



*Unity in Diversity:
An Academic Community Reflects
on
Environmental Ethics
2008 - 2009*

*Faculty Luncheon Series
Presbyterian University Center*

Florida State University

Dr. Robert S. Ross

Organizer of the Series

&

Editor of the Anthology

Dedication

Since the series on environmental ethics during the 2008-2009 academic year, the Gulf of Mexico oil disaster has occurred. This assault on the environment has created an even greater relevance, and sense of urgency, for the development of a viable environmental ethic. This anthology is dedicated to the Gulf of Mexico region, to its wildlife, its ocean, land, and air, whose only voices are our own.

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“Science, history, philosophy, religion, law, psychology, economics, and art—like so many radiant butterflies fluttering in a field, we may, like children, dart from place to place trying to capture all of their insights in our outstretched arms, as we wait for our maturation to an adulthood of ethical behavior toward the environment, when all species now living, and all species yet to come, will take their rightful place in a New World of Environmental Justice.” — *From the Introduction to the Anthology*

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Introduction to the Anthology
Dr. Robert S. Ross
Research Associate
Department of Earth, Ocean & Atmospheric Science
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Each paragraph that follows represents an abstract of the content contained in the individual essays comprising this anthology, in the order in which they appear from the first essay on science to the concluding essay on art. In effect, this introduction seeks to capture the environmental ethic that emerged from the Faculty Luncheon Series on Environmental Ethics.

Scientists have described many alarming trends in our climate. When we burn fossil fuels in our power plants, homes, and cars we release carbon dioxide into the atmosphere, a waste product disposal that is free of charge, unlike our solid waste disposal for which we pay a fee. Carbon dioxide and methane are greenhouse gases which trap heat and cause the planetary temperature to rise, and these two gases have increased by 40% and 100%, respectively, relative to pre-industrial times. The consequences of these gas releases are beginning to be observed. The planet's temperature has risen about one degree. There have been dramatic decreases in the extent and cover of sea ice in summer in the Arctic Ocean. Arctic and mountain glaciers have rapidly retreated across five continents over the past fifty years. Warming of ocean water and the melting of ice on land masses both contribute to sea level rises, and the Inter-Governmental Panel on Climate Change (IPCC) estimates that sea levels will rise by roughly 15 to 17 inches over the next century, from the first of these two effects alone, leading to flooding of coastal areas and the potential disappearance of small island nations. Such alarming observations lead to a consideration of the ethical principle of environmental sustainability. In its purest form this principle states that every generation should leave water, air, and soil resources as pure and unpolluted as when it came on the earth, and that every generation should leave undiminished all the species of plants and animals. A less stringent form of this principle holds that each generation should leave the earth in such a state that future generations would have the resources available to them to live as well as preceding generations. Our generation has clearly failed in regard to the first definition of this sustainability principle, and there are very serious questions as to whether we will be able to meet the requirements of the second formulation of this principle. On the whole it seems clear that the industrial society in which we live is on an unsustainable course and that an internationally agreed upon new paradigm of environmental ethics is desperately needed, one in which education, among many other elements, must play a central role.

There is a linkage between our concepts of ecology, the relationship of all living things to each other and to the earth, and our formulations of environmental ethics. In the early 18th century there was the "Arcadian" view of mankind's relation to the earth which is attributed, in many ways, to the naturalist and parson, Gilbert White. In White's view people should lead a simple, humble life in order to restore themselves to a peaceful coexistence with other organisms. This view signifies an intrinsic attachment to the land and its inhabitants, along with a reverence for divine Providence which produced the beautiful whole of nature, and it stresses co-operation with nature. For complex historical reasons having to do with Christian views of nature and the rise of modern western science, the Arcadian view was transformed during the 18th and 19th centuries into what may be called the "Imperial" view of mankind's relation to nature, where domination of the earth for mankind's benefit became the most important objective. This view is epitomized by the naturalist/scientist Carl Linnaeus, who developed the biological classification system for all plants and animals known as binomial nomenclature. This system provided a consistent language for biological science and fostered its spread over the globe. Charles Darwin's theory of biological evolution by natural selection established the third major ecological view and attendant environmental ethic. His theory provided for an ecological view of nature that contrasted with both the Arcadian and Imperialist

views. Gone was the idyllic cooperation found in the Arcadian view, replaced by a struggle for existence. Likewise, the Imperialist view was challenged since mankind was no longer seen as having dominion over nature, but rather as being a part of nature subject to the same forces of nature that are embodied in scientific theories and laws. Additionally, two 20th century Americans, Aldo Leopold and Rachel Carson, had profound impacts on our perceptions of environmental ethics. Leopold broadened the scope of ethical concerns by calling for the land to be viewed as a community, rather than as a commodity. Carson broadened the scope of ethical concerns to include all animals and ecosystems. She showed the harmful effects of pesticides to human and non-human populations alike, demonstrating that the fate of human health and wellbeing is inescapably intertwined with the health and wellbeing of all of nature.

The sense in which humans value nature is a vital component in the construction of an environmental ethic. When nature is viewed as having intrinsic value, the existence or flourishing of nature is considered to be a morally good thing independent of its relation or usefulness to anything else, including to humans. On the other hand, when nature is assigned instrumental value, its value is based on nature's usefulness to other entities, particularly to humans. Some ethicists have argued that, despite the apparent nobility of the concept of intrinsic value, its application to the inevitable decision making in conservation becomes problematic. For example, intrinsic value should afford all species equal access to the Endangered Species Act (ESA). In practice, however, limitations in funding and personnel, as well as political and legal pressures, have forced agencies responsible for listing decisions to assign priorities to species even though all are considered to be of equal intrinsic value. Comparative value is exactly what conservation decision making requires, according to proponents of instrumental value. Supporters of intrinsic value object to this approach on moral grounds, viewing all entities in nature as "sacred." There is an essential tension between the emotional appeal of intrinsic value and the sense of pragmatic trade off in values that instrumental ethicists believe is inevitable in conservation decision making.

Religion has been implicated by some scholars as a cause of human induced degradation of the natural environment. However, in recent decades Christianity, the most implicated religion in this regard, has shown signs of becoming a positive force in the restoration of the natural environment. The historian Lynn White writing in the 1960's stated that "especially in its Western form, Christianity is the most anthropocentric religion the world has seen." The view that all of nature exists for the sole benefit of humans represents a type of "Christian arrogance" that has penetrated the Western cultural outlook and has influenced the deliberations of all those Western institutions that would seek to solve the environmental crisis, even science and technology. But White also wrote that "since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not." As if responding to White, scholarly interest in the relationships among human cultures, religions and environments developed in the 1960's, and by the 1980's and 1990's religious writings and teachings on environmental ethics started to expand and were given the name "eco-justice" by the faith community. In 1986 in Assisi, Italy, leaders of the five world religions met to define religious obligations to nature. In 1997 Patriarch Bartholomew, the spiritual leader of more than 300 million Orthodox Christians around the world, became the first religious leader to denounce environmental abuse as a sin against God. By 2000 most mainline denominations were beginning to embrace eco-justice as an important element of their faith. Additionally, "The Green Bible" has been published, the New Revised Standard Version with 1000 verses dealing with the care of the environment highlighted in green.

While the religious concept of eco-justice refers to treating all aspects of "God's creation," land, water, and air, and all species, with equal respect, the legal concept of environmental justice seeks to ensure that the distribution of environmental harms and benefits remains equitable considering all issues, regions, and populations. The field of environmental justice developed in the 1990's and has undergone an uneasy transition since then. Beginning largely as a body of law dealing

with the unequal distribution of environmental harms and benefits across race and income lines, and the unequal enforcement of environmental protection across race and income lines, all viewed as civil rights violations, the field has expanded to include a broader spectrum of populations, moving far beyond just urban minority populations to connect with both rural and international populations. The field now also considers a broader set of issues that extends far beyond just polluting facilities to include issues of tree trade and global climate change. Sadly, however, with these far-reaching changes the law of environmental justice in some respects has stalled as a discreet source of remedy for environmental inequities. Further, it is no longer completely clear exactly what constitutes the discrete body of environmental justice law. Just as with the emerging concept and practice of eco-justice in religion, the evolving field of environmental justice in law offers hope for the eventual formation of a concrete and universally agreed upon environmental ethic. But the path ahead is not at all clear and one wonders if the pace of human deliberation and consideration of environmental ethics will be swift enough to overtake the massive environmental damage that is manifestly evident to sentient humankind.

Ultimately, harm to the natural environment comes in great measure from the collective detrimental practices of the earth's billions of inhabitants. The insights of psychology with regard to human behavior and its changes, in general, may be applied to better understand and change particular human behaviors that are harmful to the natural environment. Psychology may consider behavioral, cognitive, and social psychological approaches in this regard. Changing individual behavior relevant to the environment is a very complicated process involving the individual's social background and socialization, incentives and constraints, as well as basic values, worldviews, attitudes, and beliefs with regard to the environment. Just as in our relationship to self and to others, our relationship to the environment is enhanced by living a more conscious, deliberate, and reflective life, one that is not primarily driven by reactions to triggers and automatic thoughts and habits. The concept of healing ourselves and healing the earth as parallel processes is the focus of a very promising new area of psychotherapy called "eco-therapy," which has an intriguing parallel to the previously mentioned areas of "eco-justice" (religion) and "environmental justice" (law). There is much hope in the development of these bodies of thought and practice specifically relevant to the environment that are emanating from a variety of fields. An important message from psychology is that human beings can make significant changes in how they behave toward each other and toward the natural environment.

The field of economics may help us focus on a crucial question as we strive to develop an environmental ethic: to what extent may we be able to apply a personal ethos of moral behavior toward the environment in an economic environment with its complex inter-connectedness of production and distribution processes, as well as marketing? Economists call us to a careful analysis of the very complicated process of environmental protection so that we don't replace a robust environmental ethic with "bumper-sticker" sloganeering. From the economist's point of view most environmental problems occur because property rights are poorly defined. Our relationship to the environment may be more like our relationship to a bicycle that we might acquire through a "borrow a bicycle" program, as opposed to a bicycle that we might purchase. A purchased bicycle is maintained with a balance between some deterioration due to the joys of usage and an up keep consistent with plans of future resale. Borrowed bicycles, on the other hand, are owned by everyone, and hence, by no one, and this lack of traditional ownership typically leads to a more rapidly deteriorating bicycle as compared to one that is traditionally owned. With regard to the environment, economists consider a wide variety of approaches to create property rights and market-like systems. They also engage in bargaining and negotiation among affected parties. In these efforts there is no single quick fix or policy choice that will completely resolve any given problem. A complicating factor is that the information needed to solve a problem needs to be centralized, whereas knowledge tends to be decentralized. There are normally tradeoffs between a decision to protect the environment and other desirable societal goals. Human behavior is not static, and changes in policy designed to

protect the environment may have unexpected consequences, as humans respond to incentives. Technological systems may be more complicated than we assume, and unintended consequences may result. Further, we may assume that events are in a cause and effect relationship when they are only correlated. Is climate change caused by human activity, or is it simply correlated with that activity? In all these areas, economics as a social science calls us to take seriously the facts of the human dimensions of environmental protection, just as the natural sciences beckon us to take seriously the facts about the physical dimensions of the environment.

Artists' powerful relationship with the natural environment, based on keen observation, and their questioning and re-examination of society's notions of progress, make their input critical for the formulation of a viable environmental ethic. Artists heighten our awareness of our relations to nature and, thereby, they may bring about social change. Through the images of art we are put in touch with the power and beauty of nature and the delicate balance between humans and nature. Artists have reminded us of the absurdity of some of our actions toward nature and of how removed our experiences and perceptions of nature sometimes become. In addition, artists have raised important questions about sustainability, reuse, and mass consumption. The artistic image may be able to move us to a state of awareness and action when our cognitions and verbalizations fail.

Science, history, philosophy, religion, law, psychology, economics, and art—like so many radiant butterflies fluttering in a field, we may, like children, dart from place to place trying to capture all of their insights in our outstretched arms, as we wait for our maturation to an adulthood of ethical behavior toward the environment, when all species now living, and all species yet to come, will take their rightful place in a New World of Environmental Justice.

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**Dr. Robert S. Ross**

Dr. Robert S. Ross received the B. S. degree in Natural Sciences from Mercer University, and the M. S. and Ph. D. degrees in Meteorology from The Florida State University. He developed a B.S. degree program in meteorology at Millersville University of Pennsylvania, where he taught for 27 years. Beyond his direct professional expertise in meteorology, Dr. Ross has developed a strong interest in the relationship between science and religion, as well as the relationship of these two spheres to environmental ethics. He developed and taught a course in the Honors Program at Millersville University, "Issues in Science and Religion," for which he received an award from the John Templeton Foundation. Since becoming Professor Emeritus at Millersville University, Dr. Ross has worked as a Senior Research Scientist in the FSU Department of Earth, Ocean, and Atmospheric Science and has engaged in co-operative projects with personnel of the National Weather Service Office, which is co-located with this department on the FSU campus. In addition, he has taught his award winning course in science and religion in the Department of Religion at FSU.

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Introductory Comments about the Series

Dr. Robert S. Ross

Life on planet Earth is characterized by a rich diversity, but also by a marvelous unity that we have come to know as the community of life. By analogy, on this campus we see a rich diversity represented by the various colleges. Yet there is a unity here that produces the community that we all know as The Florida State University.

In this year's Faculty Luncheon Series we will draw upon the rich diversity of our academic community to reflect on a central issue of our time, the degradation of our natural environment that represents a very serious threat to the community of life on this planet. Our focus will be on the formation of an environmental ethic that will be robust and enduring as we seek to solve our environmental problems. We will be exploring what constitutes right and wrong, and the life that is satisfying, in our relation to the natural environment.

An implicit assumption in this series is that an environmental ethic can best be forged by the combined inputs of human reasoning and human emotion. By way of illustration, our speaker today will bring human reasoning to the table in the form of the scientific study of our environmental degradation. The last speaker on April 14 will bring human emotion to the table, as we reflect on an environmental ethic based on art, where we find human emotion embodied in our shared sense of beauty. Between these two talks we will hear speakers from history, philosophy, religion, law, psychology, and economics, truly a rich diversity of thought.

Each talk will be recorded and broadcast on WFSU-TV (Cable Channel 4). In addition, each speaker has agreed to write a short essay embodying the central themes of his or her talk. These essays will be included in a short edited volume which will be available at the conclusion of the luncheon series. The introduction to this edited volume will seek to capture common themes that emerge from the various talks. In effect, the introduction will define the environmental ethic that we expect will emerge from this year's Faculty Luncheon Series.

Environmental Sustainability and Scientific Warnings

**Dr. Jeffrey P. Chanton
Professor of Oceanography
The Florida State University**

Sustainability is meeting the needs of the present without compromising the ability of future generations to meet their needs. Sustainability is generally considered in terms of environmental concerns, but it is true for other factors as well. Currently economic debt can be considered a sustainability issue.

Environmental sustainability can be thought of to different degrees. One view has it that every generation should leave water, air and soil resources as pure and unpolluted as when it came on earth. Each generation should leave undiminished all the species of animals it found existing on earth. A more forgiving view would state that each generation should leave the earth in such a state that future generations have the recourses available to them to live as well as proceeding generations.

How are we then, to live? It seems, sometimes, that the current paradigm in operation in the world today, following the collapse of Marxist ideology, is that individual consumption should be maximized to further the economic development of others by enabling them to provide us with goods and services. For example, after 9/11 our government urged us to go shopping as a patriotic act. A rising tide is said to lift all boats. But can the world sustain all of the earth's human population in comfort while at the same time leaving space and resources for the future? Is economic growth the only way to help the poor? Or does environmental degradation associated with growth harm them even more? Sixty years ago, Mahatma Gandhi asked that God forbid India should follow the industrialism of the West. He noted that Britain consumed half the planet's resources to achieve prosperity, and asked how many planets India would require? Grinding poverty is indeed sustainable.

