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Sustainability with an Ethical Aim: Lessons from an American Nun in Amazonia

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SUSTAINABILITY WITH AN ETHICAL AIM: LESSONS FROM AN AMERICAN NUN IN AMAZONIA

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THE UNIVERSITY OF SAN FRANCISCO
Dissertation Abstract

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Research Topic

Human imagination, an ethical aim and action are the progenitors for reconciliation between humans and their environment. Two examples of such reconciliation are found in Brazil and are the result of the tireless work of an American Nun, Sister Dorothy Stang and the staff of the Iracambi Atlantic Rainforest Research and Conservation Center. The present inquiry portrays the history, current programs, and the potential for the findings to shape the lives of those committed to work toward creating a balance between human endeavors and sustainable environments.

Theory and Protocol

This research is grounded in critical hermeneutics and follows an interpretive approach to field research and data analysis (Herda 1999). This orientation places the researcher and participants in a collaborative relationship that exemplifies the power of conversation and the importance of language to unveil new understandings about our world.

Research Categories

Three primary critical hermeneutic concepts, drawn from the theory of Paul Ricoeur (1992), provided the categories for this research. These categories served as the boundaries for both data collection and analysis: Ethical Aim, understood from a critical hermeneutic orientation, promotes living with and for others in a socially just manner; Imagination is the creative act of envisioning a different future that can be inhabited; and Praxis fosters the practical application of ethical aim and imagination through action.

Findings

The participants, who lived their ethics daily in the practical application of sustainable practices, argued that we must collectively re-imagine what it means to be interconnected with the earth, because the current one-sided relationship between humans and their environment is unsustainable. The following findings were derived from the conversations with participants: (1) sustainable praxis is the responsibility of everyone; (2) education can lead to sustainability in real world contexts; (3) an ethical aim includes esteem for people and the earth's resources.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

Stephanie Demaree — 4-25-12
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CHAPTER ONE
FOCUS OF THE RESEARCH

Introduction

The death of the forest is the end of our life.
-Sister Dorothy Stang

The third millennium presents interesting, exciting and challenging times for earth's inhabitants. Technological advances in science, medicine and industry have provided the human race with comfortable levels of living that are unparalleled in history. It is important to recognize however that these levels of comfort come at a social and environmental price, which considered in terms of sustainability, are not viable in the unforeseen future of humanity.

Since the industrial revolution several hundred years ago, humans have been progressing economically and socially at an incredible rate. The consequences of such advancements are brought to bear on the condition of the environment as the extraction of natural resources required to make our lives comfortable are being removed at a pace in which the resources cannot be replenished. One place where the environmental and social consequences of this progress are evident is the South American country of Brazil.

People around the world through development projects and various advances, have distanced themselves from the earth making human societies and the environment they depend on appear unrelated. Yet, the future of humanity and the health of the planet depend on the recognition of human beings' relationships with and interdependency on the environment. As globalization continues to make international ways of living transparent, more and more people seek to adopt the American way of life predicated on material accumulation and wealth (Friedman 2008: 55). This can be interpreted as a

counter-productive trajectory to being in balance with the natural world. This research presents ways of thinking and being that take balance into consideration using Brazil as a backdrop for understanding the consequences of taking more than is needed to survive.

Chapter One explains the statement of the research topic and also highlights my research directives. The background of the issue will be presented to underscore the connection between my topic and human influence on the environment in Brazil. The significance of the issue at hand is also explored.

Statement of the Research Topic

An exploration into human imagination, ethical aim and action are the progenitors for reconciliation between humans and their environment. This study of two successful projects in Brazil provides an example of working toward a balance between human endeavors and sustainable environments. This inquiry is an exploration that demonstrates programs designed to help people's lives as a result of the work of Sister Dorothy Stang.

The three research categories listed below served as the research directives and provide the boundaries for this inquiry:

1. Ethical Aim: understood from a critical hermeneutic orientation as having to do with living with and for others in a socially just manner.

2. Imagination: the creative act of envisioning a different future that can be inhabited.

3. Praxis: ethical aim and imagination practically applied through action.

These categories framed the following guiding questions to be addressed at the end of the study: What examples exist that demonstrate people living in communion with

their surroundings? What approaches encourage people to live in ethically sustainable ways?

Background of the Research Topic

One model to reconnect people with the earth can be found in an unlikely champion of human and environmental rights. Over the past 40 years, the Amazon rainforest has been home to a unique American woman. Nun, social activist, and environmentalist, Sister Dorothy Stang committed her life to supporting land reform and social justice through sustainable practices. Although her land reform development projects reflect successful models of integrating sustainable farming in opposition to slash-and-burn agriculture practiced in the Amazon state of Para, it was because Sister Dorothy also imposed moral values into her educational and development work that she met an early and violent demise (Murphy 2007: ix).

Due to lawlessness in the remote area of Anapu in the Brazilian state of Para where Sister Dorothy lived, her mission was one not only of education and preservation of natural resources but also one of social justice. Her courage provided a voice for discourse to occur between wealthy land grabbers and poor peasant settlers, who were otherwise silenced when their homes were burned and their crops pillaged by unscrupulous loggers and ranchers (Murphy 2007: 85).

Sister Dorothy knew that the end of the voiceless rainforest would be more than devastating for the country and people of Brazil. She understood the interconnectedness of all living things and that they must have dignity and respect (Murphy 2007: 115). She saw not only that the ramifications of deforestation were detrimental to the landless poor of the area but also to the wealthy loggers who were too blinded by greed to see the long-

term ill effects of slash-and-burn practices. The Greenspan website, dedicated to promoting environmental sustainability, posted this powerful statement from Sister Dorothy (http://www.greenspanworld.org/atrocity_in_para.htm):

> I don't want to flee, nor do I want to abandon the battle of these farmers who live without any protection in the forest. They have the sacrosanct right to aspire to a better life on land where they can live and work with dignity while respecting the environment.

The poetical understanding reflected by this statement underscores Dorothy's commitment to the people through ethical aim or social justice, commitment to the land through praxis or practical action and commitment of her life. She employed imagination to ensure that balance be restored between the human societies in remote Brazil and their environment.

Significance of the Study

In this study, I explored the relationship between social justice and sustainability. I refer to social justice as part of an ethical aim. Ethical aim embodies the idea that social justice is both ethical and imbued with action at the individual level. The lenses of imagination and praxis are used to interpret meaning uncovered by this exploration. Specifically, I studied Sister Dorothy Stang's life work in environmentalism and social justice as a potential framework for others who engage in the establishment of sustainable practices with an ethical aim toward development and educational endeavors. Our ethical aim, sustainable practices and ways of life are interconnected. This interconnection unfolded throughout this study.

The health of the Amazon ecosystem is a worldwide concern, not just to Brazilians, Peruvians and citizens of other countries home to the iconic river and rainforest. Home to thousands of unique species of plants and animals and boasting the

oldest and largest rainforests on Earth, the natural resources of Amazonia provide more than beauty and wonder, but also oxygen and pharmaceuticals to the world (Taylor 2004: 16).

Indigenous groups in the region have balanced biological needs for survival with the capacity of the environment to provide for centuries. This innate sense of sustainability among indigenous groups fostered an ecological and social balance allowing both people and nature to endure and grow together. Balance between people's needs and the harvesting of natural resources shifted most significantly with the colonialization of Brazil by the Portuguese in the sixteenth century. By the time anthropologist Claude Levi-Strauss traveled to Brazil in 1935 to behold its cultural and biological wonders, the landscape had already been dramatically altered. Describing the degradation, Levi-Strauss (1970: 98) says:

> Here in Brazil, the soil had been first violated, then destroyed. Agriculture had been a matter of looting for quick profits. Within a hundred years, in fact, the pioneers had worked their way like a slow fire across the State of Sao Paulo, eating into virgin territory on the one side, leaving nothing but exhausting fallow land on the other.

It is in this shadow of destruction that Sister Dorothy found herself in the country of Brazil, first on a mission to provide education for rural children and women, but then, realizing the severity of the social conditions, to help the landless poor to establish sustainable farming practices. It is in this same shadow that the people of the world currently find themselves, knowing the destruction of the forest is detrimental to us all, but unsure of what can be done to address it. However, there are many organizations and groups of people who believe they have the right plan or approach for taking on the ecological disasters that colonialization and industrialism have created. For instance,

Sister Dorothy's life work presents lessons for educational and development practices that are applicable, not only in Brazil, but in many developing and developed countries.

Summary

An inquiry into the life and work of Sister Dorothy Stang unveiled lessons on how development and educational work can be approached using imagination, ethical aim and praxis. Sister Dorothy's approach is one that fostered community involvement. There are many reasons why this approach is significant, including participation among local people and recognition of the interdependence between human societies and the environment. Additionally, this inquiry is significant to educators as teaching students about ecological connections under socially just conditions is relevant to students understanding of themselves in relation to the environment. Sister Dorothy Stang's approach to working in Brazil may provide lessons for the ethical engagement between people and the environment which have worldwide applications and implications. In Chapter Two, I present a background of the country of Brazil in terms of geography, culture, history and economics.

CHAPTER TWO

BACKGROUND OF BRAZIL

Introduction

An exploration into the life and work of Sister Dorothy Stang related to sustainability with an ethical aim, begins with an understanding of the country she lived in for over 40 years in terms of geography, culture, economics and government and how these national aspects provide a context for one to understand her as well as others experiences. These aspects of Brazil are uncovered in the following sections.

Geographical Location

Brazil is located on the Atlantic Ocean side of South America. It is a pluralistic country of 201 million people comprised of the following ethnic backgrounds: African, Portuguese, Italian, German, Spanish, Japanese, Indigenous peoples, and people of Middle Eastern descent. The primary language of Brazilians is Portuguese and 74 percent of the population is Roman Catholic (http://www.state.gov/r/pa/ei/bgn/35640.htm).

Geographically, Brazil is barely smaller than the United States in terms of area, which gives one a clear sense of the size and scope of this South American country. Brasilia is the capital city of Brazil home to 2.5 million of its citizens. The landscape of Brazil presents a myriad of ecological variation, including the dense rainforests of the Northern Amazon region, the semiarid Northeast coast, the mountainous Southwestern area that gives way to rolling hills, the savannahs of the Midwestern region, the coastal lowland areas and finally the planet's largest wetland area (http://www.state.gov/r/pa/ei/bgn/35640.htm).

Brazil is surrounded by ten other South American countries including French Guyana, Suriname, Guyana, Venezuela and Colombia to the north, Peru and Bolivia to the West, and Paraguay, Argentina and Uruguay to the South (see figure 1).

Figure 1. Map of Brazil
Photo from
http://geography.about.com/library/cia/blcbrazil.htm

Early History

Brazil's contact history with Europe began in 1500 when Pedro Alvares Cabral claimed Brazil for Portugal. Brazil remained a colony of Portugal and was ruled from its capital city of Lisbon until 1808 when the Portuguese Royal Family escaped Napoleon's army and established Rio de Janeiro as its federal governmental center (http://www.state.gov/r/pa/ei/bgn/35640.htm). However, Rio de Janeiro was officially founded well before 1808 by the Portuguese in 1565 (Skidmore 1999: 9).

During colonization, the Portuguese claim to Brazil was challenged by the French, the Spanish and the Dutch, although the Portuguese managed to maintain control over the colony (Skidmore 1999: 12). Some of the major exports during the time were Brazil wood, sugar cane and gold (Skidmore 1999: 13 and 19).

During the years of 1872-1910, Brazil experienced an influx of immigrants from Europe. The record year for immigration was 1891 at 215,239, and the lowest years were 1872-1879 with a total of 22,042 during that period (Skidmore 1999: 72).

Current Situation

Brazil is one of the four BRIC countries, which includes Russia, India and China as well. According to Economy Watch, as a BRIC country Brazil is one of the "fastest growing and largest emerging market economies" and the BRIC countries collectively "account for almost three billion people, or just under half of the total population of the world" (http://www.economywatch.com/international-organizations/bric.html). Brazil is one of the most pluralistic countries in South America, holds the fifth largest population in the world and is home to half the population of South America (Ghose 2010: 20).

With a new female president Dilma Rousseff, Brazil is poised to be a major player in the 21st century with respect to its growing economy and world presence, such as hosting the 2016 Olympic Games (http://www.washingtonpost.com/wp-dyn/content/article/2010/10/31/AR2010103104552.html). Brazil's vast natural resources, eye toward industrialization and growing foreign relations, all create the conditions for the country and its people to flourish on the world stage.

Culture

Culturally, Brazil is diverse with at least six different ethnic groups beginning with the indigenous groups of people living in the area prior to the Portuguese colonization of the 16th century. The Tupi and Guarani languages reflect the local peoples who have lived in the region for thousands of years. Estimates of the indigenous population at the time of the Portuguese arrival vary between 500,000 to 2 million. The indigenous population decreased rapidly due to infectious diseases brought by the colonists (Skidmore 1999: 14).

