: pp. 31.

⁴⁹ Mason, 722.

wants to avoid (or cannot afford) interruptions of her occupational career when her children are small and require constant care will be less liable to have a larger family than another who intends to remain at home.⁵⁰

In addition to women's status, another important cultural characteristic that can have an influence on fertility rates is that particular culture's notion of what is an acceptable family size. Many societies view large families as a sign of the males virility and thus high fertility rates ensue. But just as cultural norms can create high fertility rates, they can also work to ensure low fertility rates. In most advanced societies, especially the United States, the number of children a couple decides to have is viewed to be a private decision. However, as it becomes evident that population growth is at least partly responsible for environment deterioration, it is a private decision that has public implications. Therefore, it is reasonable to believe that if society were to adopt a general view that a family with more than two children has become less socially acceptable because of the way in which it can now adversely affect everyone else (instead of only the parents or siblings), people would become less inclined to have large families. This is an approach that Vietnam has taken with its one-or-two child public campaign.⁵¹

In developed nations like the U.S. where: 1) the transition from a rural agricultural society to a modern urban society has been made and 2) where there is a strong grasp on health, it follows that fertility rates are determined largely by choice instead of as a matter

⁵⁰ Andorcka, 380.

⁵¹ Goodkind, Daniel M. "Vietnam's One-or-Two- Child Policy in Action." *Population and Development Review* 21, No.1: March 1995, pp. 85-109.

of survival or natural fertility. It has long been thought that development is what lowers fertility, however in the last few decades demographers have placed less emphasis on development per se and more emphasis on some of other more proximate causes of fertility decline (which may very well have come about through development, but not necessarily so). The decision a couple makes on how many children it will have is based on a complex interaction of economic, social, and cultural variables with some being more important than others based on the individual. Among some of the most important determinants were the perceived economic utilities and disutilities of children, the level of education of both the individual and society at large, and perhaps most importantly the status of women in that particular society as measured not necessarily by their level of employment but also by their type of employment. Furthermore, there are other cultural factors that influence fertility rates, such as how that particular culture envisions the ideal family size. This, of course, plays more of a role in societies that place more emphasis on the good of the whole (like China) instead of those where individual interests are paramount (like the U.S.). An additional purpose of this section, through explaining the various fertility determinants in advanced societies, was to demonstrate that efforts to lower fertility do not necessarily have to involve coercion. Fertility rates can be changed by altering some of the social and cultural institutions that may facilitate higher fertility. While such efforts may take a little longer to come to fruition than do immediate and restrictive one-child laws, they would be much more permanent and there would be no fear of a "fertility backlash" as some are anticipating in China.

To summarize, this chapter has served three main purposes. First, it gave a general overview of the history of population growth on the global scale as well as that of the

United States. For most of the history of the world, the human population was growing at a very slow rate and at times not growing at all. It was not until modern history, and the 20th century in particular, that the population started to grow at an accelerated pace. The focus on the U.S. population showed that it too followed a similar pattern, albeit on a smaller scale and in a shorter time frame.

Secondly, this chapter used the concept of health to explain the traditional impediments to population growth as well as the dominant factors behind the modern surge in population. The concept of the epidemiological transition was applied to the history of the human population. While in the first stage, people were at the mercy of disease, infection, and epidemics. As a result, death struck very early in life which greatly reduced the human life expectancy. Such high mortality rates had to be balanced with very high fertility rates, but poor health in the form of inadequate nutrition impeded the natural fertility. As improvements in health were made in the medical field and public health field, the transitions to the second and third stage were made and mortality rates dropped dramatically. With death now coming much closer to the end of the biological lifespan, mortality began to play less of a role in limiting population growth. At this point, fertility levels became the main stimulant (or impediment) of growth. Working simultaneously with the epidemiological transition is the demographic transition. The demographic transition follows three phases: high mortality rates and high fertility rates, low mortality rates and then a lag time of several years (or decades) until low fertility rates come about, and finally low mortality rates with low fertility rates that result in very slow population growth or even none at all. It is in this third phase that most of the nations of the developed world are experiencing.

CHAPTER 3

POPULATION GROWTH AND THE AMERICAN POLICY PROCESS

As the population in the U.S. continues to surge, so does the debate over whether there is a "population problem" and, if so, what to do about it. Since the 1960s, population growth on both the global and American level has received quite a bit of attention. As a result, there are many people who are convinced that population growth is one of the most pressing concerns found today in the U.S. and the government needs to enact some form of population policy to address the problem. This chapter will offer insight into the American policy process as it pertains to U.S. population growth. First, this chapter will define and explain the term "population policy." This is important since it is a term that has caused some confusion since it is not as distinct of a policy typology as economic policy or national defense policy. This is especially true for the U.S. because we have yet to adopt an explicit population policy as have some other countries. Second, it will provide a historical context for the population debate. This is useful because it illustrates how past debates on population have influenced and formed the contemporary population debate. And third, this chapter will examine the modern population debate as it has taken form in the U.S. This will demonstrate how historical perspectives on population growth permeate our thinking today, and has influenced the amount and type of attention it has received. Included in this part of the chapter is a litany of environmental damage that many claim is caused by population growth (or at

least cannot be solved if the population continues to grow) and use to bolster their argument for population stabilization. The point of this section of the chapter is to introduce the predominant environmental arguments made for population stabilization, not to make a judgement on the strength or validity of these arguments. That will be saved for the next chapter which focuses on ethics.

Defining "Population Policy"

Population policy is the "direct and indirect result of legislative, judicial, executive, and administrative actions directly and indirectly affecting many demographic components."⁵² These policy initiatives could range from those that directly influence demographic behavior to those indirectly affecting population via changes in social behavior and institutions. There are five demographic components: 1) the size of the population, 2) the rate of increase or decrease of either birth, death, or growth rates, 3) the total migration, 4) the age and racial composition of a population, and 5) the qualitative composition of a population in terms of education, per capita consumption, and per capita income. Usually these demographic components are closely related and a policy that is aimed at one will usually affect the others to some extent. Contemporary population debates mainly focus on the size of the population which is largely dictated by the rate of increase or decrease of either birth, death or growth rates, and migration. Population

⁵² Cook, Rebecca J. "Formulating Population Policy: A Case Study of the United States." in *Population Policymaking in the American States: Issues and Processes*. Elihu Bergman, et al, eds. (Lexington, MA: Lexington Books, 1974), 15.

policies can be categorized into four models⁵³: 1) the Family Planning Model, 2) the Motivation Model, 3) the Population Distribution Model, and 4) the Per Capita Consumption Model.

The Per Capita Consumption Model is only a population policy in the loosest sense. It takes into consideration the consumption habits of a particular population center and then considers ways to either curb that consumption or meet those demands. For example, a policy in this particular model would project the population of a certain area at a certain date and then plan on ways to accommodate the needs of that larger (or smaller) population.

The most obvious policies that belong to the Population Distribution Model are U.S. immigration policies. By only allowing a specified number of immigrants and refugees to enter the U.S. each year, these direct policies affect the geographic concentration of people since the majority of immigrants tends to cluster in only a few regions. Another example of a population policy (albeit an indirect one) that fits under the Population Distribution Model is the building of the interstate-highway system. This allowed people to move away from the traditional urban centers and subsequently had a substantial affect on the geographic dispersion of people. Of course at its inception few people probably thought of this as a population policy. The fact that this policy initiative would more likely be considered part of the transportation policy typology demonstrates how ambiguous the population policy typology can be and how the lines separating these typologies can be obscured.

⁵³ Ibid.

The two most well known models are the Family Planning Model and the Motivation Model. These are the two models that most people think of when they hear the term "population policy." The Family Planning Model assumes that contraceptive information and services should be available to everyone on a voluntary basis, and this is by far the most utilized model worldwide. This model purports that such services will reduce unwanted births and therefore reduce the overall birthrate. Since there are numerous U.S. policies that are part of this model, it can be said that the U.S. already has some semblance of a population policy. The most well known example of a direct population policy is the Family Planning and Population Research Act of 1970. Created under the Nixon administration, the intention of this legislation was to ensure that all individuals who wanted to take advantage of birth control methods had the proper means and access to do so. An example of an indirect population policy that probably had a substantial affect on population growth (although this law was not made with the explicit purpose of increasing or decreasing the population) was the Comstock Act of 1873. This legislation prohibited the advertisements of prescriptions for contraceptives, and made it a crime to "sell, lend or give away any article whatever for the prevention of conception."⁵⁴ By creating a block to contraceptive information and services, the inevitable outcome was higher fertility rates and thus more population growth. Another example of a population policy (which could perhaps be defined as either direct or indirect) is the legalization of abortion pursuant to the Supreme Court's decision in *Roe*

⁵⁴ Hardaway, Robert. *Population, Law, and the Environment*. (Westport, CT: Praeger Publishing, 1994), 92.

vs. Wade. Since this decision was made, millions of legal abortions have been performed which has undoubtedly had a substantial demographic impact. Again, even though the explicit intention of this policy was not to increase or decrease the size of the population, it undoubtedly had a substantial influence.

The Motivation Model, on the other hand, holds that it is not logical to believe that merely giving people the ability to decide the number and spacing of births will reduce population growth. Because there are so many factors that influence fertility rates, the private desire to limit fertility may be non-existent, therefore society must enact measures (directly or indirectly) to bring about a lower birth rate. According to this view, the Family Planning Model is still essential since it complements the Motivation Model, but it will not be sufficient when left to stand on its own. Therefore, people must somehow be motivated to use these family planning services. Policies in the Motivation Model fall under three categories that each represent a point along the spectrum of voluntariness⁵⁵: 1) the removal of pro-natalist policies, 2) the creation of incentives for lower fertility rates, and 3) the development of disincentives or the implementation of anti-natalist policies. An example of a possible population policy that would fall under the first category is the removal of certain tax deductions for children. While leaving the option of having a large family completely open, it would indirectly impose financial penalties upon doing so. Another example would be laws that require insurance companies to cover all sorts of birth control methods, including sterilizations. The second category of policies could include such measures as offering tax deductions for

⁵⁵ Cook, pp.21-23.

smaller families, payments for voluntary sterilization, and preferential treatment for services among those who opt for two children or less.⁵⁶ These type of policies take a firmer stance in that they are openly and directly trying to influence people, but it does so by using positive incentives instead of negative ones. And the third category is the most intrusive and is often associated with the stringent population policies of China. These are the ones that cross the threshold from positive to negative coercion and can be labeled as "involuntary." Policies of this nature could include the loss of benefits for those who have large families, higher taxes for those with larger families, or, in the case of India, involuntary sterilizations. Although these types of policies do not necessarily have to be part of an effort to stabilize the population (and in fact are rarely used) and are certainly not warranted in the United States, it is the fear of implementation of these types of policies that often deters people (especially elected officials) from even discussing the population issue. And concerning all three categories of the Motivation Model, the examples given of policies are by no means an exhaustive list. They are just a few examples to aid in defining each category.

Historical Perspectives of Population Growth

Although population growth has generally been heralded as a key ingredient in the making of a strong and prosperous nation, Plato and Aristotle thought otherwise. Plato (427-347 B.C.) was a strong advocate of controlling both the qualitative and quantitative

55 Weeks, John R. "How To Influence Fertility: The Experience So Far." *Elephants in the Volkswagen*. Lindsey Grant, ed. (New York: W.H. Freeman & Co., 1992), 181.

aspects of population. This was made evident in *The Republic*. In this book, Plato advocated that the population be broken down into three distinct classes with only the top two (the warriors and the philosophers) being allowed to procreate. Such a practice, which is now commonly referred to as eugenics, was thought to guarantee that society would continue to flourish and progress since each successive generation would be better than the last. Not only did Plato advocate dictating who could reproduce, but also the total number of households to which a city-state should be limited. He claimed that the number of households should never exceed 5,400.⁵⁷ Although Plato recognized that a minimum amount of citizens were necessary in order to take advantage of the division of labor that he regarded as the very basis of a city-state, he also believed that unregulated population growth would introduce a disturbing variable in his well-ordered and harmonious city-state.⁵⁸ Plato continued his writings on population in *The Laws*, which was written towards the end of his life. Although written many years after *The Republic*, he still advocated limiting the city-state to 5,400 households.⁵⁹ Furthermore, he entertained the idea of immigration and colonization to keep the population at a stable level, as well as implementing an array of family laws and inheritance laws that would enable the total number of households to remain static.

Aristotle similarly believed that a population should be static and moderate in size, and he gave this topic some attention in *The Politics*. Aristotle stated that, "To the

⁵⁷ Plato. *The Republic*. Chapter 6.

⁵⁸ Overbeek, Johannes. *History of Population Theories*. (Rotterdam, Netherlands: Rotterdam University Press, 1974), 24.

⁵⁹ Plato. *The Laws*. Book Five.

size of a state there is a limit, as there is to other things, plants, animals, implements; for none of these retain their natural power when they are too large or too small, but they either wholly lose their nature, or are spoiled."⁶⁰ Furthermore, Aristotle felt history demonstrated that "A great city is not the same as a populous one... Moreover, experience shows that a very populous city can rarely, if ever, be well-governed; since all cities which have a reputation for good government have a limit on population."⁶¹ Like Plato, Aristotle acknowledged that a very small city-state is not viable from either an economic or a military point of view. But consistent with his concept of the mean that he introduced to us in *The Nichomachean Ethics*, there is a balance that must be struck. There were three basic reasons for this. First, if the population grew too large, then a revolution was sure to follow. This would occur because the number of people would exceed the amount that the property would support. Secondly, Aristotle feared that if the city-state grew beyond a certain number of inhabitants then the system of direct government would break down since rulers and citizens would no longer be acquainted with each other.⁶² This concern stems from the Greek's concept of liberty, which is referred to as "ancient liberty." Unlike the modern view of liberty that places great emphasis on the importance of the individual and individual happiness, the Greeks defined liberty as the right of individuals to participate in the deliberations of

⁶⁰ Aristotle. *The Politics*. Stephen Everson, ed. (New York: Cambridge University Press, 1996), 172.

⁶¹ Ibid, pp. 172-73.

⁶² Overbeek, pp. 25.

government.⁶³ And a possible third reason is that too large of a population hindered the ability of a society to educate its young and ensure their proper ethical development. Attaining the "good life", according to Aristotle, requires leading a virtuous life. However, adopting the virtues listed by Aristotle in the *Nichomachean Ethics* requires a great deal of practice and attention toward the young from a very early age. If population exceeds the maximum level that can be sustained, then the individual becomes consumed with the pursuit for survival instead of excellence.

Plato and Aristotle's recognition of limits to population growth stemmed from two basic circumstances. First, with respect to geographic size, there were physical limits to growth. This is especially applicable to the Greek city-states which were limited in size and were largely forced to be self-sufficient. And secondly, once too large of a population was reached, the harmony of the city-state would be lost and the quality of life for its citizens would suffer. These views on population, like much of the teachings of the ancient Greeks, were largely ignored throughout much of European thought. This is evident during the post-Plague and post-100 Years War period of Europe that was dominated by mercantilism. Mercantilist thought has many characteristics that made it look favorably upon population growth. First of all, mercantilism is a system of "power economics" as opposed to the "welfare economics" that were championed by earlier thinkers including the Greeks.⁶⁴ Mercantilists were not interested in the welfare of the individual but in the power of the state and the wealthy. This included the wealth of the kings, who were attempting to consolidate their power, and the merchant class. Guided by

⁶³Gray, John. *Liberalism*. (Minneapolis: University of Minnesota Press, 1986),1.

some of the same economic principles that are still popular today, mercantilism's emphasis on increasing the wealth of the elite created the need for a large supply of cheap labor and an ever-expanding market. Thus, population growth was a necessity. Secondly, mercantilism is associated with "power politics."⁶⁵ This period of history was marked by a strong sense of nationalism among monarchs, which in many ways continued until World War I. Each nation was continuously attempting to dominate its rival neighbors through trade and warfare. With this constant strife, it was deemed absolutely essential to have a large population base from which to field an army. Any population growth within a rival nation was seen as a threat, and was met with population policies aimed at boosting one's own population. A third characteristic, not necessarily of mercantilism but of the era in which it took place, was the religious climate. The beginning of mercantilism coincided with the Reformation, which was marked by a rediscovery of the high fertility ethos of the Old Testament.⁶⁶ The "be fruitful and multiply" mentality once again became prevalent. Religion played a further role in so far as it caused many to ignore any possible physical limitations of the land caused by such factors as its geographic location. The dominant mentality was that God would always provide for His children and claiming otherwise was borderline blasphemy.

Mercantilist theorizing was designed to increase the might and eminence of the absolute monarch as well as the prosperity of the merchants and financiers.⁶⁷ This

⁶⁴ Overbeek, 28.

⁶⁵ Ibid, 29.

⁶⁶ Ibid, pp. 30.

⁶⁷ Ibid, 32.

system, with its emphasis on the improvements on the elite, saw a neglect of agriculture (and those who were engaged in it), incessant wars, and the shameful employment of child labor. As a result, mercantilist theory began to be criticized by thinkers who emphasized such concepts as personal freedom and individual welfare. Many thinkers began to look at population growth with more scrutiny. By using the possibility of large scale human misery instead of national power as criteria, population growth was considered in a new light. Undoubtedly, the most famous writer on population growth is English economist Robert Malthus (1766-1834).

In 1798, Malthus anonymously published the first edition of "An Essay on the Principles of Population." In this essay, Malthus made his famous declaration that "the power of population is indefinitely greater than the power in the earth to subsist for man."⁶⁸ The reasons for Malthus' concern over population growth becomes clear when viewed in the context of the times in which he lived. First of all, between 1701 and 1801, the population of England and Wales almost doubled from 5,826,000 to 9,156,000.⁶⁹ But from the year 1765 to 1814 (during Malthus' formative years) England had scores of poor harvests, unfavorable climate changes, a war with France that made imports uncertain, and no way of tapping into North America's vast supply of wheat;⁷⁰ all of which causes several food shortages and a vast amount of human suffering, especially among the lower classes and those still in the countryside. As a utilitarian (which was the

⁶⁸ Malthus, Robert Thomas. "An Essay on the Principle of Population." (New York: Oxford University Press, Reprint of 1798 original, 1993), 4.

⁶⁹ Overbeek, 41.

dominant philosophy in England at the time), Malthus regarding this suffering as a negative affect on the level of total human happiness. And he attributed this suffering to population growth. This is because population growth, if not checked, would grow exponentially, while food production could not. Therefore, population must be checked. It could be done by either the preventive type or the repressive type. Preventive checks are used by humans to voluntarily limit their numbers, and in Malthus' day such checks included late marriages and abstinence (whereas Plato and Aristotle advocated abortion and exposure). Repressive checks, also referred to as natural (or Malthusian) checks on population growth, are much harsher. Malthus contends that once a population exceeds the carrying capacity of its geographic location, natural checks such as famine, disease, pestilence, and warfare will follow. His views on population are especially important since it marks the first time that such concern was rooted in the relationship between the environment and the population that it was supporting. Framing the issue in this way has for the most part persisted through today's version of the population debate.

Secondly, Malthus' writings were a reaction to the widespread optimism and romantic ideas that were current during the latter part of the 18th century.⁷¹ Similar to the religious beliefs that influenced mercantilist thought (that were actually still quite popular during Malthus' time), there was the belief that humans were virtually infallible in the sense that there were no limits on human potential. It was assumed that all

⁷⁰ Ibid.

⁷¹ Ibid, 42.

problems could be fixed by humans, and Malthus was too much of a pessimist to let such a notion go unopposed.

For the most part, Malthus' predictions of widespread starvation brought about by overpopulation have not yet occurred. And although there is mass starvation in parts of the developing world, many would argue that it is a distribution problem and not a population problem. In other words, the earth can yield enough food to feed its six billion inhabitants, but political conflict and social inequities prevent the equal distribution of food and resources. Nonetheless, Malthus has remained the prophet of modern day population alarmists. Dubbed as neo-Malthusians, there are many people today who still voice the same fears of Malthus. Neo-Malthusians come from a wide array of careers and academic disciplines, and are essentially reacting to contemporary versions of mercantilist thought as well as the view of human infallibility, just as Malthus did. But instead of claiming that improved social institutions are the answer to social problems (as did the optimists of Malthus' era), many modern day optimists believe that technological innovation is our saving grace. Referred to as the "Cornucopia Fallacy", there is the belief that human potential, and therefore human progress, is unlimited through technology. Technology is what has allowed us to grow enough food to feed a growing population and avoid famine, to keep checks on disease, and to mitigate health problems that may have otherwise stemmed from pollution and environmental deterioration. Proponents of the "technological fix" to everything have used history (which is certainly on their side) as proof that limits do not exist. Neo-Malthusians, on the other hand, balk at such arrogance. They claim that Malthus was not wrong in his predictions, but only in his timing. There are indeed limits to our size and our activities,

and technology can only delay the inevitable. Advocates of stopping population growth often point to famine in many parts of the world, climate change, and regional warfare as evidence that Malthusian checks do indeed exist.

