Igniting a Global Change with the Innovated Eco-Behavioral Model

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Winter, 2011

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Proposal

My senior project paper is an analysis of the impact of Global Climate Change on modern social behaviors of rural communities, society at large, and international aid relations between developed and underdeveloped countries. I propose that it is possible that the most effective solutions to the environmental crisis actually focus on social problems, and most importantly, should place special emphasis on women in rural communities. The three primary areas for solutions to address are the implementation of improved technology, investment of financial capital, and fostering an attitude of Global Solidarity/New Humanism. While the first two elements are not foreign concepts to many aid projects, the third refers to the concept of achieving a genuine sense of connectedness that overcomes any risk of ethnocentrism in an effort to provide assistance that will raise up women and their communities without abandoning their cultural identities.

The primary theory in the paper is Conflict Feminist Perspective, with additional theories on modern Development and its linkages to the ethnocentric, resource-exploiting behaviors of the past. While this paper supports development, it supports a very specific formula, which will be throughly detailed throughout the body of the paper. The case study for the section on implementation of improved technology is High Efficiency Stoves. The section on Microfinance highlights the principles and practices of the Grameen Bank and similar organizations like Kiva.org. The previous two sections will each have an explanation on how "Global Solidarity/New Humanism" is important to its success, and the final section will detail the process and obstacles to establishing a new mindset about aid work and forming a global support network.

Annotated Bibliography
References

Adle, T. (2010). Better Burning, Better Breathing. *Environmental Health Perspectives*, 118(3), A124-A129. Retrieved from EBSCO*host*.
    This source is an online document detailing several studies of cooking habits and technologies in countries throughout the world before and after high-efficiency stove distribution programs. This article includes research from the World Health Organization on indoor air pollution, and the improvements high-efficiency stove technologies can make to air pollution, fuel efficiency, and health of individuals. This research helps support my claims that high efficiency stoves can make noticeable improvements in the lives of men, women, and children and in the amount of air pollution. This article also explains the pros and cons of previous stove programs (for example, in China and India), as well as the economic side of producing these stoves, which I use in my paper to explain how to get these stoves to the individuals who need them the most, the poor.

Grameen Bank | Banking for the poor - A Short History of Grameen Bank. (n.d.). . Retrieved June 8, 2010, from http://www.grameen-info.org/index.php?option=com_content&task=view&id=19&Itemid=114
    This source is the Grameen Bank's online website which details the history of microfinance and the Grameen bank– why and when it was founded, and who is responsible for creating the idea. This website explains the importance of not denying the poor equal access to credit simply because they are poor. I use this in my paper to explain how microfinance and organizations like the Grameen Bank address the needs of poor in periphery countries and attempt to break the cycle of poverty.

Grameen Bank | Banking for the poor - What is Microcredit. (n.d.). . Retrieved June 2, 2010,   from http://www.grameen-info.org/index.php?option=com_content&task=view&id=28&Itemid=177
    This source is the section of the Grameen Bank's online website that explains in detail what "microcredit" is and how microloans work. I use this in my paper to provide background to the ideas of microfinance and microloans in order to explain how they can be used to raise the social and financial position of women in rural periphery countries.

Kapur, A. (2010, June 3). The Problem of Working With Men. *The New York Times*. Retrieved   June 5, 2010, from http://www.nytimes.com/2010/06/04/world/asia/04iht-letter.html?_r=1&scp=1&sq=development%20organizations%20working%20with%20women&st=cse
    This article explains why development groups overwhelmingly choose to work with women and details all the ways that men are difficult to work with, and how they often waste the resources invested in them. The article draws on interviews and empirical studies to illustrate how aid invested in women spurs general development in rural periphery areas, and is good support for my thesis of focusing aid on women.

Kiva - Loans that change lives. (n.d.). . Retrieved June 11, 2010, from http://www.kiva.org/

This source is the Kiva website, which is a popular microfinance group because it structured in a way that is easy to access and use. I use this to illustrate that there are several different microfinance groups available to the public today, and to illustrate how small donations from many individuals can add up to a lot, resulting in huge changes in the financial and social lives of rural periphery women. I also use direct quotes from Kiva loan recipients in order to illustrate the changes microfinance can make in the lives of individual women.

Klugman, J. (2010). Human Development Report 2010. United Nations Development Programme, 85-99. Retrieved March 12, 2011, from http://hdr.undp.org/en/reports/global/hdr2010/chapters/

This source is Chapter 5, "Innovations in measuring inequality and poverty," of the 2010 Human Development Report. This chapter provides good statistical data on the current situation of gender inequality and poverty throughout the world, which supports my thesis that women need to be the primary focus of development work due to their disadvantaged position in societies worldwide.

Knowledge@Wharton (2005). Microcredit Is Becoming Profitable, Which Means New Players and New Problems. *Knowledge@Wharton: Law and Public Policy*, 1-4. Retrieved March 12, 2011, from http://knowledge.wharton.upenn.edu/article.cfm?articleid=1177

This article analyzes Microfinance as a growing market and gives information about how private for-profit industries are interested partnering with microfinance groups. The article includes statistical information about loan repayment rates, as well as a discussion of the pros and cons of private for-profit industries entering into a economic institution based in a tradition of grants and gifts. I discuss the future of microfinance and use data from this article to support my claims that as long as the principles of Universalist Humanism are upheld, private for-profit industries will not be able to dismantle the positive effects of microfinance.

Lending to Women Makes Good Business Sense -- and Lifts Up Whole Communities - Knowledge@Wharton. (n.d.). . Retrieved June 2, 2010, from http:// knowledge.wharton.upenn.edu/article.cfm?articleid=1218

This article investigates the limited options for women due to limited financial access and social power in their communities. Many turn to prostitution as a way to earn money to support themselves and their families, and risk danger and death every day. I use statistics from this article to emphasize the importance of women achieving a level of financial security so that there is less of a chance that they will be forced to resort to the world's oldest profession.

Meadows, D., Meadows, D., & Randers, J. (2004). Limits to Growth: The 30-Year Update. White River Junction: Chelsea Green Publishing Company.

This book source provides statistical background and evidence for the current state of Global Climate Change and existing environmental resources. Its thesis is an urgent call to regulate growth through ecologically-friendly technologies and modified behavioral practices, which supports the main argument of my paper very well.

Mission | 350.org. (n.d.). . Retrieved June 5, 2010, from http://www.350.org/mission

This website's sole purpose is to promote the international campaign to limit carbon production and carbon dioxide accumulation in the atmosphere in order to get the earth underneath the safe limit of 350 ppm CO_2. This website is a testament to how grassroots

movements can be large scale and international. I used this source to explain what the safe level is and illustrate that it will take a global effort to get below 350 ppm CO_2.

Mission and Vision | Women's World Banking. (n.d.). . Retrieved June 11, 2010, from http://www.swwb.org/mission-vision

Peabody, J., Riddell, T., Smith, K., Yaping, L., Yanyun, Z., Jianghui, G., et al. (2005). Indoor Air Pollution in Rural China: Cooking Fuels, Stoves, and Health Status. Archives of Environmental & Occupational Health, 60(2), 86-95. Retrieved from Academic Search Elite database
This

Science@Berkeley Lab: A Mission to Darfur. (2006). . Retrieved May 24, 2010, from http://www.lbl.gov/Science-Articles/Archive/sabl/2006/Mar/01-Darfur.html

Sachs, W. (1999). Planet Dialectics: Explorations in Environment & Development. London: Zed Books Ltd.
This book source examines "development" as a worldview, and encourages the abandonment of the Western ideal of development in the effort to liberate people's minds to find a new way of looking at and providing solutions to the major environmental, economic, and ethical challenges facing humanity today. I used information from this book as support for my thesis on innovating Eco-Behavioral practices in rural periphery country development.
Sachs, W. (1992). The Development Dictionary. (2nd ed.). London: Zed Books Ltd.