Since the indigenous peoples of Brazil proved to be a poor labor source, beginning in 1580, African slaves were brought to assist in the cultivation of crops and the felling of trees. Given the expansiveness of the slave trade, it must be noted that Brazil received more slaves, at least 3.65 million, than any other place in the Americas. Unsurprisingly, modern-day Brazil has the largest population of people of African descent other than Africa itself (Skidmore 1999: 17).

Since the 1850s, five million Japanese and other Asians, Italians, Germans, Spaniards, Polish and Middle Eastern immigrants have relocated to Brazil (http://www.state.gov/r/pa/ei/bgn/35640.htm). The language spoken by Brazil's 188 million inhabitants is Portuguese, although words from indigenous and African languages are also prevalent (Ghose 2010: 17). Brazil may have the world's largest population of Catholics, although many other religions are practiced in Brazil such as Judaism, Islam, Buddhism and many animist beliefs from the indigenous Brazilian and African cultures (Ghose 2010: 20).

Brazilians enjoy sports, in particular football or soccer, music, especially samba and bossa nova, as well as colorful and lively festivals such as Carnival (Ghose 2010: 21).

Political and Economic Background

During the period of 1889-1930, Brazil became a constitutional republic until a military coup placed Getulio Vargas as dictator president until 1945. Five presidents succeeded Vargas including Joao Goulart in 1961whose presidency was marked by inflation and radical politics. Following Goulart's coup, the military reigned in Brazil for

the next 21 years (Skidmore 1999: 159). In 1985 Jose Sarney became president and was immediately faced with the task of rebuilding democracy in Brazil (Skidmore 1999: 190).

These events set the stage for one of the world's largest democracies to take root, although Brazil faces many challenges politically. The divide between the wealthy and poor is an ongoing issue, evidenced by the *favelas* or slums of the cities (Ghose 2010: 18). Elected in 2002 and again in 2006, President Luis Inacio Lula de Silva, or Lula for short, became a symbol for Brazilian democracy with a platform that included helping 20 million out of poverty and bringing another 30 million into the folds of the lower-middle class. Dilma Rousseff was elected as his predecessor.

Brazil is the world's tenth largest economy, although the dichotomy between the rich and the poor continues to be problematic. Brazil is a market economy and a major exporter of manufactured goods such as automobiles, but especially of agricultural goods like lumber, soy beans and coffee (Ghose 2010: 18).

Summary

Brazil is a land of opportunity, with rich biodiversity, a culturally pluralistic society and an eye toward future growth. The history of people in Brazil, beginning with indigenous groups thousands of years ago to the European and Asian immigrants of the 1500s and onward, Brazil has become a world leader in terms of economics, politics and environment. In Chapter Three I provide a review of the literature in terms of anthropology, education, development and environment from a sustainable perspective. My theoretical constructs, Ethical Aim, Imagination and Praxis are also rendered in Chapter Three.

CHAPTER THREE

REVIEW OF LITERATURE

Introduction

The review of literature section includes anthropological theory which underscores Brazil's history from a cultural perspective. Brazil's cultural history includes its indigenous groups, as well as the arrival of the Portuguese colonists and African slaves which set the stage for a diverse cultural point of view. The selected anthropological theory includes works from past and contemporary anthropologists to provide a continuum of understanding about the ways in which culture has evolved in Brazil over time.

A second section is devoted to educational and environmental literature as the intersection of these with Brazilian cultural practices is of import to this research**.** The third section deals with development which contextualizes Sister Dorothy's model and approach to doing social work in Brazil. Section four is a rendering of my theoretical constructs including Ethical Aim, Imagination and Praxis.

Section One: Selected Anthropological Theory on Brazil

More than fifty years ago, Claude Levi-Strauss wrote an ethnographical account of his travels in Brazil called *Tristes Tropiques*. In this book, he recalls the scenes he witnessed in the country and describes them vividly and with great emotion to his readers. What Levi-Strauss observed illustrates what inspired Sister Dorothy's mission to evolve, namely the devastation of the natural landscape. Levi-Strauss (1970: 44) recounts:

> My eyes, or perhaps my degree of humanity, do not equip me to witness that spectacle; and in the centuries to come, when another traveler visits this same

> place, he too may groan aloud at the disappearance of much that I should have set down, but cannot. I am the victim of double infirmity: what I see is an affliction to me; and what I do not see, a reproach.

This imagery is a powerful commentary on the cost of economic progress that Brazil has endured over the past several centuries. Much more than just an eyesore to visitors, the landscape devastation described by Levi-Strauss has had numerous consequences for the environment and people of Brazil. If left unchecked, logging, mining and other destructive practices have the propensity for affecting all of humanity. For example, many of our medicines are derived from the flora of Brazil's lush and diverse jungles (Taylor 2004).

The vastness of Brazil's landscape is evidenced by its size and scope. According to World Health Organization data regarding the physical area of Brazil (http://www.who.int/countryfocus/cooperation_strategy/ccsbrief_bra_en.pdf), the country covers an impressive 8,514,876,599 km² of land. Leslie Taylor (2004) writes in her book The Healing Power of Rainforest Herbs that 50 percent of the world's animal and plant species are located in this area. The significance of Brazil's biodiversity is underscored by the medicines derived from rainforest plants. Taylor (2004) notes that one-fourth of today's medicines are harvested from the forests, and 70 percent of the plants found to have anticancer properties only exist here.

Humanity will also be affected meteorologically and ecologically if the environment is not better cared for. The Amazon region has been referred to as the "earth's lungs" since Amazonia's trees produce 20 percent of the world's oxygen (http://www.rain-tree.com/facts.htm). A vast amount of fresh water is also carried by the mighty Amazon River, contributing to climate and weather patterns. Even in her time,

Sister Dorothy noted that the cutting down of trees adversely affected the amount of rainfall in the area, diminishing from six to eight months of rainfall per year down to just four months (Clements and Newton 2005).

An unintended consequence of logging and slash-and-burn agriculture has been perpetual soil erosion. Even in the late 1930s when Levi-Strauss (1970: 97) made his expedition into the jungles of Brazil, he noted this sweeping plague, "Erosion has done much to ravage the country before me: but above all Man was responsible for its chaotic appearance." Today, much has remained unchanged; if Levi-Strauss were to visit Brazil now, he would see a similarly ravaged landscape.

One must look into the past several hundred years to see a different Brazil from today. Brazil's past is replete with contact histories and cross-cultural connections. When the Portuguese arrived, they found many indigenous tribes already calling Amazonia home. Naturally, that did not stop them from seeking a better life in the New World as Brazilian Anthropologist Gilberto Freyre (1945: 23) describes:

> Since the sixteenth century, Portuguese peasants have brought with them to Brazil a wealth of legends, of incantations, of folk-songs, of popular literature in verse and in prose, of popular arts; and it is mainly through them-illiterate peasants and artisans-rather than through the erudite or the learned, that similar popular or folk values from the Indians and the Negroes have been assimilated by Portuguese America and become the source for a new culture: the Brazilian culture.

Freyre's description illustrates that current culture in Brazil was cultivated through the Diaspora of African slaves and Portuguese settlers, co-mingling with the local inhabitants to form a new, hybrid culture which later became Brazilian. It is this cultural group that saw the opportunity for a prosperous life in the New World, where they found a seemingly limitless supply of exotic lumber, fish, birds, and other natural

resources. In reference to the way in which cultural practices created the landscape we see today, Freyre (1945: 93) explains the connection between nature and human society:

> In both spheres [nature and human society], essential harmony in the relations between living creatures was broken when one-crop agriculture, instead of diversification, was adopted. Tropical nature, being essentially many-sided, was perverted when only one particular plant was grown predominantly or exclusively over wide areas. And on the human side, as has been said, one type of social organization-a feudal or quasi-feudal one-was allowed to dominate.

The agricultural practices brought by the Portuguese were not favorable to the tropical climate, yet with so much potential land to be cultivated, there was room to experiment. With a seemingly endless supply of land, settlers did not think twice about burning hundreds of acres to grow crops (Freyre 1945). The problem was and continues to be that Amazonian soil is actually poor for growing crops, with which farmers in the region still contend today (Murphy 2010).

This grand experiment in colonialization proved the importance of working in communion with the land rather than depending on single crop agriculture not suited for Amazonian soil. The more the settlers pushed to farm a one-crop system, the more the land pushed back as Freyre (1945: 70) explains:

> That region [Northeast Brazil] was losing consciousness of the values of its history as well as of its possibilities; the loss was occurring not only because of general standardizing influences originating in industrial world-conquest but also because of similar influences originating inside the American continent and within the Brazilian nation itself.

Freyre (1945) poetically writes about the ways in which the Brazilian case is complex; multiple cultures seeking out a new way of life in a fertile land using old methods. Rather than seeing the future full of possibilities, the settlers were stuck in the notion of forward progress using methods and ideas not suited for the uniqueness of

Amazonia. They were being subsumed into a model of standardization gripping other colonial powers as well.

Every settler seeks happiness and prosperity through a new beginning in a new land. Despite the environmental casualties of this progress, Freyre (1945: 151) had hope for the future of Brazil:

> It appears that the Brazilian ideal of human happiness (an ideal affected by many traditions and tendencies of its *intelligentsia* and its common people alike) does not stop at material gains or conveniences; it includes the development of human personality in ways that seem to have been accentuated through the wide exchange of intellectual and moral values made possible by democratic contact between various races and cultures.

Too often it seems progress is characterized by greed and the accumulation of wealth. Although much of what Sister Dorothy Stang observed supports this, progress is also predicated on the attainment of a better life, the idea that by working hard and doing your best, happiness will follow. In Brazil, many people have been clouded by material gains and conveniences to worry about the happiness of their neighbors or the health of the land, illuminating the need for an ethical aim to be present with progress.

Contemporary anthropologist Darcy Ribeiro (1995) also writes about the condition of the Brazilian people. According to Ribeiro himself, his work is not neutral, but full of "ethical impulses and deep patriotism." This is clear through his description of the current social situation in Brazil, which for many, is characterized by poverty, and for the few, characterized by obscene wealth. Ribeiro (1995: 6) explains:

> What has always been lacking and is still so obviously lacking is a clear comprehension of the history that has been lived as necessary to the circumstances in which it occurred, or a clear alternative project for the social order, lucidly formulated, which could be supported and adopted by the great majorities as their own. It is not unthinkable that this social restructuring be conducted without any social upheaval, through a democratic policy of reform. But it is most improbable in this country where a few thousand large

> landowners monopolize the greater part of the territory, compelling millions of workers to go to cities and live the life of *favela* slums on the strength of upholding a few old laws. Every time a nationalist or populist politician heads in the direction of a revision of institutional forms, the ruling classes resort to repression and force.

Ribeiro believes that progress must be democratic, based on what is best for all the people of the Brazil, which is a definite departure from the *status quo* that favors the wealthy minority, including loggers, ranchers and mining operations. Ribeiro recognizes that for real progress to be realized, wealthy and poor alike must acknowledge their common history and aim to live "with and for others in just institutions" as Paul Ricoeur (1992: 172) eloquently attested.

In his book The Brazilian People, Ribeiro captures the dichotomy between rich and poor, haves and have-nots, when he shares a conversation between a man named Lery and an Indian from Brazil. Ribeiro (1995: 22) writes:

> I [elderly Indian man] now see that you [Lery] and other *Mairs* [French colonists] are great madmen, because you cross the sea and suffer great hardships, as you say when you arrive here, and you work so hard to pile up riches for your children or for those who survive you! Can it be that the land that nourished you is not sufficient to feed them too? We have fathers, mothers, children that we love, but we are certain that after our death the land that has nourished us will also nourish them. That is why we can rest and have no great worries.

Ribeiro's sentiment is reflected by this conversation and is congruent with Sr. Dorothy's point of view and philosophy about the loggers and ranchers so eager to tear down the forest, intent on taking more than their share. In practice, when each takes what he or she needs there is plenty for all. Taking what is wanted rather than needed exemplifies the inequality that greed perpetuates—the divide between rich and poor expands, and the environment suffers from the neglect of both.

Section Two: Environment and Education

Environmental education ranges from early childhood education to institutions of higher learning. Topics within this broad educational category include healthy eating habits, understanding humans' use of natural resources, or the cultural connection between American Indians and the land (Stone 2010). Significant to this exploration, understanding the current place of education in an environmental context is necessary to grasp human societies' interdependence on, yet disconnectedness from the environment that sustains them.

Michael K. Stone (2010) of the Center for Ecoliteracy in Berkeley, California wrote an article entitled *A Schooling for Sustainability Framework* in which he reflects on the work of America's educators in K-12 schools on educating for sustainability. Stone begins with recognition that current definitions of sustainability are limited and suggests a different conceptual explanation. Stone (2010: 34) states:

> Imagine sustainability as a far richer concept that simply meeting material needs, continuing to exist, or trying to keep a degraded planet from getting worse. A community worth sustaining would be alive—fresh, vital, evolving, diverse, dynamic. It would care about the quality as well as the continuation of life. It would recognize the need for social, economic, and environmental justice; and for physical, emotional, intellectual, cultural and spiritual sustenance.

