



The Goodwin-Niering Center for Conservation Biology and Environmental Studies



Senior Integrative Project Abstracts for the Class of 2003

Stefan Apse

The Equal Consideration of Animal Interests: A Study of the Works of Peter Singer and Temple Grandin

How different are non-human animals from humans? What is our moral obligation towards non-human animals, if any? In this essay I study the works of two people, who in their own ways, have worked toward better welfare of non-human animals. The first person is Peter Singer, a preference utilitarian ethicist, who argues for animal liberation through his principle of *equal consideration of interests*. Through his rational argument, Singer advocates that non-human animal interests should be given the same weight as we give to human interests. He argues that the only defensible boundary for deciding a being's moral status is if a being is capable of suffering, or enjoyment. Any other limit put on a being like intelligence or rationality would be arbitrary. Thus, in reference to animals, discriminating against their pain would be unjustifiable. Singer advocates that as rational beings humans should make a moral commitment to eliminating all moral behavior that contributes to the suffering of animals. I focus primarily on agricultural animals and the easy behavioral change we can make by becoming vegetarian. I also look at the work of Temple Grandin. Grandin is a woman with autism who has in her own life struggled to gain control of her autism as well as becoming an animal scientist and professor. Through her unique capacity to understand the behavior of animals, she has worked to change livestock handling procedures and livestock facility design. Her work focuses particularly on the minimizing of fear in the lives of livestock. Her writings impel you to imagine how her mind works and furthermore how the minds of livestock and other animals work. I find that Grandin's work along side Singer's complement each other and at the same time spawn dialogue over our commitment to the principle of equality.

Scott Epstein

Equity: A Changing Norm or Simply a Buzzword? An Examination of Nuclear Fuel Waste Disposal Policies

This thesis examines nuclear fuel waste disposal policies through an equity lens in an attempt to gain an understanding of social norms related to the use of nuclear energy. Globalization has impacted waste disposal policies because waste shipments became feasible and inexpensive, allowing waste to be shipped throughout the world. While governments have come together to address issues of hazardous waste shipments, nuclear disposal still needs to be examined. The transformation of social norms against the disposal of hazardous waste in third world countries

or lower economic areas forced governments to take a stand by creating strict laws and forming international organizations. This same change in social norms has not yet occurred at an international level for the disposal of nuclear fuel waste. To examine these issues, disposal policies of the European Union (EU), member countries of the EU, Central and Eastern European Countries (CEEC), and Newly Independent States (NIS) were analyzed based on principles of equity. Equitable policies were analyzed for current generations related to the siting process, and for future generations based on minimization policies, waste management funds, and final disposal facilities. Results showed that equity has become a social norm at the EU level, but not in individual member states. These countries are utilizing equitable principles, but all decisions are not based on equity and a desire to protect the environment and citizens. Member country's economic stability allows waste management authorities to utilize expensive methods such as waste minimization strategies and high-tech siting processes. CEEC, or EU applicant countries, have not developed equitable policies and are making changes in legislation purely to appease the EU because of the incentive of joining the EU. Finally, NIS is stuck in nuclear waste policies of the 1960's and 1970's that are inequitable and unjust. Their policies fail to protect citizens or the environment from the hazards associated with nuclear fuel waste. In addition, the economic problems of CEEC and NIS make it difficult for their governments to justify the use of funds for nuclear waste disposal programs while social norms are not present and issues such as education and infrastructure are in dire need of funding. However, this seems to represent a start to changes related to social norms. Over time, social norms throughout the world may change to focus on creating an equitable situation for the disposal of nuclear fuel waste. These changes will most likely spread from the EU to member countries and then to applicant countries. Finally, social norms may spread to impoverished countries such as NIS. This process, if it occurs, will make nuclear power an equitable process for energy production, since citizens and the environment will be protected. However, these changes will take time, as social norms need to permeate through societies and be accepted by governments and citizens.

Jared Fertman

The Clean Water Act, Wetlands and the Courts: A Paper-Thin Protection for our Nation's Most Vital Aquatic Resource

Despite the widely recognized and critical functions that wetlands provide, these habitats are not currently, and have never been, adequately protected by federal law. This insufficient protection has resulted in the destruction of more than half of the wetlands originally found in the conterminous United States. Through an examination of the legislative history of water resource protection and relevant wetlands case law, this honors thesis will display the inherent inadequacies in wetlands protection measures. In three separate cases, the courts have determined that wetlands regulations are flawed by (1) a required *addition* of material to initiate regulability, (2) a requisite link to navigation, and (3) an enforcement design that has been construed as a regulatory taking, in violation of the Fifth Amendment. The environmental implications of these cases as well as the legal basis for each holding show that federal law cannot adequately protect wetlands nor be accurately applied in the present legal context. To remedy this, a new "Wetlands Protection Act" will be advocated as the solution most amenable to environmental and legal concerns.