Tuhiwai Smith, L. (2008). Decolonizing Methodologies: Research and Indigenous Peoples. (12th ed.). London: Zed Books Ltd.
This book source is an analysis of research and development aid work with "imperial eyes" and how this affects indigenous communities. This book provides a firsthand indigenous counter story to prevailing western conceptions about the study of indigenous groups, and analyzes the history of development of rural periphery countries (from colonization to post-colonization) and makes suggestions for how development should include indigenous community members. I use her suggestions and anecdotes to provide support for my section on strengthening indigenous identity through the innovated EcoBehavioral model.

Watkins, K. (2008). Human Development Report 2007/2008. United Nations Development Programme, 1-31. Retrieved March 12, 2011, from http://hdr.undp.org/en/reports/global/hdr2007-8/
The 2007/2008 Human Development Report confronts the challenges Global Climate Change presents head on, and makes many important points about the unfair realities of the situation– the poorer countries will be disproportionately affected by the extreme climate changes and other effects of global climate change even though they contributed the least historically to the problem. I use several of the statistics and statements from this edition of the Human Development Report to support my statements about the urgency for change to a more environmentally-conscientious Eco-Behavioral model.

Senior Project Outline

I. Introduction
    A. The "apocalyptic future" as a result of climate change;
        1.possibly start with interview of Maya Lukoff, aid worker who has experience with ProMujer, rural development work, and very interesting story about Unicef and high efficiency stove roll-out program which explains the importance of the Human Connection
    B. Identify problem: environmental destruction/devastation and subordinate position of women in underdeveloped communities
    C. Identify method of response: craft solutions that include objectives in the three most important areas of the problem– technological inefficiency, microfinance/capital investment, human connection
        1. most important is New Humanism (Club of Rome), which facilitates technological changes and capital investment; all three together can create a masterful response to rural development issues and the low social status of women

II. Conflict Feminist Perspective
    A. Explanation about why women are treated as 2nd class citizens, and why they should be given special consideration in aid development projects

III. Modern Development
    A. Definition, linkages to colonialism/imperialism/Eurocentric ideology, explanation of application and its importance to this analysis of rural development limitations/impediments/and overall stewardship of the environment
        1. Can development be sustainable?
        2. Should all rural communities develop in the same ways?
        3. How does the development of periphery countries affect modern international relations, and the behavior of people living in industrialized nations

IV. Global Climate Change
    A. Explanation of the current situation: Limits to Growth statistics and analysis
    B. Wedge Theory
        1.Explains how solutions to Global Climate Change take on one section or "wedge" of the problem at a time
            a) provides support to how technological improvements and their affects on Global Climate change (primarily carbon dioxide accumulation in the atmosphere) can be measured

V. Technology
    A. The Development Dictionary, Sachs– The most important thing to recognize about the improved technology aspect of this puzzle is that we must break away from traditional western ideology and decouple technological improvement from increased production.
        1.Traditional Western ideology about technological innovation has been firmly linked with increased production– this is not suitable for most rural periphery communities.
    B. The technological innovations of the Western world are often invalid and inappropriate for culturally different, rural populations in Periphery nations. There is a wide spectrum of human needs, and technological innovation may serve its purpose more effectively if instead of being designed for mass production (mass numbers), it involved a specified intent for a certain population.

C. "Ultimately, this futile attempt to create the conditions for the good life principally through the development of the forces of production has to take place on the basis of a higher, ever increasing flow of materials, energy, and information, which is plundering and destroying the planet." (278, The Development Dictionary)

    1. Reasons why I selected high efficiency stoves as the method of improved technology

        a) simply an improved design of a mode of technology already used in these communities.

        b) It relies on found materials which can be procured in the local environments, but it is not a foreign concept which requires indoctrination of Western ideals or infrastructure.

        c) It is also a technology which is meant to improve the health of both the individuals using it and the earth, and in its lifetime it will be a net reducer of environmental pollution.

        d) In contrast, explain briefly technologies that would not be a good investment at this time (such as electric cars) and why

            (1) "For cultures of other countries, the requisite psycho-social preparation of people and the cultural transformation looks much more traumatic because it confronts them with an essentially alien culture." (285)

                (a) Robert Jungk– "trojan machines" "through technological 'development aid' more euphemistically called technical assistance, from the industrialized countries, they receive 'trojan machines' which conquer their culture and society from within." (285)

D. case study= high efficiency stoves

    1. traditional methods (3-stone fires), its impacts on women, impacts on environment

    2. high efficiency stoves description, how it addresses the problems of the original method; versions made with adobe/steel/etc and how this affects local economic endeavors, easier to incorporate into local communities where adobe construction is common

    3.Problems with this method

        a) will not succeed on the large scale without active feedback and followup methods, which will provide site-specific information crucial to the construction of the stoves, demonstrations and workshops to instruct people on how to use them, etc.

VI. Microfinance

  A. Development of microfinance, its principles and application in rural countries

  B. Problems with this method

    1. could actually be counter-productive (women could be abused/manipulated, suffer the double burden of raising children and working all day)

    2. How do rural communities fit into the larger global economy? How can women succeed in the global economy?

VII. Human Connection/ Global Solidarity

  A. This is a somewhat abstract piece of the puzzle, but it is the most important

  B. One concrete way to established the sentiment of a global identity is through field research

    1. In the grand tradition of Franz Boaz and Salvage Ethnography, except with the intention of counter-salvage or Restorative Ethnography

        a) this involves understanding cultural specificities within a larger framework (can use help of local government agencies, existing studies, but most important is field research, actually crossing those imaginary state and country boundary lines and extending yourself beyond your native comfort zone/surroundings); understand idiosyncrasies;

        b) basic facts– matrilineal/local, patrilineal/local; resource base, subsistence/economic methods;

        c) restorative ethnography is designed to preserve local ways of life and provide them with the tools to become productive leaders of their own communities, while avoiding being sucked into the mainstream industrial age

VIII.   Conclusion

    A. How this assertion on how to address environmental issues by first focusing on raising the social position of women can be applied by certain groups (governments, non-profit institutions, ordinary people)

    B. Zapatista Case Study

"A sustainable society would be interested in qualitative development not physical expansion. It would use material growth as a considered tool, not a perpetual mandate. Neither for nor against growth, it would begin to discriminate among kinds of growth and purposes for growth. It could even entertain rationally the idea of purposeful negative growth, to undo excess, to get below limits, to cease doing things that, in a full accounting of natural and social costs, actually cost more than they are worth."
    -Dennis Meadows, Donella Meadows, and Jorgen Randers (Meadows 2004, 255).

Frankly, Global Climate Change has cast a dark shadow over our future. Apocalyptic forecasts for the next century include the melting of huge portions of arctic ice, causing ocean water levels to rise and whole islands to submerge, as well as the complete extinctions of beloved habitat-specific species due to polluting anthropogenic activities. While the earth is suffering due to human activities, the quality of life for the majority of the earth's inhabitants is in desperate need of improvement. The 2007/2008 Human Development Report recognizes that "in the long run climate change is a massive threat to human development and in some places it is already undermining the international community's efforts to reduce extreme poverty" (Watkins 2008, 3). The growing inequality between the consuming "developed" core countries and the "underdeveloped" peripheral countries is based in the long history of European colonialism conquering the far reaches of the earth, championing the cause of "progress" in the form of development. The lure of the glamorous side of the western lifestyle can overshadow the many negative behaviors associated with it and the fact that it is incompatible with the available resource base. If every country lived like America, it would require five or six earths to meet the consumption and waste needs (Sachs 1999).

While the western world has dominated global resources at the expense of peripheral nations, the earth will not discriminate when it retaliates against the high levels of consumption western development and behaviors require. Destructive hurricanes and record-breaking snowstorms will not stop at country borders, just as extreme temperatures and massive flooding will not wait while we deny the existence of Global Climate Change and refuse to change our

behaviors. While a barren earth seems like a distant, and to some, unlikely, possibility; it is actually a very real consequence of the behavior of an ever-consuming, careless population– especially because our resource base is overwhelmingly non-renewable, finite materials.