This definition provides a rich conceptualization of sustainability to be interpreted as more than maintaining the *status quo* of consumerism, but as an interconnection among aspects of culture and aspects of the physical world. If curriculum is to include sustainability, then educators must understand what it means and how it is represented.

Stone (2010) shares that while there is no set curriculum for sustainability that is neatly packaged into ready-made lessons for teachers, the reality is, curriculum is

anywhere learning occurs. Yet, it is the unintended curriculum that educators must be mindful of. For example, Stone (2010: 35) says:

> For better or worse, the unintended learning is often the most powerful; the soda machine in the hallway or the dump truck headed for the landfill can convey more memorable lessons about the school's attitudes than repeated lectures on nutrition and recycling.

In Stone's book Smart by Nature, Zenobia Barlow of the Center for Ecoliteracy writes that schooling for sustainability has to do with bringing to light ecological truths and ways of being with nature, rather than apart from it. She (Stone 2009: viii) implores that sustainable education

> …is founded on a conviction that the best hope for learning to live sustainably lies in schooling that returns to the *real* basics: experiencing the natural world; understanding how nature sustains life; nurturing healthy communities; recognizing the consequences of how we feed ourselves and provision our institutions; knowing well the places where we live, work, and learn.

Barlow and Stone's sustainable philosophy should not be understood as implying that math, language arts and other subjects are secondary to sustainability; rather, that the "real basics" as described above should be *integrated* into the greater curriculum. Students can weigh their leftover food at lunchtime both to understand the consequences of food waste and to understand measurement as a math lesson. Students can make their own lunches using food from school gardens while learning about agriculture, plant biology, culture and history through the use of ethnic recipes.

Stone (2009: 15) agrees with David Sobel, an Antioch, New England professor and place-based education researcher, who stated, "I'm anxiously awaiting a good explanation why it's important for second-graders to know the order of the planets from Mercury to Pluto. Wouldn't it be more useful to develop a solid understanding of the geography of the town the second-grader lives in?"

It is necessary in terms of general science literacy to know about planets other than Earth, but it is more important for a seven year-old to first understand where he or she lives locally and then extend the learning to a global or universal level. Understanding place and local diversity underscores the Four Guiding Principles for Sustainable Schooling namely, nature is our teacher, sustainability is a community practice, the real world is the optimal learning environment and sustainable living is rooted in a deep knowledge of place (Stone 2009: 8-9).

Being purposeful about curriculum may include the creation of a school garden or the restoration of a local beach. Stone emphasizes that the key for students is to understand that all of the elements of life are interconnected. To underscore this idea, Stone draws on Living Systems Theory as explained by Maturana and Varela (1987) among others. Stone (2010: 39) shares the implications of this purposeful approach to sustainable curriculum:

> Taking a systems approach has important implications for pedagogy and for organizational decision making and practices. Thinking systematically entails several shifts in perception or emphasis. Especially for those whose intellectual grounding is in the Western scientific, analytic tradition. These shifts are not either/or alternatives, but rather movements along a continuum. They can lead to different ways to teach, educate, govern, and effect institutional change.

Stone (2010: 44) asserts that sustainability education would benefit from the parts to the whole paradigm shift in which students begin to see themselves as part of the larger environmental context in which they live. Educational opportunities aligned with this shift in understanding would have the potential to influence not only students' minds (cognitive), but also their hearts (emotional), hands (physical) and spirits (connectional).

Humberto Maturana and Francisco Varela (1987: 18) wrote a groundbreaking book called The Tree of Knowledge in which their central thesis on autopoiesis

> … aims to show, by scrutinizing the phenomenon of cognition and our actions flowing from it, is that all cognitive experience involves the knower in a personal way, rooted in his biological structure. There, his experience of certainty is an individual phenomenon blind to the cognitive acts of others, in a solitude which, as we shall see, is transcended only in a world created with those others.

This idea supports ontology, or being in the world, as connected to the natural sciences rather than being distinctly separate. By autopoiesis (self-creation) the authors mean to explain that there is dialectic between structure and function such that living things are simultaneously autonomous systems and influencers on their external environment (Maturana and Varela 1987: 94). This idea also connects to Paul Ricoeur's theories as outlined in his masterpiece Oneself as Another (1992), which is explored in the Research Protocol section of this study. This statement also references the connection between cognition or understanding and actions, which underscores the significance of praxis, one of my research categories.

Maturana and Varela's research includes setting the point that our experiences of the world are not easily explained away by the natural sciences. Rather, our experience in and of the world are deeply tied to our personal histories. In an attempt to assist the reader to arrive at this understanding, Maturana and Varela (1987: 23) include some simple experiments in their book to demonstrate that "we do not see the see the 'space' of the world; we live in our field of vision."

An experiment that demonstrates this world involves exploring the human eye's blind spot. If a person covers one eye and stares at a point on a page fifteen inches away, the point will seem to disappear. What actually happens is that the point intersects the area of the retina where the optic nerve connects; therefore, the area is not sensitive to

light, and the image of the point seems to magically disappear. This is the blind spot. Maturana and Varela explain (1987: 19):

> How come we don't go around with a hole that size all the time? Our visual experience is of a continuous space. Unless we do these ingenious manipulations, we will not perceive the discontinuity that is always there. The fascinating thing about the experiment with the blind spot is that *we do not see that we do not see.*

The implication of this and other experiments provided by Maturana and Varela are an effort to prepare the reader to consider our experiences about the world from a different point of view. This is the basis for autopoiesis and understanding that as we examine aspects of the natural and physical world, "we cannot separate our history of actions—biological and social—from how this world appears to us" (Maturana and Varela 1987: 23).

Maturana and Varela bring the reader along a journey to understand the connectedness between social and natural science and among knowledge and doing as ethical. Maturana and Varela (1987: 245) explain:

> It (knowledge) compels us to realize that the world everyone sees is not *the* world but *a* world which we bring forth with others. It compels us to see that the world will be different only if we live differently. It compels us because, when we know that we know, we cannot deny (to ourselves or to others) that we know.

Ethics, how we act in the world, is bound up with cognition or knowing, and being with others. How we act, that is to say what we do is bound in our personal histories and biology, for all of this begins from our structural bodies. Moreover, how we act is always in relation to other people in our world.

Maturana and Varela conclude their book by demonstrating to the reader that it is not stand alone knowledge, but knowledge about knowledge this is important to

understand. For example, it is one thing to know "that a bomb kills, but what we want to do with the bomb, that determines whether or not we use it" (Maturana and Varela 1987: 248). This holds true for all knowledge, because our humanness is innately bound with ethics. Maturana and Varela (1987: 248) explain that

> …to disregard the identity between cognition and action, not to see that knowing is doing, and not to see that every human act takes place in languaging and, as such (as a social act), has ethical implications because it entails humanness, is not to see human beings as living entities…Everything we do is a structural dance in the choreography of coexistence.

This description of humans acts as ethical helps us to see that we live our lives with and for others and because of that all of our actions are ethical in nature. This is very influential in terms of critical hermeneutic theory which will be explored in the Research Protocol chapter.

In the WorldWatch Institute's 2010 State of the World Report, Ingrid Samuelsson and Yoshie Kaga co-authored an article entitled *Early Childhood Education to Transform Culture for Sustainability*. Samuelsson and Kaga (2010: 57) believe that all levels of education should be imbued with sustainable education ideals, but most notably, since the brain develops rapidly in the first years of life, sustainable lifestyles and practices should be introduced to children even before preschool.

One way to ensure early childhood education has a sustainability component is to align policies with educational goals (like content standards). Beyond educational goals or policies, Samuelsson and Kaga (2010: 59) share the following:

> In addition to fostering love for and respect toward nature and promoting an awareness of problems due to unsustainable lifestyles, early childhood education must encourage the outlook and basic skills that enable children to take informed actions responsibly. Instead of the 3R's of reading, writing and arithmetic, early childhood education can follow the 7R's—reduce, reuse, recycle, respect, reflect, repair, and responsibility.

The 7R's relate to consumption, habits of mind and caring for things and people beyond the self. Preschool children with such limited experiences in the world can be taught more easily using the 7R's than an adult whose daily habits may be more difficult to change.

Samuelsson and Kaga (2010: 61) present three case studies in which early childhood education is experienced through project-based curriculum imbedded with the 7R's. The first case study from Australia utilizes mini-projects in which students are involved with the maintenance of a garden, using natural resources efficiently and aiming to have litter-free lunches.

In the second case study, children from Japan learn systems theory, the relation of parts to the whole, by learning the life cycle of the silkworm. Besides a lesson on the biological cycle of the silkworm, teachers included lessons on culture and industry to connect the lesson with real world examples (2010: 61).

In the third case study from Sweden, the national curriculum is pre-determined and maintains that it is the teacher's job to promote respect for people and the environment. Samuelsson and Kaga (2010: 61) explain:

> It [the curriculum] also very specifically focuses on children acquiring a caring attitude to nature and the environment as well as an understanding that they are part of nature's regeneration process. The curriculum asks teachers to address ethical dilemmas, and it regards gender equality as a precondition for a sustainable society.

In these case studies, three different approaches to curriculum are presented but each value and recognize the influence of teaching young children about their connection to the environment. Sister Dorothy used education and spirituality to teach young children and adults about the preciousness of themselves and their relationship toward the

earth and the common thread is an over-arching understanding of human societies' interdependence with the environment.

Section Three: Development

Development has many different meanings. For the purpose of this study, I draw from David Kaplan's (2010: 114) explanation of development as follows:

> In the descriptive sense, development is usually identified as the process of economic growth, industrialization, and modernization that aim to produce a higher gross domestic product. In the normative sense, development refers to the process of realizing worthwhile social goals, such as the overcoming of economic and social deprivation or the achievement of social well-being.

These two interconnected but disparate meanings are applicable to the Brazilian case. The descriptive sense of development applies to both government and industry approaches to doing business in Brazil, centered on commercializing products derived from the country's abundant natural resources. This approach has been very successful as Brazil seeks to make itself a world player in the market economy (https://www.cia.gov/library/publications/the-world-factbook/geos/br.html).

Insofar as Sister Dorothy and the Sisters of Notre Dame de Namur (SNDdeN) have been concerned, their presence in Brazil has been based on the normative sense of development described above, which has included working with the poor to attain knowledge through education, to obtain land rights from the government, and to form communities of like-minded individuals for the promotion of social well-being. Sister Dorothy recognized the interplay between the problems in Brazil, as described by Michelle Murdock in her book A Journey of Courage, and education and development. Murdock (2009: 58-9) shares that as Dorothy was on her way to Para to begin development and education work she

> saw cut-down trees and smelled burning forests. And once out of town, as far as the eye could see there were hundreds of deforested acres. It was a shock. Trees had been sheared right off at the ground, and the acrid smell of smoke drifted in through the open windows, stinging her nose and making her eyes water. She felt sad to think about of all the displaced birds and animals, and she wondered how many had died in the fires. A strong emotion flooded over her; surely it was wrong to destroy creation in this way… She knew what her job would be: help the poor learn skills to survive and, just maybe, teach them to protect the forest.

In many ways, the SNDdeN approach to development in Brazil has been radically different from other examples. Rather than an approach based on a model of identifying a problem and determining what the solution is, the SNDdeN model spearheaded by Sister Dorothy and others has been based on a community engagement or community involvement method. Herda (2007) eloquently explains the differences that abound in development approaches:

> In past development ideas, there is most assuredly an emphasis on the 'who.' What has been missing is 'the what': the possible world. The 'what' of development is found in the depths of the stories of the humanity we say we want to help. In the old development paradigm the developer brings her own plot [or narrative] to the field and no one else's plot counts. There isn't a space for action whose reference resides in the lives of real people—those beings we say we are striving to help come into relationship with.

Herda underscores what Sister Dorothy came to realize which was that influencing change in a particular community is the work of the community, realized through coming together in language to share plots or narratives about social situations, relationships and issues at hand. The work of the developer rests in becoming a part of these conversations and participating in the problem setting so that praxis can occur, which is distinctly different from the method of approaching a development situation with the goal of solving the problems of others.

What conditions led to the need for development measures in Brazil in the formative sense? It was development in the descriptive sense that created the need for socially just development models. Arturo Escobar (1995: 21) in Encountering Development explains the precursors for normative development in South America, including Brazil:

> As the same authors point out, however, within Asian, African and Latin or Native American societies—as well as throughout most of European history—vernacular societies had developed ways of defining and treating poverty that accommodated visions of community, frugality, and sufficiency. Whatever these traditional ways might have been, and without idealizing them, it is truly that massive poverty in the modern sense appeared only when the spread of the market economy broke down community ties and deprived millions of people from access to land, water and other resources. With the consolidation of capitalism, systemic pauperization became inevitable.