Lauren Hartzell

An Ever-Changing Future: Obligations to Future Generations and the Future Environment

Do we have obligations to future generations? If so, what are these obligations? Do we have obligations to other aspects of the future such as the future environment? I begin this project by exploring Derek Parfit's work on obligations to future generations. He first distinguishes several kinds of decisions. He then proceeds to search for a moral principle for dealing with different number choices, which are decisions that affect who will live in the future (the personal identity of future people) and how many people will live in the future. Although I find his method for seeking a moral principle that captures our obligations to future generations unconstructive and in many ways invalid, I believe Parfit makes several important distinctions and raises many important questions. Parfit forces us to realize that our decisions affect who will live in the future. However, he does not take his discussion far enough. Parfit fails to recognize that our decisions affect more than just future generations but the future in general. For example, our decisions affect what the future environment will be like. In light of this recognition that our decisions affect the future in general and the fact that Parfit's method prohibits him from finding a moral principle that applies to decisions that affect the future I try another method for finding such a principle. I explore moral intuitions as a possible foundation for a moral principle that applies to decisions that affect the future. Ultimately, however, I come to the conclusion that the only moral principle that applies to all decisions that affect the future is the principle that our decisions are both infinitely significant and insignificant at the same time. While our decisions greatly impact what the future will be, which makes them infinitely significant, there are so many such decisions that any single decision is infinitely insignificant.

Katie Jones

Wilderness and the 'Leave No Trace' Ethic: An examination of the established wilderness ethic of "Leave No Trace" (LNT)

This paper is an examination and defense of the Leave No Trace Ethic, an ethic that is currently employed by many outdoor recreators. The ethic is comprised of seven principles that each has to do with how humans should behave in the wilderness; each one of the principles also has a set of specific corresponding guidelines. First I begin with an exploration of wilderness and the spirit of the wild, and explain that almost every individual has his own concept and definition of wilderness. I also explore the consequences of human presence in the wild, and investigate the tradeoffs we find ourselves facing when we value both the wild and human experience in the wild. The Leave No Trace Principles have both an anthropocentric and a non-anthropocentric basis, meaning that they aim to protect both human experience in the wild, and the wild itself. After this initial discussion of the Leave No Trace Ethic and some of the ideas we hold about the wilderness, I defend the ethic against a claim made by Lisa Gerber. Gerber argues that environmentalists and outdoor recreators often fall prey to misanthropy when they think about humans and the wilderness. She defines misanthropy as a "mistrust, hatred, and disgust of humankind." Gerber criticizes the Leave No Trace Ethic itself, and I defend the ethic against her

claims. Wilderness and regulation is the next topic that I address. I examine four principle regulators (the law, the market, architecture, and social norms) that all influence how humans interact with the wilderness. I conclude that the Leave No Trace Ethic has the potential to be the most influential regulator, based upon its status as an emerging social norm. From regulation, I address the notion of supererogation, which can be defined as doing more than what is expected or morally required. I examine the Leave No Trace Ethic in terms of supererogation, and defend it against claims that the standards it imposes are set at too high or too low of a level. I conclude that following the ethic is not a supererogatory action, and that it is indeed something that is morally required of outdoor recreators. The paper ends with a section entitled "Is Leave No Trace the RIGHT Ethic?" This section ties together my defense of the ethic, and explains that yes, indeed it is. I also discuss the fact that the ethic is still in its infancy, and that as it develops it will most likely be slightly adjusted as we learn more about the effects of outdoor recreation on the environment.

Lindsey Kravitz

Environmental Education: Cross-Cultural Modeling

A study was conducted to determine whether a day camp experience which included a supplemental environmental education program had any significant effect on children's attitudes toward the natural environment. Forty-seven children completed both a pre- and post- camp environmental attitude survey. In addition, six staff members at the camp, two camp directors, and twenty-seven parents or caregivers of campers completed questionnaires pertaining to children's experiences at the camp and the adults' perceptions of the effectiveness of both the general program and the environmental education component. The results of this study did not support the hypothesis that children's attitudes toward the natural environment are improved by attendance at the summer camp. Children's attitudes toward the environment, although moderately high to begin with, did not improve after attending camp for four weeks. The qualitative data gathered from staff, camp directors, and parents of the campers supported the campers' data. Although children and families appreciate the overall positive experience of camp attendance, by all accounts, this day camp is not focusing effectively on environmental education, nor is it fostering children's connections with nature. The possible limitations and implications of the findings are examined, both on their own and in regard to modern developmental and environmental education theory.