If everyone on Earth lived like we do in the USA, how many planets would it take to support this lifestyle? Based on the economic growth rates of the year 2007, it was estimated that by 2031 China alone would have burned 99 million barrels of oil a day, 18% more than current global production. China would have consumed 2/3 of the worlds current grain harvest and used twice as much paper as the world currently uses. They would have driven 1.1 billion cars, currently there are 800 million on the earth. They would have paved roads highways and parking lots equal to the area now planted in rice. Perhaps recessions can be blessings.

In addition to the problems of resource management and distribution are the problems associated with waste distribution and removal. It costs a fee to remove garbage from the curb and properly dispose of it. Yet we dispose of waste products to the earth's atmosphere free of charge. And the atmosphere, too, is earth's most dilute, vulnerable and most easily affected reservoir. When we burn fossil fuel in our car, our hot water heater, our home furnace, or at the power plant that provides electricity to our house, the carbon dioxide resulting is released freely to the atmosphere- no charge. At one time, we thought this release to be of no consequence, but we know better now.

Carbon dioxide is a greenhouse gas, and human activities have increased its concentration in the atmosphere by 40%, relative to preindustrial times in the early 1800's. Other anthropogenic greenhouse gases include methane and nitrous oxide. The concentration of methane has more than doubled in today's atmosphere relative to the preindustrial 1800's. Methane is a greenhouse gas 25 times more powerful than carbon dioxide on a molecule to molecule basis.

The earth receives energy from the sun as visible radiation. The atmosphere is transparent to this visible radiation which passes right through. The visible radiation then hits the surface of the earth. About half is reflected, but the other half is absorbed and re-radiated as infrared radiation or heat. The atmosphere is opaque to infrared radiation, and these gases are responsible for this

opaqueness. Greater concentrations of these gases in the atmosphere trap energy at the surface of the earth which expresses itself in two ways, sensible heat transfer and latent heat transfer. Sensible heat means a temperature increase. Latent heat involves a phase change, for example, the melting of ice.

The consequences of these releases are beginning to be observed. Overall the temperature of the earth has increased on the order of a degree. But the areas on earth that are the most sensitive to climate change are the higher latitudes. In past climate changes on earth, these areas have exhibited the most change, and this trend continues today. The North Pole is centered at the Arctic Ocean, and here observations confirm dramatic decreases in the extent and cover of sea ice in summer. Some suppose that the long searched for Northwest Passage sea route will soon become a reality. As Arctic ice melts and is replaced by open water, the earth's reflectivity or albedo will decrease. Less solar radiation will be reflected to space and more heat will be absorbed. This will cause the earth to warm faster, further decreasing the albedo, resulting in further warming. This results in a positive feedback to climate change—warming.

An additional concern is the melting of Arctic and Mountain glaciers. Photographs taken over the past 50 years document the rapid retreat of these features across five continents. Glacial melting lubricates the ice-rock contact on which the glaciers are grounded and speeds their flow towards the sea. Indeed the speed of glacial advance has taken glaciologists by surprise.

At lower latitudes, the main concern may be sea level rise. As land ice melts, and flows into the sea, ocean levels will rise. The IPCC (Inter-governmental Panel on Climate Change) has predicted that sea level will rise roughly 15 to 17 inches over the next century. However, these changes are based solely on the thermal expansion of seawater due to warming waters, and take no glacial melting into account. Thus the IPCC estimates must be regarded as strict minimum estimates for the amount of sea level rise that will be observed. In coastal regions like Florida's, with our low coastal gradient, a one foot vertical rise in sea level may result in 10's to 100's of feet of shore line retreat in a horizontal direction. Global warming may drown the Maldives, a tropical island nation in the Pacific, and the island nation's president is considering relocating the entire population. Several other island nations are in the same boat, so to speak.

So to turn back to environmental sustainability, certainly we are not leaving the earth as we found it. It seems relatively likely that the earth will be a different place than it was in pre-industrial times. But will climate change affect the ability of future generations to prosper? Projections are for more uncertain and erratic weather patterns, more droughts, floods, heat waves, and so on. One readily might expect such effects due to the additional energy in the form of heat that is trapped on the surface of the earth. It is certain that the development of civilization has occurred in a period of relative climate quiescence. For the past 8000 years ice core records of climatic variability have indicated a benevolent system relative to periods recorded in the past. Furthermore, climate change adversely affects the populations of plants and animals with whom we share the planet and on whom we are dependent. On the whole, it seems clear that the industrial society in which we live is on an unsustainable course. Somehow, humans need to act together to reduce our impact on the systems that sustain us. One wonders if this can be achieved through the marketplace, as is so in fashion among today's policy makers, or if some other form of societal agreement needs to take place. Regardless, environmental education must play an important role.

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**Dr. Jeffrey P. Chanton**

Dr. Jeffrey P. Chanton is Professor of Oceanography at Florida State University. He is a Gulf Coast native, born in New Orleans, Louisiana. He grew up in Biloxi, Mississippi and did his undergraduate work at New College in Sarasota, Florida. He received his M.S. and Ph.D. degrees from the University of North Carolina at Chapel Hill.

Dr. Chanton joined the faculty of Florida State University in 1989. He works on a variety of research problems that involve fluxes of the greenhouse gases, methane and carbon dioxide, as well as isotopic chemistry. He is a member of the Gulf of Mexico Gas Hydrate Research Consortium where he is working to establish a sea floor observatory.

Dr. Chanton gives talks on the science of climate change to local citizens' groups and governmental organizations including the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission. In 2007 he debated climate change at the Florida Municipal Electric Power Association's annual meeting and in 2008 he engaged in a similar debate before the Florida Electric Cooperative Association.

The degree of degradation of our natural environment was the topic of Dr. Chanton's presentation to the Faculty Luncheon Series. His talk was entitled, "Environmental Sustainability and Scientific Warnings."

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Environmental Ethics: The Perspective from History
Dr. Frederick R. Davis
Associate Professor of History
The Florida State University

Thank you, Dr. Ross. I'd also like to thank Bob Ross for organizing this timely lecture series and the Presbyterian University Center for hosting us. I have one important announcement to make. Next February, FSU is hosting the annual meeting for the American Society for Environmental History. The Conference will be held from February 25 to March 1, 2009 and roughly 500 environmental historians should attend. For more information, visit the ASEH website at www.aseh.net.

My topic today is "Environmental Ethics: The Perspective from History." Rather than trying to review the history of this broad subject in detail, I'd like to introduce a few of the critical thinkers in the development of ecological ideas and environmental ethics. To a considerable degree, I see the evolution of ecology and environmental ethics as linked so I will underscore these connections. My chief sources to these issues are Donald Worster's *Nature's Economy* and Roderick Nash's *Wilderness and the American Mind*.

Gilbert White was born in 1720 and spent most of his 73 years as the parson of a small English village called Selborne. While fulfilling his religious duties, White carefully studied the local flora and fauna. In 1789, he published his magnum opus, *The Natural History of Selborne*, which is a collection of letters on the wildlife, seasons, and antiquities of White's parish. Only after White's death did his great work become fully appreciated and it has gone through more than a hundred editions.

In his sweeping history of ecological ideas, *The Economy of Nature*, Donald Worster has characterized Gilbert White's viewpoint as the "Arcadian" view. The Arcadian view holds that people should lead a simple, humble life with the aim of restoring them to a peaceful co-existence with other organisms.¹

White appreciated the complex unity in diversity that made Selborne into an ecological whole. Without too much exaggeration, you could say that White's *Natural History of Selborne* is one of the most important early contributions to environmental study in English Science. It was White's life goal to determine how many different creatures lived in Selborne and how they interacted within an interconnected system. Interspersed in White's writings were his religious beliefs. You see, two impulses attracted White to an ecological perspective: his intense attachment to the land and its inhabitants which he had known from childhood and his reverence for divine Providence that had produced the beautiful whole. In this way, White's love for nature and God were united.²

None of White's observations of ecological order conflicted with his fundamental belief that nature should provide a benign and profitable environment for mankind. He recognized the value of classification to bring order to nature but he felt that utility was more important. Selborne, he argued, could be managed more effectively to provide for man's material needs. "Never lose sight of utility." Fundamentally, White expressed the desire to reestablish an inner sense of harmony between man and nature through an outer physical reconciliation. This is the root of Gilbert White's Arcadian view of nature and the environment. Quoting Donald Worster: "Reverence and science, social distinctions and humane sympathy, utilitarianism and arcadian delight were all mingled in the daily rounds of the parson naturalist."³

Nevertheless, beyond the limits of Selborne, technological revolution was beginning in England. With the development of the factory system, the spinning jenny, the power loom, and the steam engine came the Industrial Revolution which transformed much of England and its countryside

as agriculture underwent reform as well. In totality, more than six and half million acres of countryside were converted to crops in England during the 18th and 19th centuries. Still farther away, political revolutions had devastated French society. Nestled comfortably in the village of Selborne, White believed people should lead simple, humble lives with the aim of restoring them to a peaceful co-existence with other organisms.⁴

The historian Lynn White has suggested that Christianity contributed to the development of the natural sciences by placing an emotional distance between humans and the rest of nature. Moreover, the Christian worldview placed humans above nature. This view contributed to the development of the rational objectivity that is central to modern science. In addition to objectivity, Christianity provided a mechanistic picture of nature. Christianity denied a soul to nonhuman organisms which supported the view of nature and organisms as machines. The mechanistic view of nature offered scientists a predictable world because it was devised by a rational mind and designed to follow a strict set of laws.⁵ This view, anti-arcadian at its core, was pervasive in eighteenth century writings about nature.

Thus the Christian worldview, in combination with the anti-arcadian or imperial view of nature made the domination of the earth one of the most important objectives of modern man and this leads me to the Linnaean Imperialism. Carl Linnaeus and his many followers sought to establish man's dominion over nature.

In the eighteenth century, Carl von Linne or Linnaeus (1707-1778) refined the imperial view of nature and developed it to new levels. Early in life, Linnaeus lived in a small village that was quite similar to Gilbert White's Selborne. While still in his 20s, Linnaeus earned his scientific reputation by traveling 5000 miles among the Lapps to botanize the fells, explained the sexual lives of plants, and transformed the classification of plants through his meticulous system, called the *Systema Naturae* which was published in 1735.⁶

Linnaeus' classification system was ingeniously simple. In order to place a plant into a group, a scientist only had to count the number of reproductive organs which is to say the pistils and stamens in a blossom and take note of their position in the flower. Despite the objections of many of Linnaeus' contemporaries to such an explicitly sexual classification, Linnaean classification quickly emerged as the universal system.⁷

The need for a workable naming system intensified with the huge number of plants and animals that were being brought back to Europe from Asia, Africa, and the Americas. Linnaeus cleared up the confusion when he developed binomial nomenclature. Under Linnaeus' system every organism received a Latin genus name and a species name. The genus name identified the organism as a member of a group and the species name was unique to that organism.

It is difficult to overestimate the impact of Binomial Nomenclature and Linnaean Classification on the environmental sciences. Here are some of the most profound effects of the approach. For the first time, the life sciences shared a common language. Naturalists from across Europe could share information on plants and animals with no fear of the confusion caused by common names in different languages. In a sense, a rational and relatively simple classification system facilitated scientific exploration. Scientists joined their nations in the quest to conquer other parts of the globe as colonies. Linnaeus' students and followers were part of the scientific colonization enterprise.

Linnaeus' economy of nature incorporated political, economic, and clearly Christian views of nature. One of the critical elements of Linnaeus' view of nature was mechanical materialism. Rene Descartes had long since proposed that animals represented nothing more than machines incapable of feeling pain or pleasure. Linnaeus and his followers could not accept Descartes' rigid mechanistic philosophy. The force behind the Cosmic Machine had to be God.⁸ As we have seen, Linnaeus'

imperialist view of nature justified the scientific colonization of distant lands and in some sense launched the heroic age of environmental science.

One of the great beneficiaries of the heroic age was a young naturalist named Charles Darwin (1809-1882). After an education in Edinburgh and Cambridge, Darwin spent nearly five years pursuing the naturalist's life on board the *Beagle*. Where ever the ship landed, the English naturalist collected fossils, beetles, and many other examples of the flora and fauna of the region. His time on the Galapagos Islands was particularly influential. But in 1859, Darwin published the *Origin of Species* and presented his theory of natural selection to the world. I should mention that Alfred Russel Wallace simultaneously and independently developed the theory.

Darwin's theory of natural selection is elegant in its simplicity. There is variation in nature and some of the variation is heritable. Species produce more offspring than can survive and there is a struggle for existence. Thus, only the fittest individuals survive to produce offspring. Two quick points of clarification. In formulating the struggle for existence, Darwin was influenced by the Rev. Thomas Robert Malthus who in 1798 produced *An Essay on Population*. In his Essay, Malthus noted that there was a natural tendency for resources, namely food, to grow at a linear rate, while animal populations (namely, humans) tend to grow at an exponential rate. Given these premises, catastrophic collapse is inevitable. In later editions, Malthus underscored the role of prudential restraint in avoiding disaster. Darwin dismissed the role of prudential restraint in nature. Secondly, Darwin links fitness directly to environmental conditions. Thus, a trait or character that offers an advantage in one environmental context, may be disadvantageous in another.

The Darwinian worldview contrasted with both White's Arcadian View and Linnaeus's Imperialist notion. For White, while people were part of nature, the purpose of nature was to serve humans. Linnaean Imperialism gave humans dominion over nature. Darwinism undermined both views. Gone was the idyllic cooperation found in Arcadia, replaced by a struggle for existence. Darwin's natural selection shook the foundations of man's dominion over nature as well by demonstrating that humans were also subject to the forces of natural selection. Social Darwinists later detached fitness from its environmental moorings and developed independent standards of fitness linked to race, class, and ethnicity.

Up to this point, I have offered three distinct environmental worldviews, all of which shaped environmental ethics. Now I'd like to leap ahead to twentieth-century America and the environmental ethic of Aldo Leopold. Born in Burlington, Iowa in 1887, Leopold lived until 1948, when he died fighting a forest fire. For much of his career, Leopold was a professor of game management at the University Wisconsin. He completed his undergraduate study at Yale and his graduate work at the Yale School of Forest. After contemplating his "Land Ethic" in 1923 and 1933, Leopold presented his most robust reflection in posthumous book, *A Sand County Almanac*.

Drawing on his classical education, Leopold introduces "the Land Ethic" with what seems to be an unrelated tale from Homer's *Odyssey*. When he returned from Troy, Ulysses hanged on one rope twelve slave girls who he suspected of "misbehavior." Ulysses' act, though reprehensible by modern standards and law, went unchallenged since the slaves were viewed as chattel or property and the owner could dispense of property as he wished. Leopold's point however was that while slavery had long since been abandoned as unethical, Americans continued to treat property, which is to say the environment, with carelessness. Leopold wrote: "We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."⁹ Of course, the ideal stewards of the land and its inhabitants were game managers just like Leopold himself.