In order to preserve the earth's remaining resources, action must be taken now. Many different people have thrown their support behind one theoretical solution or another, but most of the "quick fixes" fail to address the root cause– the behavior of humankind as a whole. I propose that it is possible that some of the most effective solutions to the environmental crisis can simultaneously focus on social problems, and more importantly, can elevate the social position of women in rural communities through an innovated Eco-Behavioral model. Eco-Behavioral life choices are any human behaviors within social ecologies (family, school, work, and so on) that impact environmental resources. By innovating the Eco-Behavioral model of the world system today in various ways, human beings can actively work towards a healthier earth through simple lifestyle choices. I suggest innovating the current Eco-Behavioral model in rural periphery countries through ecologically appropriate technology, investment of financial capital, and restorative ethnography, all guided by the principles of Universalist Humanism– which is essentially the glue that holds these projects together. Universalist Humanism expands upon what Aeurelio Peccei, industrial magnate and founding member of the Club of Rome, referred to as a "new humanism," which in 1981 he proclaimed

> "must be capable of restoring within us... love, friendship, understanding, solidarity, a
> spirit of sacrifice, conviviality; and it must make us understand that the more closely
> these qualities link us to other forms of life and to our brothers and sisters everywhere in
> the world, the more we shall gain" (Meadows 2004, 282).

Universalist Humanism, also referred to as the Humanist Movement, was founded in 1969 by its charismatic champion Mario Luis Rodríguez Cobos, also known simply as Silo. Universalist

Humanism believes in strengthening the human bonds between the many unique peoples of the world with the intention of creating a "universal human nation" (Document). In direct opposition to the homogenization of culture that has been a main side effect of globalization in modern times, the ultimate goal of Universalist Humanism is to achieve a world "diverse in ethnicity, languages and customs; diverse in local and regional autonomy; diverse in ideas and aspirations; diverse in beliefs, whether atheist or religious; diverse in occupations and in creativity" (Document). Universalist Humanism seeks to awaken the masses of the world to their common suffering and motivate them to make conscious changes, shattering their attitudes of indifference to each other and the state of the world as a whole. Universalist Humanism focuses on implementing fundamental changes to human life through nonviolent and collaborative efforts. These will in turn change overall social structures resulting in increased equality and a better quality of life for all human beings because every human being has intrinsic value simply from being born (Document).

Humanists focus on addressing the immediate needs of human beings and encourage "the changes they believe are most suitable and possible for these times in which they happen to live" (Document). The goal of development projects working under Universalist Humanism principles is to achieve a genuine sense of connectedness that overcomes any possibility of ethnocentrism in an effort to provide assistance that will raise up women and their communities without abandoning their cultural identities. Prevailing western attitudes tend to over emphasize the importance of technology and money, and downplay the critical role of modifying human attitudes and behaviors to achieve a healthier earth. In reality, money and technology are simply tools, and the actions performed by living, breathing human beings are what make them work. For too long, women across the globe have been denied equal access to such tools, and providing

them with a fair opportunity under the framework of Universalist Humanism may in turn provide avenues for major global change.

Terminology

I have purposefully abandoned the use of the common terms "developing" or "underdeveloped" and "developed" in favor of "periphery" and "core" or "western" nations in order to rework the way language is used to describe the status quo of global inequality. Core nations have completed demographic transitions and reaped the benefits associated with it: low birth rates, low death rates, and slow population growth, typically ushered in by urbanization and industrialization (Greenhalgh 1995, 5). Another feature of core nations is that they have traditionally been the European colonizers of global history, and often have achieved core level status by consuming the resources of periphery nations at the expense of the local peoples. Periphery is the term that represents the nations in the process of demographic transition, as they are on the outskirts of achieving the low birth and death rates, and global status that characterize fully industrialized core nations. Using the terms "peripheral" and "core" is a deliberate attempt to avoid the social darwinism concepts of progress, a common assumption that as a country moves from "underdeveloped" to "developed," it is transitioning from "primitive" to "civilized" (Sachs 1999).

As First World and Third World terminology has faded out of popular use, likely because of its self-contained ranking system, the terminology of "Developed" vs. "Developing" or "Underdeveloped" may also follow the same path. The goal is to avoid approaching global concerns, especially those rooted in rural peripheral nations, with assumptions that "western ideas about the most fundamental things are the only ideas possible to hold, certainly the only rational ideas, and the only ideas which can make sense of the world, of reality, of social life, and

of human beings" (Tuhiwai Smith 2008, 56). Or, just as objectionable, that only peripheral

nations are the ones that need to make changes in response to the concerns global climate change

presents. That they must delay or forgo entirely implementing the technological and medical

changes that go along with demographic transition so that the western nations can continue their

gluttonous trajectory is not a viable or desirable option. This paper is advocating behavioral

changes across country boundaries, and appropriate application of technological and economic

measures guided by Universalist Humanism, which will lessen the global reliance on the earth's

limited resources and use those resources more effectively. The intention through these case

studies is not to "deprive" people in periphery nations of modern advances in technology or

access to western knowledge or resources, but instead to advocate measures that will encourage

rural populations to strengthen the roots of rapidly disappearing indigenous cultural practices and

achieve a more sustainable lifestyle.

The Foundation of the Innovated Eco-Behavioral Model

The facts on Global Climate Change provide the background for how environmentally-

conscious programs can be structured in order to tackle the monumental problem of

anthropogenic environmental destruction. Feminist Conflict perspective provides a clear

explanation as to how and why women suffer as second-class citizens in communities throughout

the world. Within feminist conflict theory, a discussion of the influence of colonization and

imperialism illustrates how the global divide between core and periphery nations was created,

and provides the context for understanding why targeting development on rural poor women in

periphery countries will make lasting social changes in the world system. The combination of the

pressures of Global Climate Change and the theoretical perspectives of Feminist Conflict Theory

and Post-colonialism combine to create the Innovated Eco-Behavioral model, which produces

solutions guided by the principles of Universalist Humanism, in the areas of ecologically appropriate technologies, capital investment, and restorative ethnography (see figure 1). The case study of high-efficiency stoves is a specific example of how improved technologies can positively change the lives of women in disadvantaged countries and the health of the earth as a whole. Microfinance, especially the practice of microloans, is a case study which exemplifies an appropriate method of fighting the cycle of poverty by increasing the capital in the hands of previously disenfranchised women, with long term benefits for rural communities. It is very important to remember that neither technology nor money can solve the problems of the world without the drive and commitment of human beings to make lasting changes, primarily through necessary revisions to everyday behaviors. The final element of the Innovated Eco-behavioral model is restorative ethnography, which is a method of developing site-specific research procedures and human to human connections in order to craft appropriate Eco-Behavioral models for individual groups.

Global Climate Change Facts and Figures

While there are many costs associated with the various steps to control and to decrease the amount of carbon dioxide particles in the atmosphere, these are minor compared to the detrimental affects unbridled carbon production will do to the life forms on the planet, and the planet itself. Carbon is one of the naturally occurring greenhouse gases (GHGs). The Greenhouse warming effect is natural– without it, the earth would be about 60 degrees Fahrenheit colder and covered in ice. However, since the Industrial Revolution there has been a steady increase in the concentration of GHGs in the atmosphere (See Figure 2). Anthropogenic greenhouse gases are the gases contributed by human activities; these gases are responsible for shifting the atmospheric balance and causing the unpredictable and possibly apocalyptic climate changes

predicted by climate scientists today. Due to anthropogenic GHGs, "the Earth has warmed 0.6 ±

0.2 degrees Centigrade since 1860 with the last two decades being the warmest of the last

century" (Meadows 2004, 113-114). Since 1900, "sea level has risen 10-20 cm" and the Earth's

overall climate system is changing both globally and regionally (2004, 114). Carbon dioxide

makes up 49 percent of anthropogenic GHGs and presents a crucial opportunity to achieve

substantial change by enacting policies and reworking behaviors to decrease this number

(Mission). Currently, the earth's atmosphere has 392 parts per million (ppm) Carbon dioxide and

climate scientists estimate that 350 ppm is the safest limit for humanity (Mission). We have

already exceeded the safe limits, and must make behavioral changes sooner rather than later,

because "while we pursue adaptation we must start to reduce emissions and take other steps at

mitigation so that the irreversible changes already underway are not further amplified over the

next few decades" (Watkins 2008, 4). What is especially troubling is that the effects of Global

Climate Change, such as extreme weather events and sea level rise, are "still going to affect the

poorest countries significantly even if serious efforts to reduce emissions start immediately" and

are likely to disproportionately affect poorer periphery countries in the short term (2008, 4).