This confrontation between pro-growth and neo-Malthusians is how the population debate has taken form. It is interesting to see how the form in which the modern debate takes place has changed little from the way it was formed during the time of Malthus.

Modern U.S. Population Debate

These historical views of population growth form the underpinnings of the schools of thought circulating in today's debate. The recent concerns (with "recent" being defined here as from the 1960s onward) over population growth stem from the vast amount of population growth that has occurred in the latter half of the 20th century. In fact, there has been more growth since 1950 than there has been in the entire history of the human race. But worries about population growth did not emerge in a vacuum, and it is no coincidence that the modern population debate emerged at the same time the U.S. started to become more immersed in environmentalism. During the late 1960s and early 1970s, as Americans were becoming more politically active and concerned about the various social problems that defined the times, the environment was one of many issues that received a lot of attention. Much of the environmental legislation used today was initiated during this time. That is not to say, however, that environmentalism was born in the 1960s. In fact, the evolution of environmentalism can be divided into four periods,

with the first three being the most relevant to the topic of this paper.⁷² First, from 1890-1920, was the Conservation-Efficiency Movement. During this period, the government took part in rational planning to promote the efficient development and use of all natural resources. Conservationists, with the most notable being Theodore Roosevelt, felt that politics were an anathema and that environmental policies should be devised by scientific experts (who understood technical and scientific methods) aided by the allocation of public funds.⁷³ Second, from 1920-1960, was the Conservation-Preservation Movement, which drew much of its support from hunting and fishing groups as well as the upper-middle class who were enjoying previously unprecedented levels of leisure time. This movement was concerned not only with the efficient use of resources, but also with preserving natural habitats. Third, from 1960-1980, was the Environmental Movement. This movement saw a great breadth of constituents (unlike the previous movements that were dominated by elites) and was dominated by a "bottom-up" or grassroots phenomena in which environmental objectives arose out of changes in values about the use of nature.⁷⁴ People became much more involved in a wide array of environmental issues, such as clean air, clean water, hazardous waste, and wildlife protection; issues that had direct bearing on the quality of their lives. It was during the latter half of this third period of environmentalism that the modern population debate began, and the anti-growth side

⁷² Lester, James P. "Evolution of Environmentalism." (San Francisco: Sierra Club Books, 1989), 23.

⁷³ Hays, Samuel P. *Conservation and the Gospel of Efficiency*. (Cambridge, MA: Harvard University Press, 1959), 15.

gained considerable support. Had there not been a growing sense of environmentalism, the population issue may never have re-emerged. The size of a population is much more important when society is worried about the environmental issues that have a direct bearing on the lives and health of the general population, instead of the recreational opportunities for a few elites. Therefore, population growth began to be viewed as a critical link in environmental protection. So what type of environmental problems have been blamed on population growth? The following section summarizes some of the major environmental problems supposedly caused by population growth. It is this evidence of environmental deterioration that not only neo-malthusians use to bolster their argument, but also by those who are more moderate in their stance on population growth. It is also from these observations that many people have based their ethical argument for population stabilization.

The first area requiring attention is that of agriculturally-related environmental damage. Agriculture is undoubtedly our most important resource, as well as the closest link we have to the natural world on which we are dependent. Humans could probably get by without coal, oil, and other fossil fuels (although it may alter our lifestyles and, perhaps, diminish our quality of life). But without agriculture, humans simply could not survive. This is why it is so alarming that agriculture is so severely threatened by population growth. Due to the unprecedented number of people to feed, farmers are forced to make unprecedented demands on their fields in the efforts to produce a higher crop yield. In the short term it is working in some respects. Grain production is at an all-

⁷⁴Lester, 26.

time high. In fact, over the past forty years the U.S. has increased (on average) its grain production 2.5% per year.⁷⁵ But in the long term, such agricultural methods cannot be sustained and they cause enormous amounts of environmental damage, much of which can already be seen. For example, in order to maintain such a high yield, farmers must predominantly rely on high-yield monocultures. This reliance on monocultures is dangerous because monocultures are very susceptible to pests and disease. This increases the chances of a major crop failure. To offset such a high risk, farmers employ the use of massive amounts of fertilizers and pesticides which, unfortunately, has begun to show signs of decreasing usefulness. Pesticide application has increased thirty-three fold since World War II, but losses to pests has doubled in this time frame.⁷⁶ Although high levels of pesticides may at times increase the crop yield, the side effects are disastrous. For example, fertilizer and pesticide runoff into waterways poisons millions of fish (another food source) as well as our own water supply. The National Academy of Sciences has reported that as many as 1.46 million cases of human cancer may result from exposure to pesticide runoff.⁷⁷

There are also significant problems with high yield agriculture that stem from its dependence on machinery rather than human labor. Agriculture that is reliant on machinery- intensive methods is problematic for two reasons. First, the burning of fossil fuels to run the machinery is harmful to the environment, especially when considering

⁷⁵ Bouvier and Grant, 35.

⁷⁶ Ibid, 37.

⁷⁷ Ibid, 38.

that farmers are currently using 120 gallons of oil per acre of farm land.⁷⁸ Secondly, the fossil fuel supply is finite and when it is depleted, the machinery on which agriculture is dependent may come to a halt. Unless the infrastructure has changed prior to this anticipated, yet largely unprepared for, depletion of fossil fuels, the results may be catastrophic.

Another problem with high yield agriculture arises out of the necessity to provide sufficient irrigation. As populations expand, the disputes for water between urban areas and farming areas will escalate. Contrary to what much of the public believes, water is a finite resource. Aquifers once thought to be limitless are being rapidly depleted to the point where it is now feared they will run dry. Overdrafts on aquifers are one reason why many geologists are convinced that water shortages will bring the human population to a halt.⁷⁹ The Ogalla Aquifer, which supplies water to the Great Plains states, takes in only one half-inch of water per year but drops four to six feet annually.⁸⁰ Because of such a large overdraft, it is estimated that it will be depleted within the next twenty-five years.⁸¹ In California's San Joaquin Valley, aquifers are pumped at a rate that exceeds recharge by more than 500 billion gallons annually.⁸² And nationwide, water is being

⁷⁸ Pimentel, David and Marcia. "Land, Energy, and Water: The Constraints Governing Ideal U.S. Population Size." *Elephants in the Volkswagen*. Grant, Lindsey, ed., (New York: W.H. Freeman and Company, 1992), 26.

⁷⁹ Ehrlich and Ehrlich, 30.

⁸⁰ Ibid, 28.

⁸¹ Bouvier and Grant, 37.

⁸² Ehrlich and Ehrlich, 29.

used (on average) at a rate 25% higher than its replenishment rate.⁸³ The use of this much water cannot be continued in the long term, yet our high level of agricultural output (which is required by such a large and growing population) demands it.

The final, and perhaps most serious problem caused by such high-yield agricultural methods is erosion. To satisfy the growing population's appetite, farmers have largely abandoned using the crop rotation technique. The subsequent damage of such methods have left the soil very susceptible to erosion through wind and irrigation runoff. In fact, the Department of Agriculture estimate of annual cropland erosion is three billion tons.⁸⁴ The state of Iowa, which has our richest and deepest soil, has lost about one half of its topsoil over the last century.⁸⁵ This is certainly worth worrying about since it takes about five hundred years to naturally replace one inch of topsoil. But the world must continue to provide food for over 100 million more people each year, despite the loss in soil.⁸⁶ To compensate for this loss in soil, farmers rely more heavily on fertilizers, and the harmful consequences of such actions have already been noted.

Environmental damage resulting from population growth can also be witnessed through the worldwide destruction of forests. The deliberate removal of forests is one of the most longstanding and significant ways in which humans have modified the environment. Since 1960 about half of the world's forest land has been destroyed.⁸⁷ The

⁸³ Pimentel and Pimentel, 25.

⁸⁴ Bouvier and Grant, 36.

⁸⁵ Ibid.

⁸⁶ Hardaway, 2.

⁸⁷ DesJardins, Joseph R. *Environmental Ethics: An Introduction to Environmental Philosophy* (Belmont, CA: Wadsworth Publishing Co., 1993), 102.

rainforests in South America are disappearing at the incredible rate of 100 acres per minute.⁸⁸ Each year a land area the size of Tennessee is slashed and burned to make room for the expanding population and for the farmland and grazing land for cattle that is needed to feed such a high number of people. And although it has become quite fashionable to berate the Brazilians for the destruction of their forests, it is being done in the U.S. to an equal, if not greater, degree. In fact, only 10% of the U.S.'s old-growth virgin forests still remain intact. Some estimates show that at the time of the Mayflower the U.S. contained 170 million hectares of forestland which has since dwindled to only 10 million hectares.⁸⁹ Most of the trees standing in the U.S. are part of monocultured tree farms instead of self-supporting ecosystems. Trees are being cut down at such a fast pace to satisfy a growing population's paper-product requirement, its housing needs, and to make room for agriculture. In addition to an array of damage caused by such destruction, the cutting down of trees hastens the rate of soil erosion and thus decreases the productivity of the land.

Another serious type of environmental damage caused by such rapid human expansion is the toll it is taking on the energy supply. Currently, the U.S. is 92% dependent on fossil energy.⁹⁰ This is problematic for several reasons. First, fossil fuels are very finite resources. At current consumption rate, oil resources in the U.S. will last

⁸⁸ Hardaway, 17.

⁸⁹ Goudie, Andrew. *Human Impact on the Environment: Fourth Edition.* (Cambridge, MA: MIT Press, 1994), 43.

⁹⁰ Pimentel and Pimentel, 26.

for only sixteen more years while natural gas will remain for only thirty six more years.⁹¹ This is assuming consumption rates remain constant which, since an increase in population appears inevitable for some time to come, is not likely. Coal, the other main fossil fuel, will remain abundant for hundreds of years. But it is the dirtiest form of fossil fuel and contributes the most to climate change, water and soil acidification, and air pollution. Reliance on coal is not acceptable, especially since it is estimated that 48% of all Americans are already breathing air deemed to be unsafe by federal standards.⁹² Furthermore, much of the coal that remains in the earth is presently economically unrecoverable. A potential energy crisis such as this perfectly demonstrates the law of diminishing returns. As the closest and richest resources are used (due to a high population and high consumption rates), it requires more energy and more money to access energy sources farther away.⁹³ As we diminish the fossil fuel supply to such low levels, it gets increasingly more difficult and expensive to find and gain access to previously untapped sources. It also causes great amounts of serious, and often times permanent, environmental destruction when previously unexploited and unspoiled areas are tapped.

A second energy-related problem stems from the fact that alternative energy sources presently do not provide an adequate solution, nor will they in the foreseeable future. Wind and solar technological development has virtually stalemated and is already

⁹¹ Bouvier and Grant, 25.

⁹² Rohe, John F. *A Bicentennial Malthusian Essay* (Traverse City, MI: Rhodes and Easton, 1997), 49.

⁹³ Ehrlich and Herlich, 137.

rather limited. Additionally, due to the large land area needed to contain solar lakes (which is one method of obtaining solar energy), there lies the strong possibility of fierce competition for land with agricultural interests and with the real estate market as it becomes more scarce due to population expansion. Nuclear energy is presently deemed too unsafe by society to be widely accepted, especially because of the difficulty and danger of storing its vast amounts of radioactive waste (which remains so for many generations). And biomass energy technology has not yet reached the point where it could be a viable source either. Current technology in the process of converting biomass to usable energy requires the use of more energy from fossil fuel sources than is converted. And, once again, there is a potential conflict over increasingly scarce land since the biomass used for energy is found on farmland and in forest basins. In sum, the energy sources presently being used are finite and may not provide for any more population growth (without a substantial reduction in consumption levels) while alternative energy technology has yet to reach the point where it can even come close to providing an adequate amount of energy for the present population, let alone an increasing one. It is possible that in the future alternative energy technology could progress to the point where enough energy would be supplied. However, this will not occur in the foreseeable future and simply putting complete and unfettered faith in the natural progression of technology to solve the earth's energy concerns is not sound policy.

An increasing population also invariably increases the amount of solid waste that must somehow be absorbed by the earth. Present-day U.S. cities are generating twice the

amount of solid waste as they did in 1960.⁹⁴ On an individual level, each person generates fifty tons of solid waste each year.⁹⁵ But solid waste does not just vanish. It must somehow be absorbed by the earth or contained by landfills and water ways. The quality of life of humans, through being forced to live in such close proximity to landfills that are increasing in both size and number, suffers great detriment. It is also disastrous to the water and its aquatic-life. Wastes, such as nitrogen and phosphorous, being pumped into the oceans and rivers not only poison our own water supplies, it has caused a great increase in the number and frequency of mysterious brown-tides and red-tides which kill millions of fish.⁹⁶ Humans subsist on the aquatic-life that is being killed off at such an alarming rate. It was once thought that the seas were abundant enough to feed the world. However, with such high levels of water pollution it is becoming all too obvious that this is no longer the case. But solid waste is not the only threat to the health of aquatic ecosystems. Overfishing, to accommodate the appetite of such a large population, is taking its toll as well. The U.N. Food and Agriculture Organization estimated that out of the two hundred eighty fisheries it monitors, only twenty-five could be considered underexploited or moderately exploited.⁹⁷ Statistics also show that thirteen of the 17 major fisheries in the world are overfished or are in decline.⁹⁸

And another example of environmental harm supposedly caused by human population expansion to be attended to in this chapter is the historically unprecedented

⁹⁴ Bouvier and Grant, 15.

⁹⁵ Ibid, 16.

⁹⁶ Ibid, 42.

⁹⁷ Ehrlich and Ehrlich, 86.

assault on biodiversity. Biodiversity is the variety of life at all levels of organization, from the level of genetic variation within and among species to the level of variation within and among ecosystems and biomes.⁹⁹ Largely through human activity and, more importantly, the loss of habitat due to human expansion, life on earth faces the greatest mass extinction since the end of the dinosaur age 65 million years ago.¹⁰⁰ Scientists estimate that without human activity, approximately one species would become extinct every few years but, with credit being given to human activity, between four to six thousand species are becoming extinct each year.¹⁰¹ To explain this causal relationship, ecologists use the example of an island. As ecologist Andrew Goudie explains, islands support fewer species than do similar areas of mainland, and smaller islands have less than larger ones. As humans destroy the greater part of a natural forest, leaving just a small reserve, they become like islands. Initially it will be "supersaturated" with species, containing more than is appropriate to its area when at equilibrium. But since the population sizes of the species living in the forest must now be greatly reduced, the extinction rate will increase and the number of species will decline towards equilibrium. And not only are the overall numbers reduced, so is their genetic quality as such problems as inbreeding become acute.¹⁰² A main cause of this "island effect" is the rapid expansion of human activities across the earth and the subsequent modification of natural

⁹⁸ Benchley, 55.

⁹⁹ Tillman, David. "Biodiversity and Ecosystem Functions." *Nature's Services*. Gretchen Daily, ed. (Washington, DC: Island Press, 1997), 93.

¹⁰⁰ DesJardins, 3-4.

¹⁰¹ Ibid, 101.

¹⁰² Goudie, 133.

ecosystems into systems managed for human benefit. This is also largely due to the earth's deforestation, pollution, and subtle (yet deadly) climate changes induced by the activities of an expanding and intrusive human population. In the U.S. there are other culprits as well that lead to the loss of biodiversity, such as tall buildings and towers that kill millions of birds each year as well as dams which take an incredible toll on fish and wildlife that is dependent upon them as a food source. Furthermore, road networks are a highly-effective cause of habitat isolation acting as a series of barriers to movement. And even though there are many species that are still not threatened with extinction, most have experience vast declines in numbers and spatially. As a result, humans now have the highest biomass than any other species on earth.¹⁰³

The reduction in biodiversity mentioned above mainly deals with individual species. But the widespread destruction of entire ecosystems and the disruption of the services they provide caused by human expansion is detrimental as well. Ecosystem services are the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life.¹⁰⁴ Examples of these services are the purification of air and water, the mitigation of drought and floods, the detoxification and decomposition of wastes, the generation of soil and soil fertility, the pollination of crops and natural vegetation, the control of pests, and the partial stabilization of the climate.¹⁰⁵ These valuable ecosystems are being destroyed in the U.S. through grazing, the plowing of grasslands, the clearing of forests, and the draining

¹⁰³ Goudie, 89.

¹⁰⁴ Daily, Gretchen C., ed. *Nature's Services*. (Washington, DC: Island Press, 1997), 3.

of wetlands. In fact the U.S. has lost 54% of its wetlands, mainly because of the expansion of agriculture but also largely because of the creation of housing.¹⁰⁶

Survival Agenda vs. Opportunity Agenda

Those who point out the possibility of such environmental disasters materializing are hoping to create a sense of urgency among politicians and the general public. This is a tactic often used in other environmental issues as well, such as global warming. And then there are those who take a much more mild approach and claim that population growth may not cause widespread disaster, but it will certainly cause a downward slide in the quality of life we have enjoyed. This, they claim, will come about through increased pollution, crowding, loss of serenity, and loss of recreational opportunities.

Have those who attempted to give population growth its due attention been successful? This question can be answered by applying two criteria: 1) the degree of official government attention to the problem, and 2) the policy outputs that resulted from this government attention. On the global level, there has been remarkable success. Although the world population is still growing (with a momentum that will cause it to do so for several more decades), world leaders have long since acknowledged that population growth poses serious problems. As a result of this concern, the United Nations established such bodies as the U.N. Population Division, which monitors world demographic trends, and the U.N. Fund for Population Activities, which gives financial help and expertise to underdeveloped countries seeking to lower their fertility rates.

¹⁰⁵ Ibid, 4.

Furthermore, the U.N. frequently holds international conferences that address the various problems attributable to population growth and various means to rapidly and humanely bring about world population stabilization.

The efforts on the part of those who were concerned with the U.S. population have only enjoyed mixed results. On the upside, the growing concern over U.S. population growth in the 1960s warranted a major government study. Released in 1972, the Rockefeller Foundation's very comprehensive study titled "Population and the American Future" studied the affects of population growth on virtually every facet of American life. It came to the following conclusion:

"After two years of concentrated effort we have concluded that, in the long run, no substantial benefits will result from further growth of the Nation's population, rather that the gradual stabilization of our population would contribute significantly to the Nation's ability to solve its problems. We have looked for, and have not found, any convincing economic argument for continued population growth. The health of our country does not depend on it, nor does the vitality of business nor the welfare of the average person."¹⁰⁷

In addition to making several policy recommendations that would bring about the eventual stabilization of the population (one of which being the creation of an Office of Population Affairs under the Department of Health, Education, and Welfare), the study also placed great emphasis on the very real possibility of a drastically deteriorating natural environment where such things as a safe and adequate water supply would become a major issue in the future.

¹⁰⁶ Goudie, 111.

¹⁰⁷ The Report of the Commission on Population Growth and The American Future. "Population and the American Future." 1972.

But the study did not focus solely on the environment. It also asserted that the economies of scale between the population and the government services had been exceeded, and that attempts to cure social ills (especially those that involved minority groups) would be exceptionally difficult in the wake of continual population growth. Furthermore, the study devoted substantial effort toward debunking the myth that a large population is necessary for national security. It concluded that, "When the nation was young and her independence not very secure, her defense depended on the number of people bearing arms...", but, "Because of the expected nature of future military conflicts, experts suggest that a peacetime active duty force of two to three million would be sufficient to ensure national security. The three million required would be less than six percent of the male population 18 to 45 years old... Thus we can discern no threat to the nation's security from lesser future growth of total population."¹⁰⁸

The Rockefeller Report was very successful in two ways. First, it intelligibly linked population growth to the diminished ability of the nation to care for its natural environment. Second, it deflated much of the mercantilist-like perceptions that still pervaded American thought as it pertains to population. The study was very explicit in stating that population growth is not necessary for a strong national defense or for a healthy economy. But on the downside, the U.S. government largely ignored the findings of this study. There were many advances made in family planning services, as evidenced by the passage of the improved Family Planning and Research Act of 1975 and by Supreme Court cases such as *Roe vs. Wade*, but these were more of an outgrowth of the

¹⁰⁸ Ibid,85.

debate over the issues of privacy and women's reproductive rights. They did not necessarily originate from a concern over population. Since the Rockefeller Report, there has been one other major government study that focused on population. In 1996 the President's Council on Sustainable Development released a report titled "Sustainable America: A New Consensus for Prosperity, Opportunity, and a Healthy Environment for the Future" in which an entire chapter was devoted to population growth. In this report, the council lists ten broad goals that together would make for sustainability of U.S. development, with one of those being population stabilization. It was stated, "Stabilizing the population without changing consumption and waste production patterns would not be enough, but it would make an immensely challenging task more manageable. In the United States, each is necessary; neither is sufficient."¹⁰⁹

In both government studies, the eventual stabilization of the population is called for. But these reports differ in that the Rockefeller Report's thesis was that population growth is not necessary and that problems would become more manageable as growth slowed, while the Council on Sustainable Development took a firmer stance in so far as it essentially claimed that population stabilization is necessary to meet our goals. Unfortunately, calls for population stabilization have largely gone unheeded, as evidenced by the fact that since the Rockefeller Report the American population grew by about 70 million people and (according to the Census Bureau's medium projection) is

¹⁰⁹ President's Council on Sustainable Development. "Sustainable America: A New Consensus for Prosperity, Opportunity, and a Healthy Environment for the Future." (Government Printing Office, 1996). Chapter 6: "U.S. Population and Sustainability", 1.

expected to grow by over 100 million in the next five decades.¹¹⁰ As an explanation as to why the government has remained rather lax towards population growth, many claim that we have a long-standing "growth ethic" in this country that will take years, if not generations, to change. Others point out that population is an inherently thorny issue that many elected officials (who must run for re-election) prefer to avoid. Similarly, it is such a long-term issue that it does not make sense for those in elected office to devote a significant amount of attention to it when they are other problems seen as more pressing and immediate. These may be true, but a more likely explanation is that how an issue is defined dictates what type of agenda it gets placed on. This, in turn, influences what type of policies will be used to address that particular issue. By turning the discussion to the agenda-setting portion of the policy process, it will become clear why American population growth was not acted upon with as much vigor as many were hoping for.