But I want to give you a sense of the power of Leopold's writing on hunting, ecology, and conservation. In "Thinking Like a Mountain," Leopold described how a mountain perceives time and its inhabitants. To the young Leopold, full of trigger itch, few wolves meant more deer and no wolves

meant a hunter's paradise (the young Leopold and his compatriots had clearly forgotten their Malthus and Darwin!) After shooting a she wolf and her cubs, Leopold approached to see a "Fierce green fire" die in the wolf's eyes. The experience provided an epiphany for Leopold, who developed a deeper appreciation for ecology as he watched wolves extirpated in state after state and massive herds of deer suffering famine and disease as a result.¹⁰

I'll take just another moment to introduce yet another figure who presented an environmental ethic that challenged a core American value. I'm speaking of Rachel Carson (1907-1964). Carson grew up with a mother who encouraged her interests in writing, nature, and science. Upon completion of her master's in genetics with plans to continue for the doctorate, it became necessary for Carson to support her mother and her family, which included two nieces, whose mother died young and eventually a great nephew as well. In her capacity as a writer for the U.S. Fish and Wildlife Service, Carson wrote extensively about scientific efforts of the service. Meanwhile, her career as a popular natural history writer thrived. In her first three books, Carson wrote lyrically about the sea. In 1951, her book *The Sea around Us* vaulted to the best seller list and Carson devoted herself full time to writing.¹¹

Carson's environmental ethic reached its full form in *Silent Spring*, in which she revealed the environmental effects of the indiscriminate use of chemical insecticides. Carson introduced Americans to such concepts as bioaccumulation and biomagnification and lipofelicity. *Silent Spring* documented the destruction of fish, mammals, and birds, such as robins, Bald Eagles and Brown Pelicans. Pesticides should be called "biocides" as far as Carson was concerned. Target and non target organisms, animals, and even humans were susceptible to their long-term effects. Like Leopold, Carson called on Americans to broaden the scope of their ethical concern to include the animals and ecosystems that they shared. Even if people could dismiss the destruction that pesticides brought to animals, could they afford to ignore rising rates of cancer and other effects of exposure? Carson called for more judicious use of pesticides and the introduction of alternative pest management strategies.¹²

In this all too brief introduction to the historical dimensions of environmental ethics, I have introduced five critical individuals and their pervasive views: Gilbert White and the Arcadian view of a cooperation in nature, Carl Linnaeus and the Imperialist outlook in which humans have dominion over nature, Charles Darwin and the role of natural selection with its Malthusian undertones, Aldo Leopold and responsibility of humans for wildlife and land management, and finally Rachel Carson and the sense that the health of the land and wildlife has serious implications for human health and wellbeing.

I look forward to discussing these ideas and additional perspectives on environmental ethics with you. Thank you.

Notes

1. Donald Worster, *Nature's Economy: The Roots of Ecology* (San Francisco: Sierra Club Books, 1977), 26
2. *Ibid.*, 7
3. *Ibid.*, 11
4. *Ibid.*, 11-13
5. Lynn White, "The Historical Roots of Our Ecologic Crisis," *Science* 155, no. 3767, New Series (March 10, 1967): 1205-06, doi:10.2307/1720120. See also, Worster, *Nature's Economy*, 27.
6. *Ibid.*, 27
7. *Ibid.*, 32
8. *Ibid.*, 41
9. Aldo Leopold, *A Sand County Almanac, and Sketches Here and There* (New York: Oxford Univ. Press, 1949), 201-05
10. *Ibid.*, 129-32
11. See Linda J. Lear, *Rachel Carson: Witness for Nature* (New York: H. Holt, 1997)
12. Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962).

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**Dr. Frederick R. Davis**

Dr. Frederick R. Davis is an Associate Professor of History at Florida State University. Dr. Davis' research interests include the history of environmental sciences and environmental history. In 2007 he published his first book entitled, "The Man Who Saved Sea Turtles: Archie Carr and the Origins of Conservation Biology" with Oxford University Press. In 2008 the National Institutes of Health awarded Dr. Davis a two-year grant for research on his second book, tentatively entitled, "Pesticides and Toxicology: A Century of Environmental Health."

Dr. Davis teaches courses in the history of science and environmental science. In 2007 he received a University Graduate Teaching Award. Dr. Davis received his Ph.D. degree from Yale University in 2001.

An historical perspective on environmental ethics was the topic of Dr. Davis' presentation to the Faculty Luncheon Series.

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Why Intrinsic Value Is a Poor Basis for Conservation Decisions

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Dr. James Justus

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Conservationists from Muir¹ to McCauley² have championed intrinsic value as the right basis for conservation, one that derives from qualities innate to nonhuman biota, independent of human affairs. They argue that intrinsic value acknowledges the integrity of all species and ecosystems, protects them from short-term human whims, and gives conservation the ethical status it deserves. Many of the same authors deride instrumental value as a basis for conservation, claiming that valuing nonhuman biota in relation to human interests and preferences cheapens the biota's innate worth and makes them vulnerable to competing demands from human population growth and land use change. In contrast, they describe intrinsic value as "priceless," even "infinite," trumping other assertions of value, and thus providing the strongest foundation for conservation.

We think this view is mistaken for two reasons: (1) intrinsic value is a vaguely formulated concept and not amenable to the sort of comparative expression needed for conservation decisionmaking, and (2) instrumental value is a much richer concept than generally appreciated, permitting a full range of values of biota to be considered in conservation decisions.

What's Wrong with Intrinsic Value?

The idea that species and ecosystems have intrinsic value inspires many conservationists, perhaps drawing on deep-seated emotional connections to the nonhuman environment. However, although intrinsic value may get conservationists out of bed in the morning and into the field or up to the bargaining table, it does not serve them well once they get there.

Conservation requires decisionmaking, and here intrinsic value falls short. Decisionmaking requires trade-offs: competition among conservation projects for limited funds and personnel, compromises between human uses of biota and preservation, and even conflicts between conservation goals (e.g., predation by endangered peregrine falcons threatening recovery of also endangered California least terns). Trade-offs require comparative evaluation of competing claims, whether this evaluation is done explicitly (e.g., by eliciting preferences, as in multi-criteria decision analysis, or by monetizing value, as in contingent valuation,³ or implicitly, by taking a particular decision (e.g., approving a development proposal for a land parcel that harbors a threatened ecosystem, such as longleaf-pine savannah).

Proponents of intrinsic value as a basis for conservation action hope that it will take precedence over competing claims and guarantee conservation. This rarely happens, even for decisions relatively insulated from the pressures of competing demands. For example, any species that is threatened or endangered is eligible for protection under the US Endangered Species Act (ESA). In principle, intrinsic value should give any kind of species equal access to ESA listing. In practice, however, limited funds and personnel to administer the ESA, and political and legal pressures to list particular species (or not), have forced agencies responsible for listing decisions to assign priorities to species on the basis of "scientific" characteristics, such as taxonomic distinctiveness and geographic distribution, and "visceral" characteristics, such as large size and charismatic appeal.⁴ Intrinsic value may get a proposed listing to the table, but it does not muster the attention needed to get it off the table and into action.

When protection of species and ecosystems conflicts with economic development or with immediate human needs, intrinsic value is even less likely to be an effective basis for conservation. Although proponents of intrinsic value hope that it will take priority over competing socioeconomic demands, it is more likely that conservation goals will be cast aside in favor of those more easily computed in familiar metrics such as dollars. This is not unique to conservation decisionmaking. Many assert that human life has intrinsic value and object to evaluating the preservation or extension of a life in relation to profit, convenience, or other desired ends. Yet decisions about health and safety regulations, such as setting highway speed limits or pesticide residues in food, require at least implicit calculation of what human life is “worth.” Sometimes that calculation is made explicitly, and extension of life or prevention of illness is expressed in quantitative, perhaps monetary, terms.

What’s Right about Instrumental Value?

Characteristics such as those used to assign priorities among species proposed for ESA listing show that some people attribute greater conservation value to some species than to others. These characteristics depend upon instrumental values, which express values species have in relation to other desired ends (e.g., preservation of genetic diversity or evolutionary processes, or aesthetically desirable ecosystems) rather than in terms of the value intrinsic to the species itself. This is a comparative concept of value rather than the incommensurate, priceless, or perhaps infinite value that some claim for intrinsic value; this comparative value is exactly what conservation decisionmaking requires.

Proponents of intrinsic value have objected to the use of instrumental value as a basis for conservation on several grounds. One is that valuing nonhuman biota in relation to some further end is morally objectionable. In this view, species and ecosystems are regarded as having “sacred” value, in the sense used by Hanselmann and Tanner,⁵ who characterize trade-offs involving sacred values as “taboo,” distressing those facing such choices. But, such trade-offs must be made, and methods of measuring conservation values against competing demands are therefore required.

Some objections to instrumental value as a basis for conservation stem from too narrow a view of instrumental value, in particular, that puts too much emphasis on market-based and monetary expressions of instrumental value. For example, McCauley criticized the use of ecosystem services markets to motivate conservation as “selling out on nature,” arguing that only rarely will conservation of biota provide the services that humans need more cheaply than engineered solutions. But this neglects other types of instrumental value that might contribute to the value of species and ecosystems: aesthetic, spiritual, educational, scientific, and even “existence” value--satisfaction humans derive from knowing species and ecosystems remain, even if they are not experienced directly. This broader view of instrumental value captures much that proponents ascribe to intrinsic value, but in a form that can be evaluated comparatively and used in conservation decisionmaking.

There are qualitative and quantitative methods for eliciting different kinds of instrumental value for use in formal and informal decision frameworks. Some, such as contingent valuation through willingness-to-pay or willingness-to-accept survey protocols, express various kinds of instrumental value and trade-offs between costs and benefits in monetary terms. Others, such as utility or preference elicitation protocols from decision analysis, express value in terms of relative preference of decisionmakers or stakeholders among possible levels for particular instrumental values, such as aesthetic value. These methods articulate trade-offs among competing goals by showing how much of one instrumental value (e.g., aesthetics) a stakeholder or decisionmaker would be willing to exchange for another (e.g., an ecosystem service such as clean water). These protocols represent relative value in numerical, but nonmonetary, terms. Monetary expressions of instrumental value can be used in cost-benefit analyses, and both monetary and nonmonetary expressions can be used in cost-effectiveness analyses and in multi-criteria decision frameworks, such as multi-attribute utility analysis, the analytic hierarchy process, or outranking procedures. Cost-benefit analyses and multi-criteria decision frameworks can aid stakeholder negotiations convened to adjudicate controversies about conservation actions.⁶

Undoubtedly, arguing that instrumental value is more useful for conservation decisions than intrinsic value will not satisfy everyone. The essential tension between the emotional appeal of intrinsic value and the trade-offs required by conservation decisions is most likely irreconcilable. Using instrumental value to bring aesthetic, spiritual, and cultural values of biota into conservation decisionmaking will not satisfy deep ecologists and others who find weighing one form of value against another abhorrent. But those defending conservation against competing uses and allocating scarce resources among conservation actions are better served by building their decisions on a strong foundation of instrumental value rather than on the weak concept of intrinsic value.

Acknowledgments

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Notes

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5. Hanselmann M, Tanner C. 2008. Taboos and conflicts in decision making: Sacred values, decision difficulty, and emotions. *Judgment and Decision Making* 3: 51-63.
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**Dr. James Justus**

Dr. James Justus is an Assistant Professor of Philosophy at Florida State University and a postdoctoral fellow in the Department of Philosophy at the University of Sydney in Australia. His dissertation, "The Stability, Diversity, Complexity Debate of Theoretical Community Ecology: A Philosophical Analysis," was completed at the University of Texas, Austin in December 2007. Dr. Justus has published in *Philosophy of Science, Biology and Philosophy, Conservation Biology, and BioScience*.

Dr. Justus was co-organizer of a conference, "Environment, Science and Public Policy" held in Sydney, Australia. Besides philosophy of science (biology in particular) and environmental philosophy, his interests include the decision theory, the history of analytic philosophy, logic and philosophy of mathematics. He is also an avid bird-watcher.

In his presentation to the Faculty Luncheon Series, Dr. Justus analyzed the relative worth of intrinsic value versus instrumental value in making conservation decisions. His presentation was entitled, "Why Intrinsic Value is a Poor Basis for Conservation Decisions."

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Dr. Lynn A. Maguire

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## **Sacred Dimensions of Environmental Ethics**

**Pam McVety**

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Environmental ethics is an important topic at this critical time in human history. Some have called this the “Age of Terror”—and this seems appropriate, not only because of the threat of terrorist attacks, but also because of the human reign of terror over natural systems. Our actions have brought us face to face with the possibility of an utter climate catastrophe. And in large part, it is our collective lack of a society-wide operative environmental ethic that has gotten us here. And that there is no agreement on what we mean by an environmental ethic may explain why we are so cavalier with the very natural resources we depend on for survival. This essay reflects my experiences as an environmental scientist and manager in a state environmental regulatory agency and as a seeker of answers in religion.

It was quite a stretch to work in government as a scientist with a strong environmental ethic. Frequently I found myself in the double bind of trying to figure out how to protect and maintain a functioning natural resource for the common good, while responding to the pressure not to prohibit an individual or real estate developer from using it, which meant at a minimum impacting it. This experience brought into clear focus that environmental ethics do not drive our society. Economic ethics are by far the more powerful force in day-to-day decision-making, and environmental values are usually trumped by economic values in the name of balance. In the name of balance we stress natural systems to the breaking point, leaving them little to no resiliency to recover from natural phenomena such as storms or droughts.

We are so scientifically illiterate in this country; it will be challenging to inculcate environmental ethics into our culture. The George W. Bush Presidential administration treated science and scientific facts as if they were negotiable and created an atmosphere of disrespect for science. In order to develop and accept a functioning environmental ethic, we must have a society that is scientifically literate and understands that scientific facts and scientific thinking undergirds our life.

If we are to develop an agreed upon environmental ethical it should rest upon the following principles:

1. All things in nature are interconnected and all living things, humans included, are dependent on each other for survival. This is a scientific fact.
2. Humans by virtue of their superior intelligence and abilities have a special responsibility to care for all of creation.
3. Consumptive human activities cannot go on forever, because the earth’s resources are finite.
4. Human activities must be conducted in a sustainable fashion in order to leave a healthy planet to future generations.
5. Nature will always bat last.

It is also helpful to be aware of the assumptions that constitute anti-environmental ethical thinking:

1. Humans are separate from the rest of the world.
2. If something is good for humans, then it is good for all of creation.
3. Economics should drive environmental decision making.
4. There is always a fix for the problems we create.
5. Nature exists to be consumed.

The core of this anti-environmental thinking is our anthropocentric view of the world. Many people believe that all other species exist only for our own use. Testifying before the legislature on the need to establish boat speed zones to protect manatees, a legislator asked me, “What good are manatees? Can you eat them?” In a state of shock, the response was something to the effect that all living things have value and a role to play in an interconnected universe even if the value isn’t obvious to humans. This answer did not satisfy him. He wanted examples of how manatees are useful to humans and translate them into dollars. This is a classic example of our anthropocentric attitude towards other living things.

Environmental ethics struggled for a foothold among our state and federal environmental laws in the 1970s, 80s and 90s. Working in government, it became clear early that environmental laws and rules were not going to be passed if compromises were not made to address the objections of special interests. A whole industry of attorneys and lobbyists was spawned for just this purpose and many never saw a draft law or rule that didn’t have a problem in need of a client. This resulted in high costs for all and sometimes insubstantial laws and rules. Professional scientific opinion was up for sale in the private sector and scientific opinion in agencies was suspect. Day to day decision-making at its best protected only parts of natural systems in the name of balance, and natural systems were being damaged piece by piece. It was clear that government’s role although seemingly substantial in protecting the natural system, as viewed by the regulated community, would not sustain natural systems for future generations. Another way was needed, and seeking answers from religion to provide the moral guidance that was lacking seemed right.

It was shocking to learn upon the first reading of an article on religion and nature, that religion was leading us in the same wrong-headed direction. According to Lynn White, writing in the 1960s, “What people do about their ecology depends on what they think about themselves in relation to things around them. Human ecology is deeply conditioned by beliefs about our nature and destiny—that is, by religion.” He added that (and this is what is unfortunate) “especially in its Western form, Christianity is the most anthropocentric religion the world has seen.” Our present science and technology are so colored with “Christian arrogance” toward nature that no solution for our ecologic crisis can be expected from them. But he went on to say that, “Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not.”<sup>1</sup>

“That religion itself has been implicated as a catalyst of environmental decline has prompted scholars to examine the relationships among human cultures, religions and environments.”<sup>2</sup> Since the mid 1960s there was scholarly interest, but it wasn’t until the 1980s and throughout the 1990s, that religious writings and teachings on environmental ethics started to expand and were given the name ‘eco-justice’ by the faith community.