Escobar's point demonstrates the vision that Brazil and countless other countries have with regard to industrialization or modernization, which creates the conditions for poverty, social injustice and an increased gap between rich and poor. As the wealthy consumer class accumulates more wealth, the more the marginalized peasant farmers of the interior and urban *favela* slums become. These conditions affecting millions of Brazilians make it clear as to why groups like SNDdeN make a presence in the country in an effort to ameliorate some of the byproduct of descriptive development.

In his article *Paul Ricoeur and Development Ethics,* David Kaplan (2010) draws on the work of Amartya Sen and Paul Ricoeur to present the case for development ethics as a model for recognizing capabilities, understood as "the freedom to live a worthwhile life." Read as a response to the poverty descriptive development creates in industrializing and industrialized nations, this is a powerful notion. Kaplan (2010: 115) explains in terms of social and economic progress that

> …underdevelopment should be seen as unfreedom and development as a process of removing unfreedoms and extending substantive freedoms to people who value them. Poverty, on this model, is understood as capability deprivation; prosperity is the realization of substantive freedoms. The capabilities approach in development ethics focuses on what people are actually able to do and able to be, and what they should be able to do and to be.

Reminiscent of the attitude of the SNDdeN, Kaplan shows us how the work of Sen and Ricoeur are bound with the mission of the Sisters—the importance of realizing the value in human capacities while transcending otherness. Development ethics recognizes that poverty is created and therefore can be eliminated under socially just conditions.

Development ethics brings to bear an ethical aim to development that is more than economic growth, but development of human capacities. Commonalities between the SNDdeN, Ricoeur and Sen's ideas relate to ethical aim and development in meaningful ways. Sen's "the freedom to live a worthwhile life," Ricoeur's "aim for the good life with and for others in just institutions," and the SNDdeN mission **"**each of us commits her one and only life to work with others to create justice and peace for all," collectively speak to the element of ethics that must be present for socially just development to unfold.

The freedom to live a worthwhile life can be read as a fundamental human right. Yet, in a rapidly developing country like Brazil, social and economic freedoms are not necessarily a given. Escobar (1995: 35-36) explores the historical context to understand the attitude that led to the use of both human beings and the forest as commodities:

> In 1948, a well-known UN official expressed his faith in the following way: "I still think that human progress depends on the development and application of the greatest possible extent of scientific research. ….The development of a country depends primarily in a material factor: first, the knowledge, and then the exploitation of all its natural resources."

In Brazil, the model of industrialization and modernization using natural resources to promote progress without an ethical underpinning or understanding of future consequences means both people and environment have suffered alike. This type of development paradigm has been popular for decades and demonstrates that development practices should include all parties in a participatory approach.

In Para, where Sister Dorothy worked with the "poorest of the poor," peasants, who fled from *favelas* in the cities to settle in the remote jungle with the promise of land to farm, were part of the governmental effort of promoting progress. The situation became unethical when the wealthy few comprised of loggers and ranchers easily took advantage of the peasants who not only knew nothing of the forest, but also nothing of farming per se. Moral convictions of the wealthy few were overshadowed by the prospect of taking land from the peasants, thereby increasing their own property for the grazing of cattle or razing of timber. An economic incentive intended to provide the landless poor with titles and future possibilities turned into a "Wild West" situation in which those with power made the decisions. Herda (1997: 30) explains this type of situation:

> Now increased wealth and work in wealthier nations augments the poverty in the poorer nations. With an increasing distance throughout the world between the haves and have not's, between the poor and rich, there seems to be an association of good with power and money and bad with weakness and poverty. It is easy to apply these values to the context of poverty and wealth when there is a lack of respect for human life coupled with a lack of moral purpose and direction.

Rather than see the peasants as a people seeking to improve their lives, the loggers and ranchers saw an opportunity to become wealthier through the exploitation of a governmental development agenda. Ultimately, development ethics centered on a

community-based approach is most closely aligned with what Sister Dorothy learned to do in the field. Herda (2007: 20) underscores this ground-up approach when she says:

> Until now, the majority of socioeconomic development programs have relied on a mentality that uses economic markers to determine success. Moreover, this scientific paradigm has fueled program design and assessment processes associated with socioeconomic development. This approach has not worked because it relies on a deficit model of need rather than move forward with focus on capacity.

Development can be approached using multi-faceted methodologies, ranging from orientations that are economic or social justice based. The authors' work in this section indicate that whatever the approach may be, one that incorporates human capabilities with community- based actions tend to be ethical in aim and have the possibility for creating new worlds to be inhabited.

Section Four: Theoretical Constructs

Ethical Aim

Paul Ricoeur says (1992: 172) "Let us define 'ethical intention' as *aiming at the 'good life' with and for others in just institutions."* In his book Oneself as Another, Ricoeur analyzes the three main aspects of the ethical aim, namely The Good Life, With and For Others, and In Just Institutions.

The Good Life

Ricoeur (1992) explains that the Good Life aspect of an ethical aim can only be realized through praxis, or intentional action. He explains that once each human being decides at what end he or she wants to arrive, then decisions are made to ascertain what actions or means are required to achieve said end. Choices are ethical in nature because our decisions should be informed by phronesis, or practical wisdom. Phronesis allows the

deliberating human to break free of the means-end model and transcend to actions based on wisdom through experience.

Using Sister Dorothy's life work as a model for sustainable practices with an ethical aim, one can see many parallels between theory and application. Sister Dorothy's mission was to educate the peasants about their rights (an ethical aim), share with them alternatives to slash-and-burn agriculture (phronesis) and participate with them in the process (praxis). The ultimate goal of the relationship between Sister Dorothy and the peasants was the actualization of the good life, not through material gains, but through an ethical aim. Ricoeur's (1992: 179) ideas intersect Sister Dorothy's work in the following way:

> …we would say that it is in unending work of interpretation applied to action and to oneself that we pursue the search for adequation between what seems to us to be best with regard to our life as a whole and the preferential choices that govern our practices.

Sister Dorothy's work is reflective of her self-esteem and the way in which she esteemed others. Ricoeur (1992: 179) says, "On the ethical plane, self-interpretation becomes self-esteem." In this sense, Sister Dorothy's practice of esteeming others as herself explains the ethical aim present in her actions with the community. Her actions and intentions were ethical in nature and predicated on helping others aim for the good life.

Self-esteem is integral to an ethical aim. Much more than respect, which Ricoeur links to morality, esteem is linked to ethics by virtue of its aim. Morality is articulated though cultural norms which are socially constructed, whereas ethics are the aim of the good life configured by each individual person. Ricoeur (1992: 188) describes the link between self-esteem of others as an aim of friendship:

> To self-esteem, friendship makes a contribution without taking anything away. What it adds is the idea of reciprocity in the exchange between human beings who each esteem themselves. As for the corollary of reciprocity, namely equality, it places friendship on the path of justice, where the life together shared by a few people gives way to the distribution of shares in a plurality on the scale of a historical, political community.

Friendship for good is powerful in comparison to the two other types of friendship described by Ricoeur: utility, friendship with an expectation of receiving something, or pleasure, friendship only for contentment or enjoyment. Friendship for good is bound to an ethical aim that is visible through one's actions. Again, transcending morality which is predicated on obligation, ethics reflect choices we make in our daily lives as we esteem others as ourselves. Ricoeur (1992: 189) says of goodness, esteem and the other:

> I am speaking here of goodness: it is, in fact, noteworthy that in many languages goodness is at one and the same time the ethical quality of the aims of action and the orientation of the person toward others, as though an action could not be held to be good unless it were done on behalf of others, out of regard for others.

With and For Others

The notion of solicitude is brought to bear by Ricoeur (1992) who explains that it is an action indicative of the belief that each person is irreplaceable in our affection and esteem. Sister Dorothy, because of her mid-western upbringing and religious vocation, embodied solicitude in her actions with the farmers of Para, Brazil. Ricoeur (1992: 190) expounds:

> Its [solicitude] status is that of benevolent spontaneity, intimately related to self-esteem within the framework of the aim of the 'good' life. On the basis of this benevolent spontaneity, receiving is on an equal footing with the summons to responsibility, in the guise of the self's recognition of the superiority of the authority enjoining it to act in accordance with justice.

Justice permeated Sister Dorothy's experience with the farmers as she taught them about human rights and local laws, to sustainably plant native fruits conducive to

Amazonian soil and to live in communion with one another. Her sense of justice was shaped by American ideals of equality and fairness. Part and parcel of her character, these ideals informed her work and life. In part because of her Catholic upbringing and training as a Sister of Notre Dame de Namur, she was compelled to be a voice for the voiceless sufferers of injustice in the interior of Brazil. Sister Dorothy's solicitude was her strength and her guide, as Ricoeur (1992: 191) eloquently attests:

> For from the suffering other there comes a giving that is no longer drawn from the power of acting and existing, but precisely from weakness itself. This is perhaps the supreme test of solicitude, when unequal power finds compensation in an authentic reciprocity in exchange, which, in the hour of agony, finds refuge in the shared whisper of voices or the feeble embrace of clasped hands.

Sister Dorothy lived her life with and for the disenfranchised others of remote Amazonia finding reciprocity in their friendship and community. Although an outsider from the United States, Sister Dorothy was a welcomed member of the community esteemed as a leader and a friend to all.

In Just Institutions

Ricoeur (1992: 194) says that institution refers to "the structure of living together as this belongs to a historical community." Sister Dorothy lived in Brazil for 40 years creating history and relationships with community members. Over time, she proved to be selfless in her pursuit of human and environmental rights garnering more than respect, but esteem. The just piece of the "in just institutions" phrase is more often encountered as injustice in the world. Ricoeur (1992: 198) states:

> The sense of injustice is not simply more poignant but more perspicacious than the sense of justice, for justice more often is lacking and injustice prevails. And people have a clearer vision of what is missing in human relations than of the right way to organize them.

The situation encountered by Sister Dorothy was one of injustice, both for the people and the forest. The people were tools of the greedy ranchers and loggers to be used and abused for cheap labor and the land was seen as an infinite resource, to be felled for timber and sowed for pasture in an exploitive manner.

Sister Dorothy helped the landless poor work against the injustice of their situation by forming community bonds and following the letter of law by acquiring land titles. But the government, due to corruption and distance from the forest, did not justly support its most vulnerable people as it should. Rather, the government allowed wealthy loggers and ranchers to make the rules as they went. Ricoeur (1992: 201) describes injustice as a wall between the individual and society:

> A distributive interpretation of the institution contributes to tearing down this wall and assures the cohesion between the three components—individual, interpersonal, and societal—of our concept of ethical aim.

The overarching goal of any person engaging in social justice with an ethical aim is seeing oneself as the other as an antidote to injustice and subjugation. Treanor and Venema write about Ricoeur's ideas in their compilation of essays called A Passion for the Possible. In an article written by Kaplan, he compares Ricoeur and Amartya Sen's work in an examination of development ethics. Kaplan (2010: 114) explains the connection between capability, a subject written extensively on by Ricoeur, and ethics:

> It [capability] simply means the freedom to live a worthwhile life. Sen's contribution to our understanding of capabilities lies in his claim that we have rights to capabilities. This notion of capability forms the cornerstone for his version of development ethics, a field concerned with evaluating the moral dimensions of socioeconomic change, primarily in poor countries. Development ethics seeks to formulate ethical principles relevant to social change, to analyze and assess the moral dimensions of development theories, and to resolve moral dilemmas in development policymaking and practice. It aims to help render development actions humane—to ensure that the changes

> enacted under the banner of improvement do not destroy cultures or cause undue suffering to individuals or groups.

The intersection of development and ethics as rendered by Sen and Kaplan presents an important underpinning for research in Brazil. Sustainability inherently is ethical in nature, but the extent to which these practices are implemented and considered has to do with development practices.

Imagination

Hope and imagination are linked in the process of envisioning future possibilities. For the disenfranchised, imagination is particularly relevant as a mediator between the present and the future. Sister Dorothy's regular conversations with community members were an effort to imbue a negative situation with positive actions, the cumulative effect of which framed new possibilities. Kearney (1998: 227) posits that

> …it is the imaginary capacity to see unity-in-difference and genuine difference-in-unity which opens up the possibility of a genuine utopian horizon of shared aspirations mobilizing human beings to action.

Unity was the goal of community conversations; to share stories and become inspired to act. Sister Dorothy's community-based model of education and development were successful with the peasant farmers, but seen as dangerous and subversive by the wealthy loggers and ranchers. The collective imagination of the ranchers and loggers centered on the accumulation of wealth predicated by greed made Sister Dorothy a target of their disdain. Kearney (1988: 369) explains this brand of oppositional thinking and lack of imagination for others:

> The poetical imagination equally empowers us to identify with the forgotten or discarded persons of history. It invites excluded middles back into the fold, opens the door to prodigal sons and daughters, and refuses the condescending intolerance of the elite towards the preterite [persons passed over], the saved

> towards the damned. The poetical imagination opposes the apartheid logic of black and white.