It has been argued that there are two types of agendas on to which the various problems systemic to population growth can be placed: the survival agenda and the opportunity agenda.¹¹¹ Many developing nations are faced with such rapid population growth and such scant resources that the very lives of its citizens, as well as the viability of the entire society, are at risk. Hence, population policies are developed and implemented as a matter of survival. The situation is much different in developed

¹¹⁰ U.S. Bureau of the Census, "Projections of the Population of the United States, by Age, Sex and Race:1988 to 2080." *Current Population Reports*, P-25-1018. Washington, DC. U.S. Government Printing Office, 1989.

¹¹¹ Bergman, Elihu. "American Population Policy: An Agenda for Expanding Opportunity." *Political Issues in U.S. Population Policy*. Virginia Gray and Elihu Bergman, eds.(New York: Lexington Books, 1974), 3.

nations, especially in the U.S. Although population growth is occurring, it is not as rapid and certainly does not threaten our survival. As population policy expert Elihu Bergman stated, "Contrasted to the primordial requirements of the developing world, we have long since won the battle of survival, and in so doing, have developed greater capacities for influencing the conditions of our survival."¹¹² Therefore, we do not perceive population growth and its subsequent damage as life-threatening. At least not in the foreseeable future. Instead, we focus on the affects population growth has on our quality of life or, as Bergman worded it, "the scope of opportunity." Interestingly, he points to the Rockefeller Commission's "Population and the American Future" as an example of a comprehensive version of the opportunity agenda for population policy making. As previously mentioned, this report stated its findings on how population growth can adversely affect our education, health, ability to address social inequities, and the environment. The content found in this report demonstrates what a contrast there is between the situation of a very poor and underdeveloped nation that is facing a problem of survival and that of a developed nation facing a problem of decreasing quality of life. The report makes no mention of a possible threat of starvation (as there may be in a developing nation), but it does raise the possibility of an increase in food and energy prices as well as a decrease in outdoor recreation possibilities. Because the issues stemming from U.S. population growth are such that we can place them on an opportunity agenda instead of a survival agenda, we are permitted the "luxury of greater

¹¹² Ibid.

variation in policy alternatives."¹¹³ Instead of being forced to mandate a one-child policy (like China) or exercise involuntary sterilizations (like India reportedly did in the 1970s), the U.S. could address population growth in a much more flexible way. This explains why the government focused solely on family planning programs to address population growth.

Where does this agenda-setting fit in the overall scheme of the policy process? The public policy process follows six steps: problem recognition, agenda setting, policy formulation, policy adoption, policy implementation, and policy analysis and evaluation.¹¹⁴ During the late 1960's, population growth was increasingly being seen as a problem. These problems (with environmental damage being the dominant one) were vocalized by many interested parties, but were officially relayed to the government through the Rockefeller Commission. Along with other sources, the government considered this report and deemed the issue to be worthy of being placed on an "opportunity agenda". Since survival was not at stake, the policy formulation phase almost exclusively consisted of alternatives within the realm of family planning. Choosing this alternative was the proverbial "win-win" situation for the decision makers. First of all, it was nothing too drastic and did not mark a radical departure from past governmental involvement (or lack thereof) in childbearing decisions. Second, by doing something they appeased those who truly felt population growth needed to be dealt with.

¹¹³ Ibid, pp. 8

¹¹⁴ Theodoulou, Stella Z. "How Public Policy Is Made." *Public Policy: The Essential Readings*. Stella Theodoulou and Matthew A. Cahn, eds. (Englewood Cliffs, NJ: Prentice Hall, 1995), 86-95.

And third, this coincided with a time when many Americans were calling for more family planning services and "reproductive freedom", as demonstrated by some now famous Supreme Court cases tried during this time frame.

But why was the population problem placed on an opportunity agenda instead of a survival agenda? One explanation is that the Malthusian symbols that were used (and are still being used) were not persuasive enough. It was the proverbial "crying wolf" situation: Malthus' predictions never came true, nor have those of the neo-Malthusians such as Ehrlich. Many still doubt whether they ever will, so the very same debate continues. At least the case has not been made that population has to be addressed instead of solely focusing on technology or consumption. It is not logically sound to argue that since technology has worked thus far in preventing population-induced "ecotastrophe" it will continue to do so in the future. However, history has certainly proved this camp right so far. The fact is that there is a decreasing proportion of people starving worldwide than ever before and Americans are (materially speaking) living better than ever. Whether this trend continues remains to be seen. But a deeper explanation requires an examination of the dominant form of environmentalism, with the understanding that environmentalism is guided by environmental ethics. It was mentioned earlier that concerns over population growth did not occur in a vacuum. They were prompted by a rise in environmentalism. Although population growth can be harmful for many reasons not necessarily directly related to the environment, most modern day concerns about population are rooted in environmentalism to some extent. Therefore, if environmentalism is what prompted the contemporary population debate, then the type of environmentalism (and environmental

ethics) to which we subscribe influences how the issue is defined and what agenda we place it on.

Environmental ethics presents and defends a systematic and comprehensive account of the moral relations between human beings and their environment,¹¹⁵ and can basically be broken down into two categories: anthropocentric (human-centered) ethics and biocentric (life-centered) ethics. Needless to say, anthropocentric ethics is (and has always been) the dominant strain of ethics in American environmentalism. And the fact that we have been assessing population growth from the viewpoint of this body of environmental ethics explains why it was placed on the opportunity agenda. Furthermore, it partially explains why many feel that population growth is merely an indirect cause of environmental deterioration. If, however, biocentric ethics were to dominate environmentalism, then the population issue may have been framed much differently followed by much different policy outcomes. Instead of focusing on safe drinking water, increased agricultural prices, and decreased natural beauty and recreational opportunities, perhaps such issues as species extinction, reduced biodiversity, and the destruction of natural self-sustaining ecosystems would have been given more attention in the problem-definition phase of the policy process. Furthermore, if non-human species (or at least some of them) were granted a higher degree of moral standing, then perhaps the population problem would have been placed on some form of a survival agenda than an opportunity agenda. In other words, a shift to biocentric ethics would give the population

¹¹⁵ DesJardins, Joseph R. *Environmental Ethics: An Introduction to Environmental Philosophy*. (Belmont, CA: Wadsworth Publishing Co., 1993), 13.

issue much more importance than it receives now. The next chapter defines biocentric ethics, explores the roots of biocentric ethics, defends biocentric ethics as the branch of environmental ethics that should be adhered to in the policy making process, and demonstrates how biocentric ethics requires us to make a concerted long term effort at stabilizing our population.

CHAPTER 4

ENVIRONMENTAL ETHICS AND POPULATION GROWTH

Up until this point this thesis has focused on the demographics of population growth and how population growth has been viewed by society and the political process. In this chapter the focus shifts to environmental ethics and its application to population growth. The ultimate aim of this chapter is to convince the reader that the traditional anthropocentric-based utilitarian arguments for population stabilization are inadequate and a shift in thinking that leans more towards biocentric thought is the better approach to environmental ethics. To meet this purpose, this chapter is broken down into five sections. The first section provides some of the background information on environmental ethics that is necessary for the reader to understand the arguments being made in this chapter. The main focus of this section is distinguishing anthropocentric ethics from biocentric ethics. It is helpful to make it clear from the beginning that an ethical theory can rarely be strictly anthropocentric or biocentric. Instead of labeling ideas as one or the other, it is best to view environmental ethics as a spectrum with anthropocentric views on the one end and biocentric views on the other. Usually ethical theories will fall somewhere in the middle, taking on characteristics of both and thus making it difficult to characterize certain thinkers as anthropocentric or biocentric.

The second section of this chapter provides a historical overview of how anthropocentric environmental ethics have dominated our thoughts on how humans

should interact with nonhuman organisms and natural ecosystems. This overview illuminates the many problems associated with such strict anthropocentric views and how it fails to protect the interest of nonhuman species. This leads directly into the third section of the chapter which bridges the gap between earlier efforts to address population growth and the shortcomings of anthropocentric environmental ethics. Relying on anthropocentric environmental ethics is simply not the correct way to address environmentally-related problems, as is evidenced by the failure to adequately address population growth sooner. It does not provide a powerful enough argument to persuade others that population stabilization should be a priority of ours because it fails to take into account many interests that should be given consideration. Therefore, to summarize the view taken in this section on anthropocentric environmental ethics, it can be stated that anthropocentric ethics is not wrong or illogical, just that it is incomplete. While it does take into consideration many important interests and ideals, it does not consider all of the ones it should and thereby does not recognize all of the problems that population growth causes.

As a result of these shortcomings, this chapter then turns its attention to biocentric ethics and urges a shift in thinking towards this outlook. Note the word "shift" is used instead of "switch" because, as stated earlier, environmental ethics should be viewed as a scale instead of as two basic theories that require us to choose one or the other. As a result, this shift will force us to view population growth in a new light. One that makes it clear to us that even if population growth can continue without harm to humans, population stabilization should still be a societal goal of ours since population growth frustrates the interests of nonhuman species and ecosystems that we, as moral agents,

should be giving much more moral consideration. This aspect of the argument is done in three steps. First, there is an overview of the emergence of biocentric ideas in Western thought. An understanding of the early biocentric thinkers and how biocentric thought has progressed is essential to understanding the modern biocentric ideas used in this thesis. Secondly, there is a defense of biocentric environmental ethics. It must be established that this is the outlook we should in fact adopt, otherwise it is pointless to proceed in demonstrating how a shift towards biocentric ethics would require efforts toward population stabilization. The final section of this thesis is devoted to arguing that an adoption of a more biocentric outlook will in fact require us to stabilize our population. This aspect of the argument is composed of two basic premises: population growth is no longer necessary to achieve or protect any human interests, and efforts aimed at altering consumption and technology are not enough alone to protect the interests of nonhuman species.

Defining "Environmental Ethics"

In the last few decades, the field of environmental ethics has gained a substantial amount of attention. Environmental ethics courses are taught in many universities, and there has been a surge of writing on environmental ethics over the last few decades. These works include such now famous books as Rachel Carlson's *Silent Spring* (1962), Peter Singer's *Animal Liberation* (1975), Tom Regan's *The Case For Animal Rights* (1983), and Paul Taylor's *Respect for Nature* (1986); an abundance of articles published in scholarly journals of a wide cross-section of academic disciplines and political slants; and the creation of scholarly journals such as *Environmental Ethics*, *Ecology Law*

Quarterly, and *Environmental Review* that are completely devoted to environmental ethics. All of this recent academic work in environmental ethics may lead one to believe that it is a completely new field. While it is true that only recently have environmental ethics developed into a cohesive and "independent" academic discipline, environmental ethics in a sense have always existed. After all, humankind has always been dependent on the earth for its survival and well-being or, at the very least, has always had some interaction with nature. Therefore, there have always been ideas concerning the right way and the wrong way to treat nature and its nonhuman inhabitants even though these did not always have the label of "environmental ethics." As this brief history will show, anthropocentric- dominated ethics have virtually always been (and in many ways still are) the norm, although the tide seems to be turning in favor of biocentric ethics.

Environmental ethics presents and defends a systematic and comprehensive account of the moral relations between human beings and their environment.¹¹⁶ In other words, environmental ethics is concerned with the moral relations between humans and the natural world. The ethical principles governing those relations determines our duties, obligations, and responsibilities with regard to the earth's natural environment and all the animals and plants that inhabit it.¹¹⁷ Therefore, what a theory of environmental ethics is designed to do is "establish the rational grounds for a system of moral principles by which human treatment of natural ecosystems and their wild communities of life ought to

¹¹⁶ DesJardins, Joseph R. *Environmental Ethics: An Introduction to Environmental Philosophy*. (Belmont, CA: Wadsworth Publishing Co., 1993), 13.

¹¹⁷ Taylor, Paul W. *Respect For Nature: A Theory of Environmental Ethics*. (Princeton, NJ: Princeton University Press, 1986), 3.

be guided."¹¹⁸ To explain it in a simpler fashion, environmental ethics can basically be broken down into two categories: anthropocentric (human-centered) ethics and biocentric (life-centered) ethics. Anthropocentric ethics claims the duties we hold to the natural world are ultimately derived from the duties we hold to one another. Destruction of the environment or harm to nonhuman species can only be deemed unethical if it in some way harms another human being. A strict following of anthropocentric ethics requires one to believe that the natural environment and its nonhuman species have only an instrumental worth. This means that their worth depends only on how much value they have for humans (whether it be in economical, recreational, or aesthetic terms).

Biocentric ethics claims that the earth does not exist solely for the service of humans. Instead, all living creatures and wild communities, regardless of their utility (i.e., instrumental value) to humans, have a worth that is inherent to them; a worth that is to be respected for its own sake. In other words, humans are no longer the sole gauge of the rightness or wrongness of an action and its consequences. As philosopher Holmes Rolston III stated, "All ethics seeks an appropriate respect for life, but respect for human life is only a subset of respect for all life. What ethics is about, in the end, is seeing outside your own sector of self-interest, of class interest. A comprehensive ethic will find value in and duties to the natural world."¹¹⁹ Therefore, according to biocentric ethics, if it can be demonstrated that something we do harms nonhumans species yet does not

¹¹⁸ Ibid, 9.

¹¹⁹ Rolston, Holmes III. " Challenges in Environmental Ethics." *Environmental Philosophy: From Animal Rights To Radical Ecology* .Michael E. Zimmerman, ed. (New York, Prentice Hall, Inc., 1993), 136.

create any problems for humans, then that action is still morally wrong. On the opposite end of the spectrum is strict (or pure) biocentric ethics which would hold that all life is of equal worth. Yet this is a rather extreme view, and is not representative of the majority of biocentric thinkers. Although all beings are considered to have some inherent worth, that of a nonhuman species and human species (or among different nonhuman species for that matter) are not necessarily equal. Peter Singer explains this concept by stating, "It is not arbitrary to hold that the life of a self-aware being, capable of abstract thought, of planning for the future, of complex acts of communication, and so on, is more valuable than the life of a being without these capacities." This statement resembles a school of thought that has been called "eco-humanism." Eco-humanism, which by all accounts is still a form of biocentric environmental ethics, is a compromise position which attempts to combine eco-compatibalism's emphasis upon harmonizing human activity with ecological principles and promoting the overall well-being of the non-human biosphere with humanism's concern for human individuals.¹²⁰ As a form of humanism, eco-humanism stresses the importance of humans and so grants priority to the vital interests of humans when they come into irreconcilable conflict with other individuals or the larger biosphere with the burden of proof being on humans to show that their vital interests are at stake.¹²¹ Therefore, biocentric ethics does not necessarily hold that all species are equal; it merely asserts that all species, regardless of their instrumental value, have some inherent worth and are therefore worthy of some degree of moral consideration. How

¹²⁰ Aiken, William. "Ethical Issues in Agriculture." *Earthbound: New Introductory Essays in Environmental Ethics*. Tom Regan, ed. (New York: Random House Inc., 1984), 271.

much moral consideration is, of course, a much debated issue, and is one that will be taken up later in this chapter. Not only is biocentric ethics split with respect to how to assign inherent worth, biocentric ethics is also split between the individualistic vision and the holistic vision. The individualistic philosophers emphasize the importance of individual members of the earth's biosphere. Those who adhere to the holistic vision place ultimate value in ecosystems and their continual functioning instead of the individuals that comprise it. In short, within biocentric ethics there are several theories as to what characteristics make nonhumans worthy of moral consideration, and theories that emphasize an individualistic or holistic approach. The strengths and weakness of these theories will be examined throughout this chapter and then applied to the population issue.

Historical Dominance of Anthropocentric Environmental

Ethics in the Treatment of the Environment

Nature has not fared too well in Western ethics. Most post-enlightenment philosophies simply assumed that nature (and its nonhuman inhabitants) did not have rights and that it existed for the sole purpose of serving humans. But what were the origins of such anthropocentric beliefs? For Americans, as Roderick Frazer Nash explains in his book *The Rights of Nature: A History of Environmental Ethics*, there are at least three reasons why nature was given such little thought.¹²² First, most of the United

¹²¹ Ibid, 272.

¹²² Nash, Roderick Frazier. *The Rights of Nature: A History of Environmental Ethics*. (Madison, WI: University of Wisconsin Press, 1989), 34-35.

States was wilderness up until the middle of the 19th century. The inexhaustibility of resources was the dominant American myth that even rendered utilitarian conservation unnecessary. The idea of living ethically and harmoniously with nature was incompatible with 19th century American priorities.¹²³ Secondly, up until this point the dominant concern of earlier reformers and intellectuals was with the rights of people. After all, that is what the American Revolution was all about. And once the revolution was won, the emphasis on human rights progressed to include slaves and eventually women. Understandably, the rights of nature took lower priority to these concerns for humans (especially since there was not yet even much of a utilitarian need to respect nature). And third, once the desire to protect nature did arise, it was based on anthropocentric oriented utilitarianism. This is an aspect of American environmentalism that will be discussed in greater detail later.

Since anthropocentrism was the dominant form of environmental ethics in early America, there was little or no efforts to protect the environment. Many have also placed some blame on Judeo-Christian tradition for instilling in us the belief that humans are not only superior to all other life, but that we are the *only* species of *any* moral worth. Perhaps the most well known example of this type of criticism comes from historian Lynn White, Jr.'s 1967 essay, "The Historical Roots of Our Ecological Crisis." According to White, both Judaism and Christianity posited a dichotomy between people and the natural world making people masters of the natural world instead of mere

¹²³ Ibid.

members.¹²⁴ This dichotomy was supported by many religious teachings such as humans being created in the image of God, humans being unique in that they were the only species to possess a soul, and only humans could achieve salvation and move on to an afterlife. Although White's article received some criticism and even angered some members of the religious community, his argument is not without support. For example, in Genesis, the first book of the Bible, the following is stated: "Then God said: 'Let us make man in our image, after our likeness. Let them have dominion over the fish of the sea, the birds of the air, and the cattle, and over all the wild animals and all the creatures that crawl on the ground.' God created man in his image...God blessed them, saying: 'Be fertile and multiply; fill the earth and subdue it' " (Genesis 1:26-28). This passage is a good example of the view referred to as the Great Chain of Being which claims that humans are created as higher beings than nonhumans. This view holds that every existent thing has a certain place in an infinite hierarchy of entities extending from the most real and perfect to the least real and most imperfect.¹²⁵ Beginning with God at the top, this hierarchy continues down through the angels, then to humans, then to animals and plants, and so forth. With such strong anthropocentrism being commanded by God, there is no wonder why people felt superior to nonhumans. White also pointed toward Christianity's rejection of animism. Animism can be understood as an expanded circle of moral consideration; ethical relevancy did not end with God and other people.¹²⁶ In other

¹²⁴ Ibid, 88.

¹²⁵ Taylor, 139.

¹²⁶ Nash, 90.

words, everything had a sacred quality and people could have a personal relationship with nature, but the rigid monotheism of Judaism and Christianity forbade this.

According to Nash, Christianity's harmful influence on environmental ethics does not end with the points made by White. There is also the traditional Christian view of wilderness as a cursed land. As the Puritans demonstrated at the beginning of the American experience, the only appropriate Christian response to wilderness and its nonhuman inhabitants was conquest and subjugation.¹²⁷ Additionally, there is a sense of otherworldliness embedded in Christianity. Christian aspirations were fixed on heaven and the earth was a mere "halfway house" that God was prone to destroy at any minute.¹²⁸

Those who disagree with blaming the Judeo-Christian tradition for our anthropocentric ways are quick to point out that it is unfair to blame this religion for environmental destruction. While there may be some biblical passages that do encourage a harmful human-nature dichotomy, there are several others that call for good stewardship. Furthermore, Saint Francis of Assisi (heralded as the patron saint of ecology) is a good example of how not all Christians, even devout ones, necessarily embraced the tenets of Christianity that were not exactly environmentally-friendly. He was often seen preaching to the animals in the country side and referred to them as his brothers and sisters. But nonetheless, even though there are some aspects of Christianity

¹²⁷ Nash, Roderick Frazer. *Wilderness and the American Mind*. (New Haven, CT, 1982), 13.