Three events dramatically increased public and especially religious attention to environmental ethics. The first was a meeting in 1986, in Assisi, Italy where leaders of the five world religions met and set forth religious obligations to nature, and the second was in 1990, the Spirit and Nature Conference at Vermont’s Middlebury College where prominent religious leaders and scholars, including the Dalai Lama focused on our religious responsibilities toward nature. The third event was an American Public Television broadcast by journalist Bill Moyers on religion and nature.<sup>3</sup>

In 1997, a symposium was held in California, titled “Caring for God’s Creation: Science, Religion and the Environment.” Speaking at this conference, Patriarch Bartholomew, the spiritual leader of more than 300 million Orthodox Christians across the globe became the first worldwide religious leader to denounce environmental abuse as a sin against God.<sup>4</sup> This simple yet profound statement provided moral grounds for establishing social policies to protect the environment and moved religion front and center as the moral guide in environmental matters.

By the year 2000, most mainline denominations were beginning to embrace eco-justice as a mission of their faith. Each recognizes at some level that our society, by failing to integrate ecology with our daily business of living, is creating a crisis that is unjust to both humans and the environment. Dozens

of books and articles have been written on the Biblical basis for eco-justice. Scholars have been eager to re-examine our interpretations of the Bible in light of our growing environmental problems.

Typical is a short article by Marcia Bunge, published in 1994 in a book titled *Care of the Earth* from the Lutheran School of Theology in Chicago. She says, “The Bible affirms the goodness and intrinsic value of all living things; it points out commonalities between human beings and other living things; and it contains the mandate that we treat the natural world with care and respect.” She goes on to say that such insights provide powerful grounds for environmental responsibility.<sup>5</sup>

Not all denominations are moving in this direction. Over the last decade or so, the religious right, familiar to everyone as the group wanting to ban abortion and same-sex marriage, has exerted a significant influence on the federal administration’s environmental policies and practices.

One religious-right group, the Acton Institute for the Study of Religion and Liberty focuses on integrating Judeo-Christian truths with free market principles. This group’s website has the same lofty words about caring for creation, but if read closely you will see that it doesn’t extend to interfering with business or private liberties. What controls decision-making is the individual view, not theology or science; and the planet-wide devastations being caused by global warming, overpopulation and rampant species loss are considered to be, in their words, “unfounded or undue concerns.” This version of caring for creation gained a strong foothold during the Reagan administration and it re-appeared during the last eight years with the Bush administration. For more information see [www.acton.org](http://www.acton.org).

In contrast, another right-wing group, the Evangelical Environmental Network has played a leadership role in helping to protect environmental policy at the highest levels of government. In 2006, eighty-six respected evangelical Christian leaders issued an Evangelical Climate Initiative calling on followers of Christ to help solve the climate crisis. Thus one branch of the right-wing evangelicals has come to embrace the importance of environmental ethics in decision making and another branch fights it. For more information see [www.creationcare.org](http://www.creationcare.org).

What are we to make of these various trends? Over the past thirty or so years, the idea that the Bible and our faith teachings provide an inspired moral framework for an environmental ethic has slowly moved forward, but has this idea become mainstream thinking in faith communities? It does not have much of a following in the pulpit, but it appears to be being taught at some seminaries, so the number of clergy who understand it as an important mission of their faith will increase. On Earth Day, environmental justice is talked about in many churches and is welcomed by church-goers, but it may not follow them out the door.

We are on a long, long journey, a journey that seems slow. We may never complete it if scientific predictions of runaway climate change prove valid. But perhaps the truly dramatic and dangerous impacts to come may awaken people to the need for eco-theology, because people often turn to religion during difficult times. For people of faith, the goal is to make eco-theology a central message, one that is to guide their daily activities at home and at work.

In February 2005, the National Council of Churches did just this by releasing an open letter to church and society titled “God’s Earth is Sacred.” The letter states in part that, “To continue to walk the current path of ecological destruction is not only folly; it is sin.” Further, it points out that in spite of all our teaching and writing about caring for creation we have failed to transform our society accordingly, and that as a result we are facing both a theological and an ecological crisis. Caring for the Earth as God’s creation, the letter says, is “the central moral imperative of our time.” It goes on to say that “It is not acceptable to claim to be ‘church’ while continuing to perpetuate, or even permit, the abuse of Earth as God’s creation.” And it calls upon all of us to meet our responsibilities for caring for creation through our actions both in the church and in our secular lives. To read this statement, go to [www.nccusa.org/news/godsearthissacred.html](http://www.nccusa.org/news/godsearthissacred.html).

This past fall, “The Green Bible” was published. It is the New Revised Standard Version with 1000 verses on caring for creation highlighted in green. This Bible makes it clear how we should think and act as we confront the environmental crisis facing our planet.<sup>6</sup> From Genesis to Revelation, this version inspires us to take care of creation. For the first time the Biblical message of caring for creation has moved from scholarly publications and writings to a book, which millions around the world read for daily guidance and comfort. Surely, this is an historic leap forward for spreading the message that God wants us to take care of his creation.

In summary, religion has an important role to play in helping us embrace and collectively understand that an environmental ethic is fundamental to taking care of creation in order to sustain life on Earth. A robust environmental ethic would compel us to take care of the natural world for ourselves and future generations and turn away from the current abuse of it that is now threatening our very survival.

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## Notes

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Pam McVety

Pam McVety has brought scientific training, governmental management, and a spiritual dimension to her vital work in protecting our natural environment. She holds a master's degree in zoology, and for over thirty years she worked for the State of Florida in the Department of Environmental Regulation, the Department of Natural Resources, and the Department of Environmental Protection. Ms. McVety was the Director of the Division of Marine Resources in the Department of Natural Resources and Deputy Secretary for Ecosystem Management and Water Management in the Department of Environmental Protection.

In 2004-2005 Ms. McVety guided the rewrite of the Presbyterian denomination's energy policy, and in 2006 she successfully lobbied passage of a General Assembly Resolution calling on 2.4 million Presbyterians to go carbon neutral to combat climate change. In 2007 she guided passage of a similar Carbon Neutral Resolution calling on Presbyterian churches and members to go carbon neutral in the Florida Presbytery. Ms. McVety was named the 2008 AAUW Community Woman of the year.

Ms. McVety's presentation to the Faculty Luncheon Series was appropriately entitled, "Sacred Dimensions of Environmental Ethics."

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# Environmental Justice in a Complex World

Dr. J. B. Ruhl

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Environmental justice touches all fields of environmental law and policy these days. So I thought it would be appropriate to discuss the arc of environmental justice policy from the early 1990s to today. It is a story of transition, as the breadth and agenda of environmental justice have expanded, but it has been an uneasy transition, so much so that it is not entirely clear where environmental justice is today and where it's headed.

Environmental justice has increased its linkage to the broader spectrum of populations, going far beyond just urban minority populations to connect with rural populations and international populations. It is linking with a broader set of issues far beyond just polluting facilities—it is taking on issues of free trade and global climate change. These changes have complicated matters for the clarity of environmental justice.

Also the law of environmental justice has in some respects stalled as a discreet source of remedy. I might go so far today as to suggest that it is not entirely clear what the discreet body of law of environmental justice is. And so I think today it might be safe to say that environmental justice faces a less clear vision and agenda as tradeoffs are becoming more apparent and more difficult to resolve, and the law is cloudier than ever before.

So let's start at the beginning: What is environmental justice? Actually, it's not easy to say. I think it is easier to describe the core theme that emerged in the early 1990s: that the unequal distribution of environmental harms and benefits across race and income lines, and the unequal enforcement of environmental protection across race and income lines are, civil rights violations.

Now, I think most people would agree that disparate delivery of environmental protection violates civil *norms* of equity, but is a much different question to ask, is it a civil *rights* violation? And the movement did not have much legal success on the civil rights remedy front, so the theme as a necessity has broadened and evolved since then. It is touching a broader set of issues legal issues, but it still doesn't have that robust civil rights remedy with teeth. In fact, at a recent conference of law professors, I attended a session on environmental justice and a major figure in the movement questioned whether the core civil rights theme is useful any more for defining the agenda of environmental justice.

Well, let me provide some historical context to see why this has happened, and I don't mean to compartmentalize environmental justice into four phases, but it's kind of convenient to talk about in four evolutionary steps of environmental justice.

**Phase I, the early 1990s.** This is the era of land use siting battles. The primary focus of environmental justice in this time frame was fighting the siting of harmful land uses and unequal enforcement of regulations. The theory of course is that there was a siting pattern that was leaving minorities disproportionately worse off. The subject matter was air pollution, pesticides, mercury from power plants, concentrated animal feeding operations, drinking water contamination, hazardous waste sites, and so on. Now, the 1991 Summit of People of Color on Environmental Justice condemned this as a civil rights issue and laid out a litigation agenda. The initial thrust again was geography and demographics—the decision to site facilities or decision not to remediate facilities, or to enforce adequately, in ways that disproportionately injured minority populations.

But the agenda hit several brick walls. The first was that just the basic demographic evidence of unequal distribution is very hard to play with, hard to establish. The statistical outcome often depended on the demographic units one was using. Using census blocks could make the outcome in terms of

differential impact look different from using zip codes. So just as a matter of statistical empirical evidence, it wasn't always straightforward that the disparate impact was present.

And secondly, many of the early cases--one of the famous ones is from Houston--involved situations in which, you *could* establish this disparate impact in the present if you map where these undesirable land uses are and the demographic composition of populations around them, but if you look into the past, it oftentimes was the case that the initial siting decision for had no correlation to disparate impact. In other words, the pattern was that the siting of, say, landfills oftentimes was either very near industrial facilities where no one lived at the time, or in majority population areas. Over time, because of changing land values, demographics shifted such that 20 years later you could say, well, there's disparate impact. But there was no pattern of siting decisions that could be shown to the satisfaction of the court to reveal some kind of discriminatory intent. And this happened in case after case in the late 80s and early 90s.

So the civil rights litigation tactic ran into problems, because to establish a civil rights violation under the Equal Protection Clause, one has to prove intent to discriminate. That's very difficult to do in this sort of incremental, long time lag situation where there's clearly no intent to discriminate. There might have been a lack of awareness of the trend over time and a lack of attention to preventing it, but that is not sufficient to establish an equal protection violation under the Constitution.

Failing that constitutional remedy strategy, in the civil rights legislation the only real hook to hang the environmental justice hat on was Title VI, which restricts federal funding to states and state agencies that discriminate on the basis of race. This approach also ran into a host of legal problems. Although federal agencies are allowed to establish federal regulations that restrict funding based just on disparate impact, the Supreme Court has held that Title VI does not provide a private cause of action for the injured party to directly sue the state agency that is using federal funds and committing the alleged pattern of differential treatment.

So by the end of the 90s it was pretty clear that there was no robust civil rights remedy that had teeth to use in this siting context. The Clinton administration did issue all sorts of guidances and policies and executive orders directing federal agencies to establish environmental justice policies and review their programs to ensure they met environmental justice standards, but those didn't have much teeth either. Their enforcement through the Bush administration enforcement was not aggressive, and ultimately the EPA watered down the message by saying environmental justice is delivering fair environmental distribute to everyone, not just to minority or other discrete subpopulations. So after all is said and done the civil rights remedy agenda faced an uphill battle and has gained little traction.

I'll also add that environmental justice's emergence in the 1990s faced some credibility problems and was, frankly, hijacked in a number of cases by plain old NIMBYism, in which the claim was made that siting a facility here would be an environmental injustice even with little statistical evidence that there was disparate impact. Those kinds of claims produced credibility problems, making it difficult for true environmental justice advocates with a real case on their hands to shed the claim of playing the environmental justice card.

**Phase II, the mid 1990s.** The second phase isn't really a legal phase, but I think it's important in the history of environmental justice. This is about the mid 1990s. I call this the fracture between environmental justice and the mainstream environmentalism. Remember that core message of environmental justice includes a focus not just on distribution of harms but also of benefits, such as open space, endangered species habitat, clean rivers, and so on. Over time the environmental justice movement became dissatisfied with the mainstream environmental groups—Sierra Club, Environmental Defense Fund, Defenders of Wildlife, The Nature Conservancy, and so on. Of course those names don't project much interest in human populations—Defenders of *Wildlife*, The Nature *Conservancy*—but it was clear that those groups simply weren't connecting with the environmental justice theme, and environmental

justice advocates increasingly saw them as really serving affluent and mostly white conservation and habitat protection interests without respect to the distribution of the amenities that they were trying to protect.

This led to a bit of a fracture between the two movements, which I think ultimately was important for environmental justice as it focused the movement on the need to solidify the community, to organize and create grassroots and national networks, because they weren't going to get it from the mainstream environmental organizations. Since then they've tried to repair relations, but I don't think they really have. But actually now there is a very viable national network of environmental justice groups that is focused on just that question in particular and supporting local agendas.

This divide became very clear to me in the mid 90s when I was in practice in Austin and The Nature Conservancy teamed up with the city to try to preserve 10,000 acres of prime habitat in west Austin for endangered species, including a salamander in Barton Springs, a coveted playground for that part of town. A \$60 million bond issue was put before the voters to finance this acquisition of land and I went to a breakfast rally for this. Bruce Babbitt, then Secretary of Interior was there and everyone was rah rah, but a reporter for the Austin American Statesman leaned over next to me and said, "I don't see any minorities here—what's that about?" Sure enough, he went into those communities on the east side of town, far away from this intended preserve, and two days before the bond election, an article comes out about what he found. He interviewed an elderly African American woman and asked what she thought about this bond issue--how are you going to vote, he asked her, to protect Barton Springs or not? And her answer was, "Barton Spring? My bus doesn't run there." In other words, there's an unequal distribution of these amenities. Why should she vote for a \$60 million habitat preserve that will do nothing to address her environmental problems? The bond referendum failed. That really struck me, and I think that this experience was felt around the country.

**Phase III, the late 1990s.** The third phase is what I call the participation movement. The failure of the civil rights remedies to lock onto environmental justice led a now organized network at the grassroots level to shift their focus from attacking the decisions at the back end with civil rights litigation to getting involved at the front end of the decisionmaking process. Participation is the theme of environmental justice now—participating at grassroots level in every decision that's taking place that has an environmental justice component to it. Participating at small scale, local decisions, in state rulemakings on power plant permits, industrial permits, hazardous waste cleanups, land use zoning battles, and so on. Those are all now the forums for environmental justice advocates rather than waiting to fight the decision after it's been made at that sort of large civil rights level. The agenda is demanding rights to participate, demanding a seat at the table, demanding access to information from agencies that make the decisions, demanding process, hearings, the right to comment. Basically, it is about persistently working from within the process rather than attacking outcomes at the back end.

**Phase IV, 2000 to the present.** I call this the linkages phase. Environmental justice has increasingly gone deeper and deeper into process and also found itself involved in more than just its core issues from the early 1990s. The environmental justice agenda today sees environmental justice issues in many global and national arenas. Free trade is an enormous issue, especially on the Mexican American border. Climate change, immigration policies, tax policy, public health policy, emergency response and rebuilding policy after Katrina, those are all now environmental justice issues. But this expanded scope has vastly complicated what their agenda is and how they fit into the decisionmaking process. These are multi-scalar tradeoff issues. It's not as easy anymore as saying, hey there's a hazardous waste dump in our back yard, and you need to clean it up. This is "We're opposed to free trade." Well, a lot of people aren't who might otherwise identify with environmental justice. Is free trade universally antagonistic to environmental justice? It's a tough issue. Climate change policy is an environmental justice issue. It cuts in many different ways though. Immigration policy has, as you may have know, led to some division within the Sierra Club, over what is the impact on the environment. Yet what is the impact on environmental justice of immigration policies?

These are very complicated questions, so things are getting cloudy for environmental justice. It's not always as well-positioned to portray a clear right answer under environmental justice as it was in its earlier stages when it focused on very local, backyard kind of impacts of environmental policy.