Ricoeur (1992) writes in his narrative theory about emplotment, which is the act of prefiguring, refiguring, and configuring events to tell a story. In this sense, Sister Dorothy tirelessly emplotted a just future with others using imagination and action, thereby challenging the *status quo* between rich and poor. The collective imagination among Sister Dorothy and her people, as she referred to the farmers, was an appropriation of the injustice of their living conditions. Conversing about future plans to obtain land deeds or set up sustainable crops was a dangerous undertaking, one that invited violent reprisals by the wealthy land grabbers. Kearney's (2002: 139) work on imagination helps to explain how the actions of the land grabbers were the result of an imaginative failure and lack of an ethical aim:

> [The] power of empathy with living things other than ourselves—the stranger the better—is a major test not just of poetic imagination but of ethical sensitivity. And in this regard we might go so far to say that genocides and atrocities presuppose a *radical failure of narrative imagination*.

Though sharing and discussing Gospel stories with the people, Sister Dorothy was able to create the space for narrative imagination to flourish. The hope that was born through conversations permitted the peasants to imagine a different life, and a different way of doing things. These shared narratives, created through the medium of language, set the stage for the community to consider alternate ways of being and approaching problems. Ricoeur (1981: 181) asks:

> Are we not ready to recognize in the power of imagination, no longer the faculty of deriving 'images' from our sensory experience, but the capacity for letting new worlds shape our understanding of ourselves? This power would not be conveyed by images, but by the emergent meanings in our language. Imagination would thus be treated as a dimension of language.

It may be that the community-based approach that Sister Dorothy learned while living in Brazil was successful because it involved discussions that prompted new ideas, which became the impetus for action through an imagined world. The imagined world envisaged though language was based in part on hope; hope for a better future, or better life. Ricoeur (1974: 399) demonstrates that hope and imagination can lead to freedom and justice, "Liberty according to hope is nothing other when understood psychologically, than this creative imagining of the possible."

Sister Dorothy set the stage for imagination to unfold through action. When the community gathered to discuss an issue, a potential approach to the issue had to be envisaged. Ricoeur (1984: 68) explains that this is the work of imagination:

> The labor of imagination is not born from nothing. It is bound in one way or another to the tradition's paradigms. But the range of solution is vast. It is deployed between the two poles of servile application and calculated deviation, passing through every degree of rule-governed deformation.

Sister Dorothy's education and development approaches included the opening up of new possibilities through a community setting. She helped to shape the ways in which the community approached their problems by including a narrative function to meetings about land titles and group projects. She demonstrated unwittingly Ricoeur's (1977: 54) position that "We have thought too much in terms of a will which submits and not enough in terms of an imagination which opens up." Her message to the people was one of working with the laws to uphold basic rights and showing that through the discussion of new possibilities "imagination comes into play in that moment when a new meaning emerges from out of the ruins of the literal interpretation" (Ricoeur 1986: 213).

In addition to unimaginative development practices, our education system may be thought of as too linear and unimaginative. A writer of this deficiency is Dr. Ken

Robinson, author of The Element, who explores the extent to which schools kill students' creativity by emphasizing rote memorization measured by standardized tests in lieu of nurturing the imagination. Of particular import to this research is Robinson's (2009: 18-9) attestation that the key issue with subduing young imaginative minds is that "this great new mass of humanity will be using technologies that have yet to be invented in ways we cannot imagine and in jobs that don't yet exist."

The implication is not that facts are unimportant and that students shouldn't learn them. Students must memorize their multiplication tables to move on to higher levels of math. But the extent to which our educational system has become predicated on standardized tests to measure these facts is in total disproportion to what education should be fostering—creative, imaginative minds.

Robinson (2009: 67) describes creativity as applied imagination. People are creative in a range of different ways; some are musical while others are verbal-linguistic. The key to education is that it must nurture imagination by tapping into the different "Elements," that medium which sparks each person's own creativity. In a practical sense, this is what masterful teachers and those engaged in development do; they participate in a community and come to know each person and help to cultivate their imagination in creative and purposeful ways.

Praxis

Praxis is the intersection of ethical aim with human actions. Praxis refers to the ways in which one is self-reflective about the practical application of decisions through language and action. Critical hermeneutics concerns understanding through

interpretation, the application of which can be described as praxis. Bernstein (1983: 160) expounds that

> …praxis requires choice, deliberation, and decision about what is to be done in concrete situations. Informed action requires us to try to understand and explain the salient features of the situation we confront.

In Sister Dorothy's case, and for anyone seeking to apply sustainable practices with an ethical aim, free choice must always take center stage or the situation will become an oppressive example of "power over" in the same sense Ricoeur used the phrase in Oneself as Another. Sister Dorothy was not interested in having power over people; rather her interest was to serve others, inspired by the Gospel teachings, through discourse and praxis. Deliberation refers to the to and fro of both self-reflection and conversation with others to reach an understanding. Finally, a unanimous decision is made which informs action.

After conversations between Sister Dorothy and the farmers, Sister inspired the group with a call to action. One such example is evidenced in a letter Sister Dorothy wrote to the Sisters of the Ohio Province of Notre Dame de Namur in 1981. She passionately (2007: 63-64) implored:

> We can't talk about the poor. We must be with the poor, and then there is no doubt as to how to act. If we strip ourselves of all our extras that consume so much of our time and thoughts on how to care for them, our leftover time is colored and it is hard not to give a radical Gospel response…Golly, did we make our life so comfortable and withdrawn from reality that we can't see the social sins that our keeping silent is supporting? …But instead of spending so much time on waking ourselves up, let's spend our energies getting with it.

This letter demonstrates Sister Dorothy's innate sense of praxis imbued by her overwhelming desire to advocate for the people and land that she loved. Her examples of action can be models for others interested in this work. Indeed, Sister Dorothy lived

Ricoeur's (1992: 157) conviction that "not acting is still acting" and she implored others to live this way as well:

> …not acting is still acting: neglecting, forgetting to do something, is also letting things be done by someone else, sometimes to the point of criminality; as for enduring, it is keeping oneself, willingly or not, under the power of the other's action; something is done to someone by someone; enduring becomes subjected and this borders on suffering.

Sister Dorothy was prepared to live with and for the people she served. She learned though her mission that community creates a sense of solidarity among the people, a necessary ingredient for action. Jervolino (1996: 68) underscores this when he says "Praxis is to dwell and act in solidarity. Solidarity is hence the determining condition and basis of all social reason."

Praxis includes a spectrum of being and doing which are unpredictable, even if envisaged first in our mind's eye. Jervolino describes praxis from a hermeneutic orientation as including understanding, but recognizing that our actions do not guarantee outcomes. Praxis means we act with the best knowledge we have understanding that reality is simultaneously subject to unforeseen circumstances. Jervolino (1996: 68) explains:

> Praxis means…that everyone belongs to a society, the nation and mankind in the whole and is responsible to them all….Praxis is the way one *is*. However things go, whether well or ill, praxis indicates the fact that we are not the masters of our existential situation but depend on external circumstances: obstacles, disappointments or—as we hope—happy outcomes beyond our wildest dreams….Praxis…is clearly much closer to the concrete position of mankind in the world, with its dimensions of temporality and finitude…

Praxis understood as "the way one is" is a powerful medium for action. Praxis helps one to see that what we do reflects who we are and who we want to become. The

only way to change a situation is to do something about it, and this is the point where praxis and imagination become inseparable. Ricoeur (1986: 178) shares that

> It is in the realm of the imaginary that I try out my power to act, that I measure the scope of 'I can.' I impute my own power to myself, as the agent of my own action, only by depicting it to myself in the form of imaginative variations on the theme 'I could,' even 'I could have done otherwise, if I had wanted to.' Here, too language is a good guide…One can say that in expressions of the form 'I could, I could have…,' the conditional provides a grammatical projection of imaginative variations on the theme 'I can.' This conditional form belongs to the tense-logic of the practical imagination. What is essential from a phenomenological point of view is that I take possession of the immediate certainty in my power only through the imaginative variations that mediate this certainty.

The power to act is the precursor to praxis. It is the imaginary put into practice and realized in a real world context. Since praxis is human imagination put into action, it is always imbued with an ethical aim as it influences people. Ricoeur (2010: 23) states that

> By the *power to act* I mean the capacity to produce events in society and in nature. This intervention transforms the notion of events, which are not only what occurs. It introduces human contingency, uncertainty, and unpredictability into the course of affairs.

The notion of praxis as the power to act again underscores the human element related to being and doing. Understood as action and a way of being, praxis underscores development and educational work in every context. Especially salient is the idea that praxis begins through an imaginative act in which one envisions their ability to change a situation through personal power. This is the embodiment of Ricoeur's "I can," transforming praxis in the imaginary to praxis in reality.

Summary

Brazil's history is culturally diverse and rich with an eclectic mix of indigenous, European and African narratives. Brazil's colonization by the Portuguese in the 1500s

marked the start of a new country economically based on harvesting natural resources for the promotion of the society. Now in the 21st century, Brazil is facing two threats: environmental threats that may undermine its future by forever reducing the biodiversity of its varied ecosystems and social threats that engender poverty.

Education and development present avenues for understanding human dependency on these limited resources so that a balance might be struck between human needs and the ability of the environment to sustain ethical lives. A hermeneutic orientation toward education and development in Brazil provide the ethical and imaginative impetus for praxis to occur. In Chapter Four, the research process for this inquiry is outlined and descriptions of the research sites and participants are rendered.

CHAPTER FOUR

RESEARCH PROCESS

Introduction

Sustainable practices with an ethical aim permeated Sister Dorothy's actions. Her story is a powerful example that encourages others in education and development to consider the interconnectedness between human beings and the natural environment. I explore these ideas through interpretive inquiry using critical hermeneutic theory as a framework.

The interpretive inquiry approach to research involves the researcher and participants coming together through language to form new understandings about the world. Herda (1999: 82) explains how the research is mediated through language, "The purpose of participatory research is to create conditions whereby people can engage in discourse so that truth can be recognized and new realities can be brought into being."

This exploration into the background of sustainable practices with an ethical aim includes three topics from critical hermeneutic theory that are applicable to my research which are Ethical Aim, Imagination, and Praxis. I have also integrated Sister Dorothy's life within my theoretical discussion as it fits very well in the principles that are discussed in terms of the theory.

Ethical Aim

An ethical aim can be understood as a component of social justice insofar as social justice refers to equality of various rights within a society and ethical aim is an orientation toward realizing those rights. Kaplan (2010: 116) expounds on this idea by linking human capabilities with the welfare of society:

> The idea of a right to capabilities is a powerful criterion for social justice that links individual capacities to act with governments that have a responsibility to protect our rights. The policies, institutions, and welfare of a society should be measured by how well they enable opportunities for people to develop their full human capacities.

An ethical aim is related to the public sphere since ethics represents the umbrella under which personal morals and cultural norms are found. Kearney explains that ethics require an imaginative aspect in order to empathize with the other, particularly when politics and government are involved. In the case of Sister Dorothy and sustainability in Brazil, human rights, ethics and politics were always intertwined, even if the result led to social injustices. Kearney (1998: 234) shares

> …that the ethical imagination takes on a political role, that of envisaging the needs of others not immediately present to us, and of envisaging the most effective social means of meeting them. It is surely the case that the deepest motivational springs of political involvement are located in the capacity to *feel* needs for others beyond our immediate circle of family and friendship.

An ethical aim must be an all inclusive endeavor with citizens, educators, developers and governments' working with what Jurgen Habermas (1984) calls an "orientation toward reaching understanding." This includes creating policies and enforcing laws that honor the dignity of "the other" as fellow human beings, regardless of social status, while simultaneously doing the same for the land.

Imagination

Imagination is a theory that embodies the ability to envision a world we can inhabit that is different from the one we live in now. Imagination has to do with future possibilities, as Kearney (2002: 25) states, "The imaginary liberates the prisoners of our lived experience into possible worlds." From this point of view, imagination is central to

education and development practices, for if one cannot imagine something other than the present, then how can one move beyond the constraints of the situation?

Sister Dorothy's efforts with the people of Para centered on hope; hope for a better tomorrow. She lived in communion with those she served, and their suffering was her suffering. Their dreams were also her dreams and she often used hope as a catalyst for conversation. According to Rita Beamish (2010), author of the article *Planting Seeds of Hope*:

> She [Dorothy] would gather with villagers under leaf-covered structures to strategize on their stand against the aggressive loggers. She learned about the connection between deforestation and global warming, and helped the farmers develop sustainable projects--cacao, fruit, a wood shop, a banana flour factory - in hopes that a federal reserve would one day protect them from the aggressors.

Imagination is more than conjured images seen only in the mind's eye, but it includes transforming images through action to create new possibilities. Ricoeur (1986: lecture 1) says, "…social imagination is constitutive of social reality itself," meaning that we use our imagination to create what *should* be from what *is* now. In this rendering, imagination can be envisaged as the medium through which an ethical aim can be manifested by way of praxis.