¹²⁸ Nash: *The Rights of Nature*, 92.

that encourage good stewardship of the environment, it is clear that they did not hold the most persuasion.

Traditional Western religious views were not very favorable to the environment, and much of Western philosophy (although not always separable from religion) was not much better. Nash also stated in his book *The Rights of Nature: A History of Environmental Ethics*: "But just like theologians, Western ethicists have focused for two millennia almost exclusively on the conduct of people toward each other and toward various duties. Traditional moral philosophy professed little concern for the human relationship with nature. When philosophy did examine the moral status of animals and natural objects, it was usually in the manner of Descartes, for the purpose of ruling them out of ethical bounds. Well into the middle of the 20th century, environmental ethics was simply inconceivable as a subject for philosophy."¹²⁹ So even though religion is often criticized by some environmentalists as the chief culprit, it has played a much less fundamental role than philosophy; most of the environmentally offensive ideas in Western religion originated not in religion but in Western philosophy.¹³⁰ Eugene Hargrove, in his book *Foundations of Environmental Ethics*, demonstrates this by selecting a few thinkers from the two periods that he believes were the most influential in shaping philosophical attitudes toward the environment: classical Greek philosophy and early modern European philosophy.¹³¹

¹²⁹ Ibid, 122.

¹³⁰ Hargrove, Eugene C. *Foundations of Environmental Ethics*. (Denton, TX: Environmental Ethics Books, 1989), 15.

¹³¹ Ibid, 16.

Of the classic Greek period, the two most influential figures were, of course, Plato and Aristotle. Plato's metaphysical theory of the forms prevented the creation of any significant appreciation of nature and created a sort of antipathy to natural objects. True beauty only existed in another plane, so there was no point in admiring natural objects and nonhuman species and certainly not in preserving them. They were only mere images in a sense. Although these views of Plato are somewhat mystical, it is easy to observe how well they parallel the other-worldliness of early Christians.

Aristotle, by contrast, was much more concerned with the natural world than Plato. In some respects he could even be thought of as a naturalist. Many of Aristotle's books, such as *History of Animals*, *Parts of Animals*, *On Plants*, and *The Physics* were recordings of his observations of the natural world and his theories about the intricate workings of nature. But Aristotle's findings were anthropocentric to the utmost. He thought that certain kinds of objects, especially living organisms existed for particular purposes as part of a design built into nature.¹³² But instead of simply examining each organism separately he also examines them in their relationship to other organisms. He then came to the conclusion that lower organisms existed for the benefit of higher organisms. The reaching of the telos (or final cause) of a lower organism was necessary for a higher organism to reach its telos, and so forth. All organisms were ranked into an order of being with humans being at the top. Aristotle articulated this in *The Politics* by stating: "In like manner we may infer that, after the birth of animals, plants exist for their sake, and that other animals exist for the sake of man, the tame for use and food, the wild,

¹³² Ibid, 25.

if not all, at least the greater part of them, for food, and for the provision of clothes and various instruments. Now if nature makes nothing incomplete, and nothing in vain, the inference must be that she has made all animals for the sake of man."¹³³

These writings of Aristotle embody the inherent superiority of humans over other species that was implicit in the classical Greek definition of a human being as a rational animal. This capacity to reason was seen not only as unique to human nature, but also what gave us special value or worth.¹³⁴ By having this ability to reason, we are able to live on a higher plane than nonhuman species. Living a rational life allows us to develop nobility of character (or any of the virtues set forth in Aristotle's *Ethics*) which is the best type of life according to the Greeks. Beings who were not rational had no chance of living this type of life and therefore were considered a lower form of existence. This is what helped form the basic assumption of human superiority that has persisted until today.

During the period of early Modern European philosophy, one of the key philosophers- at least as far as the influence on environmental ethics is concerned- was Rene Descartes (1596-1650). The Cartesian emphasis on consciousness or awareness was the guiding principle for rendering individual nonhumans unworthy of moral consideration and is another major historical source of the idea of inherent human superiority. Referred to as metaphysical dualism, Descartes thought that human beings were superior to animals and plants because humans have souls (or minds) as well as

¹³³ Aristotle. *The Politics*. 1256b7-22.

¹³⁴ Taylor, 135.

bodies while animals and plants are only bodies.¹³⁵ Animals, in his view, are mere "automata" or machine-like organisms because they do not possess the minds that allow us to have reason and free will. They are not conscious like humans, and are therefore not aware of their existence and not capable of feeling physical pain, much less emotions and desires. Instead, they are mere physical mechanisms that house complex physical processes but not "life" in the same sense that humans do. He likened them to clock when he wrote that they are functioning only "according to the disposition of their organ, just as a clock, which is only composed of wheels and weights..." Much of Descartes' philosophy (and not just that regarding animals) has widely been rebuked, but his emphasis on consciousness as a criteria for moral consideration has largely endured. Among modern proponents of anthropocentrism, our higher level of consciousness is what separates humans from nonhumans and what grants us intrinsic value while nonhumans enjoy only instrumental value. Even those that do concede that at least some mammals have some degree of consciousness still hold that we have more and are therefore have more inherent value. In other words, some hold that consciousness is the primary factor when deciding a particular species moral worth.

Thus far the influential traditions of Western thought that have been discussed focus on how humans should treat individual nonhuman organisms, but this is only one aspect of environmental ethics. Another important concern of environmental ethics is how we should treat biotic communities and ecosystems or, simply stated, the land. With regards to how we should respect the land itself, perhaps the most lasting influence has

¹³⁵ Ibid, 143.

come from John Locke (1632-1704). For most of Europe's history, German and Saxon freemen did not have a concept of land ownership, only of landholding.¹³⁶ The concept of land ownership (or private property) was introduced by John Locke in his book *Two Treatises On Government* which was first published in 1690. This work was held in very high esteem among many of America's "founding fathers" (Thomas Jefferson especially) and some of its language actually turns up in the Declaration of Independence. Deeply concerned with the natural rights of all men, Locke's treatise disputes many beliefs and practices of his day such as the divine right of kings and, more specifically, royal ownership of the land. According to Locke, if a man mixes his labor with a natural object, then the product is his.¹³⁷ He states the following:

"Though the Earth, and all inferior Creatures be common to all men, yet, every Man has of Property in his own Person. This no Body has a Right to but himself. The Labour of his Body, and the Works of his Hands, we may say, are properly his. Whatsoever he that removes out of the State that Nature hath provided, and left in, he hath mixed his Labour with, and joined to it something that is his own, and thereby makes it his Property."¹³⁸

Locke's reasoned that the enjoyment of property is a presocietal natural right. The right to property, through labor, existed before society was formed. It existed in the "state of nature" that ceased to exist once humans entered into the social contract that was

¹³⁶ Hargrove, 65.

¹³⁷ Ibid, 66.

¹³⁸ Locke, John. *Two Treatises of Government*. Thomas Cook, ed. (New York: Hafner Press, 1947), section 27.

created to protect people from one another. And since this society was formed for the purpose of protecting one's rights, then no society could infringe on this right to property.

Based on Locke's reasoning, when a person came across a patch of wilderness not yet inhabited by another human, any work or "improvement" on that land made it that person's property. This concept of property rights still runs strong today, and although it is not explicitly stated by Locke, it is interesting to note that his views implicitly hold that wilderness only exists for the sole purpose of becoming the property of humans. The fact that nonhuman species already inhabit that area and have "mixed their labor" with it is of no consequence. And certainly, the concept of the natural objects of that area (such as the trees and the rivers) having a right to remain intact since they were there first would have been beyond comprehension. In sum, Locke's philosophy embodies the two basic tenets of the anthropocentric ethics that have developed so far. First, humans, by virtue of being human, are the only organisms of any moral significance. They are the only ones with rights and the only ones who have inherent value. And second (as an extension of the first), humans thereby have the right to do what they wish with nonhuman organisms as well as wilderness areas, includes altering it regardless of its effects on the inhabitants.

Applying Anthropocentric Environmental

Ethics To The Population Issue

Up until this point, this thesis has mainly dealt with three aspects of the population issue. First, it provided the demographic background information necessary for a discussion on the need for population stabilization. Secondly, this thesis offered a brief description of the environmental damage that many neo-malthusians attribute to

population growth and feel is enough to warrant the creation of population policies. This evidence possesses a definite anthropocentric slant. Nonetheless, it was important to provide this summary of population-related damage because if population growth is not actually hurting the environment, then it would be difficult to argue for population stabilization based on environmental ethics. And third, also in the previous chapter, the historical context of the population policy debate was provided. This was to demonstrate the way in which the framing of the population issue has been greatly influenced by the dominance of the anthropocentric ethical perspective that has prevailed throughout history. Since U.S. population growth has not been given much more than superficial attention by the government, then clearly framing the issue strictly in anthropocentric terms is not enough. Therefore, this section- by attacking the traditional and standard anthropocentric arguments for population stabilization- will show how anthropocentric ethics has failed to convince others to support the argument for population stabilization in the U.S. and why biocentric ethics is necessary if policies aimed at population stabilization can be justified. In other words, if the issue continues to be framed strictly in anthropocentric terms (and the things that we value for ourselves are not significantly altered) then population growth will simply not be given the attention it warrants. But the argument for population stabilization efforts cannot end there, or the argument would be circular. Instead, once it is shown that a shift from anthropocentric ethics to biocentric ethics is needed for population to receive its due attention, it must then be argued that a more biocentric outlook is indeed the right one to adopt.

To do this, let us assume for the time being that population is either the driving force behind this environmental destruction or, at the very least, a key component of it. It

is now time to make some sort of moral judgement on this environmental harm that is taking place and, subsequently, a moral judgement on the population growth that we are to assume is fueling it. To do so in anthropocentric terms means that we evaluate this damage to the environment as right or wrong in terms of how badly it harms humans. The ethical theory that is relied on the most (in fact, almost exclusively) in arguing for population stabilization is utilitarianism. Utilitarianism (although it no longer enjoys as much support from the philosophical community as it once did) is still widely used in the policy evaluation arena, albeit under the ruse of "cost-benefit analysis." Before there can be a departure from the traditional way of looking at population growth, it is necessary to first provide a detailed examination of where the old approach fails and why.

Utilitarianism was originated by British philosopher Jeremy Bentham and later advanced, and slightly refined, by one of utilitarianism's strongest proponents, John Stuart Mill. Bentham asserted that, "Nature has placed mankind under the governance of two sovereign masters: pain and pleasure... They govern us in all we do, in all we say, in all we think: every effort we can make to throw off our subjection, will serve but to demonstrate and confirm it."¹³⁹ In other words, all human actions are consequentialist by nature. Taking this into consideration, utilitarianism holds that "actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness."¹⁴⁰ Happiness is identified with pleasure and with the absence of pain. Mill also went on to state, "Pleasure and freedom from pain are the only things that are

¹³⁹ Bentham, Jeremy. *Principles of Morals and Legislation* (Garden City, NJ: Doubleday and Company, Inc, 1961), 18.

¹⁴⁰ Mill, John Stuart. *Utilitarianism* (New York: Oxford University Press, 1969), 118.

desirable as ends, and all desirable things are desirable for the pleasure inherent in themselves, or as the means to the promotion of pleasure and the prevention of pain."¹⁴¹ It is important to note that utility includes not just the pursuit of happiness, but also the prevention or mitigation of pain; and not just for the individual, but for all of society. "The multiplication of happiness is, according to utilitarian ethics, the object of virtue."¹⁴² Therefore, the basic principle of utilitarianism can be summed up in the following declaration: actions are right to the degree that they tend to promote the greatest good for the greatest number.

Caring for the environment and mitigating the damage already done through the stabilization of our population carries great utility for society (and the world community as a whole). And, to perhaps state it better, the population increasing any further will carry a tremendous amount of disutility, or pain, for society. Therefore, any further harm to the environment can be translated as further harm to us. An expanding population means the need for food is expanding, but the earth is limited and can only yield so much bounty. With the present population, the seas are already overfished and estimates of how much more it could provide are bleak. Farmland is already being taxed at an unsustainable level. To demand any more from our farms could require an increase in fertilizer and pesticide use, and the consequences of this are literally deadly. To further increase crop yield, the only option is clearing more land for agriculture. But this is by no means a viable long term solution since it would require even more deforestation. Furthermore, land that could be used for agriculture (especially the raising of livestock)

¹⁴¹ Ibid.

is, for the most part, already being used. Remaining land that could be farmed upon is certainly at a premium. All the while urban sprawl (a competing land use) is devouring 1.1 million acres of prime cropland per year in the U.S.¹⁴³ Shrinking supplies of water for irrigation and land area on which to grow food coupled with an increasing demand for food are situations that are simply not compatible.

The same rationale applies to the earth's finite energy resources. Adding more people to the planet inevitably increases the total amount of energy consumed, regardless of their respective consumption levels. Therefore, the amount of pollution created will inevitably increase as well. There will be that many more automobiles to run, homes to heat, and factories to operate. An increase in health problems and a decrease in quality of life resulting from the increase in air and water pollution certainly does not promote a greater degree of happiness. And, similar to the food supply scenario, tensions will rise as competition for dwindling fossil fuels becomes intense. Some have even used the U.S.'s conflict with Iraq in the early 1990's as an example of what can happen when a state's access to an energy resource is threatened. Again, with respect to the world's energy supply, population growth can and has created such conditions which are contrary to the promotion of happiness for individuals and the aggregate society alike.

Another environmental calamity that is damaging to the human species, though often unrecognized as such by many, is the assault on biodiversity. Through such mediums as rapid deforestation and climate changes induced by human activity, the earth

¹⁴² Ibid, 129.

¹⁴³ Rohe, 123.

has seen the extinction of thousands of plant and animal species as well as a substantial decline in overall biodiversity. This is extremely dangerous since so many plant and animal species can hold such great utility for the human race. For example, about one third of all prescription medicines are either plant defensive chemicals or chemicals modeled on them.¹⁴⁴ The next plant species destroyed could have been the one with the cure for AIDS or cancer, yet it will pass without discovery. Furthermore, such an assault on biodiversity has greatly diminished the earth's genetic library. This can adversely affect the world community since it reduces the pool of genetic variability needed to stay in the game of high-yield agriculture.¹⁴⁵ As already mentioned, monocultures are very susceptible to pests and disease. To combat this, they are often bred with relatives growing in the wild to slightly alter their genetic make-up and thus make them more resistant to blights and increasingly resilient pests that have become immune to toxins. But as the genetic library diminishes, so do the chances of finding suitable partners. Many consequences of destroying the natural habitat cannot be foreseen. No scientist can fully know what kinds of vital and potentially life-saving species are being destroyed or what kind of new viruses we will unleash or come into contact with if we begin inhabiting areas never ventured into before. Taking all of this into consideration, it is clear that the destruction of the earth's biodiversity may be an act that brings great pain to society and serves to prevent many discoveries that could have enormous utility for all.

If much of what was stated above is accurate, then certainly one would agree that population stabilization would certainly aid in "preventing pain and promoting pleasure."

¹⁴⁴ Ehrlich and Ehrlich, 34.

But there is a second way that is at least equally important in determining utility. As eluded to earlier, population stabilization should be the primary concern when employing various environmental initiatives. It is often said that any cause is a lost cause without population stabilization. Without population stabilization, the utility of other environmental initiatives (such as anti-pollution laws, recycling, raising awareness of rain forest destruction, etc.) is greatly diminished. Such initiatives carry a great amount of utility, but their full potential cannot be realized without measures to first reduce the human population. Thus, when determining whether or not population stabilization has utility (and also trying to quantify that utility), not only should consideration be given to the direct benefits of population stabilization, but also to its ability to raise the utility of other environmental initiatives and laws. Therefore, in addition to the direct benefits of population stabilization, society will also benefit because of the fact that population control enhances the utility of other environmentally oriented efforts.

Utilitarianism, applied in this manner, is a completely human-centered ethical theory, as most ethical theories are. That is not to say that it cannot be used as a biocentric theory. If nonhumans were given equal moral consideration, we could judge the rightness and wrongness of an act or rule based on the utility it presents for them as well as us. One only needs to look as far as Peter Singer's *Animal Liberation* to see how utilitarianism can take a biocentric form. But in the manner used here, its concern is centered around the welfare of humans. To state it simply, anthropocentric-oriented utilitarianism deems population stabilization to be ethically required since it holds great

¹⁴⁵ Ibid, 33.

utility (and prevents great pain) for the human race. Ending population growth eases the burden on the environment which, according to this philosophy, is the right thing to do since it is good for humans. As a result, anthropocentric-oriented utilitarianism seems to have little concern for the welfare of the natural environment in and of itself. It does not require humans to care for the environment simply for the environment's sake. In other words, the value placed on caring for nature is strictly instrumental. It does not consider nonhuman species (and certainly not ecosystems) as having an inherent value to be taken into consideration. The strictest of anthropocentric viewpoint holds that if the human race were somehow able to expand its population without causing considerable harm to each other (regardless of the impact on the environment and on other living beings), then there would be nothing wrong with allowing our population to continue to grow. But this does not seem to be the case. So why does anthropocentric-based utilitarianism work so well in theory, but in practice done little for the population stabilization movement? The next section of this chapter is devoted to answering this question, and is based on the ideas set forth in the books *On Liberty* by John Stuart Mill and *Policy Paradox* by Deborah Stone. The short answer to this question is that utilitarianism as whole is problematic because of the complex and diverse interests that must be considered when deciding if something is actually harming society, and that anthropocentric-based utilitarianism when applied specifically to environmental problems is inadequate because it fails to take into consideration and protect all of the interests that we as moral agents should consider.

The Inadequacy of Anthropocentric-Based Utilitarianism

On Liberty, often regarded as one of the most important essays of liberal thought, is an attempt to demarcate the nature and limits of the power which can be legitimately exercised by society over the individual. Mill stated: "The object of this essay is to assert one very simple principle, as entitled to govern absolutely in the dealings of society with the individual in the way of compulsion and control, whether the means used be physical force in the form of legal penalties or the moral coercion of public opinion. That principle is the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to *prevent harm to others* (italics added). His own good, either physical or moral, is not a sufficient warrant...The only part of the conduct of anyone for which he is amenable to society is that which concerns others."¹⁴⁶ Mill created the harm-principle to use as a tool to aid in the reconciling of the need for social order with individual freedom. Referred to as the harm-principle, this "one simple principle" unfortunately proves to be quite complicated and ambiguous, and has been subject to a great deal of criticism. In fairness to Mill, though, it was not his intention to provide clearly defined criteria to follow in the public policy process. Instead, Mill's argument is concerned with the importance of individuality and autonomy among members of society. Appearing as a humanist at times, Mill believed that humans are a

¹⁴⁶ Mill, John Stuart. *On Liberty*. Rapaport, Elizabeth, ed. (Indianapolis, In.: Hackett Publishing Co, Inc.,1978), 9.

progressive being and only through autonomy and rational thought can we continue to develop. He viewed unquestioned custom and the majority opinion as an enemy to one's efforts in becoming an autonomous creature, as was made clear when he wrote that society can be a "tyranny more formidable than many kinds of political oppression."¹⁴⁷ But that still leaves us with one major difficulty: what constitutes harm? Virtually every ethical theory, whether it be the utilitarianism of Mill or the deontological thoughts of Kant, deems something to be wrong if it "harms" someone. Although that notion is universal, people in such a diverse and pluralistic society such as ours, do not always agree as to what constitutes harm. A close look of all of the different types of harm there is and how this applies to population growth, and ultimately poses a problem for those who think population stabilization is necessary since humans are being harmed by growth will illustrate this point.

Deborah Stone's *Policy Paradox* does an excellent job of identifying the different types of harm that may be experienced as well as conveying how they are much more complicated than they first appear to be. The first and most obvious type of harm is physical injury. The idea that causing another physical injury should not belong in the sphere on liberty seems rather straight forward. Upon further inspection, this type of harm seems quite a bit more complicated because physical harm does not always take the form of one simply assaulting another. Stone illustrates this point in her example of the exposure of small but recurring doses of toxic chemicals in the workplace.¹⁴⁸ Now that

¹⁴⁷ Ibid, 5.

the harm is not immediate or direct and its effects are not felt as quickly, is it still a harm? And if so, to whom can blame be assigned for the purposes of seeking recourse or enacting policies that would prevent it from happening again. In the modern era this type of physical harm results from the failure of a large and complex system rather than from individual action.¹⁴⁹

Another way we can be harmed is materially or, as I will refer to it, economically. The state can often interfere with the liberty of a person to prevent economic harm to another, such as with the case of slander. But there is the question of how far do we want to go in protecting people from economic losses at the expense of other people's liberty?¹⁵⁰

Furthermore, there are amenity harms which are those that cause harm through depreciation of the aesthetic value of certain places or things. Examples include an increase in noise pollution, a decrease in privacy, or loss of a historical building. These are, as Stone points out, the most politically contentious harms since it is so difficult to measure them in market values or other quantifiable units.¹⁵¹

And a fourth type of harm that an individual may be exposed to is spiritual or moral harm. The actions of others can offend those of a particular religion. Mill gave a good example of this type of harm when he cited the "rather trivial example" of the hatred

¹⁴⁸ Stone, Deborah. *Policy Paradox: The Art of Political Decision Making*. (New York: WW Norton & Co., 1997), 110.