A wonderful example in our own backyard is the Tallahassee Biomass Plant controversy. This is a perfect example of something that might 20 years ago have been a fight over whether to put a power plant in this location and what are the local demographics, but today we're talking about this being a clean energy source. This is an energy source that if you don't start building them and rely on more big coal-fired plants, well that might have an impact on some other minority or low income community somewhere else at a different scale perhaps, in a different place. So the location of these new clean energy facilities—and while they may be clean they are certainly industrial—makes for a more complex environmental justice inquiry. They're better on a regional scale than the alternative, but they will have an impact on local communities. So this is an example of how much more complex environmental justice has become, the trade offs that are operating now on multiple scales with multiple populations.

Of course, this is by no means the end of environmental justice, but rather a new beginning. The issues will be more complex, but that only means we will need to stay more focused on ensuring that the distribution of environmental harms and benefits, particularly as we work through regulating sources of greenhouse gas emissions and adapting to climate change, remains equitable.

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Dr. J. B. Ruhl

Dr. J. B. Ruhl is the Matthews & Hawkins Professor of Property at The Florida State University College of Law. Professor Ruhl received his B. A. degree with High Honors from the University of Virginia. He was awarded the J. D. degree from the same institution, and also holds the LL. M. degree in environmental law from George Washington University, as well as a Ph.D. degree in geography from Southern Illinois University.

Professor Ruhl is a nationally regarded expert, with extensive and important publications, in the fields of endangered species protection, ecosystem services policy, regulation of wetlands, ecosystem management, environmental impact analysis, and related environmental and natural resources fields.

Several of Professor Ruhl's publications have been selected by a national peer review committee as one of the 10 best law review articles in environmental law published during the year of their respective releases. He has published three recent books, *The Law of Biodiversity and Ecosystem Management*, *The Practice and Policy of Environmental Law*, and *The Law and Policy of Ecosystem Services*.

Professor Ruhl's presentation to the Faculty Luncheon Series was entitled, "Environmental Justice in a Complex World."

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## **Environmental Ethics: Changing Behavior**

**Dr. Paul S. Deitchman**  
**Clinical Psychologist**

Within the overall context of environmental ethics, this essay addresses the issues and findings relevant to changing behavior, particularly as it pertains to our relationship with the natural environment. The response of individuals and groups to information about global, potentially irreversible adverse ecological changes (i.e. global warming) follows from what we know about human behavior in general. Altering environmentally relevant behavior also follows from what we know about human behavior.

It seems clear that meaningful change in behavior involves multiple factors that impact the process. Internal and external forces continually affect the behavioral choices and the decisions we make on a daily basis. Psychological and constitutional processes within (e.g. cognitions, perceptions, emotions, physical factors) and external factors (e.g. social, cultural, interpersonal, natural) are impinging on how we think, how we feel, and what we do.

There are various approaches to understanding behavior in psychology especially for our purposes. Behavioral approaches in psychology focus on the stimulus conditions that elicit certain responses and the connections between responses and the contingencies (rewards, consequences) that follow. Cognitive approaches focus on the processing of information, how cognitions impact emotional responses, and the mediating influence of thoughts, i.e. how we think about things between the stimulus events in our life and our emotional reactions and subsequent behaviors. Social psychological approaches focus on the impact on our behaviors and beliefs of social/interpersonal factors.

As an integrating concept, there is the idea that each person has an experiencing core self that helps us make sense of the world, is there to help us function effectively and consistently, has evolved over our lifetime, and is resistant to change. Thinking provides strategy and evaluation. Feelings provide direction and motivation. Potential changes that impact, disrupt, or threaten our core experiences – sense of reality (order), sense of self (identity), self-esteem (valuing of self), sense of power (control) – will be more resisted as a self-protective measure to maintain some degree of personal coherence and stabilization. The often fierce rigidity of political and religious thought reflects this process.

With this introduction in mind, I thought it would be useful to summarize some concepts and findings that can be specifically applied to environmentally relevant behavior.

### **Relevant Factors, Findings, and Considerations Impacting Behavior**

An increased awareness of environmental concerns and threats increases anxiety. Defending against the experienced threat or anxiety entails avoidant methods such as denial of the threat, rationalizations of our present behavior, and dissociating from emotionally disturbing stimuli; such as turning off the news.

Fear appeals as motivation for change may lead people to take either constructive action or to minimize or ignore a problem depending on various factors. Adaptive coping is most likely when threats are perceived as severe and personal and when cost effective responses are known and available. When a person perceives a severe threat, feels vulnerable, but experiences a lack of ability to cope, there develops a sense of powerlessness that results in maladaptive responses including denial and unfocused emotionality. There is an unwillingness to change certain habits and ways of living, especially if they are tied to an individual's self identity or perception of themselves (e.g. level of consumption, status).

Cognitive tendencies that contribute to environmental problems include failing to consider the societal costs of individual actions, assigning monetary value to all things, and overweighing short-term considerations in decision making.

People have difficulty behaving in line with long-term goals that affect the whole community when short-term reinforcers /contingencies support environmentally destructive behavior. Human beings have a strong propensity to overuse natural resources by pursuing their own individual or group short-term self-interest rather than acting in the long-term common interest of the world. It appears to be in everyone's interest to exploit a common resource as far as possible to the detriment of the group's collective interest.

In regard to incentives, it is difficult to determine the "right price" to facilitate behavior change on things such as clean air, those things not traded in market. Incentives as an agent of change pose a complex issue. At what price of gas will people decrease driving, increase bus riding? At what rate of change in price will people change habits? Habituation can prolong habits.

Educational interventions by themselves typically have little or no effect in promoting new pro-environmental behaviors, at least in the short-term. Behavior change is often blocked by institutional barriers, financial expense, and the need to substitute deliberation for routine, automatic action.

From a cognitive standpoint, changing environmentally relevant behavior requires changing people's perceptions and thoughts about environmental issues. Environmentally sensitive perceptions and thoughts are often part of a world view that emphasizes egalitarian rather than hierarchal or individualistic social relationships, the fragility of nature, and the redistribution of wealth.

Because world views are often implicated in attitudes about environmental issues, it is not surprising that debates are heated. Environmental opinions are related to deeply held convictions about the appropriate organizations of human society, about its relationship with nature, and about morally appropriate courses of action. Since these convictions are part of the person's reality and organization of self, world views are more difficult to change. When a long-held belief is confronted by a new inconsistent belief or nonconfirming information, dissonance and discomfort are created.

Information campaigns have limited effects on changing behavior. Pro-environmental attitudes are not highly correlated with changes in behavior. Environmentally relevant behavior lies at the end of a long causal chain involving a variety of personal and contextual factors – e.g. social background and socialization, external conditions (incentives, constraints), basic values, world view attitudes, beliefs and personal norms regarding environmentally relevant behavior, behavior-specific knowledge, and behavioral commitment.

Attitude change alone is unlikely to create environmental change, at least not in the short-term. The key to behavioral change is the immediate context of behavior, not deeper values.

It is significantly more difficult to bring about and maintain changes in repetitive behaviors (e.g. bicycling to work) versus one time actions (purchasing a piece of efficient equipment). One time actions enhance efficiency on an ongoing basis and require no further thought. Repetitive actions require giving up comfort or amenities, curtailing some resource, and sustaining ongoing consideration.

### **Relevant Factors Facilitating Behavior Change**

Information that is vivid, simplified, and personal can facilitate behavior change verses impersonal, statistical, and abstract information. Imagery (e.g. inefficient energy use in a home is equal to having a football sized opening in the wall), concrete examples, normative information, and direct feedback on our use of energy compared to other people can be useful.

People seem to respond more seriously to a loss than they do to a gain. Losing money creates more concern than the positive feelings of winning money. Stressing what is to be lost (money, quality of life) may lead to more behavior change if strategies are available.

The use of cues and prompts preceding environmentally relevant behavior can be facilitative. Frequent feedback is an important element in altering behavior.

Individuals come to see themselves as believers in an activity (e.g. energy conservation) and develop a personal interest in it to the degree they are acting without coercion, have publicly committed themselves to act in front of others, and invest time, money, or personal prestige in an activity. Solicitation of a smaller commitment known as the “foot in the door” technique (e.g. responding to a survey to participate) may create a larger ongoing commitment. Engagement in some small energy conservation behaviors could create more interest and lead to more significant behavior. Providing people with some encouragement for engaging in any energy efficient behavior they choose should plant the seeds for continuation of energy efficient behavior.

Models are important in providing information as to how to behave. People tend to do what others around them are doing, especially if the models are similar, have credibility, and have some authority. The modeling of energy conservation and energy efficient behavior through live or videotaped models who show how to behave and the effects of that behavior can be instrumental. Group, neighborhood, and school based approaches are indicated.

Curbside recycling is a good example of a repetitive behavior that is maintained due to multiple relevant elements including (a) no required change in consumption (b) no required loss in comfort (c) a minimal time investment (d) structural support by the municipality through curb pick-up (e) immediate reinforcement of the recycling behavior with reduction in waste evident (f) a strong normative modeling impact on the behavior through the evident involvement of other households.

## **Final Thoughts**

The ancient expression “The life which is unexamined is not worth living” is central to our discussion. We are speaking of leading a more conscious, deliberate, reflective life which is not fundamentally driven by reactions to triggers and automatic thoughts and habits. Much of our life experience consists of our relationship with self and our relationships with others. This essay is emphasizing our relationship with the natural environment, as well.

As an aside, our relationship with the natural environment is actually the focus of a newly developed area of psychotherapy, called ecotherapy, which holds that healing ourselves and healing the earth (i.e. building a sustainable culture) are parallel processes. Discovering one’s reciprocal abilities to be nurtured by nature and to nurture nature are addressed in this psychotherapy. Increasing ecological awareness includes wilderness trips, perceptual exercises, and other strategies. Nurturing nature involves environmental activism, environmental restoration work, and horticultural activities. Restoring the relationship with the natural environment and enhancing our sense of connectedness and resilience are considered healthy outcomes.

Environmental ethics is part of the larger issue as to how to live an ethical life. We are bombarded by forces, psychological and external, that can sway us. The integrity, responsibility, respect, and concern that underlie an ethical, healthy approach to our other relationships seem applicable to our relationship with the natural environment, with the earth. It would follow that an ethical approach in this relationship could translate into a healthier life for ourselves, our children, and other humans present and future whom we may want to consider.

Factors that positively influence and support our relationships with other people would apply to our relationship with the natural environment, including involved engagement, care taking, and commitment to the health of the natural environment. To create any healthy relationship, we have to move past our self-absorption and illusion of self-sufficiency and come to appreciate the reciprocal, interdependent nature of the relationship. And so it is with our relationship with the non-human world.

The modeling of those behaviors and the provision of natural environment experiences for the next generation would be helpful in building their relationship and in extending their commitment to the natural environment. Being involved with people who behave in similar ethical ways supports our values

and ethics and strengthens our resolve. It is also important to consider that each of us can create productive behavioral ripples within our own group in our own piece of the world. We can have a positive impact engaging in specific, manageable, incremental behaviors. Aligning our expectations of individual impact with realistic goals can be empowering and reduce frustration. A more abstract, global approach tends to be discouraging. Acknowledging to ourselves and others how we have contributed to the well-being of other humans and the natural environment can be reinforcing and produce more of an ethical effort. Creating a purpose and meaning in life beyond materialism and consumerism that includes meaningful, purposeful activity and contributing, giving to other human beings, including future generations, can support our ethical ecological behavior.

Human beings can make significant changes in how they behave. Change can be complex and is non-linear. Individual differences in how the process unfolds deserve acknowledgment and respect. What we do can make a difference. We are still determining under what conditions and with which incentives individuals make meaningful changes in behavior.

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### Notes

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Dr. Paul S. Deitchman

A native of the Bronx, N. Y., Dr. Deitchman came to Tallahassee to attend Florida State University where he earned his doctoral degree in clinical psychology. With a more behavioral bent during his student days, his master's and doctoral theses both involved aversive conditioning paradigms to reduce habitual smoking and overeating behaviors.

Dr. Deitchman's clinical internship was at the University of Southern California Medical School. He returned to Tallahassee and was a faculty member for three years at Florida State University training master's level rehabilitation counselors. Since then he has been in full time private practice for nearly thirty years, working primarily with adults with a variety of psychological and relationship problems.

With a consideration of the important role of individual behavior in the care of the natural environment, Dr. Deitchman's presentation to the Faculty Luncheon Series was entitled, "Environmental Ethics: Changing Behavior."

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# **A Dismal Look at the Economics of Environmental Issues**

**Dr. R. Mark Isaac**

**Professor of Economics**

**The Florida State University**

## **Introduction**

When my presentation for the 2008-2009 Faculty Luncheon series at the Florida State University Presbyterian University Center was originally scheduled, the title was supposed to be “A Place for Profit.” Instead, as I prepared my notes for the presentation, I realized that the word profit seldom appeared. (And we all know that it is an honor to be without profit before one’s own people.)<sup>1</sup> So, instead I chose the current title, “A Dismal Look at the Economics of Environmental Issues.”

My goal is not so much to offer a specific profit analysis or cost/benefit calculation for or against any specific environmental policy. Rather, it is to walk through the narrative of how economists tend to think about environmental issues.

The underlying picture of the economics of “anything” is that scarcity is an immutable part of human life, and with an analysis of scarcity come such concepts as “opportunity costs” or “tradeoffs.” A condition of scarcity is not, as some might suspect, an assertion of a zero-sum society, in which any interpersonal transaction must create both winners and losers. Instead, the essence of economic thinking is that voluntary exchange will make all parties to the transaction better off, a “win-win” scenario. Another important point is that economists believe that the same basic properties of human nature carry over into every possible social arrangement: markets, government, the family, group associations, and so forth. Whatever brokenness there is in our humanity extends to all of our relationships, but “greed” is neither a necessary nor sufficient condition to define any one of the above. (John Calvin would be pleased.)

In an economics class, especially one for non-economists, we would spend a great deal of time discussing examples of opportunity costs, voluntary exchange, the emergence of markets and money, and so forth. But in particular for a discussion of the environment, one of the most important components of the basic economic narrative is the observation that most environmental problems stem from a situation in which property rights are too poorly defined. In other words, there are economic exchanges in which some people affected are not voluntarily participating.

Consider the typical example of well-defined property rights. Let’s say that you own a bicycle. You have a wide variety of options if your neighbor has designs on stealing your bicycle: prevention, private retrieval, criminal prosecution. In addition, you have an incentive to be a good steward of your bicycle.

Being a good steward of your bicycle does not mean that you will adopt a program of zero damage to your bicycle. You are probably willing to having some dings on the paint as a cost of a good trail ride. Maintaining the bicycle in absolutely pristine condition will not trump all others goals in your life. However, you probably will maintain the chain, the brakes, and so forth. You probably won’t park it around a campus without a lock. You may realize that your optimal use of the bicycle will result in enough wear and tear that you eventually will sell this bicycle and buy a new one, but the future is important to you, either through use or through re-sale.

Compare this to what is often found on many campuses where clubs have started a “borrow this bicycle” program. You can imagine what the bicycles look like after a short period of time. For example,

according to the St. Cloud Times,<sup>2</sup> bicycles lacking property rights tend to look very different when they are owned by everybody (and hence by nobody). Consider the following points from that article:

- *Despite a 2004 trial run at St. Cloud State University that didn't produce great results, the ... bike program is back this year.*
- *Out of about 20 ... bikes intended for students to use for free to commute locally and on campus, only four survived the last academic year. And those were in rough shape at year's end.*
- *Failure of the program can be credited to students' lack of respect for the bikes and disregard for the program's potential benefits, said Grant Schnell, student manager at St. Cloud State's Outdoor Endeavors office.*
- *"It didn't work out very well. Basically they all just got ruined," Schnell said. "In one instance we found a rim wrapped around the entire front fork of a bike." Other bikes disappeared, he said.*<sup>3</sup>

Poorly defined property rights do not have to be associated with a physical object such as bicycles. How many of us have ever despaired of people who don't clean up after themselves in the department coffee area or in a public campground?