Feminist Conflict Perspective and a Brief Discussion of Colonialism

Feminist Conflict perspective explains the current social position of women and why it is

of the utmost importance to provide them with assistance. Gender serves a basic organizing

principle of society and separates women into a social position that is not only different from

men but also unequal (Tuhiwai Smith 2008, 45). Some cultures have more than two gender roles,

and many have different gender expectations, but in a general sense women are expected to raise

children, perform household duties, and obey the commands of their male counterparts. While

there is some connection to biological requirements or restraints, overwhelmingly, gender roles

are created by social practices and norms. Most women are prevented from receiving adequate

education by the social norms of impoverished rural societies. Often, the social norms are legally enforced since women lack an adequate voice in policy-making institutions in peripheral countries. According to the 2010 Human Development Report, although "national parliamentary representation, which reflects women's visibility in political leadership and in society more generally, has been increasing over time... the global average is still only 16 percent" (Klugman 2010, 91). Because of this lack of political representation, typically, women have restricted civil and property rights, and most are treated like the property of men. The result of such norms is the oppression of women and female children by a dominating patriarchal culture often found in the majority of countries in the world. Giving aid to women (especially in peripheral countries) will make the most impact on some of the biggest problems facing the global population today– such as overpopulation, epidemic disease, malnutrition, social inequality, and environmental degradation.

Feminist theory for women in peripheral nations is more than just an analysis of the women's role and the relationship between men and women—it must also take into account that those women come from a history of subjugation by colonizing core nations, as well as their peers. Post-colonial theory examines the history of colonialism and its lasting influence on social structures. The colonizers quelled any notion that the indigenous groups had their own systems of order because those colonized "were not fully human, they were not civilized enough to have systems, they were not literate, their language and modes of thought were inadequate" and thus it was justifiable to treat them as less than human (2008, 28). Bought and sold as commodities, indigenous peoples were less-than-human slaves and forced to work on land taken from other groups of indigenous peoples (Tuhiwai Smith 2008, 27). Colonizing men often engaged in sexual relations with indigenous women, leading to communities stigmatized with the terms "half-breeds" or "half-castes," and often prevented from fully belonging to either group (2008,

27). Social norms of exclusion and persecution were often made law, which indoctrinated successive generations into accepting the status quo created by those in power, the colonizers. The post-colonial influence is not the same for all countries, just as gender roles are not identical in every country. For women, fighting this dual oppression—being second class citizens within their own communities and sitting in a low place on the global totem pole– is a difficult battle to win. Targeting women in periphery countries for aid and support is reasonable, and has the potential to result in lasting changes to the status quo.

In order to make up for the exploitation and inequality of the past, green-inspired programs need to engage and incorporate women within rural peripheral countries. The goal of the two case studies in this paper is to improve the health and quality of life for the individual woman with programs that are also designed to make positive impacts on the environment. The ultimate goal of these case studies is to raise the social status of women to a more powerful and respected position in societies throughout the world while creating a healthier world for us all.
Ecologically Appropriate Technology

The most important criteria to recognize about the improved technology aspect of this puzzle is that we must break away from traditional western ideology and decouple technological improvement from increased production. This dogmatic approach has created the world we live in today, which is one of groundbreaking technological achievements, but one where we treat human labor as the cheapest commodity. The technological innovations of the western world are often invalid and inappropriate for the culturally diverse rural populations in periphery nations. There is a wide spectrum of human needs, and technological innovation may serve its purpose more effectively if, instead of being designed for mass production, it involved a specified intent for a certain population.

One of the main reasons I selected high efficiency stoves as the method of improved technology is because it is simply an improved design of a mode of technology already used in these communities. It relies on found materials which can be procured in the local environments, and it is not an entirely alien concept which requires indoctrination of foreign ideals or infrastructure. It is also a technology which is meant to improve the health of both the individuals using it and the earth, and in its lifetime it will be a net reducer of environmental pollution. In contrast, a technology such as electric cars would be incredibly inappropriate in these respects. It would require an imposed network of energy-producing factories (nuclear, solar, wind, but most likely coal or wood-burning), driving lessons, repair shops, insurance infrastructure, and so on, which would bring additional psychological changes and economic problems and requirements. It may also trivialize existing cultural norms and practices, resulting in a cultural backlash– disrupting cultural patterns and what existing infrastructure may have been in place. The goal of implementing increased-efficiency technologies should be to retain the connection to the culture, while improving daily human health and the long-term wellness of the earth. There are many other technologies I could have picked to act as case studies for the Improved Technological Efficiency section, all of which must go through a process of determining if they are appropriate and applicable for the rural host group. High-efficiency stoves can be used throughout the world with very little change to daily life besides faster cook times, less fuel consumption, and less air pollution.

Fuel for the High-Efficiency Fire

Most rural communities use the traditional three-stone fire technique, or a variation of it, where three stones in a triangular shape support the cooking pot as the fire burns beneath it. This method does not achieve complete combustion of the solid fuel materials (which often consist of

wood, coal, animal dung, and crop residues) and is typically stationed indoors to provide lighting and heat for rural homes, which causes harmful indoor pollution. Solid fuel use is "highest among the poor" and up to 90% of rural households utilize these materials, making indoor air pollution a serious and devastating problem in rural communities throughout the world (Peabody 2005, 86). An estimated 600-800 million homes which currently depend on traditional three-stone stove technology could switch to high-efficiency stoves, resulting in significant changes in carbon and smoke pollution production (Adle 2010).

When rural families use open fires or poorly vented stoves indoors, the resulting smoke accumulates within the home and is full of toxic pollutants such as carbon monoxide, sulfur oxides, nitrous oxide, carcinogenic polycyclic organic matter, formaldehyde, and other small particulate matter and residues. The smoke burns the eyes and contaminates the lungs of women and children as they breathe in "amounts of smoke equivalent to consuming two packs of cigarettes per day," according to the World Health Organization's 2006 report Fuel for Life: Household Energy and Health (Adle 2010, A126). Several Chinese studies found that indoor coal smoke correlates with lung cancer, and these studies provided further support for the hypothesis that infections of the lower respiratory tract in children are also linked to burning solid-fuel indoors with inefficient stove technology. Solid fuel smoke contributes to 1.6 million premature deaths annually from adult chronic obstructive pulmonary disease (COPD), pediatric lower-respiratory infection, and lung cancer; two thirds of those deaths (over 1 million annually) are children (Peabody 2005). In addition to these devastating facts, carbon monoxide poisoning is an especially worrisome health consequence of indoor air pollution since about 90% of the smoke from three-stone fires is carbon monoxide (Adle 2010). Health problems caused by short-term carbon monoxide exposure include dizziness, headaches, irritability, dimness of vision,

fatigue, unconsciousness, respiratory collapse, and death. Chronic health problems like reduced birth weight, early onset of cardiovascular disease, sudden infant death syndrome, and increased daily mortality rate have been linked to longer-term carbon monoxide exposure (Peabody 2005).

The black carbon particles produced by incomplete combustion of traditional cook fires accumulate in the atmosphere (increasing the warming effects of greenhouse gases) and on the white, reflective snow packs from the Himalayas to the poles. This leads into a positive feedback effect of increased warming, because the snow is no longer as reflective of the sun's rays as it was before the soot collection and this enhances heat absorption, resulting in a dangerous cycle that continues to build on itself if we continue to contribute to the problem. Close to two-thirds of black carbon emissions in South Asia are caused by burning solid fuel and biomass (Adle 2010).