¹⁴⁹ Ibid.

¹⁵⁰ Ibid, 112.

¹⁵¹ Ibid.

of Muslims toward the Christian practice of eating pork.¹⁵² Mill was quite clear on the importance of not intruding on an individual's liberty on the basis of a religious belief. Conduct does not harm others simply because they dislike it or abhor it.¹⁵³ This may be true, but it will hardly convince those with religion on their side that they are not being harmed or that society as a whole is not injured from such a degradation in the collective morality.

This list of harms is generally agreed upon as the basic types of harm an individual can be subjected to. There is disagreement, though, over when a harm has actually occurred and whether it is a harm sufficient enough to warrant government intervention. This is because society, or the polis as Stone refers to it, is not made of like-minded individuals who agree on everything. There are many different people possessing a multitude of "reasonable comprehensive doctrines", and it is this doctrine that people use to gauge harms and to guide them in discerning what the best policy would be in rectifying the harm. On the individual level it is easy for a person to consult his or her own doctrine and then decide if they have been harmed. It becomes infinitely more complicated for society, being guided by many different and conflicting doctrines, to determine if they are being harmed collectively. So herein lies two fundamental and recurring problems of the harm-principle: 1) our different reasonable doctrines lead us to disagreement when defining harms, and 2) it is impossible for government to take

¹⁵² Mill, 83.

¹⁵³ Ten, C.L. "Mill's Defence Of Liberty." *J.S. Mill On Liberty in Focus*. Gray, John and Smith, G.W., ed. (London: Chapman and Hall, Inc., 1991), 215.

account for every possible interest that people may have and judge one to be better than the other. These problems can be seen in the interest-based arguments commonly made by proponents of population stabilization. For example, the agricultural industry's greatly increased use of fertilizers and pesticides to raise crop yields and keep pace with population growth may count as a physical harm. Pesticide and fertilizer run-off is the source of a great deal of water pollution which, because of the health risks associated with water pollution, is a long-term accumulative physical harm. The same holds true for topsoil loss. Foregoing crop rotation (usually done in exchange for increased crop yield) is one main causes of topsoil loss. Without topsoil, crops will not grow. Although this may be a much more serious problem in developing nations than it is in the U.S., the long-term worse case scenario consequence is starvation, which is by all means a physical harm. But there is a fair amount of room for disagreement over this claim of physical harm. The first type of disagreement is over whether a harm (or the potential for harm) actually exists. In the U.S., the claim that we may end up on the verge of starving while we export so much grain and still pay our farmers *not* to grow food is very weak and few would agree to forego having another child because of it. Furthermore, there are those who feel toxins in the environment from a farm or a factory are not sufficient reason for lowering the population. The medical industry has and will continue to develop new ways to counter the harmful effects of pollution and protect our health. After all, even with all this pollution, aren't we living longer than ever? A second type of disagreement comes from those whose interest in having a large family (and consequently contribute to population growth) outweigh their personal interest in living in a clean pollution-free environment. They would rather contend with pollution problems than suffer any loss of

personal happiness in not having more children. Similarly, there are those who would rather have a lower crop yield and eat a more simpler diet than give up having a large family.

Then there are those who predict that our population growth will eventually cause the depletion of the fossil fuels we are dependent on for energy before new alternative energy sources are developed and made economically feasible. If this becomes a reality, economic harm will be felt by many in numerous ways. But even if resources are finite, why restrict fertility instead of people's wasteful consumption habits? Or why not devote much more attention to developing alternative energy. There are those who would rather have the government try to influence people to conserve energy before restricting fertility because their happiness is contingent upon having a big family instead of living a lavish and consumptive lifestyle. And then there are those who, as a matter of personal preference, would rather consume resources than have a family.

There is also the argument that population growth harms us in an aesthetic manner is the destruction of our forests and wetlands. Soil erosion caused by deforestation is not the only problem that it causes. It also diminishes the amount of biodiversity in the wild and decreases the amount of recreational opportunities people can enjoy in the outdoors. This type of harm is felt certainly by those who lost their favorite hiking trail in the forest to a clear-cut, or those who lost a river they viewed to be more beautiful than any man-made work of art ever created because it needed to be dammed and diverted in order to provide drinking water for a growing population. But there are competing interests here too. One's interest in hiking and enjoying the outdoors cannot be judged (at least not by the government) to be a more important interest than those interested in having children

which in turn creates a larger demand for water and wood products, and real estate for housing.

And the final example of a harm to be given here is the harm felt by those with religious or spiritual ties to nature. Religious or spiritual affiliation with nature is not found only in Native American cultures. Dubbed as the "greening of religion", there is a significant movement within many traditional Western religions toward incorporating environmental ethics into religious doctrine and adopting the principle of stewardship of nature. One of the more vocal leaders in this movement is Bartholomew I who, as the Ecumenical Patriarch, is the spiritual leader of the world's 250 million Orthodox Christians.¹⁵⁴ Bartholomew I has stated, "For humans to cause species to become extinct and to destroy the biological diversity of God's creation...these are sins"¹⁵⁵, and "How we treat the earth and all of its creation define the relationship that each of us has with God. It is also a barometer on how we view one another."¹⁵⁶ Regardless of the profoundness of such sentiments, they are just as much a part of a religious belief as the prohibition of eating pork is for Muslims. And it does not take a lengthy dissertation on our separation-of-church-and-state doctrine to demonstrate why restricting population growth on these types of claims would be a mistake.

The point trying to be made in this section is two-fold. First, as just previously shown, when taking only anthropocentric interests into account, it is difficult to warrant

¹⁵⁴ Newsome, Melba. "To Have Dominion In The Earth." *The Amicus Journal*. Winter/ 1999, pp.16.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid, 17.

government intervention in population affairs. To attempt to blame population based on its supposed contribution to human harm via harm to the environment is very problematic. Interests are far too diverse to come to a consensus on the importance of stabilizing the population versus focusing on consumption or technology, and people would rather see the environmental harms mentioned throughout this paper addressed by means other than population if at all possible. Secondly, as mentioned in the beginning of this chapter, it is hard to even make the case that many of the environmental problems mentioned in Chapter 3 could not be rectified by the development of more environmentally-benign technology and an all around change in how people live and value consumption. In other words, population may not necessarily be the culprit after all. So does this mean that there is no good argument for population stabilization? Speaking strictly in anthropocentric-based utilitarian terms, it would seem so. However, if we adopt the biocentric outlook, then the need for population stabilization arises once again. This is because the biocentric outlook forces us to judge population growth, and ultimately the human's place in the biosphere, according to much different standards. To illustrate this point, consider the following hypotheticals. The reason why these hypotheticals are presented is not to give strength to the anthropocentric-based utilitarianism that this thesis is rejecting, but to point out the need for us to shift towards the biocentric outlook. The logic behind this is that even if you assume everything that is purported by one theory to be true and it is still inadequate (with inadequate in this context meaning that all of the interests we should be protecting are not) then it adds strength to the assertion that it is time to reevaluate the ideals we have always subscribed

to and give an honest consideration of alternative ideas and approaches to environmental protection.

Suppose that the population keeps growing, yet we are able to continue to develop new ways to neutralize the affects. With the advent of the green revolution and the new agricultural methods that came with it, people all over the world who may very well have starved (or not been born in the first place) had access to sustenance. Prior to that, many people were worried that a boom in the population would inevitably lead to mass starvation, but the green revolution prevented that from happening. So suppose that something of that magnitude is on the brink of happening again, where food output for several hundred million more Americans is possible, and possible in a sustainable manner that does not require an increase in land. Furthermore, suppose that the organic farming methods being developed today become viable on a large scale, meaning that most of our food could be produced this way. If this were to happen, then the production of more food would not require the unhealthy increase in fertilizers and pesticides than many fear would occur. In short, it is a possibility that new agricultural methods could be developed, as they have in the past, to keep pace with population growth. And if all else fails, there are certainly many things that could be done to alter America's consumption as well as its desire for certain products that are less efficient to grow and less nutritionally satisfying. Therefore, based on these hypotheticals, one really cannot argue that our population should stop growing based on agriculturally- related environmental problems. The same may hold true for water. In the drier regions of the country, perhaps advancements could be made in the transportation, or relocation, of water to accommodate urban and agricultural areas. Elsewhere, more serious efforts of

conservation could be made. Although droughts do occur and are beyond the control of humans, there are certainly many things that could be done to mitigate their damage. Rationing of water (if absolutely necessary) is something that is done in other countries, such as Jordan, where water is at a premium.

Regarding pollution and solid waste, these are environmental problems that are, more than any other, a direct result of consumption. The pursuit of excess material items that can be readily discarded is an unfortunate, and hopefully short lived, phenomena. It is true that land fills are being rapidly filled up and much of our forests are being chopped down to create paper and wood products. But it is possible that this wasteful process of ours could be mitigated by much greater emphasis on reduction, the reusing, and then the recycling of all products. It seems to be rather selfish to say our population should not grow anymore because it will mean that those of us already here will have to stop being so wasteful. And this applies to pollution, and ultimately energy, in many ways as well. On the one hand, anti-pollution laws are hindered by an increase in population. Take the automobile for example. Between 1975 and 1987, the Environmental Protection Agency expected the imposed standards on the auto-industry to result in an eighty to ninety percent reduction in emissions. However, there was only an 18% reduction because the number of cars on the road doubled.¹⁵⁷ In other words, reductions in per-capita pollution are frustrated by increases in population. But does this argument really get to the crux of the problem? Instead of focusing on less people polluting, why not focus on

¹⁵⁷ Ophuls, William. *Ecology and the Politics of Scarcity: Prologue To A Political Theory of the Steady State*, (San Fransisco: W.H. Freeman and Co, 1977), 137.

getting people to change their consumption habits? Mass transportation, or at least carpooling, could be encouraged, possibly with the use of incentives. And better yet, a revitalization of urban centers could take place that would encourage people to move closer to cities. This would discourage suburban sprawl, which inevitably comes with long commutes that create pollution and make mass transportation hopelessly inconvenient. Or, if consumption habits and lifestyles cannot be altered to accommodate for a growing population, the technology approach could be taken. And this is where a contradiction, and therefore a fundamental flaw, in the argument of those who argue for population stabilization based on depleting resources is exposed. As mentioned in Chapter 3, a growing population that continues our present consumption levels could possibly lead to the depletion of resources, namely fossil fuels. So on the one hand, environmentalists argue that population growth must cease in order to ensure a steady supply of energy for us and for future generations. But on the other hand, environmentalists call for technological changes (i.e., solar, wind, water, electric) that make the use of fossil fuels obsolete. But technological change will only be spurred once there is a need for it, and what could possibly be a better indication of need than the prospects of running out? According to this logic, the sooner we end our reliance on fossil fuels, the better. And if this comes about as an adjustment to population growth, then so be it. There will no longer be a need to worry about an increase in pollution stemming from population growth if people no longer use polluting resources.

Finally there is the problem of the loss of biodiversity and species extinction. It was stated earlier that our population growth may result in the loss of a species that holds tremendous instrumental value for humans. But if we only value them for their

instrumental value, then certainly there could be ways of capturing that value and retaining it after they are gone. Genetic libraries could be established where synthetics are created. Zoos and even national parks could possibly keep a sustainable number of some species alive and reproducing. And regarding ecosystems that provide useful maintenance functions, perhaps humans could develop ways of performing those functions, and possibly even do it better. Conceivably, then, humans could continue to exist in a world in which we were the only species, except for those which are raised for our consumption.

The above situations were just hypotheticals with some being more likely than others. Whether all or even some of them will actually become reality remains to be seen. The point was to demonstrate that for every aspect of the argument that the U.S. needs to stabilize its population in an effort to avoid harming humans, there is a counterargument. It is these counterarguments that prevent us from truly believing that population stabilization is more important than a change in consumption habits, the continual development of more efficient and benign technology, or even that a problem exists that needs to be dealt with at all. While it may still be true that population stabilization would make it much easier to protect the environment to the point where humans are not harmed, it still does not seem as if it is absolutely crucial. That is what those who approach the population issue from the anthropocentric view believe, and that has been society's view of the problem. But taking into account a few realities and approaching the population issue from the biocentric outlook makes population stabilization something we should achieve, not just something that would be convenient. The reality is that modern humans, no matter how much we scale back our consumption

and no matter what kind of new technology and methods we employ, will still have an impact on the environment. To be more specific, we will always have some impact on the nonhuman species that live with and around us because it is impossible for us to completely coexist with other species while maintaining anything close to our standard of living, and trying to bring others up to our standard of living. That is certainly not meant in a negative way or as a criticism against what our society has evolved into. Nor is it meant as a defense of some of the consumption habits that many Westerners value. But the fact is that we all want, and should have, certain things and a certain amount of material wealth in order to achieve happiness. This is an idea that goes back at least as far as Aristotle. We could survive without much of this, as early bands of hunter-gatherers have shown us, but we would not be happy. We would not be able to become fully human, as the early Greeks would say. So no matter how large of a population the earth is capable of sustaining and no matter how skilled we become at developing technology that allows us to protect the environment enough that we are not harmed, the fact is that as we continue to spread, we will inevitably have an impact on the nonhumans and previously unaltered ecosystems and habitats. As we expand, they diminish. This is true with virtually any species; the more one species flourishes, the more it pushes another out. Therefore, we should view our population growth in a different way, independent of its effects on us. The question should not be can we grow, but what are the costs of doing so? Once we realize that our population growth, no matter how benign of a species our consumption habits and technology can make us, will inevitably exact a toll on nonhumans (mainly through destruction of their habitat to make room for us and to tap into needed resources), it is time to question whether we stand to gain anything

from further growth. If the answer is no, which it certainly seems to be, then we must admit that we should bring about the eventual stabilization of our population. Not because we need to, not because it would make things easier or more convenient, but because we should. This is the conclusion that the biocentric outlook leads to, and the remainder of this chapter is devoted towards demonstrating this.

The Emergence of Biocentric Environmental Ethics in Western Thought

Environmental ethics has historically ranged from complete ambivalence towards nature to extremely rigid anthropocentric concern for the environment. This may lead one to believe that there was absolutely no sort of protection ever enacted on behalf of wilderness or nonhuman organisms. However, there are many instances of this type of action. For example, Henry Bergh established the SPCA in the United States in 1866, a few years after it was founded in Britain. Although this mainly dealt with domesticated animals, it did demonstrate concern for those not of human origin. Long before this there were calls in Britain to end the practice of vivisection, the practice of dissecting animals while still alive and conscious. But the reasons for this concern were based on the notion that a nation that did not stop cruelty to animals ran the risk of cruelty extending to people and, ultimately, of decline and decay as a civilization. This view is similar to why Locke spoke out against cruelty to nonhumans in his book *Some Thoughts Concerning Education* (1693). Locke claimed that cruelty to animals and insects, if not stopped and corrected, "will by Degrees harden their minds even towards Men... People who delight in the Suffering and Destruction of Inferior Creatures will not be very compassionate, or

benign to those of their own kind."¹⁵⁸ Although these examples indicate concern for nonhumans to some extent, they certainly cannot be considered examples of biocentric ethics. This is especially true when compared to biocentric legislation of the U.S., such as the Marine Mammal Protection Act (1972) and the Endangered Species Act (1973), which sought to protect organisms for their own sake instead of for their economic value or because their suffering may offend the consciences of some people or "harden" them towards others. When exactly this shift to biocentrism (that is obviously yet to take place completely) began to emerge is impossible to pinpoint. Undoubtedly there are many thinkers, like St. Francis and Jeremy Bentham, that were to some extent proponents of biocentrism back when it was not only unusual but downright eccentric and possibly even heretical. But perhaps the one event that was most crucial for opening the doors for biocentric ethics was the publication of Charles Darwin's *The Origin of Species* in 1859. The general theory of evolution that Darwin purported is now, with a few notable exceptions, widely accepted by both science and society at large. The impact that Darwin's work had on environmental ethics was profound for two reasons. First, it scientifically demonstrated (which, at the time, people were beginning to require in order for something to have merit) that humans were not the pinnacle of creation. That does not mean that humans are not the most advanced species to date; it means that evolution (and therefore creation) has not ended with us. Chances are that in due time we will perish as a species just as the dominant and most advanced species of past eras have

¹⁵⁸ Locke, John. *Some Thoughts Concerning Education*. Quoted in Nash, Roderick Frazier, *Rights of Nature*, 19.

done. At least in some ways this refutes the notion that creation occurred for the sole purpose of creating humans- a notion that much of anthropocentric environmental ethics has, and still is, based on. The second reason, which is more or less an extension of the first, is that if we cannot simply assume that we are superior based on dogmatic religious doctrine, then philosophers are required to come up with a moral theory that offers sound reasons for humans being the only species worthy of inclusion in the moral community. Although Descartes predates Darwin, his use of consciousness as criteria of moral worth is an example. As a result, the process was initiated where philosophers could critique the environmental ethical theories of others, make points and counterpoints, and so forth. This process, as with every academic field, still continues. For environmental ethics the result has been the creation of a large body of sound biocentric ethical theories that can be applied to many contemporary environmental issues, including the population issue.

One should not take Darwin as the sole instigator of the shift to biocentric ethics. For one thing, the idea of evolution cannot be completely accredited to him and, as mentioned earlier, there were biocentric thinkers dotting the philosophical landscape before Darwin. One of the most notable being Henry David Thoreau, who in July of 1845 (14 years before the publication of *The Origin of Species*) departed for the solitude and serenity of Walden Pond from where his memoirs and philosophical writings helped create the foundations for the biocentric outlook. Nonetheless, if one refuses to credit Darwin with providing the spark to ignite the flame of biocentric thought, then it has to be conceded that he at least aided in the creation of a society where it was possible for those endorsing the biocentric outlook to be taken seriously both academically and in the public policy arena. Philosophers such as John Muir, the founder of the Sierra Club and

the influential acquaintance of Teddy Roosevelt that helped create the National Parks, stated in 1867, "The world, we are told, was made especially for man- a presumption not supported by all the facts... Why should man value himself as more than one small part of the one great unit of creation?" and, "I have never yet happened upon a trace of evidence that seemed to show that any one animal was ever made for another as much as it was made for itself."¹⁵⁹

Critics of Thoreau and Muir often claim that their writings are based too much in mysticism instead of reason and logic. Some even dismiss them as being disenchanted misanthropes. This criticism is debatable. Certainly emotion and, to some extent, unexplainable mystic beliefs do have some place in philosophy. Regardless, their writings have proven to be critical to the field of environmental ethics if, for no other reason, they inspired many philosophers to devote enough time and focus to create the biocentric theories that are becoming so influential in the policy arena.

Biocentric environmental ethics is what is ultimately being used in this thesis to support the claim that the U.S. should adopt some sort of plan to bring about the stabilization of its population. This brief section on the emergence of biocentric ethics was to lay the foundation for such an argument. As already mentioned, environmental ethics presents and defends a systematic and comprehensive account of the moral relations between human beings and their environment,¹⁶⁰ and can basically be broken

¹⁵⁹ Muir, John. *A Thousand Mile Walk to the Gulf*. Quoted in Nash, Roderick Frazier, *Rights of Nature*, 40.

¹⁶⁰ DesJardins, Joseph R. *Environmental Ethics: An Introduction to Environmental Philosophy*. (Belmont, CA: Wadsworth Publishing Co., 1993), 13.

down into two categories: anthropocentric (human-centered) ethics and biocentric (life-centered) ethics with anthropocentric ethics being the dominant strain of ethics in American environmentalism. The fact that we have been assessing population growth from the viewpoint of this body of environmental ethics explains why it was placed on the opportunity agenda. Furthermore, it partially explains why many feel that population growth is merely an indirect cause of environmental deterioration. If, however, biocentric ethics were to dominate environmentalism, then the population issue would have been framed much differently followed by much different policy outcomes. Instead of focusing on safe drinking water, increased agricultural prices, and decreased natural beauty and recreational opportunities, such issues as species extinction, reduced biodiversity, and the destruction of natural self-sustaining ecosystems would have been given more attention in the problem-definition phase of the policy process. Furthermore, if non-human species (or at least some of them) were granted a higher degree of moral standing, then perhaps the population problem would have been placed on some form of a survival agenda than an opportunity agenda. In other words, a shift to biocentric ethics would give the population issue much more importance than it receives now. The remainder of this chapter will consist of two parts: that the biocentric outlook is the one that we should adopt, and the argument that biocentric environmental ethics actually does call for population stabilization.