On environmental issues, an economist's typical tool kit would analyze a wide variety of approaches, including technical or legal innovations to create property rights, market-like systems (the U.S. acid rain cap-and-trade program, pollution taxes), or bargaining and negotiation among the affected parties.

There are many possible criteria to use to evaluate such policy tools. For example, supporters of reduced CO<sub>2</sub> emissions have put forth proposals for both a carbon tax and for "cap and trade" systems. Now, these two approaches may be more alike than some people realize. Consider a cap and trade system which limits carbon emissions to some level per year "X." A pollution tax which achieves the same quantity target will, for an approximation useful for the current discussion, match the price of the permits in the cap-and-trade system. Yet the two systems have notable differences. In "cap-and-trade" the primary enforcement target is making sure that actual emissions match the legal requirements of the permits. If there is error in predictions or if there are after-the-fact upheavals in the technical/economic system, the variability will be manifest in relatively more unpredictable prices. With a carbon tax system, on the other hand, the primary enforcement target consists of making sure that the appropriate tax is paid, given the amount of chosen pollution. Thus, prices become more predictable, but emissions are subject to relatively more variation.

The most important lesson to draw from this example is that there is no single quick fix and no "one size fits all" policy. The United States chose a cap-and-trade system for sulfate emissions (primarily impacting Mid-Western coal-fired electric generating facilities), and it has worked rather well. That does not mean that a cap-and-trade system must be preferred for a nationwide carbon emissions control program.

A second consideration in evaluation of policy proposals is the issue of information. Friedrich Hayek famously pointed us to the fact that knowledge is massively decentralized, and both the carbon tax and cap-and-trade systems, in contrast, require central planning at key points of policy implementation.<sup>4</sup>

### **Some Specific Applications to Environmental Problems**

When my colleague Doug Norton and I teach our course on "The Economics of Compassion", we face some of the same challenges of making the abstract economics narrative concrete (in that case, for students interested in domestic and international programs of compassion, charity, and assistance) as here, when I want to flesh-out some specific examples relating to the environment.

One of the things that Doug and I do is to present and dissect specific examples of “analytical potholes” that economists would like to see citizen advocates and policy makers avoid. Here are some concrete examples from both the worlds of compassion and the environment.

One of the most stark examples of opportunity costs is the decision by major industrialized nations to ban the insecticide DDT and to implement that prohibition in aid programs in developing countries. DDT remains the single most effective insecticide against the mosquito that transmits malaria. One only needs to read the continuing debate on numerous websites about requests to reintroduce DDT to understand that there is no getting away from the fact that this decision did have and continues to exhibit tradeoffs between environmental protection and the eradication of malaria.

A second “analytical pothole” that economists love to warn against is the simple fact that humans are a part of any technological/environmental/economic interactive system, and that human beings respond to incentives. Specifically, we economists are fond of pointing out that changes in prices, institutions, or policies that assume that human behavior is static are likely to generate surprises by the “unexpected consequences” of incentive-driven human action. A classic example is the installation of red-light traffic cameras. In some cases, drivers have changed their behavior (to avoid the traffic tickets generated by the cameras) with the result that accidents have actually increased at some monitored intersections.<sup>5</sup>

Sometimes there are unintended consequences simply from the fact that technological systems are more complicated than we usually assume in order to make policy decisions. For example, the growth of wind-farms as proposed alternative energy sources has prompted a spirited debate as to whether large windmill farms do or do not harm birds. However, after an extended debate on birds, it appears that only recently has it been noticed that wind farms might also be dangerous to bats.<sup>6</sup>

A third analytical pitfall is the danger of confusing causation with correlation. I don’t believe that Super Bowl victories by NFL teams affect the stock market, despite the measured correlation of the Dow with the residence of the victor in either the former NFL or AFL. Some correlations are just spurious. And, Milton Friedman is famous for pointing out that, simply looking at correlation statistics would indicate that Arizona was the absolute worst place for TB victims to locate, because Arizona had the highest death rates from TB in the country. Friedman’s example illustrates false causation drive by the “self-selection” bias inherent in TB victims wanting to move to Arizona precisely because of the climate.

It is not difficult to put these warning signs in the perspective of some of the environmental issues that have had central stage in the PUC luncheon presentations this year. The very questions of “Is the earth’s climate warming?” and “If it is warming, is that due to human activity?” must disentangle numerous features of correlation from causality. There is no such thing as a perfect historical record of “THE earth’s temperature.” The scientific task involves both the construction of an appropriate proxy time series and the statistical disentangling of human from non-human influences. As an economist, I have a great deal of sympathy for those professionals involved in this debate, because economists face very similar data limitations on a daily basis.

In preparation for this presentation, I was looking for more good background citations on the DDT/malaria discussion that I mentioned above. In this search, I ran across a fascinating internet-based interview with the late Prof. Andrew Spielman of the Harvard School of Public Health regarding his lifetime crusade against malaria.<sup>7</sup>

I don’t know whether Prof. Spielman has ever had any formal economics training, but he approaches the compassion and environmental issues of malaria control with a firm appreciation for the type of economic narrative I have presented. Prof. Spielman discusses the tradeoffs in the DDT debate as well as in crop selection (some crops that grow well in Africa require cultivation techniques that are favorable to mosquito populations).<sup>8</sup> He discusses how people react to incentives though a fascinating discussion of temporary home occupation. Apparently, in some parts of Africa digging for mud for short-

term home repairs creates holes that fill with water. Prof. Spielman notes that a longer-horizon view of home ownership promotes more stable, less mosquito-friendly building techniques.

Prof. Spielman also discusses the stark, unintended consequences of moving children to schools in healthier climates. Unfortunately, when these children return to their homes, as they most certainly are going to want to do, their natural immunity systems may be disrupted to the point that they are worse-off than if they had stayed. Finally, he discusses difficult property rights issues in mass vaccination programs.

While I am happy to play “the compleat economist” on these analytical issues, I must admit that there is a dimension in which I believe that economists often miss part of the story. As Doug Norton has gone to great pains to point out in his professional work,<sup>9</sup> economists often miss change that can derive from changes in preferences. The adoption of an “environmental ethic” has been a consistent theme in the PUC lunch series this year. Which direction should we emphasize for addressing legitimate environmental problems: the incentives and institutions approach of economists or the changing of individual preferences inherent in the idea of the development of personal environmental ethics?

I’d like to answer this question with an actual case study. The poor definition of water property rights in the Western United States<sup>10</sup> means that underground aquifers are operated as common pool resources: a classic environmental problem. I lived in Tucson, Arizona, for twenty-one years, so I am very familiar with the local legends and urban legends of Western water usage. One of the stylized facts at the time was that per-capita water usage in Tucson was substantially lower than (at least certain parts) of the Phoenix metropolitan area. A common topic of discussion at cocktail parties that included both economists and non-economists was why this was so. Was it, as most economists would quickly assert, due to the fact that water customers faced higher prices in Tucson than in Phoenix? Or was it, as was much more popular with the expressive Tucson natives (or more likely, people who would like you to think that they were Tucson natives), a function of the environmental ethos of “the Old Pueblo?” For example, local authorities in Tucson spent a lot of money on a “don’t waste water” public education campaign.

As it turns out, I happened across a working paper by a University of Arizona colleague in another department<sup>11</sup> which attempted to answer this question. The author used statistical methods based upon the time path of changes in both relative water prices between Phoenix and Tucson and changes in the level of the educational campaign. The conclusion of the paper was that both prices and the educational campaign worked to lower water consumption in the Tucson area. Of course, it is important to remember that the educational campaign had two intertwined purposes: changing preferences and providing customers with practical information on how to reduce their water bill, so the educational campaign was not without its own classic economics-based rationale.

My overall take on this debate is heavily influenced by Adam Smith. Now many people, typically including a lot of people who have never actually read anything by Adam Smith, assert that Smith believed that humans were naturally greedy and/or that “greed is good.”<sup>12</sup> On the contrary, he actually stated, over and over again, quite the opposite: people have natural-born sentiments of morality, and they make decisions motivated by altruism, duty, and charity.<sup>13</sup>

My interpretation of what Smith is saying is that in non-market activities it is very easy to connect our underlying moral sentiments to our actions, and the consequences thereof. And, there are some cases in which there is a similar direct connection between our moral sentiments and our behavior as sellers or consumers. I would never want to lie to anybody about a used car I was selling. I would never want to throw trash out of the window of a car. I would never want to purchase a diamond that I knew had some high probability of being a “conflict” or “blood” diamond. Another example is that some people simply do not desire to purchase products made from animal fur.

However, the complexity and inter-connectedness of production and distribution processes and marketing suggest to me that there are practical limits as to how much a personal ethos can guide all of

our consumption decisions. For example, if I should become a grandfather in the next few years, it likely makes two generations who have had to listen to the debate as to whether “cloth” or “paper” diapers are more environmentally friendly (and there are legitimate arguments on both sides). In a similar vein, I have enjoyed following the debates on the internet as to whether, across a complete production cycle, a Hummer is more environmentally friendly than a Toyota hybrid. It’s not necessary for me to come down firmly on one side or the other to argue that these are good examples of why it is hard to push moral arguments backwards through the marketplace like so much toothpaste going back through a network of tubes. The fact is that the answer to “paper or cloth?” or “Hummer or Prius?” depends on a complicated system of both technological and behavioral assumptions and subjective environmental costs. How high a temperature will a typical parent use to wash cloth diapers? Will people wash diapers themselves or use a diaper service? Are we more worried about the environmental damages from carbon emissions or from disposal of batteries? What kind of batteries? How long will a Hummer last before being scrapped? How about a non-hybrid Toyota sedan? How about a Prius?

It really doesn’t matter to me how any one individual weighs the assumptions and relative environmental costs in the examples above, as long as they admit that the considerations are subject to formal analysis and that the answer could, in some situations, be different than what is expected. To me, to behave differently is to replace a careful environmental ethic with “bumper-sticker” sloganeering. And to what point?

### **A Personal Environmental Ethic**

The discussion above seems like a good opportunity to close with Bob Ross’s request that luncheon speakers discuss their personal sense of environmental ethics.<sup>14</sup> Here is how I summarized my ideas at the PUC luncheon:

*As a Christian, I believe that there is a large canvas in which my direct actions can have moral consequences. That among these are 1) caring for the orphans, the widows, the malaria victims, the oppressed, and the aliens among us; 2) acting with the dual responsibilities of a wise Master (Genesis 1, Psalm 8) and a faithful Servant (Genesis 2 ) of God’s creation --- stewardship --- and 3) to approach personal consumption decisions with prudence, humility, a lack of covetousness, and a firm resistance to false-god creation. My preference is to combine wise prudence in markets with moral direct actions.*

However, I would probably lose my membership in one or more economics associations if I didn’t act like an economist and, like a parody of a scene in an old movie, throw some cold water on even my own manifestation of environmental ethics. (The appropriate parody response is, “Thanks, I needed that.”) So, following are what I referred to as my “three glasses of cold water.”

First, I could do no better than to borrow a phrase from the PUC presentation by my FSU College of Law colleague J. B. Ruhl, “My buses don’t go there.” Prof. Ruhl reported this phrase as a newspaper account of the response of a lower-income resident of an American city when asked to comment upon a bond issue designed to protect a sensitive wildlife habitat on the outskirts of the city across town. I don’t believe that the costs of environmental protection always fall the hardest either on lower income individuals or on higher income individuals. But sometimes the costs of an environmental policy do fall disproportionately on the poor (the banning of DDT being a good example). And, when there is such a conflict, I will tend to have a substantial deference to the needs of the poor.

Secondly, I believe that simple prudence should remain a part of environmental stewardship. The price system is an efficient mechanism of signaling resource scarcity, and I don’t believe that as a Christian we are instructed to pick and choose the domains in which we want to be good stewards. I believe that this is particularly important when we are acting as stewards of resources that other people have entrusted to us. If I were a member of the financial stewardship committee of a church or other non-

profit organization, I would want to know whether it was overall prudence and good stewardship of resources entrusted to us to adopt a technology (say, solar photovoltaic panels or ultra-energy-efficient appliances) that was substantially more expensive than some other technology. I hope that I would not sit by and allow the conversation to simply be “saving the planet” versus “grubbing for money.” The fact that another technology is cheaper in and of itself represents other claims against the scarcity of creation: labor, time, other raw materials, not to mention the funds that have been entrusted to our stewardship. And market prices can also reflect other environmental costs. For example, the existing U.S. program for tradable sulfate emissions permits means that environmental costs associated with sulfates should be reflected in current market prices. Similar effects would come from the costs of regulations restricting toxic waste disposal. It is possible that the more expensive “green” technology is more expensive precisely because it generates environmental costs that are already reflected in market prices.

Thirdly, I would like to close with a quote from Dietrich Bonhoeffer<sup>15</sup> as he discusses the tension between two parts of the Sermon on the Mount: Jesus’ call for Christians not to hide our light under a bushel is presented in parallel with a warning against our seeking public approval for its own sake. We are called to set a good example, be are warned not to worship our own goodness. Matthew 5 is a call to lead a visible, holy life. Matthew 6 is a warning against doing righteousness (even giving to the needy, fasting, praying, or making environmentally correct consumption decisions) simply for the reward of being seen by others. Bonhoeffer says:

*“Jesus, however, bids his disciples to persevere in the practices of humiliation, but not to force them on other people as a rule or regulation.”*

## Notes

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- <sup>1</sup> This was a humorous reference for those in attendance who, like me, had been Presbyterian Sunday School teachers at some point in their lives.
- <sup>2</sup> As reported on [www.divisionoflabour.com](http://www.divisionoflabour.com).
- <sup>3</sup> Simple web searches reveal similar experiences for other “free bike” programs.
- <sup>4</sup> Hayek’s argument about the decentralization of information has already had transformational impact in another area of society: Jimmy Wales’ creation of Wikipedia ( see [http://en.wikipedia.org/wiki/Jimmy\\_Wales](http://en.wikipedia.org/wiki/Jimmy_Wales)).
- <sup>5</sup> <http://www.washingtonpost.com/wp-dyn/content/article/2005/10/03/AR2005100301844.html>
- <sup>6</sup> [www.newscientist.com/article/dn11834](http://www.newscientist.com/article/dn11834) (I thank Toby Isaac for bringing this to my attention.)
- <sup>7</sup> The interview is available on [www.vega.org.uk](http://www.vega.org.uk) .
- <sup>8</sup> The following is my transcription of some of the discussion on DDT: “The analysis that people have drawn from Silent Spring is wrong. I knew Rachel Carson. I’ve studied the book. The way I interpret the book is as arguing that we should not do anything too extreme...If we get too much DDT coverage, we will lose DDT, we will lose its effectiveness. I certainly think that was right...DDT was a wonder chemical. It is inherently dangerous to wildlife, birds especially, so it has to be used in a very restrained manner. But when it is sprayed on the inside wall of houses, not much of it enters the general environment, so I think that the ecological issue is not very strong.”
- <sup>9</sup> Douglas A. Norton, "Incentives Matter Less: Standing at the Crossroads of the Coercive State and Transforming Preferences, " ( [www.dougnorton.com](http://www.dougnorton.com) ).
- <sup>10</sup> Western U.S. water law is a Byzantine subject too complicated to explain in this article.
- <sup>11</sup> I was reviewing a large set of research, and I unfortunately did not record the author or title of the research.
- <sup>12</sup> Doug Norton attended a presentation where Dierdre McCloskey made a similar point, saying that the “greed is an essential part of capitalism” meme comes “routinely ... from those who have never read any of [Adam Smith’s] works.”