Praxis

Herda (1999) discusses praxis as it relates to critical hermeneutic inquiry. She explains that the difference in approach between traditional research in the social sciences and research in the critical hermeneutic tradition has to do with the relationship between the researcher and the participants, which is based in language. Herda (1999: 11) states, "interest, commitment, and the willingness to learn how to think about the nature of social reality may bring us closer to appropriate research praxis for many of our social

problems." Praxis in this sense is understood as a connection between theory and practice or application that unfolds through discourse. Praxis can be understood as what people do.

Praxis is an ethical aim and imagination put into practice, in social situations, so that lives are lived not just theoretically in the mind, but in our social reality. Kearney talks of the connection between praxis and imagination as they work in tandem to transform social situations. Kearney (1998: 149) says that

> By projecting new worlds it also provides us with projects of *action.* In fact the traditional opposition between *theoria* and *praxis* dissolves to the extent that 'imagination has a projective function which pertains to the very dynamism of action'. The metaphors, symbols or narratives produced by imagination all provide us with 'imaginative variations' of the world, thereby offering us the freedom to conceive of the world in other ways and to undertake forms of action which might lead to its transformation. Semantic innovation can thus point toward social transformation. The possible worlds of imagination can be made real by action.

Praxis is the practical application of theory, the actions that propel the practical imaginary into the throes of the real world. Examples of the transformative power of praxis emerge through imagination and an ethical aim during this study.

Research Protocol

This exploration into sustainability with an ethical aim was carried out in the hermeneutic field inquiry tradition as explained by Herda (1999). Herda explains that this type of research protocol is different than others because it is less about how one conducts research and more about a way of being a researcher. Herda (1999: 93) says:

> Knowing how to do hermeneutic participatory research does not mean knowing how to use particular techniques to design questions, create response sheets, and collect and analyze data. Rather, it means learning about language, listening and understanding.

This understanding underscores the importance of research categories that help in the interpretation of the text that is created between the researcher and conversation participants. Additionally, the guiding questions are meant to provide a springboard for the research conversations, but not dictate or control them. The conversation unfolds with a natural to and fro among participants with opportunity for understanding to occur through discourse.

Research Categories and Guiding Questions

The following research categories serve as a framework for data collection, reflection and analysis of the conversation texts. The guiding questions are as the impetus for the conversations and they are not meant be answered specifically. All of the guiding questions have been retained from the pilot conversation with one exception represented as the first questions in each category and several more have been added to initiate the conversations. The first question under the imagination category was reworded for clarity.

Category I: Ethical Aim

This category presents sustainability within the broader context of social justice. An ethical aim is an approach to understanding that human actions are always ethical in nature and that our actions not only influence other people but also the health of the environment.

Guiding Questions:

1. What are the ethical implications of Sister Dorothy's work? What were Sister Dorothy's methods for implementing sustainability with an ethical aim and were the methods always successful?
2. How do you see the work at Iracambi as being ethical? Where are issues of ethics in your work?
3. Why is the focus of research and practice at Iracambi focused on sustainability and ethical aim?

4. In my experience as a teacher of science, and as I am thinking about my research, I believe ethical aim and sustainability are interconnected, but I think there could be a case where they are not. What do you think about that? Are sustainability and ethical aim naturally connected? Do you see this as a relationship?

Category II: Imagination

Brazil has experienced radical social, cultural and environmental changes through the Diaspora since the 1500s. Envisioning a future for Brazil requires imagination of what ought to be for the people and their relationship to their natural resources. Envisioning a world that the people can inhabit in communion with the environment means invoking imagination about what that could look like.

Guiding Questions:

1. You have had a variety of life experiences in many parts of the world (specific to the LeBretons). How can what you are learning here in terms of sustainable development transfer to other contexts or areas of world?
2. In a previous conversation my participant says that Brazilians don't mind cutting down forest for profit, because it is their land, their country, etc. and that many Brazilians do not see a problem with cutting forests to graze cattle. Do you notice this? How do you envision the work at Iracambi as influencing the Brazilian community?
3. What would a relationship between the government and people look like if sustainability with an ethical aim were present?

Category III: Praxis

Praxis, also understood as practical or intentional action, includes ethical aim and imagination, because our actions are rooted in ethics and promulgated by imagining what Ricoeur (1992) calls" the kingdom of as if." Praxis allows one to emplot and configure a new understanding of what could be based on history, past experiences and what one envisions for the future.

1. What did Sister Dorothy's 'call to action' mean for the people of Brazil and how can this legacy be carried on by others doing education and development work?

2. What are the best practices that you have discovered that work in terms of sustainability? Is it possible for the average Brazilian farmer to make a living by using sustainable practices rather than slash and burn practices?
3. What action can the government take to support sustainability with an ethical aim?

Data Collection

In the critical hermeneutic tradition of inquiry research, the primary processes I used for data collection were transcribed conversations, observations, and the collection of documents that were pertinent to my study. In all cases the conversations were video and audio recorded.

Data were collected from conversations between the participants and me. These research conversations were recorded and transcribed so that themes related to the research categories could be explored and analyzed. All of the research conversations were carried out in the English language, except for the conversations with Zezhino, Everaldo, and Frei Gilberto. These conversations were in Portuguese and attended by Binka LeBreton of the Iracambi Atlantic Rainforest Research and Conservation Center, who was my host and translator during my time in Minas Gerais state.

The conversation transcriptions became texts that I interpreted in light of my theoretical categories. I sent the transcribed conversations to my participants so that there was an opportunity for each person to reflect on the conversation and review the contents of the text. Half of my participants returned the transcribed conversations, with some minor changes to the text that helped to clarify ideas or in most instances the spelling of proper nouns. What follows is an analysis of the research transcriptions and my experiences through the critical hermeneutic constructs of imagination, praxis and an ethical aim.

Data Analysis

According to Herda (1999), the analysis of text through a critical hermeneutic orientation is an imaginative act. As I participated in conversations with others, a text unfolded which became the data source for understanding the issue at hand. I came to new understandings as a result of being an active participant in the research process.

Herda (1999) is clear that there is not one, specific, prescribed method for conducting research in the critical hermeneutic tradition, but does offer a sequence for understanding how one might go about it. Herda (1999: 98-9) describes the sequence for data analysis:

- After the research conversations have occurred as part of the data collection, the discourse is transcribed becoming a written document open to textual analysis framed by the research categories.
- The act of listening to the recordings and typing them allows the researcher a measure of distanciation (Ricoeur 1992) from the original conversation so that through reflection, new understandings may unfold. This is the place where critique occurs, because one has recorded the conversation, transcribed it into written text and come back to it to draw new understandings.
- As the researcher listens, pertinent information is gleaned and themes within the categories are established.
- The researcher culls quotes from the discourse to support the themes and substantiate the presentation of the data. The textual conversation data is analyzed in light of critical hermeneutic theory situated within the researchers categories.
- If more data are needed, conversation participants may be contacted for continued discussions about the issue at hand.
- Through a connection of the conversation textual data to the theory, the researcher explores implications that have arisen as a result of the data analysis.
- The researcher may grow and change in relationship to the research and new understandings may unfold.

Research Sites

The Dorothy Stang Center for Social Justice and Community Engagement

Notre Dame de Namur University (NDNU), located in Belmont, California, is fortunate to be the home of The Dorothy Stang Center for Social Justice and Community

Figure 2. DSC Logo
Photo from http://www.ndnu.edu/dorothystang/

Engagement (http://www.ndnu.edu/dorothystang/). The mission of the center according to its website:

> The Dorothy Stang Center for Social Justice and Community Engagement is dedicated to increasing awareness, dialogue, and activism around the issues of social and environmental justice. Through collaboration and partnership, the Center provides leadership and opportunities for NDNU and the larger community to develop an enhanced understanding of critical social issues, a deepened sense of civic commitment, and positive social change.

I had the opportunity to converse about the connections between The Dorothy Stang Center (DSC) and my research with the co-directors of the DSC, Stuart "Eli" Latimerlo and Cheryl Joseph. They are dedicated to sharing Sister Dorothy's story with others. Eli explained that the purpose of the DSC is to create dialog and experience through events, workshops and invitations to people to be a part of the mission which is to instill passion for service through experience.

Given current environmental conditions as they relate to climate change, water issues, and rapid progress in developing countries, the mission of the center is to inspire others through Dorothy's work to care about the connections between human societies and the environment. As more and more of the earth's natural resources are consumed, it will become vital for people in every echelon of society to see themselves doing what they can to preserve and conserve for ourselves now and for future generations. For Eli and Cheryl, an important part of the DSC's mission is to encourage college students to

become active in environmental and social justice issues through international service projects.

NDNU freshman are required to read Sister Roseanne Murphy's book entitled Martyr of the Amazon: The Life of Sister Dorothy Stang. The purpose is for students to become inspired as they read about the passion this Mid-Western nun had for others, and they will set an example for others through service experiences. This invitation to participate parallels Sister Dorothy's famous call to action, the need to not just talk about an issue but to go out in the world and do something about it. For example, students at NDNU can participate in alternative spring break trips to countries like Jamaica, where they volunteer their time assisting with community projects.

Iracambi Atlantic Rainforest Research and Conservation Center

Figure 3 Iracambi
Photo from Michael Demaree

In Brazil, The Iracambi Research Center is located in the state of Minas Gerais. Similar to Sister Dorothy Stang's work, Binka and Robin LeBreton run the non-profit research center on a sustainable farm with a group of international, like-minded individuals. Their life's work includes "managing natural resources, developing sustainable communities and researching ecosystems" (http://www.iracambi.com/v2/index.php/about-us).

To develop sustainable communities, the people at Iracambi work with both local agencies and community groups in a participatory approach similar to Sister Dorothy's method. According to their website:

> Iracambi's vision of thriving communities in a thriving landscape is founded on our search to identify ways of better caring for our forests while improving the

> livelihoods of local farm families. We do this through developing community skills, working on environmental policy issues and social entrepreneurship, currently focusing on community-based ecotourism.

The alignment between DSC's mission and Iracambi's vision demonstrates a human desire to do more than just live in the world, but to also thrive in it. In this sense, "to thrive" describes a way of being in the world that is ethical in nature. Thriving in the Iracambi sense means acknowledging the fulfillment of basic needs in such a way that there is concern about how these needs are met. For example, in Brazil, one can farm using the slash- and-burn method to earn a living, or one can farm using sustainable methods. Both methods provide a living but only sustainable practices show care for the environment, while slash-and-burn depletes the capacity of the land to produce healthy food.

Entree to Iracambi and The Dorothy Stang Center

As a faculty member at NDNU, I have the privilege of working on the same campus at The Dorothy Stang Center for Social Justice and Community Engagement. I conducted conversations with two Sisters of Notre Dame de Namur (SNDdeN), Sr. Margaret Hoffman and Sr. Joan Burke, in April who knew Sister Dorothy Stang personally. They shared about the SNDdeN involvement in Latin America, specifically Brazil, and about Sister Dorothy's life.

I conducted conversations with the co-directors of the DSC, Dr. Cheryl Joseph and Eli Latimerlo, in May of 2011. They discussed the mission and purpose of the DSC as well as efforts related to inspiring action related to social and environmental justice. Later in June, I had a conversation with one of the founders of the DSC, Dr. Don

Stannard-Friel who talked about the origins of the DSC and its future purpose which includes continuing the celebration of the life of Sister Dorothy.

I had the pleasure of meeting Binka LeBreton of the Iracambi Atlantic Rainforest Research and Conservation Center in October of 2010 at a book signing event held in conjunction with the DSC at NDNU. After our meeting, I contacted her husband and fellow Iracambi co-founder Robin LeBreton about the sort of research conducted at their center. He expressed that I would be most welcome to come to Iracambi Atlantic Rainforest Research and Conservation Center as many international researchers do every year to investigate questions related to both natural and social science disciplines. The research conversations at Iracambi with Robin and Binka LeBreton and five other participants were conducted in August and early September of 2011. A complete list of participants is included in Appendix A.

Research Conversation Participants

The Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (USF) approved my proposal on March 17, 2011. My IRBPHS approval number is 11-023 (See Appendix G).

My research included 13 conversation partners comprised of Dorothy Stang Center representatives and Iracambi representatives. Photographs of my participants are included and those without citations were taken by me.

Figure 4 - Sister Margaret Hoffman Photo from http://www.snddenca.org/article.php/MHBio

Sister Margaret Hoffman

Sister Margaret Hoffman is a SNDdeN at the California Province located on the campus of NDNU in Belmont, California. Formerly the head of NDNU's Art

Department, Sr. Hoffman was also involved in international communications for the SNDdeN in Washington D.C. for five years. Her current focus is with justice and peace issues, regularly writing articles posted on the SNDdeN California Province website (http://www.snddenca.org/index.php ?topic=justiceandpace_istm).

Figure 4 Sister Joan Burke Photo from http://www.snddenca.org/article.php?story=BurkeJob

Sister Joan Burke

Sister Joan Burke is a SNDdeN and Sr. Catharine Julie Cunningham Visiting Scholar at NDNU. Sr. Burke has lived and worked in rural Africa for over 20 years participating with those living in poverty to become self-advocates using the strength of their personal voice. From 2002-2010 she was the SNDdeN Non-Governmental Organization (NGO) representative at the United Nations. She visited Sister Dorothy in Brazil in the 1970s and does similar development work in Africa and in the fall, will be living and working in a slum of Paris, France.