Sarah Lathrop

Post-Modern American Poetry in the Eco-Critical Context

This paper examines the way in which postmodern conceptions facilitate the implementation of ecocriticism, specifically in the milieu of American poetry. Under particular examination is the work of Audre Lorde and Philip Levine, both poets who interpret the urban environment, as well as that of Robert Hass, James Schuyler and Elizabeth Bishop, quintessential postmodernists fascinated by the relationship between people and their natural surroundings. As depicted in the following pages, postmodernism enables pragmatic thought and action, both valuable for solving environmental problems. By dismissing metanarratives as well as teleology, postmodernism

allows for case-specific analysis and the coexistence of diverse perspectives. Also, the destabilization of modern structure and the dethroning of the male human subject, both emblematic functions of postmodernism, provide a niche for radical politics as well as a consequent interest in formerly peripheral subjects, including Nature. The empowerment of the Other, gives an opportunity for increased communication between once privileged speakers and previously disenfranchised entities. The poets included in this study have sought to provide a voice for the environment and to earnestly engage it in dialogue. Through the work of Lorde, Levine, Hass, Schuyler and Bishop, the reader perceives the confluence of postmodern ideas and ecocritical perceptions.

Molly Lippman

Environmental Education in a Traditional Day Camp: A Case Study of the Effectiveness and Impact on Pre-Adolescent Children

A study was conducted to determine whether a day camp experience which included a supplemental environmental education program had any significant effect on children's attitudes toward the natural environment. Forty-seven children completed both a pre- and post- camp environmental attitude survey. In addition, six staff members at the camp, two camp directors, and twenty-seven parents or caregivers of campers completed questionnaires pertaining to children's experiences at the camp and the adults' perceptions of the effectiveness of both the general program and the environmental education component. The results of this study did not support the hypothesis that children's attitudes toward the natural environment are improved by attendance at the summer camp. Children's attitudes toward the environment, although moderately high to begin with, did not improve after attending camp for four weeks. The qualitative data gathered from staff, camp directors, and parents of the campers supported the campers' data. Although children and families appreciate the overall positive experience of camp attendance, by all accounts, this day camp is not focusing effectively on environmental education, nor is it fostering children's connections with nature. The possible limitations and implications of the findings are examined, both on their own and in regard to modern developmental and environmental education theory.

Vetri Nathan

Ecological Post-Colonial Discourse in India: Where the Realms of Culture and Ecology Meet

The preservation of "untouched" tropical and semi-tropical deciduous forest in India is crucial; there is a huge conflict of interest, on the local, national and global level for space. Of key importance in this conflict is the issue of indigenous peoples and their rights; for example, the Narmada Valley Dam Project that gave rise to the revolutionary *Narmada bachao andolan*. Edward Said defines orientalism as "an idea that has a history and a tradition of thought, imagery and vocabulary that has given it a reality and presence for the West [. . .] the relationship between Occident and Orient is a relationship of power, of domination, of various degrees of hegemony." The post-colonial viewpoint of Said on orientalism does not imply that it is simply a collection of lies and myths about the orient, and that by simply identifying these cultural myths,

one can destroy the division of the world into “East” and “West.” The political and cultural hegemony, with the passive consent (and hence consensus) of the masses, has created and disseminated a particular image of the East. Present ecological imperialism in India is directly connected to the simultaneously occurring processes of economic imperialism, which is a continuation of historical colonial profiteering; however, the issue is more complex than the “West” manipulating the “East.” Urban society in India is as prone to misrepresentation of indigenous people as are people in more technologically advanced countries. These consciously created gaps in our understanding of the rural “third world” realities is the principal driving force of the continuing degradation of prime ecological land.