13. Not only do many people not know about Smith's non-economics work *The Theory of Moral Sentiments* ("The Library of Economics and Liberty," [www.econlib.org/Library/Smith/smMS1.html](http://www.econlib.org/Library/Smith/smMS1.html) ) but the point is also made in *The Wealth of Nations* (Harmondsworth, U.K.: Penguin Books Ltd., 1977). For example, in the very same paragraph as Smith's comments about appealing in the marketplace to the "self love" of the butcher, brewer, or baker, Smith asserts that the whole substance of the support of beggars is the "charity" of others, and takes as a given that individuals will have donated their old clothes to them.
14. This is an appropriate place to offer my thanks to Bob Ross for organizing not only the PUC luncheon series but also the collection of essays in which this will appear. Many thanks also go to Rev. Bruce Chapman and the PUC for hosting the event, a long-standing tradition of the Presbyterian University Center's mission to the FSU campus. And, as is obvious from the text, this presentation draws heavily from joint teaching and research with my colleague Doug Norton.
15. Dietrich Bonhoeffer, *The Cost of Discipleship* (New York: Macmillan Publishing [first paperback edition], 1963), p. 191.

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Dr. R. Mark Isaac

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Dr. Isaac spent 21 years at the University of Arizona before coming to Florida State University in 2001. He is the chair of the Experimental Social Sciences Pathways Cluster, and he holds the honorary title of “El Jefe” in the Christian Men’s Nicotine Research Collective.

The title of Dr. Isaac’s presentation to the Faculty Luncheon Series was, “A Dismal Look at the Economics of Environmental Issues.”

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# **A Modest Proposal for Renewable Energy**

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## **Abstract**

The time to shift to renewable energy is now. Due to the problem of global climate change, there is no time to waste. My plan for America's renewable energy future that can be implemented over the next five to ten years and beyond consists of four points:

- 1) install renewable energy infrastructure,
- 2) level the playing field for renewable energy in the free market by federally subsidizing projects,
- 3) encourage less energy use while eliminating energy waste and
- 4) provide an easy transition period from our current fossil fuel based economy to one based on renewable energy.

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The time to shift to renewable energy is now. It is true that no one can prevent global climate change at this point but we can stave off its most catastrophic effects. However, there is no time to waste. Strategies must be presently implemented with all due expediency. Historically, the United States has always had the desire to be on top of the development of new technologies. In 1945, that desire culminated in the explosion of the first nuclear fission bomb near Alamogordo, New Mexico. In 1969, it was Buzz Aldrin and Neil Armstrong's walk on the surface of the moon. As concerns the development and implementation of renewable energy technologies, the United States is unfortunately, barely in the running and in fact, lags way behind Europe and Japan. Bookshelves are full of solutions and there are plenty of successful examples to point to in other countries. What we need now is political will. As Elizabeth Kucinich has expressed, we do not need to sacrifice. We need to be creative. My plan for America's renewable energy future that can be implemented over the next five to ten years and beyond consists of four points:

- 1) install renewable energy infrastructure,
- 2) level the playing field for renewable energy in the free market by federally subsidizing projects,
- 3) encourage less energy use while eliminating energy waste and
- 4) provide an easy transition period from our current fossil fuel based economy to one based on renewable energy.

The technology is available for us to at least double our energy in the next five years. This would be well within the realm of feasibility, financially, politically, technologically, and otherwise. In Vancouver, Canada ninety percent of energy use is renewable and even here at home, in Austin, Texas, twenty percent of energy used for electricity is renewable energy (Sheppard). Our first plan of action should be to create a Green Jobs program. The jobs that are to be created will be very important in installing renewable energy infrastructure such as solar panels and windmills as well as retrofitting homes for energy efficiency by installing insulation and tight windows. This program will be modeled on Franklin Delano Roosevelt's Work Progress Administration but instead of creating jobs with little social value (e.g. beaver relocation), the jobs created will be immensely influential in a new sustainable energy future. In addition, this program will address the other pernicious problem of

unemployment and deal with any displaced workers in the fossil fuel sector by the imposition of a well funded job retraining program and transition assistance. This will create millions of jobs and be the backbone of a practical energy program.

Regarding what energies to use for our renewable energy future, I believe the best options are solar and wind. Hydrogen and geothermal heat are to be used in conjunction with these technologies as they have proved successful in other countries. The primary advantage of solar and wind power is that once the infrastructure is built (through the Green Jobs Program aforementioned) the actual 'fuel' - the sun and wind - is free. Just as the sun powers all life via photosynthesis, it can also power our energy needs. We can start with carrying out Co-Op America's simple first measure of adding 3,000 gigawatt-peak solar photovoltaic units, 1,000 times current capacity (Gravitz). Secondly, we should encourage businesses and individuals to buy solar panels by giving subsidies to the solar panel industry to lower costs (as is currently done with fossil fuels). In the end, the energy savings will outweigh the initial start up costs of such a venture. Co-Op's first suggested measure for wind power is adding three million 1-megawatt windmills, 75 times the current capacity (Gravitz). Again, wind power is very cost-efficient. Once the turbines or windmills are built, the energy is free. Additionally, wind power is clean, safe, non-polluting, and non-greenhouse gas emitting. Compared to petroleum, wind power is also very economically stable because the price of oil will fluctuate due to many external factors but the cost of wind is always free. In fact, wind could be our most valuable energy technology. As with all energy technologies, regionalism should be taken into account. In more windy places, wind power will be used more often than in less windy places. In more sunny places, solar power will be used more often. Wind turbines will be especially effective in offshore and high altitude sites where winds are stronger and more constant. Positively though, Denmark, whose wind resources are infinitesimal compared to ours, already produces a bit more than twenty percent of their electricity using wind turbines and is planning to increase that to fifty percent in the near future. It is naive to believe that we cannot do the same. According to statistics, the long-term technical potential of wind energy is believed to be five times current global energy production, or forty times current electricity demand ('Renewable Energy'). Perhaps in the future we could have a near wholly wind power based society but we will never get there unless we begin implementation of these technologies as soon as possible. The common criticisms of wind power have been debunked. It is said that wind power would be very land intensive but wind farms actually occupy "less land area per kilowatt-hour (kWh) of electricity generated than any other energy conversion system, apart from rooftop or building-integrated solar energy" ('Wind Power'). Another criticism is that wind power will cause 'noise pollution' but modern wind turbines are almost silent ('Wind Power'). A final criticism is that wind turbines will prove hazardous to migrating birds but modern wind turbines also rotate so slowly that they are rarely a hazard to birds and the technology is only getting better ('Wind Power'). Wind power should be seen as a viable alternative.

Geothermal heat has had huge successes in Iceland where almost all buildings are heated by it and work on some US geothermal power stations should begin so as to take advantage of this burgeoning technology ('Geothermal power'). It is expensive to build a power station but operating costs are low and like all mentioned renewable energy technologies, the energy savings will make up for initial fees. Hydrogen, as the third most abundant element in Earth's surface and its availability in water and all organic matter, is another consideration. It can be made totally non-polluting with only water as exhaust. Hydrogen technologies will take longer to perfect (about 20 years) but the sooner we begin the better. In Reykjavik, Iceland, already they are using hydrogen buses (Sheppard). Also, in Denmark they opened a full scale hydrogen plant on May 2007 ('First Danish Hydrogen Plant is Operational'). Accelerating the pace of government support for research into this technology will help make the hydrogen economy a reality. One of the seeming disadvantages of renewable energies is the price. However, we must take into account what is deemed 'real cost' and the energy savings that will occur after implementation. For example, wind power generates the energy used in its construction in just three months of operation, yet its operational time is 20 - 25 years ('Renewable Energy'). We

must too remember that fossil fuels are also costly but they have had many advantages over renewable energies throughout the years by way of being federally subsidized. Besides, real cost is not factored into the cost of fossil fuels. For instance, the cost of healthcare due to air pollution is not taken account of, the cost of war to maintain our fossil fuel habit, or the price future generations will have to pay to remedy the situation. This is why the second point of action involves leveling the playing field for renewable energies in the free market.

In order to encourage renewable energy, the federal government should fund initial project financing, subsidize renewable energy technologies and give research grants to those who plan on developing our current technologies further. Possible research topics could include but are not limited to: biodiesel from algae and other forms, hydrogen extraction, tidal power, wave power, tapping into the energy that powers hurricanes, tidal stream power, industrial hemp as fuel, deep lake water cooling to save energy in summer, space solar power, sunshine to petrol, improving efficiency, ocean thermal energy conversion, blue energy, and developing new technologies. An agency in the Department of Energy should be created to provide technical assistance (in addition to the already given financial assistance) to communities. The energy savings that result from such actions could be invested in the community for better roads, schools, etcetera or paid back to the government (so as to not incur federal debt). Financial incentives could be given to individuals or companies who purchase renewable energy technologies such as rebates to be redeemed at a later date.

The third point is to encourage less energy use while eliminating waste. If so much energy wasn't unnecessarily wasted each year, we could easily lower our energy use without any significant drop in consumption. For maximum effectiveness, we can do both. Our first step will be to increase efficiency. Mandatory energy efficiency standards are to be put on buildings and appliances. The Green Jobs Program will install insulation and tight windows to prevent leaks and adapt outdated systems to become more efficient. Higher automobile mileage requirements will be enforced. A modest proposal is to raise the standards to 45 miles per gallon for cars and 35 miles per gallon for trucks but in reality we can do much better than that. Studies have shown if the only thing we do is raise automobile mileage by a small amount, 7.6 miles per gallon, we can eliminate 100% of Gulf Oil ('Freebie for Hybrid Car Owners at Better World Auto Club'). Not to mention, the saved energy costs will give people more money in their pockets - better than any tax cuts! This 'extra' money will help stimulate the economy as well. Biking should be encouraged to limit automobile use as well as updating the public transportation system to become more like that in Europe. National bike sharing programs will provide cheap access to bicycles as they do in Europe and some American cities and bike lanes will be made available and easily accessible nationwide. Incandescent light bulbs are to be phased out with their replacement being ideally, LEDs but also at least in the short term, fluorescent light bulbs which are both more energy efficient than incandescent light bulbs. Lighting accounts for 22% of US electric use today and much of that is inefficiently used ('Solar Energy'). One study finds that if, '25 per cent of the light bulbs in the US were converted to LEDs putting out 150 lumens per watt (higher than the commercial standard now), the US as a whole could save \$115 billion in utility costs, cumulatively, by 2025' (Kanellos). The argument that renewable energies are just too expensive is fallacious.

The necessary correlation of encouraging less energy use is discouraging nonrenewable energy use. This can be done in many ways. First, coal power plants should be made to be more efficient and no net new coal plants are to be built. This means, for every new coal power plant that is created, one coal power plant must be closed. Nuclear power is to be phased out over some years. As with coal, no net new nuclear plants are to be built. Nuclear power is unsustainable, dangerous, expensive, and the problem of disposal has still not been adequately worked out. One significant way to discourage nonrenewable energy use is to cut carbon emissions. Stepitup2007.org's demands of reducing carbon emissions 80% from 1990 levels by 2050 and 30% by 2020 which have been endorsed by many politicians should become a national pledge. Many scientists believe this is a

sufficient way to curb the most catastrophic effects of global climate change. A cap and auction or cap and recycle policy could be implemented to see this in action. The former sells permits for carbon emissions to corporate polluters and the revenue goes to the government (which can be used to fund renewable energy projects) while the latter has the revenue going to the community (could also be used for renewable energy projects). Either way, the dialogue needs to be opened up about this issue. Lastly, subsidies are to be eliminated for non renewable energy. In conjunction with my other point, the money from these subsidies can be directly transferred to renewable energies.

My final point is one that will create a smooth transition period from our current fossil fuel based society to a renewable energy based society. It will involve first a steady decline of the production of fossil fuels. Biomass and biofuels can be a short term transition to more efficient technologies like solar and wind or while technologies like hydrogen are being worked out. Biofuels ultimately are not a good primary solution because they have the downfalls of increased food prices, declining food production, and land and water intensiveness. However, as a transition fuel they may be very valuable. In the end, biomass from wastes can be used all the time to help better implement point three but waste alone won't provide enough to fuel our society. Co-Op America also proposes a natural gas transition in which 1,400 gigawatts of coal will be replaced with natural gas (Gravitz). Automobiles can undergo a hydrogen transition as well. At first hydrogen and conventional fuel cells can be used together but the end result will be solely hydrogen fuel cell powered vehicles.

In the end, these proposals are not very difficult to achieve. In fact, compared to what other countries are doing, they are altogether moderate. There's no reason that we cannot eventually become a wholly sustainable and renewable society. Not only will we be working to remedy the problem of climate change but also the problems of terrorism, war, and unemployment, among others. By implementing my four point plan, we will be treading down that long and difficult, though not all together formidable, road. And there's no time like the present.

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## **Introductory Comments for the Last Lecture in the Series**

**Dr. Robert S. Ross**

Suppose that scientists one day surprised us by saying that we no longer needed to worry about climate change because new technological developments would allow us to survive even with massive global temperature rises. And suppose that economists also surprised us by stating that even though the planet was in a state of great environmental decline, new economic thinking would allow our global financial system to survive. Even with such revelations I have often thought that we, as a species, would continue to experience an environmental crisis. Why do I think this? Because even though we would be able to survive physically and economically, we would be living on a planet that had lost most of its beauty. Gone would be the grandeur of the great snow capped peaks. The solace of deeply verdant forests would be only a sad memory. And the once breathtaking beauty of a blue sky and an emerald ocean would be replaced with an all encompassing and always depressing gray. Beauty is crucial to the human spirit, and without a vibrant experience of the beauty of our planetary home, we *will* have a crisis, a crisis of the human spirit.

In our modern world it is no longer fashionable to speak of the human spirit, of the human soul. This is particularly endemic to academia, I think. But just because we no longer speak of something does not mean that it doesn't exist. Leonardo da Vinci once wrote of the soul as dwelling within the body, and he said "whatever this soul may be, it is a divine thing."

As we seek an enduring environmental ethic it may turn out that our greatest motivation will come from a deep spiritual reflection. When all the closely chosen words of science, history, philosophy, theology, law, psychology and economics have faded, we may simply realize that we love this planet, and that the planet that produced all of us, is divine, even as our own souls are divine, as in Leonardo's view. *Those things that are divine, human and non-human a like, must be honored and protected! This may prove to be the ultimate foundation for environmental ethics!*

So today, in this last session of our Faculty Luncheon Series, we turn to those enduring things of the human spirit as we approach environmental ethics through a sense of beauty as captured by the artistic image. Our speaker is Professor Anne Stagg of Florida State University's Department of Art.



## A Sense of Beauty: The Role of Art in a Changing World

Anne Stagg

Assistant in Art, BFA Director and Foundations Faculty

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This paper reflects information presented in a talk given during the 2008-2009 FSU Faculty Luncheon Lecture Series that focused on global warming and environmental change. As my talk was centered around the artist's perspective, I will include several images (limited to black and white) and a resource list of websites where you can view more work from each artist.

An artist must harness the power of observation in order to be successful. Paying attention is at the root of the work and often the basis for the content. Sometimes it is the beauty of a tree in changing light or the intricate detailing of pattern on a bird's wing, while at others, the order and structure of society, or the similarity between the calls of rainforest birds and the pitch of car alarms (Nina Katchedourian's *Natural Car Alarms*). Perception and investigation often lead to insight and understanding. The artists who I will highlight in this paper are in no way definitive of this movement and, in fact, they do not belong to a single "movement," but rather are simply a collection of artists whose work I feel relates to an investigation of the changing world around us and an appreciation or dependence upon the natural world.

One means of observation is through photography. While photography is often thought to document a specific moment and place in time, **Robert Parkeharrison's** work goes beyond the documentary process and instead, directly takes on the earth's problems. In *Mending the Earth*, [Figure 1a] Parkeharrison references an historical Timothy O'Sullivan image, Fissure Vent of Steamboat Springs (c. 1867), in order to point out the absurdity of repairing something that cannot be fixed. The Timothy O'Sullivan image [Figure 1a] is of the vast landscape highlighting a split in the earth (the fissure vent). Robert Parkeharrison's image [Figure 1b] shows the artist mending the vent by stitching it back together with a giant needle and thread. In this image he documents and pokes fun at our attempts to improve nature while simultaneously hinting at the ultimate price of land devastation.