Figure 6- Stuart "Eli" Latimerlo Photo from http://www.linkedin.com/in /seekingdharma

Stuart "Eli" Latimerlo

A graduate of NDNU for both his B.A. and Masters degrees, Eli came on board as the Co-Director of the DSC in 2007 with a focus on developing the

community outreach and development aspect of the mission.

Figure 7- Dr. Cheryl Joseph
Photo from
http://www.ndnu.edu/academics
/schools-programs/school-sciences
/animalshumsoc.aspx

Dr. Cheryl Joseph

Dr. Cheryl Joseph is a professor of sociology at NDNU since 1988. She has also been Co-Director of the DSC since 2009. Dr. Joseph teaches a number of Community-Based Learning (CBL) courses as part of the Dorothy Stang Scholars Program in particular called *Social Change Through Social Service*.

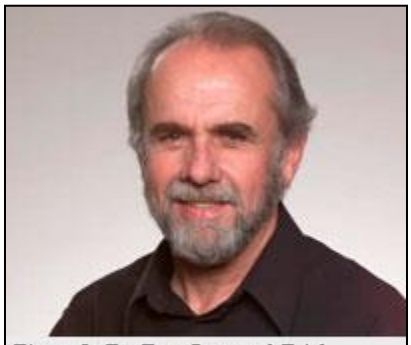

Figure 8- Dr. Don Stannard-Friel
Photo from:
http://www.ndnu.edu/faculty
/dstannard-friel/default.aspx

Dr. Don Stannard-Friel

"Dr. Don" as he is affectionately called by his students is one of the original faculty members who helped to create the DSC. Dr. Don is also a Dorothy Stang Scholar teaching *The Inner City: The Good, The Bad and The Ugly*, among other CBL courses. He has been a professor of sociology at NDNU since 1978.

Figure 9 - Binka LeBreton

Binka LeBreton

An accomplished concert pianist and writer, Binka has written six books about Brazil including a biography of Sister Dorothy Stang. She is also President of *Amigos de Iracambi*, a non-profit organization with the purpose of saving the lesser known Atlantic Rainforest which is where Iracambi

Atlantic Rainforest Research and Conservation Center is located.

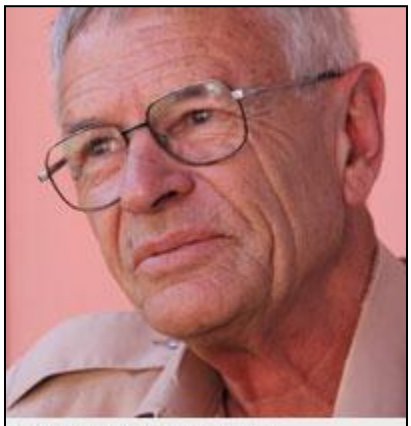

Figure 10 - Robin LeBreton

Robin LeBreton

Robin LeBreton holds degrees in Law, Agriculture Economics and Environmental Management. Formerly an agricultural economist in international development with the World Bank, Robin is a farm boy at heart and is living out his dream of practicing sustainability in the "Land of Milk and Honey" which is the meaning of the word *Iracambi,* where the LeBretons live in rural Minas Gerais, Brazil.

Figure 11- Jose Zezhino da Silva

Jose "Zezhino" da Silva

Zezhino lives in the village of Belisario which is over the mountain from Iracambi. His trade is saddle making, but his passion is protecting the land and water resources in the area. He does this by gathering and sharing information at base community churches and by attending meetings concerning mining projects in the area. He works in conjunction with Iracambi to gather information about local mining and to be an active voice for the protection of the *Serra do Brigadeiro* Park.

Figure 12 - Everaldo Oliveira da Silva

Everaldo Oliveira da Silva

Everaldo and his family live and work at Iracambi. Besides sharing about his life as a staff member he is also the local plant expert, using medicinal flora to cure everything from headaches to high blood pressure. He led me on a garden tour pointing out over 20 plants and their medicinal uses and properties. His knowledge and use of local plants is his inspiration for conserving the natural biodiversity of the landscape.

Figure 13 - Gustavo Polido

Gustavo Polido

Gustavo is a close partner of Iracambi whose work focuses on establishing and managing special projects. Specifically, he works on developing inroads with *Amigos de Iracambi*, the non-profit which advocates against devastating mining projects and for the education of local children. He was a site researcher Iracambi for many years before transitioning into his special projects role.

Figure 14 - Frei Gilberto Turceira da Silva

Frei Gilberto Turceira da Silva

Father Gilberto is a Franciscan priest in the nearby town of Rosario da Limeira who works with the base community churches in the villages to spread the word about ecology and religion. He believes that faith in God and care for the environment are interconnected because the earth is God's creation and therefore it must be cared for.

Figure 15 - Angelika Apagart Berndt

Angelika Apagart Berndt

A long time friend of Binka's, Angelika worked with Binka on issues of slavery in Brazil. As a German who grew up in Brazil, she is intimately familiar with social issues related to my study including the use of natural resources for progress despite environmental degradation. Her work as a counselor provides her with additional insights about the ways in which consumer culture has affected children.

Figure 16 - Altair Souza de Assis

Altair Souza de Assis

Altair is a physics and math professor at Fluminense Federal University in Niteroi, a city across the bay from Rio de Janeiro. His fascinating life story includes growing up as a street child in the *favelas* of Rio, earning his doctorate in physics, and then creating a non-profit group that institutes programs for street children called *Centro de Cooperacao para o Desenvolvimento da Infancia e Adolescencia* (Cooperation Center for the Development of Children and Adolescents). Part of the education with street children includes ethical aim with a sense of their place in the environment.

The next section includes an overview of my pilot study which was the precursor to the dissertation. My background as a researcher and interest in the topic at hand are also addressed.

Pilot Study

Introduction

In 2008 I conducted a pilot study on the topic of sustainability with an ethical aim to ascertain the extent to which this research would be feasible (See Appendix B). Knowing the notoriety of Sister Dorothy Stang on our campus, I began playing with the idea that her work was an example of my topic in action and that there may be lessons that others engaging in this work could gain from this research.

Sister Roseanne Murphy of NDNU wrote a biography of Sister Dorothy Stang called Martyr of the Amazon: The Life of Sister Dorothy Stang. I had a conversation with

her in November of 2010 (See Appendix B) as part of my pilot study to ascertain the connections between Sister Dorothy's life work and my dissertation topic. The pilot study proved fruitful, as demonstrated by the connections between caring for the land and the people who make their living from the land were clearly evident. This allowed me to see that Sister Dorothy's work caring for the people and the land could provide lessons for people elsewhere engaging in development and education work, teaching us that we can harvest the earth for what we need for survival without completely destroying it for profit.

Reflections on the Pilot Project

Sustainability with an ethical aim is part of every person's daily experience, but the extent to which we acknowledge or understand it varies. My pilot research demonstrates some concrete cases in which people attempt to live their lives in harmony with the earth (Sister Dorothy Stang and the LeBreton's of Iracambi) and even more cases in which people do not. I have come to understand that ignoring the issues related to over-consumption is not a solution and human societies will be faced with tough decisions about how to immediately address the effects of climate change, water shortage and balancing needs and wants in terms of consumption.

Through researching about Sister Dorothy and the LeBreton's work, I learned that an ethical approach to sustainable practices is central to meaningful human actions that esteem the environment. We need to imagine what these meaningful actions look like so praxis can occur. Herda (1999: 79) underscores this when she explains:

> In our interpretations, the worlds we propose cannot be finally evaluated with intellectual technology, such as determination of a text's structure or a text's understanding. Rather, the ultimate evaluation comes in whether or not we live

> our lives in moral, economic, and political community—a community that is always on its way.

With this understanding, I realize that a community embodies a world of ethics and action when human beings are aware of themselves in relation to others and the environment. To esteem others and the environment as we esteem ourselves is a step towards balancing needs and wants with the environment's capacity to provide.

An ethical aim, imagination and praxis are influential in the creation of sustainable practices in any particular community. These categories were important to my understanding and analysis of my pilot study text because they allowed for meaning-making to occur on a theoretical and practical level. The research questions were helpful in guiding the conversation with my participant and I was excited by the prospect of future conversations with others related to my topic. I used the same categories and questions for my dissertation with a few additional questions that were specific to Iracambi.

Background of Researcher

My journey into the exploration of sustainability with an ethical aim began with my passion for and life-long interest in science. I have always been curious about the natural and physical world, how things work, how the human body operates, the intricacies of ecosystems, and the vastness of the universe. From earth, to life, to the physical sciences, my interests are broad and far reaching, sparked initially by my high school biology teacher and nurtured during my undergraduate program by my physical anthropology professor.

In 2001, scientific interests led me to accept a position in which I was hired to teach two sections of sixth grade earth science, two sections of seventh grade life science

and two sections of eighth grade physical science. Although I did not yet have a teaching credential, I did not need one to teach at a Catholic school, but promised the administration I would earn my master's degree in education, which I completed in 2004.

Each day in the classroom was an adventure! Regardless of thoughtful planning, careful preparation of materials and ensuring I knew the content, there was always a student whose curiosity matched or exceeded my own and it was easy for lessons to diverge on a tangent because of an unanticipated question. For example, during a mini-lesson about matter, one intelligent and well read sixth grade student queried, "Mrs. D, what do you know about string theory?" Uhhhh, virtually nothing. My undergraduate physics professor didn't get to that in his curriculum. As the silent seconds ticked by, the student and the class waiting eagerly for me to share my knowledge, I had to admit that I didn't really know much (anything) about string theory, but suggested the student look it up and share with the class! And the next day, he did.

Throughout the six years I taught science, I was required to adhere to the California State Content Standards in science and noticed that there were certain things I deemed important that were not standards. For instance, as climate change, recycling, alternative energy sources, green jobs, and the cost of fossil fuels dominated the nightly news, there was not a standard about the interconnection between human societies and their dependency on the environment. The only standard that was close involved sixth grade content standards related to natural resources. Any connection between human use and misuse of natural resources was by and large dependent on the teacher to imbue the curriculum with it; there was nothing inherent to the standards to say, "This is what humans use from the environment, these are the consequences of using too much."

Now that I have been teaching in the multiple subject credential program at NDNU for the past six years, I have become increasingly interested in the static nature of the science standards as they have remained unchanged and unaltered since their adoption by the state in 1996. In addition, as news stories amass about the imminence of climate change and the depletion of natural resources, it seems to me that is important now more than ever to ensure that our students, who will be future adults dealing with the consequences of such issues, have an understanding about the role humans play in connection to their environment.

Summary

The research process described in this Chapter presents a road map for examining sustainable practices with an ethical aim. Aspects of critical hermeneutic inquiry provide a way to interpret meaning from the researcher's experiences conversing with participants at NDNU and in Brazil. Both the researcher and the participants come to new understandings about the topic at hand through discourse.

In Chapter Five, the data gathered during the research process is presented in light of three critical hermeneutic lenses so that meaning can be uncovered. The Data Presentation Chapter represents a narrative of sustainability within educational and development arenas told from the researchers point of view and imbued by the participants whose thoughts and ideas have become a story to be told.

CHAPTER FIVE

DATA PRESENTATION

The act of narrating preserves the history that is behind us so we can have a future (Herda 1999: 127).

Introduction

The transcribed research conversations became a text created through language. The data presentation represents a plot that allows the reader to take account of the narratives shared by the participants. It is a story created from the plots shared by the participants which the researcher imbues with quotes forever preserving the conversation encounters. As Herda (1999: 128) says "the text opens up a world of possibilities" and indeed, it does open a world in front of the text in which language becomes action.

The conversations that unfolded during the spring and summer of 2011 are narratives about sustainability, ethical responsibility, and the roles of education and development told by faculty and staff of the DSC, farmers in rural Minas Gerais, NGO representatives, and local Brazilian people. The narratives disclosed notions about sense of place, passion for sustainability through care for the land, ethical orientation toward the land, and the desire to educate and promulgate the idea of ecological balance with human happiness. When considered through my point of view framed by my personal history and experiences, the themes that unfolded were: sustainability in Brazil, the meaning of sustainability with an ethical aim, education and development models, and the government's attitude toward progress.

Sustainability in Brazil

Before setting foot in Brazil to see firsthand the country's fabled ecological wonders and in some cases, environmental disasters, I started my inquiry in Belmont,

California at NDNU to learn the history and life work of Sister Dorothy Stang and uncover the degree to which her work may influence sustainable education and development in the future. My first foray into the life of Sister Dorothy led me to SNDdeN Margaret Hoffman and Joan Burke who live on campus in the Toso Residences.