In Defense of the Biocentric Outlook

This section defends the biocentric outlook by taking a chronological look at the most important ideas by the preeminent modern biocentric philosophers, with the

culmination being with Paul W. Taylor's *Respect for Nature*. The tenets of Taylor's philosophy are mainly what the arguments in this chapter rely on. However, in order to fully appreciate Taylor's work it is necessary to first go through those who predate him and point out the strengths that Taylor builds on and the weaknesses that Taylor compensates for, thus making his work the most comprehensive and persuasive work on biocentric environmental ethics to date.

Aldo Leopold is often credited with laying the foundations for the biocentric movement with his enduring collection of essays titled "A Sand County Almanac." Promoting what he described as the land ethic, Leopold argued that, "All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts... The land ethic simply enlarges the boundaries of the community to include soils, water, plants, and animals, or collectively: the land."¹⁶¹ Leopold was advocating a holistic approach, wherein the role that homosapiens play has changed from "conqueror of the land-community to plain member and citizen of it." It is the belief in this land ethic that lead Leopold to the conclusion that, " A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community, and wrong when it tends to do otherwise."¹⁶² An ever-expanding population does not preserve the integrity, stability, and beauty of the biotic community.

¹⁶¹ Leopold, Aldo. *A Sand County Almanac: And Sketches Here and There*. (New York: Oxford University Press, 1949), 203.

¹⁶² Ibid, 204.

Despite Leopold's profound and lasting influence on environmental ethics, his argument in "A Sand County Almanac" is problematic for two reasons. First, although his conclusions helped to form the underpinnings of the biocentric movement, they are rather slim on reasoning. He is clear on what he thinks the human place in the biosphere should be, but he offers little as to how and why he came to this conclusion. Secondly, without much expansion and explanation, he leaves his philosophy as being dangerously holistic. By relegating humans to the status of mere citizen of the biotic community, he puts us on an equal plane with other species. Following this logic (although I will admit this is perhaps a bit of a slippery slope), if it is acceptable to cull portions of one species to "preserve the integrity, stability, and beauty of the biotic community", then how could one argue that it would be wrong to do the same to humans if our population size proved to be having the same affect. This is one of the dangers in advocating an equal moral worth for all species. A more eco-humanist approach, on the other hand, would not only require us to do the right thing, but to do it in the right way. Because of these two major shortcomings, offering Leopold as a defense of the biocentric positions would be very incomplete. After Leopold, several writers have attempted to fill in these gaps by giving more in-depth arguments as to why humans should include other species in the moral community, and have taken a more individualistic-oriented position versus a strict holistic one.

One of the most influential philosophers to take up the subject of moral consideration of nonhuman species is Peter Singer. Although most of his writings, namely *Animal Liberation*, are directed at the treatment of domestic animals and the abuses involved in such institutions as factory farming and animal testing, his arguments

can still be applied to those in the wilderness and our treatment of them. According to Singer, the reason we should extend moral consideration to nonhuman species is because of one very important characteristic that they have in common with us: sentience. Used in this context, sentience is the ability of an organism to experience pain, or to suffer. Singer contends that it is the possession of this characteristic that is sufficient for equal moral consideration. Not necessarily equal moral worth, but equal consideration at least. This line of reasoning is consistent with the utilitarianism that Singer subscribes to which, as described in a previous chapter, judges the consequences of an action by how well it promotes pleasures and prevents pain. Singer is extending this principle to animals, as did Jeremy Bentham when he stated, "The question is not can they reason? nor can they talk?, but can they suffer?"

Again, Singer wrote *Animal Liberation* as a call to end some institutionalized abuses of animals, but it can be extended to the population issue as well. As humans expand into previously untouched areas (or under-exploited areas), the inhabitants of that area can be caused to suffer which can have the eventual result of decreasing their numbers and the overall biodiversity. This can happen as a result of decreased food supplies, which leads to starvation, and habitat destruction, which can lead to death by exposure. However, it does not always occur in this manner. Species extinction and reduction does not necessarily have to come because of a direct assault. As animals are relegated to smaller and smaller areas to inhabit, resources will become too sparse to support a viable and sustainable population. Hypothetically, they do not necessarily have to suffer by starving to death, but are just hindered to the point where they cannot

continually repopulate. Mates are not found, food is not abundant enough to raise offspring, etc. This leads to a gradual but steady decline.

It may be hard to imagine that habitat destruction is not a direct form of pain, but for the moment let us assume it is possible. According to Singer's reliance on sentience, loss of biodiversity in this way would not be wrong. In other words the loss of a species, or even a substantial reduction in that species' numbers, is not inherently a bad thing. If all, or most, members of a species were gone but it caused no ecological damage and loss of utility (and therefore pain) for other species, then it would not be wrong.¹⁶³ In other words, we have a moral duty not to cause pain for sentient creatures, but if we lessen their numbers or cause their extinction painlessly- only to be replaced by more humans- then we have done nothing wrong. Nonhuman species have a right to avoid pain, but not necessarily to exist.

Another gap in Singer's theory is that plants and other non-sentient creatures (such as insects, perhaps) are offered little protection, as are ecosystems as a whole. Their worth is purely instrumental and goes only so far as they have utility for sentient creatures. In other words, sentience is not very all-inclusive. Therefore, to use sentience as a criterion for inclusion in the moral community is a good place to start, but it does not seem to be enough. Sentience could be a good measurement for *how much* consideration they should receive, but not *whether* they should receive it. In order to remedy these shortcomings, we can turn to philosophers such as Tom Regan and Kenneth Goodpaster

¹⁶³ Gunn, Alastair S. "Preserving Rare Species." *Earthbound: New Introductory Essays in Environmental Ethics*. Tom Regan, ed. (New York: Random House, Inc., 1984), 308.

who both raise the standard from sentience to simply being alive. According to Regan rights are not based on the value of consequences which will affect individuals for good or ill, as a utilitarian might contend. Instead, rights are based on the inherent value of the individual. But what is it that gives this individual inherent worth? The answer is that, just like us, they have a life. A life which is "...better or worse logically independent of anyone else's valuing us or finding us useful; we are subjects of a life that is more or less valuable to us."¹⁶⁴ Here we can see the difference between what it means to have instrumental worth and to have inherent worth.

Goodpaster goes into even more detail as to why being subject to a life is a better criterion than sentience. Goodpaster wrote that, "biologically it appears that sentience is an adaptive characteristic of living organisms that provides them with a better capacity to anticipate, and so avoid, threats to life. This at least suggests, though of course it does not prove, that the capacities to suffer and to enjoy are ancillary to something more important rather than tickets to considerability in their own right."¹⁶⁵ Pleasure, as is pain, is an evolutionary-derived indicator and not the goal itself. It is the "applause which signals a job well done, but not the actual completion of the job."¹⁶⁶ So what Goodpaster is actually saying is that the capacity for suffering is not really what we

¹⁶⁴ Regan, Tom. "Animal Rights, Human Wrongs." *Environmental Philosophy: From Animal Rights to Radical Ecology*. Michael Zimmerman, ed. (New York: Prentice Hall, Inc., 1993), 43.

¹⁶⁵ Goodpaster, Kenneth. "On Being Morally Considerable." *Environmental Philosophy: From Animal Rights to Radical Ecology*. Michael Zimmerman, ed. (New York: Prentice Hall, Inc., 1993), 97.

¹⁶⁶ Ibid.

should look for when determining if an organism is worthy of moral consideration since it is merely a tool used by some organisms (and not by others) to aid them in the pursuit of what matters to all organisms: staying alive. A tree, for example, may never have developed the ability to suffer (at least not how we understand it to mean) but it thrives to continue living and has developed various methods for doing so. So instead of taking Singer's approach of emphasizing the shared characteristic between humans and some nonhumans of sentience, Goodpaster emphasizes the shared characteristic of being the subject-of-a-life (i.e., being alive) and trying to stay that way. One can hardly deny that living organisms clearly demonstrate efforts to stay alive and appear as if they believe themselves to be of inherent worth and thereby having a good of their own. In his essay "Challenges In Environmental Ethics" Holmes Ralston III described this in the following way: "Wild animals defend their own lives, because they have a good of their own. Animals hunt and howl, seek shelter, build nests and sing, care for their young, flee from threats, grow hungry, thirsty, hot tired, excited, sleepy, seek out their habitats and mates. They suffer injury and lick their wounds. They know security and fear, endurance and fatigue, comfort and pain. When they figure out their helps and hurts in the environment, they do not make man the measure of things."¹⁶⁷

An even better and deeper defense of biocentric ethics (and one that can be readily applied to the population issue) is Paul W. Taylor's book *Respect for Nature*, which is one of the most fully developed and philosophically sophisticated contemporary defenses

¹⁶⁷ Ralston, 137.

of biocentric ethics.¹⁶⁸ Throughout this very important book, Taylor outlines the core of the biocentric outlook. The beliefs that form the core of the biocentric outlook are four in number:¹⁶⁹ 1) the belief that humans are members of the earth's community of life in the same sense and on the same terms in which other living things are members of that same community, 2) the belief that the human species, along with all other species, are integral elements in a system of interdependence such that the survival of each living thing, as well as its chances of faring well or poorly, is determined not only by the physical conditions of its environment but also by its relations to other living things, 3) the belief that all organisms are teleological centers of life in the sense that each is a unique individual pursuing its own good in its own way, and 4) the belief that humans are not inherently superior to other living things.

Taylor essentially supports the first belief- that humans are members of the earth's community in the same sense as other living things- by drawing several parallels between human life and non-human life, two of which are especially important. First, in order to survive, we all must be able to constantly adapt to environmental changes. And to do this, all species must have the capacity to relate themselves in certain ways to other living organisms. In order to live a healthy and full life, it is necessary to carry on life functions in ways that allow successful ecological coexistence with other organisms.¹⁷⁰ For example, if humans continually mistreat the farmland on which our food supply depends, it will eventually be unable to support us. Similarly, if a grizzly bear mistreated the

¹⁶⁸ DesJardins, 152.

¹⁶⁹ DesJardins, 99.

stream from which it catches salmon to the same degree humans mistreat their land, the stream would be unable to support the traversing salmon and the grizzly would starve. The second way in which both humans and nonhumans are members of the earth's community is our common origin with other living things. It was the same order of evolutionary processes, governed by the laws of natural selection, that gave rise to our existence and to the existence of every other species.¹⁷¹ In other words, the evolutionary factors that governed our original emergence were not different from those that gave rise to all other creatures, and it is in this sense that we are all united by a common origin.¹⁷²

The second belief of the biocentric outlook- that all species are integral parts in a system of interdependence- requires us to view the whole natural domain of living things and their environment as an order of interconnected objects and events that comprise a tightly woven web.¹⁷³ No action by one species goes unfelt or undetected by another species in that particular ecosystem. Or, as Taylor stated, "No life community associated with a particular ecological system is an isolated unit."¹⁷⁴ Humans must grasp the concept that they are members of the biosphere and that human activity will inevitably affect other members of the biosphere, just as the actions of an alligator or an elephant affect the other members of the particular ecosystem in which they live. The only difference is that humans are capable of altering ecosystems globally as well as locally.

¹⁷⁰ Taylor, 102.

¹⁷¹ Ibid, 111.

¹⁷² Ibid, 112.

¹⁷³ Ibid, 116.

¹⁷⁴ Ibid, 117.

The third belief of Taylor's biocentric outlook- that all organisms have their own telos- focuses attention on the lives of individual organisms (instead of simply claiming that they have membership and a specific place in the earth's community). Through extensive observation and study, humans have been able to greatly expand their knowledge of how animals and plants behave. Not only as physical and chemical systems, but also how each organism can act as an individual. Close study over periods of time have even enabled people to describe animals as having unique "personalities". Aristotle went to great lengths in studying wildlife and was the first to argue that each organism has a telos, which means an "end", a "purpose", or a "function."¹⁷⁵ That is to say, every living being has a natural activity or a final cause. Its life is aimed at achieving its good. Determining what in fact the human telos is has, of course, been extensively debated in philosophy. But as far as nonhumans are concerned, Aristotle concluded that all nonhuman beings are to ultimately serve some human purpose. Needless to say, biocentric ethics strongly disagrees with Aristotle on this point.

To say an organism is a teleological center of life is to say that all of its activities, internal and external, are goal-oriented with the constant tendency to maintain the organism's existence through time and to enable it to successfully perform those biological operations; it is all of an organism's functions being directed toward the realization of its good that make it a teleological center.¹⁷⁶ A living plant or animal has a good of its own in the same sense that a human being has a good of its own, and it is independent of human interests or needs. A different telos does not necessarily mean that

¹⁷⁵ DesJardins, 26.

it is a telos equal in quality to ours, but it is one that should be respected nonetheless and not interfered with unless it is necessary to meet a vital human interest. Human beings must then respect the right of all living things to realize their good, or achieve their telos. To understand why, the concepts of a moral agent and a moral subject must first be defined. A moral agent is any being that possesses those capacities by virtue of which it can act morally or immorally, can have duties and responsibilities, and can be held accountable for what it does.¹⁷⁷ These capacities are the ability to decide right or wrong, to engage in moral deliberations, and the ability to make decisions based on these deliberations. Humans are, for the most part, moral agents. But it is important to note that some humans, such as children, the mentally ill, or the mentally retarded, cannot be considered moral agents since they lack such capacities. Instead, they are to be regarded as moral subjects. Moral subjects are beings with regard to whom others (moral agents) have duties and responsibilities.¹⁷⁸ Most nonhuman inhabitants of the earth would certainly qualify as moral subjects to which moral agents owe moral consideration. (I used the word "most" since many higher animals, as pointed out in Frans deWaal's book *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*, certainly have the mental faculties sufficient to be considered moral agents). They are living, breathing entities which, above all else, have the ability to feel pain. They have the ability to suffer in consequence to the particular actions of a moral agent. To mistreat

¹⁷⁶ Taylor, 121-122.

¹⁷⁷ Ibid, 14

¹⁷⁸ Ibid, 16.

children or the mentally handicapped merely because they have limited abilities and cannot reach "full personhood" would be morally abhorrent, and is widely accepted as such. Instead, their right to live and to be nurtured within their limited capacities is respected. The same should hold true for nonhumans. Simply because their abilities and characteristics are different from that of a human, and because they will not achieve "full personhood", does not provide sufficient reasons to prevent them from living and realizing their own good. And similarly, the fact that humans have the abilities to destroy and subordinate nonhuman species does not justify doing so. Simply put, might does not make right.

This last point directly leads to the adoption of the fourth belief in the biocentric outlook: the denial of human superiority. The belief that humans are superior to the earth and all of its nonhuman inhabitants is deeply rooted in our way of thinking, especially within Western society. And it is certainly not in keeping with the belief that we are all merely members of the earth's community instead of its rulers. Such a framework of thought has had a tremendous influence on all of humankind, philosophers and laymen alike. But in order to truly have respect for nature, it is critical that such thinking be abandoned. Humans tend to feel superior because the characteristics humans possess are judged to be superior, or higher. But such a judgement is rather biased and unfair when made from a strictly human outlook or point of view.

It is undeniable that the human race is a very unique and special species that has uniquely human characteristics. These characteristics, such as rationality, individual autonomy, and free will are essentially possessed only by humans. And there is no doubt that they are wonderful qualities to have. They allow us to live in the manner that we do

and to achieve our telos. But they cannot be said to be superior, or to qualify us as superior. They are only thought to be superior when judged from a human point of view. As Taylor reminds us, when judged from a plant or animal point of view, they are worthless. For example, plants are dependent on the process of photosynthesis. It is a characteristic of plants that is vital for their survival and for them to achieve their telos. Photosynthesis is an extremely complex, intricate, and amazing process that took millions of years of evolution to develop. It is arguably just as complex and amazing as the thought process used by humans when we engage in reasoning, if not more so. But for a plant to achieve its telos, photosynthesis is essential while reasoning is worthless. For humans, it is vice versa. Such characteristics that make humans unique are not superior to uniquely bumble-bee or uniquely cactus characteristics. They are only different. A species-specific characteristic is indispensable when attempting to realize the good of that particular species, but not for others. Therefore, one unique characteristic cannot be said to be better than that of another species. Hence, it cannot be said that one species' telos is inherently better than that of another. At the very least it would be wrong to prevent another living organism from achieving its telos when our vital interests are not at stake.

Another reason humans have deemed themselves to be superior is because of the notion that humans, as best stated by Rene Descartes' idea of metaphysical dualism, have souls or minds as well as bodies while plants and animals possess only bodies.¹⁷⁹ Accordingly, nonhumans are mere physical mechanisms that are no different from inanimate objects. All the while, humans have these physical processes as well as minds

¹⁷⁹ Ibid, 143.

that enable us to exist on the level of consciousness. A level that, admittedly, most nonhumans do not live at. At least not to the extent that humans do. But an argument for human superiority based on such premises is easily refuted.

First of all, to claim that nonhumans are mere physical mechanisms with no mental capacities contradictory to science and biological knowledge. Studies of animals, especially of the higher primates and mammals, indicates that they give every indication of possessing the capacity to feel pleasure and pain, and both their external behavior and internal structure of their brains and nervous system indicate that they can experience many kinds of emotions, such as anxiety, fear, excitement, and concern for others in the group.¹⁸⁰ In light of this, many nonhumans can be regarded as living on somewhat of a conscious plane. Hence, not respecting their right to life on the basis that they do not have any consciousness whatsoever and are inanimate objects is significantly weakened. Secondly, even if it were accepted that only humans do possess minds, it would be irrelevant. Most nonhuman species can and do live their lives and find their good without a "mind". Humans need such a mind to be happy and become "fully humans" but plants and many animals simply do not. A bear or a beetle can still live its life to its full potential and achieve its respective telos without the same level of consciousness possessed by humans. Their guidance from instinct and other innate abilities is sufficient. A mind, in the human sense, is not needed just as photosynthesis is not needed by a human.

¹⁸⁰ Taylor, 145.

To summarize, the most important of Taylor's contributions to biocentric thought are that we should not blindly adhere to the prejudices that have allowed us to automatically assume our interests, regardless of importance, should always come first, that we are much more connected with and related to nonhuman species and the natural world than we tend to believe, and our "uniquely human" qualities are what make us moral agents. Being moral agents is a form of power, and like all power it is accompanied with responsibility. Along with this power of being moral agents comes the great responsibility of affording moral subjects the consideration they deserve and not automatically trumping those interests every time they come into conflict with human interests. It may seem as if it is a bit of a contradiction to agree with Taylor that humans should not claim superiority, while at the same time agree with the principle of eco-humanism that human needs should be given priority over those of non-humans. However, that would indicate a misunderstanding of what it means to reject human superiority. We should not think that rejecting human superiority means rejecting the idea that human needs should come first. To put us on an equal plane with another species is not only illogical, it is unnatural. What other species would put the interests of another species ahead of their own? Instead of thinking that a rejection of human superiority means placing all species on equal footing with respect to moral worth, we should think of it as a rejection of the notion that all human interests should be given more importance than all non-human interests.

So what are the main aspects of biocentric environmental ethics that we are to extract from this section? First of all, we must understand that we are much more similar to nonhuman species than different. Many of the characteristics that we feel gives

humans such great value in this world are shared by many other organisms as well. That is not to say that we should give nonhumans the same value as us merely because we have so many shared characteristics, only that they have interests that should not be automatically trumped every time they conflict with human interests. Second, as moral agents we have a responsibility to not only take into consideration these interests but also protect them when the situation allows. To believe otherwise is based more on blind prejudice than logic and compassion. To simply continue our old ways out of convenience and out of a refusal to embark of self-examination and a re-evaluation of our values would be a conscious choice to ignore what we now know about the natural world and its inhabitants. That type of behavior has consequences that reach far beyond those related to population and the treatment of the environment. Furthermore, to refuse to acknowledge this responsibility is an acceptance of the "might makes right" ethos. This is an attitude that has lead to unjust and even deadly consequences throughout the history of the human race, and we are finally at a point in our civilization where it has been abandoned in much of the world. It is time we extend the abandonment of such a dangerous philosophy to the treatment of the environment and the species that we are fortunate to still have with us.

Biocentric Environmental Ethics And Its Call for Population Stabilization

Once the basic tenets of biocentric environmental ethics are integrated into one's moral and ethical belief system, it naturally and logically follows that violations of biocentric ethics, and the biocentric outlook, are unethical. Therefore, it is necessary to demonstrate that allowing the human population to expand, even if it were possible to do

so without experiencing considerable human harm through Malthusian checks, would violate the principles of biocentric ethics. The argument that further population growth is a violation of biocentric environmental ethics is based on two premises: population growth is no longer necessary to achieve or protect any human interests, and efforts aimed at altering consumption and technology are not enough alone to protect the interests of nonhuman species.