High-efficiency stoves contain the fire in a chamber typically made of commercial materials, like sheet metal or cast iron, that can be purchased or manufactured in most of the host countries. This ensures a much more complete combustion process for the fuel, and prevents the smoke from escaping from the chamber and collecting in the home. Most models include chimneys to move the smoke safely outside of the home. In one study conducted in Guatemala, stoves with chimneys reduced carbon monoxide levels "in the kitchen by about 90% and children's exposure by an average 50% over 48 hours" (Adle 2010, A126). Other tests of high-efficiency stoves in India showed a "50-60% reduction in indoor air pollution levels and 50% reduction in fuel use" (2010, A126). Clearly, high-efficiency stoves can provide major health benefits to rural communities throughout the world.

Collecting firewood for inefficient three-stone fires consumes time and natural resources. Using less firewood on average can relieve women and their families from some of the stress and

cost of procuring fuel. In some cases, women walk several miles each day searching for fuel and spend huge portions of their limited savings on fuel for cooking fires. For women in war-torn areas, like Darfur, collecting firewood can be a life-threatening experience. In Darfur, women leave the safety of their camps because there simply is not enough fuel available to cook meals for their families. These women are often unaccompanied because men avoid leaving the camps for fear of being murdered by the Janjaweed raiders. The land closest to the refugee camps are devoid of trees. As they walk farther and father every day to find fuel for their fires (up to three hours each way in some cases), they risk rape and violent attacks by the Janjaweed. Due to the unsafe conditions beyond refugee camp borders, more than half of the women were forced to resort to buying their wood fuel in South Darfur. This means that families are selling a fraction of their already inadequate food ration to buy fuel for fires. Close to 50 percent of families interviewed in the Otash Camp "had missed meals even though they had food because they did not have fuel to cook their meal" (Science@Berkeley). The estimation of the workers in the Darfur program was that more efficient stoves can result in savings of up to "$150 in fuel wood per year for an average household of seven people" (Science@Berkeley). Thanks to the improved efficiency of high-efficiency stoves, the need to gather outside fuel is minimized and existing stores can be used more efficiently.

In addition to the health improvements provided by high-efficiency stove use, many of the high-efficiency stove distribution programs help to reinforce the existing infrastructures and promote the environmental restoration of the communities they aid. Some programs encourage community service work such as planting trees in order for families to receive high-efficiency stoves. That way, use of high-efficiency stoves is linked with not only the conservation of existing trees, but also their expansion and fostered growth by local recipients of the stoves,

which will allow for the creation of more carbon sinks. Investing in forests is incredibly important in achieving a healthier earth– among the long list of positive attributes of preserved forests, "forests moderate climate, control floods, and store water against drought" (Meadows, 2004: 74). Although they only cover 7 percent of the surface of the earth, tropical forests "are believed to be the home of at least 50 percent of the earth's species" (2004: 74). The amount of the world's natural forests is shrinking as time goes on, and this loss of a renewable resource stock should be noted worldwide as an especially alarming trend of unsustainability (2004). The use of wood as fuel makes up more than half of the world wood use (see figure 3). Using high efficiency stove technologies, thus limiting the destruction of trees to provide fuel for inefficient traditional stoves, has multiple benefits for rural communities and the world as a whole simply through the preservation of existing trees.

Widespread implementation of high-efficiency stove technologies in peripheral nations has the potential to provide the environment with some relief, and improve the standard of living in the areas of physical health, social status, and financial stability for women in rural communities.

The Importance of Universalist Humanism in Technological Projects

Improved technology may positively transform the lives of rural people throughout the world in many different ways, but it will fail if there is no human connection. What is the point of the newest, most efficient technology if it sits unused? Interacting with the target audience and learning about the culture is vitally important to the success of high efficiency stove ventures. There is no room for any type of ethnocentrism or "one size fits all" ideals. In most situations, changing traditional practices takes a significant amount of convincing and demonstrations. People have to see it for themselves. Ashok Gadgil, a researcher from Berkeley Lab's Environmental Energy Technologies Division (EETD), carried out a demonstration which "laid

out an equal number of same-weight bundles of wood in front of each stove" and "as they cooked meals on both stoves, the audiences could see how much faster the wood bundles in front of the three-stone fire disappeared" (Science@Berkeley). The crowd of men and women shared in the excitement of the realization that they could achieve 50-percent savings of their fuel and safer conditions for their women through the use of high-efficiency stoves. At the second demonstration "there were 250 women in attendance and 100 sheikhs, men with governing authority over family and clan groups" (Science@Berkeley). When aid groups take the time to share and connect with the people in the community, the members of the community respond with active participation.

How Bright is the Future of Fire?

The success of the high-efficiency stove technologies will hinge on a few variables. One is whether or not the stoves are correctly suited to the communities to which they are distributed. Incorrect assumptions about cultural practices can lead to glaring errors with implementation and adoption of the new stove technology. Technicians must know what type of fuel is to be used, what food is going to be cooked, the common sizes and shapes of pots used, and the cooking method. This information can vary drastically from place to place (Science@Berkeley). An organized effort at distribution and maintenance is also crucial because, "without manufacturing quality-control and careful instruction in the stove's manufacture and use, the camp inhabitants could end up with stoves that are no better in fuel efficiency than the three-stone fires" (Science@Berkeley). Working under the framework of a relationship-based human connection model, discussed in more detail in the restorative ethnography of this paper, will provide the answers to the crucial design questions and better inform the distributors of stove technologies about local practices and customs.

The sheer volume of people in need of this technology is daunting to some, but it also provides great opportunities for improvement in the lives of rural dwellers and the health of the earth. In Darfur alone, there are 2.2 million refugees in need of 300,000 stoves. Well-planned and concentrated distribution with simple feedback-response methods to correct problems will prevent making "the same mistake 300,000 times" (Science@Berkeley). If all 300,000 stoves are distributed and properly used, carbon pollution in the area from fires will decrease inside and outside of the home, resulting in notable health benefits for women, young children, and the environment– especially because the wood fuel will be more efficiently used and the existing tree shortage issue can be more effectively addressed.

In some areas of the world, the metalworking infrastructure required to make the stoves may not exist where the stoves are most desperately needed. In these cases, local workers must choose between having the stoves manufactured in nearby towns or establishing stove-construction stations within the camps. Either option has the potential to provide jobs and capital to communities within the country, but both require in depth analysis of the local ecology and the group that will be using the stoves. Some organizations have opted to bring outside materials or previously constructed stoves with them, and then charge a fee for each completed stove. If the price gets too high (10-20 USD), it could result in the exclusion of the very poor, arguably the most in need of the technology. In response to this issue, the group Envirofit set up a model that allows customers to purchase high-efficiency stoves by making monthly payments of about 1 USD to a microfinance company until the stove is completely paid for (2010, A129).

When traveling in war-torn, impoverished areas, safety is a primary concern as well, and programs can be derailed and abandoned if conditions in the country are not secure. However, this proves how important assistance is to the women and their families in these areas, as they are

subject to violence and unsafe conditions on a daily basis. Before one stove distribution program embarked to South Darfur, local aid workers (some with ties to Cooperative Housing Foundation International) were abducted and later released, and the UN removed their aid workers from the West Darfur area due to violence and risky working conditions (Science@Berkeley). Despite the actions of the UN, the group continued on their planned journey to distributing high-efficiency stoves to the refugee camps.

It is important to recognize that improved technology is not an infallible, fundamental solution to all the problems in peripheral countries. While it can make critical changes in the financial and personal security of women as well as curb the amount of air pollution in rural areas, it will not magically end world hunger, violent conflicts, or global climate change. However, the evidence of the current programs in action should serve to prove that increasing technological efficiency could result in substantial change that makes leaps and bounds toward a better future than what current practices will yield.