Kassie Rohrbach

Gender and Sustainable Energy Development: An Examination of Three Case Studies from a Transnational Environmental Feminist Perspective

This project looks at sustainable energy through a gendered lens. In terms of energy development, two problems present themselves. First the earth’s resources are allocated disproportionately. Second, major lending groups such as the International Monetary Fund and the World Bank fund large-scale projects such as hydroelectric dams and coal- and oil-burning power plants that do more harm to the majority of citizens in these countries than good. Sustainable energy projects offer a solution to the problems of over-consumption and environmentally and socially destructive methods of development. This study uses a synthesis of transnational feminism and environmental feminism to analyze traditional development projects and sustainable energy projects that involve women – the renewable energy campaign at Connecticut College, an energy efficient cookstove project in Chiapas Mexico, and the Green Belt Movement, a reforestation project in Kenya. This study will examine ways that women in industrial and developing countries are breaking the cycle of consumption and oppression through sustainable energy development. A transnational environmental feminist analysis of sustainable energy projects reveals that gender inequalities, poverty and environmental destruction are all interconnected; not only do the same systems of power create them, but they perpetuate each other. The case studies examine the conditions under which sustainable energy development is a real solution that merges economic, social, and environmental interests through a holistic approach. The examination of these three locations shows that variations in applications of sustainable energy projects are necessary in order to meet the specific needs of the people whom the project affects. The case studies also reveal that energy development of each location is shaped by global forces so that sustainable development in one location involves cross-border, international networks and shared knowledge.

Daisy Small

Forest Community Changes Following Hemlock Woolly Adelgid Infestation in Southern New England

The hemlock woolly adelgid (*Adelges tsugae*), a small aphid-like insect introduced from Japan, has caused widespread *Tsuga canadensis* mortality throughout the Mid-Atlantic and southern New England region over the last twenty years. We examined long-term changes (1952-2002) in hemlock-dominated stands following the introduction of the woolly adelgid in 1987. Major findings included a shift in the dominance to hardwood canopy species, increasingly rich herbaceous layers, the appearance and expansion of several invasive shrubs and vine species, and increased sapling stem density, particularly in clonal species. Hemlock basal area declined by 70% from 1982 (pre-adelgid) to 2002. Black oaks (*Quercus velutina*, *Q. coccinea*, *Q. rubra*) increased from 28% of canopy basal area in 1982 to 41% in 2002. Saplings of *Sassafras albidum* increased from 0 to 1900 stems/ha and *Acer rubrum* from 4 to 1100 stems/ha over the past 20 years. Formerly hemlock-dominated communities on nearby ledge and ravine sites became more compositionally distinct. Ledge site canopies became dominated by black oaks. The density of *Sassafras albidum* saplings in the understory increased and few herbaceous species were present. The canopies of ravine sites became, dominated by black oaks and *Fagus grandifolia*. Ravine sites had a greater diversity of herbaceous and sapling species, particularly with *S. albidum*, *Prunus serotina* and *Acer rubrum*. Hemlock stands studied here are expected to experience complete hemlock mortality due to woolly adelgid infestation by 2006. With the loss of a dominant forest component and depending upon site type, hemlock stands infested with hemlock woolly adelgid may convert to oak and mixed hardwood forests with multi-species dominance.

John Traversi

Exploring Turtle Hearing through Operant Conditioning

Do turtles hear? Many zoologists postulate that hearing has no effect on the behavior of freshwater turtles; however, electrophysiological data has proven that their brains do respond to sound. Very few behavioral studies have been conducted and most have had inconclusive results. In the previously successful “Myrtle Project” scientists studied the hearing capabilities of a green sea turtle through behavioral methods. Using operant conditioning techniques the turtle was taught to come to a station and touch a response paddle to indicate signal detection and to touch a light box in the absence of an audible tone. The resulting data can be used to help assess the impacts of anthropogenic sound on sea turtles; all of which are threatened or endangered. In my individual study I attempted to replicate the “Myrtle Project” on a smaller scale using three red-eared slider turtles (*Chrysemys elegans*). Training sessions were held at the same time each day on an average of five times per week and ranged from twenty minutes to two and half hours. Some methods employed to expedite training were isolation, group training sessions and feeding out of the water. I was successful in training the turtles to respond to a recall tone by touching a response paddle with their beaks. Feeding, the basis for the training, proved to be the most challenging part of the experiment; however, once a relationship was established, training progressed smoothly. The results were as follows: The yellow female took thirteen sessions to recall and station/target; the pink female responded to recall and station after fifteen sessions; and the blue male never responded to recall and station. Conclusions: While this experiment did not reach its goal of developing a behavioral audiogram of the red-eared slider, it does give us insight on the trainability of turtles.