Figure 1a



Figure 1b



In other of Parkeharrison's work, he creates machines to keep polluted air away [Figure 2], contraptions to clean dirty clouds and thus save us from acid rain [Figure 3], and he shows fields that appear to be growing machines instead of food. The humor and absurdity of the images drives home the absurdity of many of human kind's actions.

Figure 2



Figure 3



In **Andy Goldsworthy's** collaborations with nature, he points to the transience of nature and helps us appreciate its beauty through his elegant observations. His materials come directly from the environment in which he is working and, together with other factors like form, color, and function, the materials inform and inspire the work he creates. Examples of materials he has used range from more substantial materials like trees and stones to more ephemeral materials like thorns, flowers, sand and icicles.

Because Goldsworthy works on-site with the materials available, his works are often shortlived and passing. While the works exist, they function as monuments to the surroundings, to time itself, and to a delicate balance between man and nature.

"Movement, change, light, growth and decay are the lifeblood of nature, the energies that I try to tap through my work. I need the shock of touch, the resistance of place, materials and weather, the earth as my source. Nature is in a state of change and that change is the key to understanding. I want my art to be sensitive and alert to changes in material, season and weather. Each work grows, stays, decays. Process and decay are implicit. Transience in my work reflects what I find in nature."

[[http://www.senorcafe.com/archives/art/the\\_hourglass\\_t.html](http://www.senorcafe.com/archives/art/the_hourglass_t.html)]

His endeavor is to make a work for every day that he lives and the photo documentation of thousands of works support this claim. Some of his works are planned ahead and others happen spontaneously. An example of a more spontaneous work is *red sand on a mulga tree*. According to the artist, this work came about as he was walking through the Australian outback. After getting red sand on his hand, he absent mindedly wiped it off onto a dead mulga tree and it stuck. Goldsworthy climbed the

tree and began coating it in the sand from top to bottom. Dark rain clouds gathered on the horizon, against which the sun illuminated the tree, and suddenly a distant downpour formed a rainbow over the entire scene. "It was an extraordinary work," he says, "covered in an earth that hardened as it dried, becoming a stone tree in a very ancient land. At the time it all seemed so right, but looking back I am astonished that the moment and work happened at all -- a meeting of tree, earth, rain, and sun." [Geoffrey Coffey, [http://www.senorcafe.com/archives/art/the\\_hourglass\\_t.html](http://www.senorcafe.com/archives/art/the_hourglass_t.html)] [Figure 4]

In another of Goldsworthy's works, he pins daisies to blades of grass with thorns in order to draw a meandering, brilliant, yellow line through an otherwise random field of daisies. The daisies are held up in the chain with forks made of brush. [Figure 5]

Figure 4

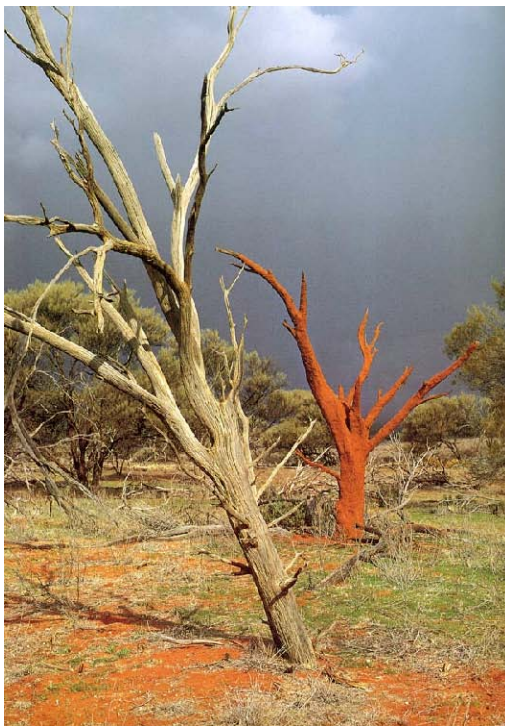


Figure 5



**Theo Jansen** is a very interesting artist who started off as a Dutch physicist and painter, but has, over the years, shifted course and become well known as a kinetic sculptor, designer and inventor. Sometime in the 1980's, Jansen began writing genetic algorithms on an ATARI computer. This research, after many years, resulted in "a 'strain' of beautiful creatures where plastic conduit is fashioned into dynamic linkage systems which translate rotary motion to linear movement" according to the artist. Through this system of translation, Jansen is able to move thousands of pounds of bent conduit using wind energy. These giant creatures' mechanical biomimicry causes them to roam the beaches of Holland on their many legs when there is enough wind. Through constant investigation and adaptation, Jansen carries the most efficient parts of the system through to the next manifestation. He calls this species of magnificent animals "Strandbeest" or beach creatures. Theo Jansen hopes to have self-sustaining populations of his Strandbeesten free-roaming the beaches of Holland within the decade. While I have

included a photographic example of a Strandbeest, [Figure 6] it is far better to watch a video of the creature in motion at [www.theojansen.com](http://www.theojansen.com) or on You Tube at <http://www.youtube.com/watch?v=WcR7U2tuNoY>.

Figure 6

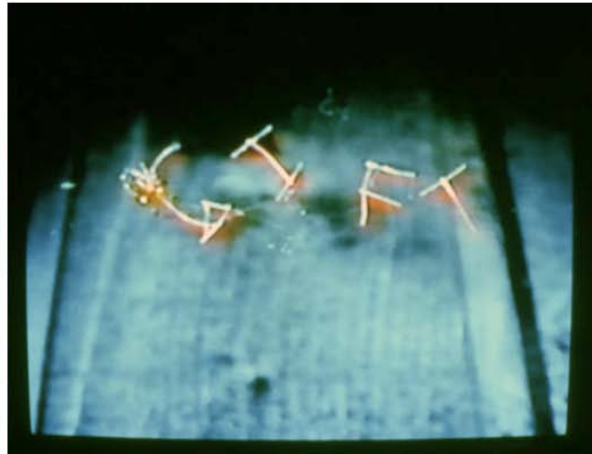


**Nina Katchadourian** combines familiarity, curiosity, investigation and humor in her work and makes her audience more aware of their surrounding environment and our impact on the natural world. *Mended Spiderwebs* [Figure 7] is a piece that grew from what the artist describes as “a slightly bratty moment of throwing something into a spider’s web and watching how the spider would come and take it out.” At that point, she decided to intervene in nature in a very human way and where the web appeared broken, she would use thread to darn or stitch it back together. This led to a collaboration between artist and spider and was captured in a video called *GIFT/GIFT*, 1998 [Figure 8] where Katchadourian inserts tiny starched thread letters into a spiderweb and videotapes the spider’s reaction of removing the word “GIFT” from its web and repairing the holes. Katchadourian chose the word ‘gift’ because of its dual meaning to her. In Swedish, her first language, givt means poison, while in English it means present. So, she is giving the spider a present, but at the same time the act might be harmful or unwanted. [Berry, 11-13] The simple gesture of wanting to help a spider repair its web with a similar material is a dangerous misapplication of human empathy on nature. Katchadourian observes that ‘it seems a very human thing to want to do something right but then to screw it up.’ [<http://www.ninakatchadourian.com/>]

Figure 7



Figure 8



*Natural Car Alarms* is a piece that initially resulted from a mistaken observation. She was in a remote forest in Trinidad when she heard a birdcall but mistook it for a car alarm. It was that she mistook a sound in a remote natural environment as being one in an urban environment that pushed her to pursue the reverse. Car alarms are a natural part of an urban environment like Long Island City, but exotic birdcalls are not. In this piece, Katchadourian has made three custom car alarms where she matched and replaced the pitch and duration of existing car alarms with various birdcalls. In the final piece the *Natural Car Alarms* [Figure 9] were installed in three cars that were parked on the street outside of the Museum of Modern Art and were set off as pedestrians bumped into or moved too close to the vehicles. [Berry, 20-22]



Figure 9

**El Anatsui** is a Gana born artist now living in Nigeria. He is considered by many to be Africa's premier contemporary artist. Anatsui drives home the old adage that 'one man's trash is another man's treasure' because the materials that he chooses to use are often recycled or reused and repurposed. The humble nature of his materials gives an endearing quality to his work. Examples of the reused and repurposed, often discarded materials include recycled metal, old rusty steel sheets, the tops and bottoms of tin cans, aluminum bands, the foil off of bottles of alcohol and copper wire. It is difficult to imagine the amount of time it would take to amass such a large collection of materials, let alone imagine the amount

of time it would take to stitch them together to create his sculptural forms. The sheer scale of Anatsui's works brings about questions of sustainability and mass consumption and shows us how beautiful it can be to find new life in discarded materials. [Figure 10] [<http://elanatsui.com/>]

Figure 10



Next, I want to take a look at a few artists local to Tallahassee and on faculty at Florida State University. **Janae Easton** is an adjunct faculty member who reuses and repurposes materials to make her work. She is very interested in sustainability and rarely lets things go to waste around her. She makes books, drawings and large sculptural installations from things that others discard on a daily basis: old cards and decorative papers are cut and assembled into new constructions, old sweaters and fabrics are similarly used in sculptures and installations. Easton effortlessly makes us aware anew of beauty in the objects and environment that surrounds us. Examples of her work can be found in Textures Handmade Market on Thomasville Road in midtown. This retail gem features art and functional objects from several area artists and artisans and allows all of us in Tallahassee the opportunity to support local artists who are looking at reuse and sustainability. [Figure 11a & Figure 11b]

Figure 11a



Figure 11b



**Mark Messersmith** is a painting professor at FSU. He creates large-scale paintings that are rich in color, texture and content. Often his works feature a have sculptural elements to them including carved animals and insects that hover above or hang in front of the paintings, and predella boxes at the bottom of the paintings that showcase natural artifacts from ‘old Florida.’ Messersmith states:

Since moving to north Florida in 1985, I have been taken with the uniqueness of the region's environment, and the beauty of its lands and animals. While both land and animals are vulnerable, they share a strong determination for survival and still offer potential dangers for the unwary visitor. With my Southern landscape paintings I think about ideas concerning; myths and facts, good and evil, life and death, human versus nature. The Southern landscape I paint is, at least for awhile, still out there somewhere, somewhere just beyond the urban sprawl, our shopping malls, and trailer parks. It is a land still inhabited by powerful birds, vigilant panthers, wary gators, blackwater swamps, old cypress trees, back road citrus stands, and careening logging trucks. [<http://www.markmessersmith.com/>]

His works allow his audience to reenter the wild and varied landscape that once was prevalent in the state of Florida, but has become increasingly more difficult to find. He reminds us of the power and the beauty in the natural world. [Figure 12]



Figure 12

**Lilian Garcia-Roig** is also a painting professor at FSU. Because she works directly from nature, she is in a sense documenting a quickly changing world. As we develop more land it does two things. First, it destroys natural habitats while devastating forests and greenscapes and, second, it takes urban dwellers farther from these natural environments. Lilian states:

For me, the seemingly passé' mode of plein-air painting (painting on site to experience nature first hand) is today injected with new relevance and urgency as it helps underscore how removed most of our own experiences and even images of nature have become. In my works, I want the viewer to discover how the landscape reveals itself in cumulative and unexpected ways. Ways that will hopefully create a desire to engage more fully, directly and positively in our own environment and to do so before it is too late. [<http://www.liliangarciaroig.com/statement-extended.html>] [Figure 13]



Figure 13

The Art Department at Florida State University is expanding its course offerings to include environmentally focused curriculum. An example of this is Paul Rutovsky's "Get Green" class where he encourages art making from reclaimed materials, but also seeks to rehabilitate green spaces in Tallahassee's downtown corridor that have become overrun with trash and graffiti. The students clean out detritus and invasive plant species, design garden beds and reintroduce native plants. They also create planters and sculptures that promote responsible environmental practice.

Another course offering is Linda Hall's Eco/Artology. Through this course, students will study historical and contemporary artistic responses to life during a time of ecological concern; produce art about, out of, or in the environment both individually and collaboratively; and will learn about the specific ecological concerns of our local environment.

These artists are not only bringing attention to these matters, but in many instances, affecting social change. The head of the RSA Arts and Ecology Centre, Michaela Crimmin, says "Artists have always had a powerful relationship with the natural environment. Equally, artists continually question and re-examine society's notions of progress. We need their unique perspective on the enormous challenges ahead - on the relationship between environmental issues, ... and people."

### Figure Legend:

- Figure 1a:** Timothy O'Sullivan, *Fissure Vent of Steamboat Springs*, albumen print, 1867
- Figure 1b:** Robert Parkeharrison, *Mending the Earth*, From the exhibition "The Architect's Brother", photogravure print
- Figure 2:** Robert Parkeharrison, *Wind Machine*, From the exhibition "The Architect's Brother", photogravure print
- Figure 3:** Robert Parkeharrison, *Cloud Cleaner*, From the exhibition "The Architect's Brother", photogravure print
- Figure 4:** Andy Goldsworthy, red sand, dead mulga tree.
- Figure 5:** Andy Goldsworthy, Dandelion Line, dandelions, grass, thorns
- Figure 6:** Theo Jansen, *Strandbeest Series: Anamaris Curren Sventosa*, bent plastic conduit, mixed media, circa 2006.
- Figure 7:** Nina Katchadourian, *Mended Spiderwebs*
- Figure 8:** Nina Katchadourian, *GIFT*
- Figure 9:** Nina Katchadourian, *Natural Car Alarms*
- Figure 10:** El Anatsui, *Kente Cloth*, flattened liqueur bottle caps and foil wrappers, copper wire, 2007
- Figure 11a:** Janae Easton, *Robust Bark encountered by Dusky Caves*, Mylar, lenox 100, wrapping paper, colored marker, colored pencil, pen, foil tape, duct tape and other found papers, 25" x 40", 2007
- Figure 11b:** Janae Easton, mixed media installation, 2006
- Figure 12:** Mark Messersmith, Installation view of paintings, oil on canvas with wood, each measures 82" x 65"
- Figure 13:** Lilian Garcia-Roig, *Washington: Stained Glass Woods*, oil on canvas, 48" x 132", 2008

### References & Resource List:

#### Robert Parkeharrison:

<http://www.parkeharrison.com/>

#### Andy Goldsworthy:

Geoffrey Coffey, [http://www.senorcafe.com/archives/art/the\\_hourglass\\_t.html](http://www.senorcafe.com/archives/art/the_hourglass_t.html)

#### Theo Jansen:

<http://www.theojansen.com/>

#### Nina Katchadourian:

<http://www.ninakatchadourian.com/>

Berry, Ian. Opener 11. Nina Katchadourian: All Forms of Attraction. The France Young Tang Teaching Museum and Art Gallery at Skidmore College, Saratoga Springs, New York (exhibition catalogue)

#### El Anatsui:

<http://www.elanatsui.com/>

#### Janae Easton:

[http://www.drawingcenter.org/viewingprogram/share\\_portfolio.cfm?pf=345](http://www.drawingcenter.org/viewingprogram/share_portfolio.cfm?pf=345)

<http://janaeeastonatplatusfile.blogspot.com/>

#### Mark Messersmith:

<http://www.markmessersmith.com/>

#### Lilian Garcia-Roig:

<http://www.liliangarciaroig.com/>

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Anne Stagg

Ms. Anne Stagg is a junior faculty member in the Department of Art at Florida State University. She is the Director of the BFA Studio Art Program and a founding member of a faculty initiative to start an experimental arts book press at Florida State University, called Small Craft Advisory Press. This press was established in 2008 and Ms. Stagg recently received a grant to support the inaugural year of programming.

Ms. Stagg's research includes paintings and installations, and she exhibits her work regionally and nationally. Currently her work is on exhibition at Bridge for Emerging Contemporary Artists Gallery in New Orleans, LA.

The title of Ms. Stagg's presentation to the Faculty Luncheon Series was, "A Sense of Beauty: The Role of Art in a Changing World."

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