Investment of Financial Capital: Going Green, The Grameen Way

Financial investment in peripheral countries is a complicated issue which deserves attention– it guarantees the spread of the ultimate green, money, and could contribute to the empowerment of women and to programs to improve the health of the earth. While there are many different types of microcredit, generally the term means loans of small amounts of money (from 25-200 dollars) from traditional sources– banks, NGOs, moneylenders, and so on. Grameen microloans did not come into existence until the 1970s with the creation of the Grameen Bank by Professor Muhammad Yunus, Head of the Rural Economics Program at the University of Chittagon in Bangladesh. In 1976, Professor Yunus decided to create an institution designed to give credit to rural poor men and women (Grameen- History). While other banks and

lending institutions have historically ignored individuals from the lower classes by classifying them as "not creditworthy," the Grameen bank cites credit as a fundamental human right (Grameen- Microcredit). What makes Grameen microcredit unique is that it specifically targets poor families, especially women, so that they may "help themselves to overcome poverty" (Grameen- Microcredit).

Microfinance is not intended to close the economic gap between the core and peripheral nations, which is growing wider and wider everyday. The global market place is still a hostile place for the fledgling economic endeavors of individuals from lower socioeconomic groups, let alone those in peripheral nations. Microfinance is meant to break the cycle of poverty within peripheral nations, not achieve a western lifestyle for every person on earth. Poverty conditions support perpetual "population growth by keeping people in conditions where they have no education, no health care, no family planning, no choices, no power, no way to get ahead except to hope their children can bring in income or help with family labor" (Meadows, 2004:46). The ultimate endeavor of projects like microfinance is to fundamentally change this pattern while improving the quality of life for people who have been locked into the cycle of poverty for generations.

In microfinance, the borrower must join a group of borrowers in order to obtain loans, which encourages active community involvement, cooperation, and collaboration. Borrowers may also have multiple loans at one time (Grameen- Microcredit). To ensure that reliable borrowers are receiving funds, a new loan will only become available once the original loan is repaid. This means that "loans can be received in a continuous sequence" but money is not simply given out without awareness of an individual's credit history with the Grameen bank (Grameen- Microcredit). Loans are accompanied by voluntary and mandatory savings programs

to aid the borrower in sustaining their cash flow (Grameen- Microcredit). This is especially important for the impoverished since most individuals live paycheck to paycheck, making it very difficult to save money and build wealth. Loans are paid back in weekly or biweekly installments. A significant feature of Grameen credit is that the bond is solely based on "trust" and lacks any legally enforceable contracts or procedures should the recipient default (Grameen-Microcredit). This program is about "creating self-employment for income-generating activities and housing for the poor," not holding them in debt with massive interest rates if they do not succeed in the competitive capitalist world (Grameen- Microcredit). Regardless of which organization or institution is handling the loan, Grameen credit works to keep the interest rate as close as possible to the market rate in the commercial banking sector, which keeps it in proportion to make the program sustainable, yet not designed to win a large return of funds for the investors. However, inflation rates combined with the high costs of running microfinance institutions can drive interest rates above 25 percent, yet many borrowers are willing to pay these rates "because money lenders charge even more" (Knowledge@Wharton 2005).

Even though it may be tempting to scoff at microfinance, United Nations sponsored empirical studies in Kenya, India, and the Philippines indicate that "the average annual return on investments by microbusinesses ranged from 117% to 847%" (2005). This could be because individuals in poverty are left with no other lending options, so repaying a microloan is an important priority. Because applying for a loan often requires a group of individuals working together, there is a high amount of peer pressure on individuals not to default on the loans, because it could mean "losing microcredit as a financial opportunity for their community" (2005). As of 2005, 30 million small-business people received microloans adding up to $7 billion from over 500 microfinance institutions from around the world, yet an additional "300 million could benefit from microcredit to start viable businesses" (2005). Microfinance has

proved so successful that private for-profit enterprises are starting to partner with microcredit groups, intending to provide additional features such as insurance and savings accounts while raising interest rates.

Although based in grants and gifts, Microfinance is not solely a charitable aid institution, but an organized agent intending to invest financial capital into rural communities in order to build and expand local social capital. Designed to bring "the bank to the people," the long-term plan of the Grameen Bank is to achieve fully sustainable practices in order to expand its outreach without the constraints imposed by limited funding (Grameen- Microcredit). Just as the feminist theory believes that women are not inherently inferior but the social practices and institutions in place create a two-tiered society, the Grameen bank promotes the idea that the poor do not lack valuable skills, but institutions and policy create poverty, and force people to accept impoverished social positions. In order to end poverty, changes must be made to those institutions or new ones must be created. The Grameen bank's influence is more than just dollar signs– it positively impacts the lives of children in disadvantaged countries by providing scholarships and student loans for higher education. The Grameen bank also gives special attention to the "formation of human capital and concern for protecting environment" (Grameen-Microcredit). By providing special incentives for budding women entrepreneurs to create businesses founded in environmental protection principles, as well as social work, microcredit can make macro changes to the social and ecological environment of rural peripheral communities.

Following in the footsteps of the Grameen Bank, there are several other organizations such as Kiva.org and Women's World Banking that focus financial investment specifically on the rural poor in peripheral countries. While Kiva.org focuses on men and women, Women's World Banking dedicates all of its microloans specifically to women and is based on a mission

statement that proclaims, "when a woman is given the tools to develop a small business, build assets, and protect against catastrophic loss, she is empowered to change her life and that of her family" (Mission and Vision). The websites of these programs create a personal, intimate connection between the lender and the borrower by providing pictures and stories from the borrowers themselves. In the week of May 31st, 2010, by June 2nd (Wednesday) 16,119 lenders had made loans through Kiva.org (Kiva). If each of these investors only contributed $25, a small amount for most Americans, a total of $402,975 was invested in rural communities throughout the world. Through these microlending programs, it is obvious that a small amount goes a long way.

Why Lend to Women?

Women are the focus of these programs, and this paper, not only because they have been historically oppressed since agricultural societies dominated the world system, but simply because it makes more financial sense for development groups to invest directly in women. According to aid workers, women "are far more likely to spend their meager incomes or loans received through self-help groups on the family" (Kapur 2010). The problems aid groups encounter when working with men range from irregular attendance at meetings and poor loan repayment rates to alcoholism and violence. Even though men make more money on the average than their female counterparts, "they tend to spend much of their income outside the household" on things like entertainment and alcohol (2010). Also, when food supplies are limited, the male members of the family are fed at the expense of the females, and even the children. Men in less developed countries subordinate and oppress women by this unequal food distribution, by withdrawing young females from school, by arranging marriages at early ages, and by physical abuse (2010). Without education, proper nutrition and medical care, most women remain in a

position of powerlessness with few opportunities outside of bearing children, and patriarchal practices continue unchallenged. Aside from the immediate financial security microloans give to women and their families, the money may also generate more power for women in the community and safer conditions for the women that were once treated as inferior, second-class citizens. Greater financial security for women in periphery countries can contribute to increased educational attainment for young women, which "expands women's freedoms by strengthening their capacity to question, reflect and act on their condition and by increasing their access to information" (Klugman 2010, 91). Greater education is also correlated with a trend of decreased birth rates and more young women delaying reproduction which can have many positive effects, since a high adolescent fertility rate in a country "is associated with greater health risks for the mother and baby and tends to prevent young women from going to school, often destining them to low-skilled jobs at best" (2010, 91).

Programs such as Grameen bank and Kiva.org also favor giving money directly to the women motivated enough to enter their programs in order to avoid placing money in the hands of possibly corrupt government officials. The lack of legal rights, education, and financial security can force desperate women into unsafe work without legal protection, including drug smuggling and prostitution. Laura Lederer, a senior advisor with the U.S. State Department, found that of women involved in the sex trade, "64% had been threatened by a weapon, 80% had substance abuse problems, and 68% suffered from post-traumatic stress disorder" (Lending). For women, having the opportunity to form their own business (including grocery stores, retail, construction, and many more) is truly a life-changing opportunity. One borrower in Nepal relayed her experience to Kiva saying,

> "Before microfinance, all of the decisions in our family were made by my
>
> husband. I didn't get a say in anything, not even with the decisions that affected

my own children. Now that I contribute the same amount of money to our family expenses, he comes to me and we make every decision together, even the small decisions" (Kiva).