If all human interests are automatically granted priority anytime there is a conflict between human and non-human interests, then there was no point of even introducing the principles of biocentric environmental ethics. If on the one hand we claim that all species are worthy of moral consideration, but on the other hand claim that all human interests are automatically more important than non-human interests, then this is essentially the same as agreeing with some of the anthropocentric views that this thesis has rejected. Therefore it is necessary to furnish some sort of balancing test to guide us when determining what to do when human interests come into conflict with non-human interests, and apply the population issue to this test. Essentially it is being used to answer the following question: if population growth serves a human interest, is this interest important enough to trump the vital interests of the nonhuman species we are obliged to afford consideration under the tenets of biocentric environmental ethics?

The most basic test that has been used is the vital-nonvital interest dichotomy. A vital interest is one that is necessary for survival, such as food, water, shelter, adequate healthcare, etc. A nonvital interest are those that only fulfill desires (i.e., things we want but do not necessarily need). The most basic principle is that when vital interests collide, human interests come first. Even from the biocentric outlook, to argue otherwise defies

logic and nature. It is unnatural because it would completely go against the survival-instinct that is not only common to all species, but is what we have to thank for becoming as successful as we have. It is unheard of for a species to put the interests necessary for survival of another species ahead of its own. It is illogical because if we were to decide that our vital interests do not automatically come before those of nonhumans, then by what logical criteria are we to decide between human or nonhuman? It cannot be based on that which is "more vital" because something is either vital or it is not. It cannot be based on strength or "might" because this would go against one of the central tenets of biocentric ethics. Therefore we must simply acknowledge that there is no way to argue that a vital nonhuman interest is worthy of the same moral consideration as a vital human interest. While we should certainly have compassion and appreciation for nonhuman organisms and ecosystems and seek to protect their interests when warranted, we should not allow this compassion to defy logic and be counterproductive. In sum, even though biocentric ethics asks us to give moral consideration to nonhuman species, the eco-humanism aspect of it certainly does not require us to put the welfare of other species ahead of us, and it does not require us to put them on an equal plane with humans.

Unfortunately, this fundamental principle that vital human interests should be given more importance than non-human vital interests does not help much in this context since it is so obvious that further population growth is not necessary to meet any vital human interest. We have long since achieved substantial numbers and geographic dispersion to ensure not just our survival but also our way of life. Therefore, we must move beyond this simple vital-nonvital dichotomy and attempt to devise a sort of balancing test to guide us when non-vital human interests come into conflict with vital

nonhuman interests. Such a test is necessary because we cannot make the blanket statement that all vital interests (regardless of species) should automatically be given more weight than all non-vital interests (regardless of species). This would be contrary to one of the main themes of not just biocentric environmental ethics but all of philosophy: that we are here not just to survive, but to thrive as a society and as individuals. It is impossible to list all possible human interests and rank them in order of importance and then draw a line at which are worthy of trumping the vital interests of nonhuman species. Instead, based on the principles of biocentric ethics set forth earlier with a slant towards eco-humanism, when deciding whether a human non-vital interest should trump the vital interests of nonhumans consider the following factors: 1) the importance of the human activity in furthering our progression as individuals and as a society, 2) the availability of reasonable alternatives, 3) the degree to which we are blindly adhering to human prejudice and rejecting other principles of biocentric thought, 4) the amount of hardship and sacrifice that is required on our part, 5) the ability of the environment to absorb and eventually reverse the effects of us acting on this particular interest (i.e., how permanent will the loss be), and 6) the consciousness and sentience of those being adversely affected. With that being the balancing test to guide us, it is now time to apply it to the population issue.

The first question that must be addressed is whether further population growth is actually an interest of ours. In an era of very low mortality rates and a population that is sufficient in both size and geographic dispersion to ensure our economic efficiency and continued comfortable existence, having one or two children can of course still be considered a vital need (since reproduction is obviously important for the continued

existence of a species) but society having a total fertility rate above replacement level is not. Even though population growth is not even close to being a vital human interest, is it a nonvital interest that should trump the vital interests of nonhumans? With respect to the amount of sacrifice to achieve population stabilization, there is not a great deal of it required on our part as individuals or as a societal whole. If this thesis were advocating strict one-or-two child policies, then the sacrifice would be great because it would be placing severe limitations on many families and preventing them from living what they have deemed to be the good life. Our interests in having reproductive freedom and individual liberty, although not vital to our survival, would trump any vital interests of nonhumans. However, it was made very clear earlier in the thesis that such an approach is not necessary. Individuals do not have to be targeted in order to lower a society's total fertility rate. Therefore, the sacrifice required on our part is virtually nothing on the individual level.

But what about as a society? Will our quality of life somehow suffer if the population growth we have known since the dawn of our existence were to cease? Is our progression as a species somehow dependent on continual population growth? Not only is the answer no, it is becoming much more apparent that we have much to lose by population growth and absolutely nothing to gain. To support this statement, it would be useful to once again mention the findings of the Rockefeller Report presented in Chapter 3:

"After two years of concentrated effort we have concluded that, in the long run, no substantial benefits will result from further growth of the Nation's population, rather that the gradual stabilization of our population would contribute significantly to the Nation's ability to solve its problems. We have looked for, and have not found, any convincing economic argument for continued population

growth. The health of our country does not depend on it, nor does the vitality of business nor the welfare of the average person."¹⁸¹

In addition to the Rockefeller Commission's conclusions about the negative impact of population growth on our interests, perhaps the best way to describe how population growth will negatively impact our society and quality of life is to present an argument that further population growth will infringe on the liberties that we cherish and hold as an important part of our chosen way of life. These arguments concerning the threat to our liberty from population growth are being presented to really drive home the point that population growth is not necessary to protect or promote any human interest, and therefore should certainly not trump vital interests of other species. These arguments provide much more strength to the argument that population growth is not an interest of ours worthy of trumping vital interests of nonhuman entities than simply quoting government studies, and it is a way of refuting the prevalent and all too often unexamined assumption in this society that population growth is important to our way of life and our comfortable existence.

Liberty consists of three different but equally important and inseparable components. The first component of liberty, referred to as the ancient view of liberty, was the most dominant conception of liberty among the Greeks.¹⁸² Within this view, the idea of freedom consists of the rights of individuals to participate in the deliberation of

¹⁸¹ The Report of the Commission on Population Growth and The American Future. "Population and the American Future." 1972.

¹⁸² Gray, John. *Liberalism*. (Minneapolis, MN: University of Minnesota Press, 1986), 1.

government. This idea of liberty is reflected by our own system of government in that it is a participatory democracy run by elected officials. But for many of the Greeks, individuals were not accorded as much personal freedom and independence from government control as they are under the more modern conception of freedom, referred to as negative liberty. Under the view of negative liberty individuals enjoy a protected sphere of non-interference in thought and activity. Synonymous with classic liberalism, it is this type of liberty that is often referred to as "freedom from". People are entitled to freedom from intrusion into their personal lives, and this is protected in two ways. First, there are legal rights such as those found in both the letter and the spirit of the U.S. Constitution. Secondly, our commonly shared social values of respecting the rights and interests of others often prevents us from unfairly restricting people from carrying out their wishes regardless of how eccentric or easily misunderstood they may be.

Third, there is the most recent conception of liberty called positive liberty. Espoused by revisionary liberals, and referred to as "freedom to"¹⁸³, positive liberty recognizes that being free means much more than simply not being subject to external restraints. It requires that all people should be given the skills and disciplines necessary to realize the vast opportunities that life holds. In other words, positive liberty seeks to free the individual from the internal restraints we are born with. As Isaiah Berlin stated, "It is true that to offer political rights, or safeguards against intervention by the state, to men who are half-naked, illiterate, underfed, and diseased is to mock their condition."¹⁸⁴

¹⁸³ Berlin, Isaiah. "Two Concepts of Liberty." *Four Essays on Liberty*. (New York: Oxford University Press, 1970), 124.

Undoubtedly, positive liberty requires the existence of equality and security, as well as the attainment of at least the minimum amount of material wealth and education necessary for a life that can focus on quality and not merely survival. This is a concept that can be found at least as far back as Aristotle.

All three components of liberty can be threatened by population growth. For example, a representative democracy is predicated on the ability of the people to voice their concerns. However, a large and condensed population results in an impossible number of concerns to be heard and interests to be attended to. Consequently, the power of the citizen is significantly diminished. Furthermore, there is legitimate concern over our reliance on technology to counter the effects of an overly large population. It would be a bit of a stretch to claim we are on the verge of a technocracy, but the need to clean up and reduce environmental damage as well as develop alternative energy brings with it the need for regulatory and administrative bodies. Although not inherently bad, such organizations inevitable take the power and decisions out of the hands of the officials that the citizens elected. But the main way that population growth threatens our chosen way of life is through the constraints it will inevitably place on our negative liberty. The environment is a form of commons and, to state it simply, the commons are overcrowded. As the population grows and becomes more condense, the commons will become even more crowded. And when the commons are overcrowded, "mutual coercion mutually agreed upon" is necessary.¹⁸⁵ This was stated by Garrett Hardin in his famous essay

¹⁸⁴ Ibid.

¹⁸⁵ Hardin, Garrett. "The Tragedy of the Commons." *Science*, Vol 162, No.3858 (December 1968), pp. 1243-48.

"The Tragedy of the Commons" in which he used the example of a pasture to illustrate his point. This pasture, offered as a microcosm of our society, is used by several herdsman to raise cattle. But of course this pasture has a limited carrying capacity, meaning it can only provide for a limited size herd before it begins to degrade and eventually becomes ruined. But the herdsman are rational, or self-interested, beings which means they each seek to maximize their gains. Therefore, they will always ask the following question: "what is the utility to me of adding one more animal to my herd."¹⁸⁶ After all, the gains of adding one more animal are enjoyed solely by the individual while the harmful effects of overloading the commons, as gradual as they may be, are dispersed among all who share the commons. Population growth is synonymous with such thinking. There are several theories as to why people procreate or, in other words, add to the commons. In agricultural societies, children are economic resources who are a source of labor as well as old-age security for the parents. In a more modern industrialized society such as ours, children can serve two purposes: 1) they are a source of intrinsic, non-substitutable pleasure, and/or 2) they are social capital in the sense that they establish new relations among persons such as parents, siblings, neighbors, and friends.¹⁸⁷ Either way, people have children (and therefore add further stress to the commons) because they are seeking their own interests. Rarely does anyone stop to think about how it will affect

¹⁸⁶ Ibid.

¹⁸⁷ Schoen, Robert, et al. "Why Do Americans Want Children?" *Population and Development Review*. Vol. 23 June 1997, pp. 333-358.

others, and even fewer people have children thinking that population growth is in society's best interests and they are therefore doing their civic duty.

There are many modern forms of the commons, such as the air, water, and fisheries. And once these "commons" are overloaded, activities that are not inherently wrong become harmful to others. This point can be illustrated with examples of activities from our everyday lives that few people would even think of as being harmful to others. For example, we do not regard driving an automobile as bad. It provides a great amount of social mobility and freedom of movement. It is true that it can spew out an array of pollutants, but when limited this can be absorbed into the atmosphere and cause no real harm. But when there are a substantial number of people driving automobiles, especially in a concentrated area, the air pollution can no longer be absorbed by the atmosphere and a host of environmental and health problems ensue. The same holds true for resource consumption. In a modern industrial society, people have to extract resources from the environment to not only survive but to maintain their quality of life. The problem arises when there is an increasingly large population that needs to burn oil to heat its homes or cut down trees to meet its paper-product demand. The Council on Sustainable Development articulated this point well when it stated, "There is nothing inherently wrong with a population- even a large one- meeting its material needs by consuming resources and creating wastes. Problems arise when the numbers of people and the scale, composition, and pattern of their consumption and waste generation combine to have negative effects on the environment, the economy, and society."¹⁸⁸ There is also nothing

wrong with wanting to own a home in a peaceful rural or suburban area instead of the crowded and noisy city. But when a substantial number of people are doing so, it creates suburban sprawl that brings with it a host of environmental (as well as socio-economic) problems. And finally, the production of the typical American diet, consisting of large quantities of meat, fish, and other animal by-products, takes an enormous toll on the surrounding ecosystems and estuaries. It can be argued that there is nothing inherently wrong with eating animals; there is nothing more common in nature than one animal killing another for food. But in doing so to this extent we turn an inherently neutral practice into a harmful one.

So how can the harmful effects systemic to an overloaded commons be prevented or at least mitigated? One alternative that is popular among contemporary conservatives is to get rid of the concept of the commons altogether and have it become private property. The rationale behind this alternative is that "over the long run, private ownership is the most effective protector of the environment- provided ownership is transferable and backed by the courts that make people liable when their pollutants invade the person or property of others. This system of private ownership would protect the environment for the same reason that it protects other kinds of property: because it encourages good stewardship."¹⁸⁹ But a fear of liability is hardly a sufficient deterrent

¹⁸⁸ President's Council on Sustainable Development, "Sustainable America: A New Consensus for Prosperity, Opportunity, and a Healthy Environment for the Future." (Government Printing Office, 1996), Chapter 6 : "U.S. Population and Sustainability", 2.

¹⁸⁹ Stroup, Richard L. and Jane S. Shaw. "The Free Market and the Environment." *The Public Interest*. Spring/1995, pp. 31

because the threat is so far removed. If toxins are released into the environment in harmful quantities or in a harmful manner, the source of these toxins is too hard to pinpoint. This is especially true if there is no regulation enforcing these industries to monitor their pollution levels. From a legal perspective, even if the source of environmental harm can be detected, bringing suit against the alleged culprit would be quite difficult. Usually the harms that people would suffer are indirect, meaning they are only noticeable after a long period of time has elapsed and the harm accumulates to the point where it can even be noticed at all. And even then there are so many other factors that could have been the cause of or a contributor to the harm that liability would be very difficult, expensive, and time consuming to prove. From a philosophical perspective, it would not be right for someone to claim ownership over the commons. These commons are continually being traversed by other living beings who cannot be owned as a piece of property or manufactured good can. If a factory claims ownership over the part of the river that it pumps pollutants into, does it also own all of the fish and other creatures whose habitats were established there long before the factory was built? And from a practical perspective, the commons are not entities fixed in time and space. They are continually flowing and the harm done to a particular area of the commons one day, regardless of who "owns" it, affects others the next day as the water flows to a neighborhood down river or the wind blows the air of one community to the next. It is impossible for harm in the commons cannot be localized and contained.

If converting the commons to private property is not a viable option, then another alternative would be appeal to altruism. By convincing people to limit their freedom and forego their own interests for the good of the community, the commons will be protected.

Unfortunately, people, as self-interested beings, do not think this way. Unless a significant amount of others agree, by foregoing your own interests you bear the entire burden while the good that can result from your self-denial is minimal and undetectable. For example, if I wanted to reduce the smog hanging over the city by finding an alternative mode of transportation, it would only be a matter of time before I realized that this was doing absolutely no good since the others were not taking the same initiative. The inconveniences felt by me would be far greater than any benefit to the environment and to society.

Some argue that to counter the tragedy of the commons is to develop cleaner and more efficient technology. But, as stated earlier, any gains made through technology (as well as a reduction in consumption) are negated by population growth. This is evident from the amount of air pollution we must still tolerate. Between 1975 and 1987, the Environmental Protection Agency expected the imposed standards on the auto-industry to result in an eighty to ninety percent reduction in emissions. However, there was only an 18% reduction because the number of cars on the road doubled.¹⁹⁰ And another objection to this alternative that invokes even greater concern is that technology cannot keep up with population growth. In the past, advancement in technology (as seen with the Green Revolution) has helped our dwindling resources dwindle a little slower. But there is mounting evidence new technologies are not developing at a fast enough rate, and even if developed will not be at a low enough cost to allow us the same access to the

¹⁹⁰ Ophuls, William. *Ecology and the Politics of Scarcity: Prologue To A Political Theory of the Steady State*. (San Francisco: WH Freeman and Co, 1977), 137.

quality of life we enjoy. For example, fossil fuels are dwindling and becoming increasingly expensive to extract, and are becoming less socially acceptable, but wind and solar energy technological development has virtually stalemated and is already rather limited. Additionally, due to the large land area needed to contain solar lakes (which is one method of obtaining solar energy), there lies the strong possibility of fierce competition for land with agricultural interests and with the real estate market as it becomes more scarce due to population expansion. Nuclear energy is presently deemed too unsafe by society to be widely accepted, especially because of the difficulty and danger of storing its vast amounts of radioactive waste (which remains so for many generations). And biomass energy technology has not yet reached the point where it could be a viable source either. Current technology in the process of converting biomass to usable energy requires the use of more energy from fossil fuel sources than is converted. And, once again, there is a potential conflict over increasingly scarce land since the biomass used for energy is found on farmland and in forest basins. In sum, the energy sources presently being used are finite and cannot provide for any more population growth while alternative energy technology has yet to reach the point where it can even come close to providing an adequate amount of energy for the present population, let alone an increasing one. It is possible that in the future alternative energy technology could progress to the point where enough energy would be supplied. However, this will not occur in the foreseeable future and simply putting complete and unfettered faith in the natural progression of technology to solve the earth's energy concerns is not sound policy.

Reliance on a technological fix is not acceptable and we cannot expect people to cease being rational and self-interested, so the only two alternatives left are restricting our freedom or stabilizing our population at a low enough number whereas our daily activities can be absorbed in the environment without harm. In other words, we are faced with a choice. Do we agree to restrict fertility or do we restrict all of the daily freedoms we enjoy and take for granted. And by restriction of our daily freedoms I mean restriction to the point necessary to meet our stated clean air and clean water objectives instead of merely making empty promises. At first glance, such restrictions may seem only superficial and tolerable. Take for example the statute limiting the number and frequency of backyard barbecues in Los Angeles aimed at reducing the city's infamous smog problem.¹⁹¹ Few would argue that we have an inalienable right to barbecue whenever and wherever we wish. Even the most ardent proponent of "rugged individualism" would concede that sometimes we must consider what is in the best interests of the community. But these restrictions would add up to the point where every part of our lives becomes regulated. When and where it is permissible to drive a car, when we can run our air conditioners, how much water and paper products we can consume, what diets are environmentally benign, having to live in an apartment in a crowded city instead of a home in the suburbs, etc. Even if these aspects of our lives are not directly regulated, the same objectives can be met indirectly through such measures as increased taxes on certain goods and services. Driving a car, putting a pool in our

¹⁹¹ Cone, Marla. "Barbecue Rule Adopted to Take Bite Out Of Smog." *Los Angeles Times*. 6 October 1990, pp 14.

backyards, or eating at a fast food restaurant do not exactly qualify as inalienable rights, but the cumulative effect of all this restriction (which may very well be necessary) is a terrible affront to our liberty. The founders were not only referring to rights when they sought to form a government that would protect our "life, liberty, and pursuit of happiness". As parts of the whole, we all recognize the need to balance our own interests with responsibility. But when adhering to the principle of civic responsibility results in an intrusion on the freedoms we have grown accustomed to in virtually every aspect of our lives, then clearly something is wrong and we are out of balance. Thus, the choice must be made between stabilizing our population at a lower rate or restricting our freedom accordingly.

In addition to its threat to our way of life, population growth is also a direct assault on biocentric values. Human population growth simply cannot occur without some degree of destruction to the natural environment. More people being added to the planet directly results in more encroachment on wildlife through the need to make more room for housing, more forests being cleared for farmland and paper products, and more pollution of some sort that has to be absorbed by nature. Such damage to the world's ecosystems causes great damage to its inhabitants. And by doing so, we are ultimately not respecting each organism as a teleological center of life with a right to strive for its own good. It is impossible for members of an ecosystem to achieve their telos if they are constantly being forced to find new homes, being forced to forage longer and harder for sustenance, or by being poisoned or intentionally killed by human activity. Instead of living according to their telos, their existence is defined solely by warding off the harmful effects of human growth and increased human activity.

Population growth also runs counter to biocentric ethics because it is the product of a blind adherence to the biased notion that humans are superior. All populations have a right to life, and life can only continue through reproduction. But, as it has already been stated several times, there is a point where an increase in numbers is simply no longer needed to ensure the survival of the species and, obviously, the human race has long since attained this level. Nevertheless, we continue to be fertile and multiply despite the fact that any benefit that could come from population growth was realized long ago. Such behavior conveys the attitude that harm to the natural environment is irrelevant since its members are inferior to humans and are only here to serve us. Rarely has a wooded area not been cut down or a beautiful meadow not been paved over in reverence to its plant and animal inhabitants. Instead, new roads and new houses needed to accommodate the overflowing population are built because it is felt that the needs of the humans, even those that were unnecessarily added to the world, take precedence over the needs and lives of nonhumans.