All That is Green is Not Always Gold- The Importance of Universalist Humanism in Microfinance

The more recent trend of private for-profit enterprises trying to slice their own piece of the Microfinance pie is somewhat disconcerting. First of all, Microfinance exists solely because those institutions were ignoring the needs of the poor and barring them from any opportunity to borrow. By partnering with large corporations, Microfinancial institutions may be obligated to bring interest rates up so that they are "more in line with interest rates for the great majority of the borrowers" (Knowledge@Wharton, 2005). The fear is that the motivation behind microlending will no longer be to raise the poor up out of poverty, but instead to make a profit. This is a trend that will need to be observed very closely in the coming years, in order to make sure that Microfinancial institutions are remaining true to the principles the practice is based on.

There could be a backlash by focusing development aid primarily on women– the social relationship between men and women could worsen because of men experiencing feelings of resentment and exclusion. Another significant consequence could be that women are forced to work overtime– juggling the responsibilities of mother, wife, and entrepreneur– and because of this, may fail to adequately perform any of the roles. This is exactly where the principles of Universalist Humanism enter into the equation. Simply flooding a country with money will not solve the root problems of alcoholism, domestic abuse, neglect, and oppression that go along with the ingrained patriarchal attitudes in its communities. Aid groups and local support groups in the respective communities must work to foster improved gender relations, and follow-up with recipients of loans.

Social attitudes in peripheral countries are not the only ones in need of change. Investing capital in disadvantaged communities is, for some in America, an unappealing venture. The "do it yourself, fend for yourself" attitude of the individualistic culture in America presents a major obstacle for most people when considering to donate to the disadvantaged. Most Americans may also have an adverse reaction to donating to individuals in foreign countries, since there is so much poverty within the United States in need of attention. This attitude may be the reason why the United States is not one of the leaders in worldwide aid, even though it is the largest and richest economy in the world. It may take some convincing, but lenders (private and public) will come to learn that donating through a program like the Grameen Bank or Kiva is not charity, but a smart and compassionate investment. The investment is not only repaid to the lender, but repaid many times over by reinvestment in the local communities of impoverished countries. Impoverished men and women often face insurmountable obstacles when trying to escape the cycle of poverty without outside assistance. Under the principles of Universalist Humanism, country of origin will no longer matter, since we all share the responsibility of taking care of each other and our one earth.

One Method of Practicing Universalist Humanism– Restorative Ethnography

The process of forming a global support network of bonded citizens of the world is far from simple. The most important place to start is by breaking down the deeply ingrained cultural practices of Eurocentrism, which rank cultures based on western ideals of industrial development. Many existing development aid groups today are founded based on principles of equality, justice, and human and environmental rights, but some still chose to provide aid from afar, dropping in food or technologies with little supplementary contact. This can cause little change in the overall quality of life or environmental conditions, since often detailed

demonstrations and follow up programs are required– as many of the groups who encourage active, involved participation know full well.

One of the most effective ways to learn about a foreign culture is to do field research and live among the people. Although it resembles the grand tradition of Franz Boas and salvage ethnography, I prefer to term it "restorative ethnography." Restorative ethnography maintains the attitude of cultural relativism founded by Boas, that all cultural practices should be understood in their relationship to the host culture and not in comparison to other cultures, and through this lens encourages field work and detailed qualitative and quantitative studies. Restorative ethnography diverges from salvage ethnography in its intention to maintain and uphold cultural uniqueness, instead of documenting communities for pure research, mechanically recording practices and customs for later generations to study. This means speaking the host language, living with the subject group, and remaining honest and open throughout the process, with the goals of enhancing cultural expression and creating ecologically appropriate solutions for local environmental problems. Restorative ethnography allows more site-specific research, providing detailed information and feedback about how changing practices through methods like say, high-efficiency stoves or microfinance, affects the women and their communities. By crossing the physical state and country boundary lines, as well as the imaginary dividing lines between cultures, researchers can begin to understand cultural idiosyncrasies that will help them form the Eco-Behavioral model best fit to specific groups.

Restorative ethnography is intended to preserve local ways of life and provide the subject group with tools so productive members can take on leadership roles and traditional ways of life can be upheld and enhanced. Working at the individual level to achieve a genuine sense of the culture and a connectedness to the people will provide better information for the implementation

of improved technologies and microfinancial investment which will, hopefully, elevate the position of women without abandoning their cultural identities. Hopefully, this will help the remaining rural populations of the world avoid the increasing trend to surrender to the mainstream industrial age– indicated by the mass exodus from rural areas to already over-crowded urban areas and succumbing to urban poverty, factory work, disease-ridden conditions, and the increasingly impersonal relationship with the land and environment which results from city living (Meadows, 2004). This has been the traditional trend of "development" in periphery countries and it has lead to many of the compounding environmental and human rights issues we see today. As the earth's urban populations continue to rise (over 50% of the world's population since 2008), with between one fourth and one half of urban residents in the developing world living in poverty, continuing to follow along the projected growth lines will only make social and environmental change more difficult (see figure 4).

Collecting information and feedback from coordinated programs can assist communities in protecting traditional practices and enhancing or adapting their expression given the changing circumstances imposed by global climate change. Clearly, "idealistic ideas about community collaboration and active participation need to be tempered with realistic assessments of a community's resources and capabilities, even if there is enthusiasm and goodwill" since many obstacles exist to forming a stable human to human connection under the principles of new humanism (Tuhiwai Smith 2008, 140). Developing a dialogue between aid groups or social scientists from Western nations and indigenous group members may be a difficult process given the historical pattern of some outsiders to patent, co-opt, exploit, or commodify indigenous practices. This obstacle presents an exciting solution– members, specifically women, within these communities can act as their own representatives and data collectors. Restorative

ethnography can provide indigenous women with the opportunities to be seen as role models within their own communities, hopefully starting a self-sustaining chain reaction of social change in gender role construction and opportunity perceptions for women.

Restorative ethnography principles are mainly advice for the sociological and anthropological communities and development aid groups, but the average individual should not shy away from opportunities to travel or work with aid groups. For most of the western world's citizens, the most important changes to make in one's daily life are behavioral. The most desirable outcome of changing behaviors, economics, and technologies in the peripheral nations to meet with a more culturally-restorative and site-specific design would be that in conjunction with this change, the industrial world will respond with one of its own– one which limits consumption, focuses on improved efficiency of existing technologies, and expands renewable energy resources to meet the highest demand possible. We have reached a point in our development where the western world is going to have to scale back its consumption and focus on alternative, cleaner technologies to achieve even the current level of production into the future. Even though new "environmentally-friendly" technologies hold incredible potential for the future, regardless of their capabilities, human behavior must change drastically in order to preserve what we have not yet destroyed and improve the quality of life for the majority of the earth's citizens.

In Conclusion- One Last Case Study

Settled in Chiapas, the highlands of Mexico, the Zapatistas live a peaceful, self-sustained rural lifestyle. Although the organization arose from an armed conflict between the government of Mexico and 3,000 indigenous peoples on January 1, 1994 (purposefully timed to protest the North American Free Trade Agreement), the lasting legacy of the Zapatista community is a focus

on creating a revolution of social change (Harvey, 2005). As a politically autonomous Mayan indigenous group, the Zapatistas are one example of the increasing trend of indigenous and rural-based communities to fight for the defense of human and environmental rights against the pressures of increasing urbanization and globalization. They openly invite people to come live with them and experience their way of life firsthand, by embracing the use of the internet as a medium for social change. They have chosen an Eco-Behavioral model that works in their ecology and encourages the strengthening of indigenous practices, such as speaking the indigenous Mayan language, Tzotzil.

In a targeted effort to make a positive impact of the general health (especially the health of women and babies) of communities within two zones in Chiapas, Mexico, the Zapatistas organization has developed a comprehensive health care training program. Even though the "indigenous women of Chiapas are among the most marginalized and underserved of all global populations," they often take on the roles of practitioners of healthcare for their communities. The training of indigenous health care practitioners is based in a curriculum created by a core group of experienced women health promoters from months of meetings with specialized teams of medical professionals. A special emphasis is placed on gathering and teaching sexual and gynecological functioning information to indigenous women for them to use in service to their communities in order to make a larger impact on reproductive health and practices in the area.

Founded in 1996, new Zapatista schools have been reinforcing the Maya cultural history, while promoting social justice for the small indigenous communities, with volunteer teachers appointed by the Maya community itself. The Schools for Hope project of the Zapatistas is an admirable model for providing comprehensive, culturally-supportive education for local indigenous groups in Chiapas. The group promotes team ball sports, such as basketball, to carry

on the Mayan tradition of ball court sports, reaffirming their importance of the traditional Mayan culture. They allow non-Zapatista teams to participate, as a sign of open communication and peaceful collaboration with non-indigenous groups. Throughout games of teams of men and women, traditional dances are performed and prayers and blessings in the Tzotzil language are offered to individuals. The community encourages environmental education and sustainable practices, such as beekeeping. The practice of beekeeping is a traditional Mayan enterprise, and in a response to the deforestation limiting habitats for bees, the Zapatistas have renewed the practice to sustainably produce the medical, nutritional, and useful products that can be made from beeswax. There is also a strong emphasis on community members working in reforestation projects, gaining technical training in traditional indigenous artisan crafts (such as weaving), and practicing local subsistence farming. As the group grows, they are considering investing in technologies such as solar cookers, solar-generated electricity, rainwater reclamation, and small scale hydro-electric projects, with conscious consideration for the environmental impact such technologies have (Alternate). Despite oppressive actions by the Mexican government, such as the 2008 invasion of the community's corn and banana fields– the society's limited food sources– under the pretense of searching for drugs ("the Zapatistas neither grow nor tolerate drugs"), the Zapatista community remains strong (Schools). In reality the Zapatistas earn their "rebel" status not from being warring drug runners, but from their ideology and the rapid disappearance of indigenous diversity from modern urban life. Simultaneously improving the health and education of local populations and reviving the use of native cultural practices, spreading the practices of the Zapatistas could change the place of indigenous cultures within the world system.

The model of the Zapatistas exemplifies the aspirations of many social scientists, climatologists and environmentalists, as well as development aid groups. While the details of the Zapatistas cannot be equally applied to all indigenous groups, their overall struggle is a universal problem for most indigenous communities– how to retain the connection to the traditional culture and thrive in the modern industrialized world. The Zapatistas prove that indigenous communities can maintain their own versions of the innovated Eco-Behavioral model, and serve as inspiration worldwide that there are viable alternative options to explore outside of the lures of western life. Guided by the principles of Universalist Humanism, researchers and development aid workers can use restorative ethnography in communities throughout the world in order to determine the potential and impact of ecologically appropriate development technologies and capital investment. This innovation of the Eco-Behavioral model will strengthen global efforts to fight Global Climate Change, the inequality between men and women, and the increasing cultural homogenization of the modern world by modifying what it means to "develop" in the modern world system.
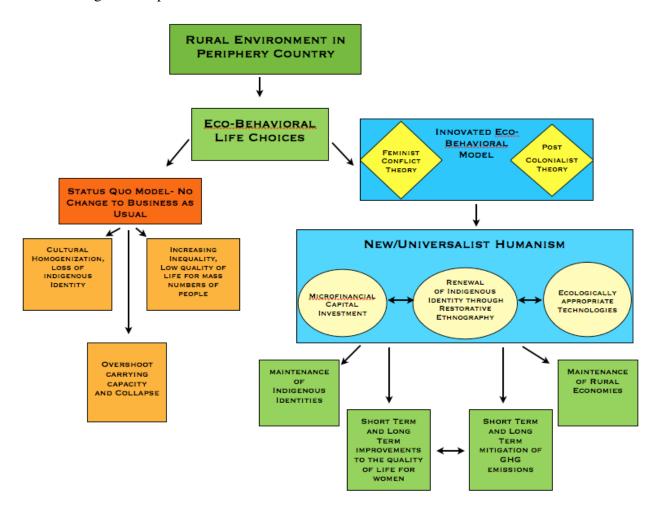
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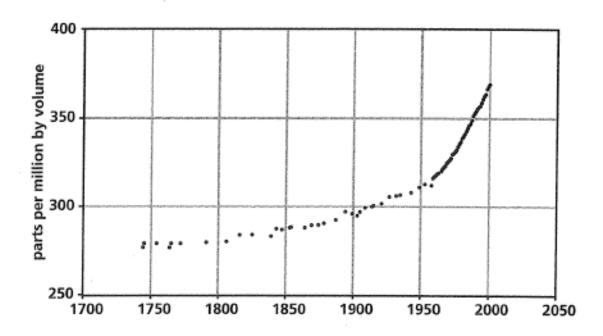

Figure 1- The Eco-Behavioral Flow Chart

Figure 2- Carbon Dioxide Concentration in the Atmosphere by Year

"The concentration of carbon dioxide in the atmosphere has risen from roughly 270 parts per million (ppm) to more than 370 ppm and continues on its growth path. The sources of the carbon dioxide buildup are principally human fossil fuel burning and forest destruction. The consequence is global climate change" (Meadows 2004, 7).
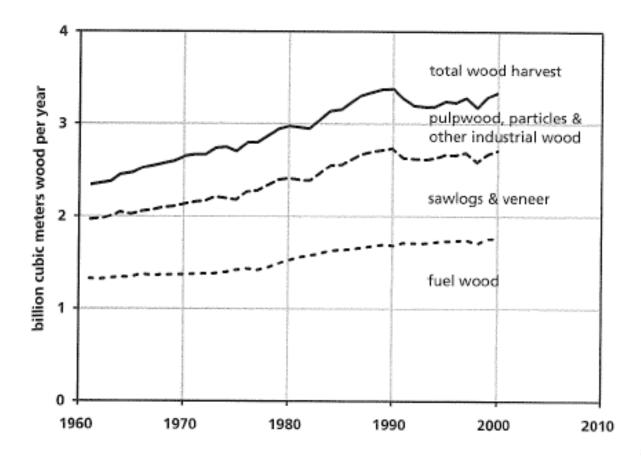
Figure 3- World Wood Use

"The use of wood is still growing, albeit at a slower rate. More than half of the wood cut from forests is used for cooking and heating and small industries... by the poor, often in extremely inefficient wood-burning stoves or open fires. Greater stove efficiency or alternative fuels could supply human need with much less forest consumption, less air pollution, and less labor to gather the fuel" (Meadows 2004, 81).
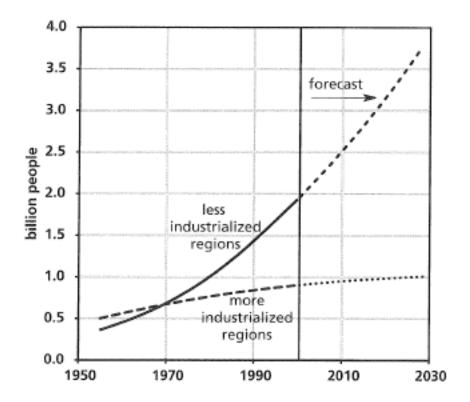
Figure 4- World Urban Population

"Over the half past century the urban population has increased exponentially in the less industrialized regions of the world but almost linearly in the more industrialized regions. Average doubling time for city populations in less industrialized regions has been 19 years. This trend is expected to continue for several decades" (Meadows 2004, 19).

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