Furthermore, expanding the population above the earth's carrying capacity is a flat rejection of the belief that humans are members of the earth's community and that we are dependent on the health of the earth, just as a fish is dependent on the health of a river in which it swims. Humans continually expand, yet expect the food supply to expand equally. As a result, we use increasingly harmful agricultural methods that adversely affect the environment. They pollute the water and the air and cause undesirable change to the earth's climate and ecology, as do a host of other human activities. There is nothing wrong with effecting change in an ecosystem, per se. All creatures do it. A bear alters the ecosystem of the stream when it fishes out salmon headed up the current to

spawn. A snake alters its ecosystem when it swallows its prey. However, in the complex web of life such changes are very minor and are soon thereafter reversed. With humans, it is quite different with respect to both the magnitude of the changes and with the time it takes for them to be noticed and felt (at least within the human community). The changes caused by human population growth are typically only felt (by other humans) in the long term. But our short term way of thinking prevents us from thinking about and preparing for the long term. Nonetheless, such long term changes still certainly qualify as changes to the earth's ecosystem and such change affects the ability of other organisms to live and, more importantly, to thrive. But instead of stabilizing the population, we repeatedly turn to technology to provide short term solutions which only serves to reinforce our false notion that we can live outside of earth's ecosystems and independently of its health. This frame of mind, and its harmful results, were eloquently stated by Vice President Al Gore in his book *Earth in the Balance*. In it he states: "Believing ourselves to be separate from the earth means having no idea how we fit into the natural cycle of life and no understanding of the natural processes of change that affect us and that we in turn are affecting. It means that we attempt to chart the course of our civilization by reference to ourselves alone. No wonder we are lost and confused. No wonder so many people feel their lives are wasted. Our species used to flourish with the intricate and interdependent web of life, but we have chosen to leave the garden. Unless we find a way to dramatically change our civilization and our way of thinking about the relationship between humankind and the earth, our children will inherit a wasteland."¹⁹²

Are there alternatives to population stabilization within the ecohumanist biocentric outlook? No matter how much we reduce our own consumption and alter our lifestyles, and no matter how advanced our technology becomes, a realistic look at us shows that we cannot help but have some sort of impact on the earth and on other living organisms. As ecologist Andrew Goudie stated, "One of the most fundamental ways in which humans are causing extinction is by reducing the area of natural habitat available to species. Even wildlife refuges tend to be small "islands" in an inhospitable sea of artificially modified vegetation or urban sprawl."¹⁹³ We no longer live in small roving bands of hunter-gatherers that have little impact on the environment (although that perception of early humanity has even been called into question by modern theories of early humans being the cause of several extinctions instead of the drastic changing of climates, as once thought). And our numbers preclude returning to such a society, and nor should we even aspire to do so. While we should always aim to minimize harm to the environment and leave as much to wilderness as possible, we shouldn't do so to the point where we are infringing on the quality of human life and reverse the progress we have made. "Man is a political animal; humans maximally are what they are in culture, where the natural selection pressures are relaxed without detriment and with benefit."¹⁹⁴ Facing this reality requires us to understand that we must strike a balance between

¹⁹² Gore, Al. *Earth in the Balance: Ecology and the Human Spirit* (Boston: Houghton Mifflin, 1992), 140.

¹⁹³ Goudie, 132.

¹⁹⁴ Roston, Holmes III. "Challenges in Environmental Ethics." *Environmental Philosophy: From Animal Rights To Radical Ecology*. Michael Zimmerman, ed. (New York: Prentice Hall Inc, 1993), 137.

humans and nature. Modern humanity cannot completely coexist in an ecosystem (at least not now and not in the foreseeable future, anyway) without altering it in some way and thus reducing the biodiversity. Therefore, to truly live according to the aspect of biocentric ethics that requires us to give all species their due moral consideration, we must cease our outward expansion. And the only way to do that, while at the same time not severely deteriorating our own quality of life, is to realize that we simply cannot keep growing.

To summarize, population growth is certainly not a vital interest of ours. We have long since achieved a population that is large enough and geographically dispersed enough to ensure our survival. Any threat that comes to our survival will be a result of our own doing, and not as a result of having too small of a population. Therefore we must acknowledge that population growth is, at best, a nonvital interest and is subject to the balancing test proposed in this chapter to determine if it is a nonvital interest that is we as moral agents can honestly say trumps the vital interests of the moral subjects we are ethically bound to protect. So how does it withstand the scrutiny of this test? Quite poorly considering that it would be a stretch to even argue that population growth serves any societal interests at all. Of course, individual people maintaining the right to have larger families is an important interest that is worthy of protection, but since this thesis advocates targeting the society's total fertility rates in ways that do not include placing direct restrictions on individuals per se, then that is not really an issue. Furthermore, population growth is a blanket rejection of the biocentric principles we are to adhere to as moral agents, and the harm it causes will in many ways be irreparable.

CHAPTER 5

POLICY ALTERNATIVES AND CONCLUSIONS

Does the U.S. have a need to stabilize its population growth? This is the issue that many environmentalists have tried to push to the forefront of our policy-making agenda. Although it is a relatively new issue in the U.S. and did not surface until environmentalism began to surge in the 1960s, it is a very old issue that dates back at least as far as the ancient Greek philosophers. However, as this thesis argued, this question originates from an outlook we should do away with and is therefore the wrong question to ask. Instead of asking, “can we afford to grow?” the proper question is “should we allow ourselves to grow?” To understand why we should instead be asking this question requires a shift in thinking toward the biocentric end of the environmental ethics spectrum. By making such a paradigm shift it becomes clear to us that making moral judgments on population growth based merely on how it affects us is an incomplete approach because it does not take into account all of the interests that we as moral agents are required to consider under the norms of biocentric ethics. A reliance on the anthropocentric outlook gives us a distorted view of whether we are living up to our ethical duties in allowing population growth continue even though we have long since achieved the numbers and dispersion necessary to insure our survival and quality of life. Therefore, the inquiry should go well beyond whether population growth poses a threat to human welfare.

To make such an argument, this thesis took a very historical approach. In doing so it examined the evolution of environmentalism from the strict anthropocentric norms that prevailed throughout most of our Western history to the emergence and growth of the biocentric thought in Western philosophy that is beginning to play more of a role in environmental policy. This historical overview of environmental philosophy was accompanied by a specific emphasis on how this traditional anthropocentric outlook of ours has influenced our thoughts on population growth. Essentially, population growth has always been seen as a good thing that should continue until it reaches the point where it causes environmental damage of the type and magnitude that causes harm to humans. Of course, it is not fair to assign this line of thinking to everyone throughout modern Western civilization for there are many biocentric-oriented thinkers during this era thought would not have agreed with such an outlook and with such ambivalence towards population growth. However, it is fair to say that this is the general consensus for most of our history, and it is this general consensus that is being criticized in this thesis.

Within this historical overview of environmentalism and the population debate, a cycle was uncovered that dates back at least as far as the time of Malthus in the 18th century. On the one side there are those who feel that population growth is causing dangerous and irreparable harm to the environment that will cause great harm to humans. Referred to as neo-Malthusians, they argue (as Malthus did) that we have finally reached the limits of what the environment can handle. To support this argument they point to vast amount of environmental damage, which was described in detail in Chapter 3, and assign the blame to population growth. Neo-Malthusians fear that any more growth will result in such an overloading of what the environment can handle that great suffering will

follow. On the other side, it is argued that population is not a concern because improvements in technology and its subsequent lowering of per-capita affect on the environment will always keep us one step ahead of the Malthusian checks we are being warned about. Some even go as far as saying that not only is population growth not a concern, it is actually desirable because it forces us to improve technology and continually seek new and better ways to mitigate our impact on the environment. This is how the population debate has taken shape, and this is the cycle that is repeated every time the issue re-emerges. This cycle is based on a reliance on strictly anthropocentric ethics (which is far too narrow of an outlook) and a blind adherence to an antiquated growth ethic that originated in times and conditions that no longer persist today and should be abandoned.

Once the faulty logic and inadequacies of the traditional anthropocentric view towards population growth were exposed, two steps in the argument remained. First, it was demonstrated that the biocentric outlook is the one we should adopt. Of course there are many shades of biocentric thought and the one deemed to be most sound is that of eco-humanism; one that includes nonhuman species in our moral community yet does not make the mistake of assuming that all species are of the same inherent moral worth. Second, it was demonstrated how further population growth cannot be reconciled with the biocentric principles this thesis proposes. Further population growth, while holding absolutely no benefit for us (vital or nonvital) is having a visibly harmful affect on other life forms that, for a host of reasons, have the right to continued existence and well-being. Of course, population is not the only variable that needs to be addressed. Consumption and technology should always remain on the forefront of our environmental protection

agenda as well. Nonetheless, to continue the traditional American ambivalence toward population is not in keeping with the biocentric ethics defended in this thesis.

The Biocentric Approach to Policy Formulation

Just as there is debate surrounding what our future population will be, there is much debate over what it should be. Increasingly, though, a growing number of Americans are beginning to view further population growth as a significant problem. Many are simply growing weary of the increased congestion and lack of solitude, but the strongest calls for curtailing population growth come from those who are concerned about its affects on the environment. For those who seek to protect the environment on this front, any population growth is seen as a problem.

Trying to determine the exact number that our population should be is not the purpose of this thesis, and is really not something that is required of us. Biocentric environmental ethics does not require us to forge some sort of utopian ideal of what our optimum population should be and then seek to attain it. The term "optimum population" has been defined by demographer Lindsey Grant "not as the largest number we can get away with, but as a target that would help us achieve the greatest human well-being."¹⁹⁵ Grant further expands on this definition by describing optimum population to be "presumably, some magic point that best reconciles all the different goals related to

¹⁹⁵ Grant, Lindsey. "Reconciling Texas and Berkeley." *Elephants in the Volkswagen: Facing the Tough Questions About Our Overcrowded Country*. Lindsey Grant, ed. (New York: Simon and Schuster, 1992) 7.

demography: full employment and maximum productivity per person, livable housing accessible to employment, social equality and reasonable levels of consumption, national security, open spaces and the preservation of resources, clean air and water, leisure, education and cultural amenities, and indeed 'liberty and the pursuit of happiness'.¹⁹⁶ Based on this rather ambiguous definition, it becomes apparent that this is an exceptionally difficult question to answer for several reasons. First, not only are there many complex variables that must go into such an estimation, this falls back into the very same trap caused by a reliance on anthropocentric environmental ethics. If we decide an optimum population based on what we believe the environment can sustain at this present time, it fails to take into consideration future improvements in technology and consumption habits and would therefore be constantly changing, just as the supposed maximum number of people the environment can sustain that neo-Malthusians believe exists. In other words, this is essentially the same mentality that lead us to ask "How much can we grow?" instead of "Should we grow?" Secondly, serious efforts at determining such a number would require input from such a diverse contingency of experts from so many fields that reaching any sort of a meaningful consensus would be unlikely. This is the same type of problems illustrated Chapter 3. With so many diverse interests and notions of the "good life" it would be virtually impossible to reach such a consensus, even if we were required to do so. Third, populations fluctuate quite a bit. Even if an "optimum population" could be decided upon, there would be no way to keep it at that exact number unless strict population control measures were implemented.

¹⁹⁶ Ibid, 8.

While it is important to stabilize the population, it is important to keep in mind that it can never be kept stable at a certain number. It will inevitably fluctuate, and therefore we can only aspire to keep it stable within a general range. Fourth, such an endeavor requires a sort of social engineering that most Americans would find repugnant. It is worth stating again that it must always be kept in the forefront of the minds of those who aim to see the attainment of population stabilization that there are always other interests and values to be considered when fashioning an effective and realistic approach to addressing any problem. Therefore, determining an "optimum population" is an interesting question, but population policy should be approached from a different perspective. Instead of trying to figure out what we can be or should be, we should just ask ourselves what does the eco-humanist slant to biocentric ethics require us to do? According to the principles of this school of thought set forth in this thesis, we need not engage in some never-ending debate over what our population should be. We need only recognize that we have long since reached adequate numbers and that the time to make a more concerted effort at stabilizing our population as soon as we can is long overdue. (Ideally it should have been done thirty years ago at the time of the Rockefeller Report because by now the population would be stabilized. However, that was simply a missed opportunity and although we are faced with population momentum, there is still a lot that can be done). Biocentric environmental ethics forces us to recognize that we may very well be able to grow more, but since that is not in furtherance of any interest of ours (or at least not of one that is important enough to trump the vital interests of nonhuman organisms) we should not do so. As mentioned earlier, population momentum will inevitably cause the population to grow. We simply need to accept that, do as much as we can in the meantime to mitigate

the effects of this growth, and engage in a concerted effort to make sure that once this momentum ends we achieve stabilization and maintain it. This can easily be done through reduction in fertility rates to about 1.5 coupled with immigration rates of around 500,000 per year will result in a stabilized population of around 230 million by the year 2050; 170 million less than there would be if present demographic trends were to persist.¹⁹⁷ This is a very reasonable objective since it does not call for a drastic reduction in immigration and because a fertility rate of 1.5, as seen by many European nations who have achieved this and even lower fertility rates, is certainly attainable.

Policy Recommendations

The question remains about how to get there. Before this is answered, it must be understood that any policies aimed at ending population growth should be guided by two basic parameters. First, immigration will continue. To propose that immigration should cease in lieu of efforts to influence fertility rates fails to recognize that policy making inherently involves having to take into consideration all of the interests of the U.S. One should not lose sight of the big picture and fail to see that population stabilization is not the only interest of ours, and not even a paramount one at that. Furthermore, proposing the cessation immigration fails to recognize that population growth is a global problem, not just one in the U.S. While this thesis focused on U.S. population growth for reasons stated in Chapter 1, it does not do so under the false presumption that the U.S. can live in

¹⁹⁷ McKibben, Bill. *Maybe One: A Personal And Environmental Argument for Single-Child Families*. (New York: Simon and Schuster, 1998), 10.

an isolationist vacuum and forget about problems occurring on the global level. Simply put, the U.S. has an interest in stabilizing its population but must realize that ending immigration will do absolutely nothing for the global population problem. Secondly implementing population policies that aim at influencing fertility rates must do so under the auspices that population control must be accomplished by voluntary means. In 1968 the United Nations Conference on Human Rights stated, "Couples have a basic human right to decide freely and responsibly on the number and spacing of their children and a right to adequate education and information in this respect." Such sentiments are clearly prevalent in the United States, so a restrictive population policy such as the one in China for the U.S. would be undesirable and, above all else, unnecessary. The fact remains that it is a very important aspect of the private lives of individuals that the government, and society at large, must respect. Unfortunately many people mistakenly think that any attempts to influence population through a reduction in fertility rates requires involuntary coercion, and the widely publicized policies of India and China have exacerbated this misconception. One of the main points of this thesis was to show that population can be stabilized with long term planning and foresight without resorting to population control. Now more than ever population growth can be stabilized without resorting to intrusive and isolationist means. Although this chapter does not provide the definitive answer, it provides insight into how a developed nation like the U.S. can use its knowledge to develop a long-term comprehensive plan and offers four basic recommendations. Interestingly, it does not require that we do many things that we are not already doing-only that we do more of it.

A concerted effort at increasing education on population growth is a good starting point, since education plays an important role in developing and understanding of the causes and consequences of population growth. This is vital in developed nations like the U.S. where fertility rates are determined largely by choice instead of as a matter of survival or natural fertility since the transition from a rural agricultural society to a modern urban society has been made and where there is a strong grasp on health. As the Rockefeller Foundation recommended, there should be the enactment of a Population Education Act to assist school systems in establishing well-planned population education programs so that present and future generations will be better prepared to meet the challenge arising from population change.¹⁹⁸ To implement such a program, federal funds could be appropriated for teacher training, for curriculum development, for research and evaluation, and for assisting state departments of education to develop competence and leadership in population education.¹⁹⁹ Education in this manner would be much more effective and acceptable in this society than a more direct propaganda campaign used in other nations attempting to influence their fertility rates.

Along the same lines, the U.S. should create a government agency (or at least fund a major government study) aimed at preparing the U.S. for population stabilization. Part of the reason why many avoid the topic of population is apprehension of some perceived negative consequences of a stabilized or shrinking population. This would include such things as making any appropriate changes in the economic system to

¹⁹⁸ The Report of the Commission on Population Growth and The American Future.
"Population and the American Future." 1972., 141.

¹⁹⁹ Ibid.

accommodate for a population that is no longer growing or is slowing decreasing. This would ease fears that an end to population growth will necessarily damage the health of the economy. Such a project should also study and create ways to accommodate various demographic changes such as changes in the age structure.

A necessary precondition for lowering fertility is adequate family planning services, and the U.S. is clearly not succeeding in this area. In 1995, only sixty-four percent of women between the ages of fifteen to forty-four were practicing contraception.²⁰⁰ As a result, over half of all pregnancies in the U.S. are unintentional (with only about half of those ending in abortion).²⁰¹ Despite all of these unintended pregnancies, Title X spending has fallen by more than seventy percent between 1980 and 1992 and has not been reauthorized by Congress since 1984.²⁰² So clearly there needs to be more of an effort to expand access to family planning, education, and related reproductive health services, particularly for at-risk individuals. This can be done in several ways. The first step in doing this for states to adopt affirmative legislation that will permit minors to receive contraceptive information and services regardless of parental consent. Secondly, the U.S. should make it mandatory that costs of

²⁰⁰ Piccinino, Linda and Mosher, William. "Trends in Contraceptive Use: 1982-1995." *Family Planning Perspectives*. Vol 30, No.1. Jan/Feb 1998: pp. 4-12.

²⁰¹ Henshaw, Stanley K. "Unintended Pregnancies in the U.S." *Family Planning Perspectives*. Vol 30, No.1 Jan/Feb 1998: pp. 24-30.

²⁰² President's Council on Sustainable Development. "Sustainable America: A New Consensus for Prosperity, Opportunity, and a Healthy Environment for the Future." (Government Printing Office, 1996), Chapter 6: "US Population and Sustainability."

contraceptives are covered by health insurance coverage. Not only should this include the traditional methods, but also the more permanent ones such as sterilization that is typically rather expensive and considered elective and therefore not covered. Sterilization is by far the most effective technique, but not the most well received because of its cost and permanence. If it could be made more cost effective (like being covered by insurance companies) and perhaps even less permanent (i.e., reversible), then it would be far more utilized and, considering the reproductive life span last well beyond the last planned pregnancy, unintentional pregnancies would decrease.²⁰³ Third, the U.S. should increase funding and make a more concerted effort in the continual development and improvement of family planning services and methods to make them as effective, inexpensive, and accessible as possible to all people regardless of age, economic standing, or geographic location.

The U.S. also has to ask whether it is taking full advantage of the contraceptive affects of education and socioeconomic status, especially among women. Poverty and the lack of economic, educational, social, and political opportunities are important influences on early and unintended childbearing.²⁰⁴ Almost two-thirds of the adult poor are women and more than half of all poor families are headed by a single mother. These factors demonstrate the need to deal with broad social conditions such as poverty that contribute to unintended pregnancy and, in turn, to the relatively high rates of adolescent pregnancy

²⁰³ Bumpass, Larry L. "The Risk of an Unwanted Birth: The Changing Context of Contraceptive Sterilization in the U.S." *Population Studies*, 41(1987), pp. 347-363.

²⁰⁴ Ibid.

and population growth compared with other industrialized countries.²⁰⁵ People who feel that population growth can only be addressed by coercive measures should first look at the economic and educational differentials that exist in the U.S. With such socioeconomic differentials, especially with income and employment opportunity for women, it is a wonder why U.S. fertility levels are as low as they are. Many think that the U.S., being the most developed nation in the world, has already maximized the contraceptive effects of development and therefore assume that a TFR of 2.1 is as low as it can be without getting coercive. However, such thinking fails to recognize the many pockets of American society where the fertility rate is much higher than the national average, and often these pockets are created out of a lack of education or economic opportunity. In conclusion, for almost all of the history of the human population, growth was dictated by external forces such as health. As health has become more controllable, population growth stems from fertility rates which, taking into consideration the various cultural and socioeconomic conditions in which they are found, stem mostly from personal choice. As long as there is an adequate level of health and a sufficient amount of family planning services, fertility rates are determined mainly the economic, educational, and cultural conditions found in a given society. Any efforts on the part of a society to influence fertility rates should be preceded by an assessment of these conditions in order to come to an enlightened decision as to the most effective and justified pathways for doing so.

²⁰⁵ Ibid.

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VITA

Graduate College
University of Nevada, Las Vegas

Phil MacWilliams

Local Address:
3542 Algiers Drive Apt.# 2111
Las Vegas, Nevada 89115

Home Address:
1407 Ridgeway East
Arnold, Maryland 21012

Degrees:
Bachelor of Science, Criminal Justice, 1996
Xavier University

Thesis Title: U.S. Population Policies and Environmental Ethics: Addressing Population Growth From the Biocentric Perspective

Thesis Examination Committee:
Chairperson, Dr. Barbara Brents, Ph.D.
Committee Member, Dr. Zak Zimmer, Ph.D.
Committee Member, Dr. Frank Chessa, Ph.D.
Graduate College Representative, Dr. Todd Kunioka, Ph. D.