Butternut squash was roasting in the oven as I was welcomed into the sisters' common living room. We sat down together and I shared about my research and interest in the life of Sister Dorothy. Sister Margaret spoke first, explaining that she knew Sister Dorothy during her days as a credential student at NDNU. She described Sister Dorothy as a likeable person who was "nicely ordinary," in contrast to the fiery lady seen in documentaries who passionately implored the Brazilian government among others to stop the destruction of the people and forest of rural Brazil.

Sister Margaret rationalized that Sister Dorothy's farm upbringing in Ohio made her perfectly suited for her work in the forests of Brazil, because she valued the land and the people whose livelihood depended on it. Through recounting the work of Sister Dorothy, Sister Margaret shared that the ills of the environment sprang from people who moved to the forest to exploit it for economic benefit. In the case of the poor migrating from the cities to the forest, they simply didn't know any other way than slash-and-burn agriculture, but were receptive to learning new methods from people like Sister Dorothy. It was predominantly the large-scale cattle ranchers who did not value the natural biodiversity of the land. Sharing about the forest ecosystem as it intersects the cattle business, Sister Margaret said that

> there's a kind of education that is lacking, and in a sense, people who have been there over years [living in the jungle], poorer people would understand that. But then, you have people coming in because of population growth, coming into those areas where they did not have the same understanding, that

> you cannot slash-and-burn and move on because the soil is fragile there. And, so Dorothy herself I think evolved because she came up here [to Notre Dame de Namur University] to study, in between times, and I think she found out that we have got to really learn how to sustain.

Sister Joan, who visited Sister Dorothy and the SNDdeN in Brazil in 1973, joined the conversation and explained the history of the Catholic Church and the SNDdeN in Brazil. She underscored that their work was predicated on a mental-shift from the Portuguese colonial missionaries teachings on fatalism, which dictated that suffering should be accepted, to non-violently challenging oppressive systems since God wants his people to be free (see The Book of Exodus, Chapter 8). The SNDdeN set up base communities comprised of local villagers who would meet for Gospel readings and, through discussions with the sisters and sometimes a priest, connect the Gospel message to their daily lives.

Over time, Sister Dorothy realized that slash-and-burn agriculture was not sustainable and as she worked with the people socially, she also worked with them ecologically to better balance their use of the forest. Sister Joan said:

> In the system that was worked out, a certain portion of the land was settled on and farmed (20%). The other 80% would be left as a forest to which the people committed themselves to be the custodians. As they would take down the trees in their area to farm, they immediately started to re-plant. Dorothy worked with the people to identify the indigenous trees which grew best in the area. The people now had to learn to survive in a rainforest, whereas what they had come from was a semi-arid dessert, the *sertao.* It required a big leap to learn new skills. Dorothy really threw herself into that, she realized they had to learn how to adapt in another environment.

Sister Joan related sustainability to intergenerational justice, the idea that we must look at one generation as accountable not only to the immediate generation, but to the next as well. This is a notion Sister Dorothy embraced, and now members of the Catholic Church, which includes Benedict the Sixteenth in his last encyclical (see *Caritas in*

Veritate), have also publicly recognized. Sister Joan said that intergenerational justice also means:

> In terms of use of materials, recycling what can be recycled, using what one needs… that whole idea is a question of justice, our justice to the next generations. And I find it's a very helpful concept to link all kinds of things. But with climate justice, sustainability, it just fits.

As we discussed the theme of sustainability within the context of intergenerational justice, I asked Sister Joan if the phrase was synonymous with ecojustice. She said that it was in the sense that it reminds us that there are people who come after us and so it is the idea that there must be justice for the land and justice for the rest of creation, of which we are a part. She went on to share, as Zezhino and Everaldo later did in Brazil, that the wisdom of the native peoples inherently recognized that human needs must be in balance with the land's capacity to provide. Additionally, from her work in rural Africa, Sister Joan said that modern day subsistence farmers also have the understanding that there is a kind of reciprocity in which one takes from the land, but then one gives back and this perpetuates the cycle so the land will continue to nourish.

Therefore, climate justice, ecojustice, and intergenerational justice all underscore the importance of going back to basics in the sense that we must understand what it takes to have clean water, land for food to grow and diverse ecosystems for the land to be healthy. In Belisario, a small village in the Brazilian state of Minas Gerais, I met with Zezhino who is a local saddle maker and supporter of the land preserves in the area. His passion was evident and his historical knowledge about the area was fascinating because he connected this idea of going back to basics with the native Puri Indians who were decimated when Colonel Belisario arrived 150 years ago to settle the pristine forest of the *Zona da Mata.*

Zezhino explained that the Puri Indians were the guardians of the water and that is why they named the beautiful mountain peak *Itajuru*, meaning tears, which is a metaphorical reference to the natural springs of water that flow down the mountain. Zezhino explained:

> The Indians had all kinds of knowledge about medicinal plants, and all kinds of knowledge about the area and when Belisario and his *pistoleiros* (gunmen) came they sent the women and children into the forest. The Puri Indian men fought Belisario, but it was guns against bows and arrows, so we lost all that knowledge.

Zezhino shared that his passion for the land and forest zone is based on the history of the area and his desire to protect God's creation. Zezhino regularly attends meetings to discourage bauxite mining in the area based on the fact that the *Zona da Mata*, or buffer zone region, protects one side or area of the mountain range, but not necessarily the other side of the mountains. When miners excavate the unprotected side, polluted water rolls down into the *Zona da Mata* and incidences of deadly landslides spurred by erosion increase dramatically. When I asked him why he is so passionate about protecting the native forest and water resources he said:

> The coronels sent people in to cut the forest and turn it into *fazendas* (farms). Minas Gerais means "general mines." It's very high here and so, the higher it is the more water there is in this area. This area doesn't belong to either Minas Gerais or Brazil; it belongs to mankind because it is an extraordinary area of water resources. There are areas in Africa where it hasn't rained for three years and the kids are eating dirt. Brazil has some of the greatest water reserves of the world because of the Amazon, the Pantanal, the big aquifer Guarani, and the huge rivers. The water doesn't belong to me, it doesn't belong to people in Minas Gerais, it belongs to the world.

Most of the people I met and conversed with shared similar feelings about the need to protect these valuable natural resources. They recognized that humans do need to use these resources, but we must consider how much we need, what alternatives exist,

and how can we use less to ensure that future generations can also have an orientation toward the good life. The reason most cited as a roadblock to sustainability was money. Zezhino said, "Money buys people easily," and if it weren't for his environmental passion, he said he would have taken a job with the mining company a long time ago.

In an interview with another Iracambi researcher named Clare Raybould, Binka discussed this same dichotomy among Brazilians and the land and the original native inhabitants and the land. Binka (http://print.news.mongabay.com/2010/0926-raybould_brazil_lebreton.html) posited:

> It has been the custom in Brazil ever since the European first came here to use the land until it is exhausted and then move somewhere else. Farmers invest the minimum they can in the land: they'll go on using it until it won't produce anymore, and then abandon it. An Indian farmer, whose family has farmed the land for generations, would never do that as he knows that if he does, his children and grandchildren won't be able to live off the farm. Here however, without that experience and the European custom not changing, we are running out of new land to plough up and new forests to cut down and have lots of land that is being farmed to exhaustion because there is no place to move to.

It remains clear from this conversation that unless or until the people of Brazil and the world decide that the land has been degraded enough and become concerned about the future generations' ability to have rich land and clean water, then a wide-spread shift toward resource conservation is unlikely to occur.

Meaning of Sustainability with an Ethical Aim

As I explained my research topic to a colleague, he wondered why I needed to argue that sustainable practices are inherently ethical in nature. I shared that from my point of view, sustainable practices are not always easy to implement, cost efficient or well enough understood to always be ethical. In particular, sustainable practices are not socially just if people can no longer earn a living because regulations are restrictive or

environmental laws are so strict. Sustainable practices respect the biodiversity and ecological conditions of the land while simultaneously supporting the people who live there. During my conversation with Sister Joan, she poignantly shared about Sister Dorothy's murder at the hands of greedy people opposed to sustainable practices because of the lack of profit in them. She explained:

> In the film ["They Killed Sr. Dorothy"] when you see the two people hired to be the hit men of Dorothy, they describe themselves as day laborers, which means they weren't farmers. They might've come from the Northeast, as most of the people Dorothy was working with did, but they weren't actually farming. So they didn't have the sense of "I'm caring for this land and it's going to be there for someone else after me." And certainly those who are behind the logging and the grazing in the Amazon do not feel closely connected to the land or have any idea of even using it as stewards. They see it as a commodity to be exploited; they will in time move on to do the same to other parts of the forest.

Eli Latimerlo, Co-Director of the DSC, stated that Sister Dorothy understood the implications of sustainable practices on our consumption patterns. The majority of the wood products and beef supply grown in Brazil are not consumed by Brazilians, but by Americans, Europeans, Chinese and others who purchase these goods. As long as people outside of Brazil want to eat large quantities of beef and sit on beautiful wood furniture, there will be a market for Brazilian goods irrespective of how or where they were obtained. Eli said:

> One of the things that Sister Dorothy was really addressing was that she was hoping to impact consumerism in our society. If we can temper, scale back some of that consumerism, it would have a significant impact on the need for greed, the avarice that's fueling the destruction of the Amazon… We are the consumers so we are creating the demand for the supply.

At Iracambi in Brazil, I met with a man named Everaldo, who works as a ranch-hand for the LeBretons on the *fazenda*. I wanted to know about daily life in rural Brazil, and how issues of sustainability may be brought to bear. Everaldo shared that through

attending church, the Franciscan priests shared messages of ecological balance during their talks. We also discussed the presence of the miners and how that affects the local region. During our conversation, we talked about the connection between the God and the miners:

> Stephanie Demaree (SD): This might sound kind of wild, but if the people in the base communities understand that God is the divine and God created everything and we need to respect it, do the miners not have God in their lives or they just ignore it? How are they able to mine with a clear conscience?
> Everaldo da Silva (ES): I think they don't believe in God. They probably do it [mining] because they need the jobs. But there must be some people from the church [involved in mining companies], there must be.
> SD: But money is probably more important than duty to God?
> ES: Many people let money speak louder than God.

Frei Gilberto, a Franciscan priest in the town of Rosario da Limeira, shared the history of how the Franciscans came to be involved in matters that concern the environment and what they are doing specifically in the local communities. He explained that when Francisco lived 800 years ago during the 13th century, it was a time of great conflict and great progress. There were wars, but civilizations were also growing as cities began to develop. Francisco wanted to create a group who lived in harmony and that has been the goal of the Franciscans ever since.

I wondered to Frei Gilberto what the connection between religion and the environment was. He said that most Franciscan priests choose not to talk about ecology because in this day and age of conflict, it is a difficult subject. In the same vein, he clarified that politics and religion do go together. He elucidated:

> We [Franciscans] believe the power [God] created everything. One day God was the Creator and everybody lives with his creation. The moment that he [man] appears, he has a link with everybody—nature, animals, trees. God and everything [exist] together, on the same level.

I asked Frei Gilberto if the Franciscans were trying to be a voice to advocate for a less consumer driven lifestyle. He said this was a big challenge because our lives are all about money. But the church is trying to do its part. He stated:

> Every year in Brazil and maybe other countries the Catholic Church has a subject to work on. And this year 2011 we work with the church on the environment, to save the planet. Creation has problems. So the church [and] this is important, the majority of the church, the powerful people decide to work to show the Catholic people that we need to save the planet. And groups have decided this is the year of the international forest.

I responded that I think people around the world are starting to realize that if we don't start to respect nature that in 20 years, 50 years, our children and our grandchildren might not have the things that they need to survive. Frei Gilberto replied:

> But at the same time, we have two powerful systems: the nature system or alternative ecology and capitalism. This [capitalism] continues to be more and more powerful, [though] television, etc. Everything is this [consumerism].

Sustainability with an ethical aim can be considered through this lens. It is bound up with a desire for progress ordinarily measured by financial gains and sometimes also the desire to do what is right. Often, these are at odds. It can be difficult to make your living as a bauxite miner and care for the land simultaneously. When I spoke to Robin LeBreton of Iracambi about this issue of sustainability with an ethical aim, he was very practical rationalizing:

> Basically in any ecosystem, if every element in the ecosystem takes what they need [then] basically the ecosystem is sustainable in the way that wildlife lives in the wild. The lion kills the antelope because it needs to eat but it doesn't go around killing all the antelope left, right and center.

He related this to people, whether we are talking about a mining company or farmers, that we have forgotten this simple science lesson about balanced ecosystems. I wondered why more people in Brazil weren't as passionate as Zezhino and others

concerning balancing ecological needs with material wants. Robin explained that at least in the case of Brazil, it was cultural. He said:

> [A] neighbor of mine when I asked him why there aren't any trees on his farm he said, well trees are for monkeys. I'm not a monkey so what do I want a tree for? And there are plenty of people around here who feel like that.

Robin went on to explain that this was a general feeling, especially of parents who actually feared the forest. He shared:

> Their parents [of local children], particularly mothers are afraid of the forests. This is another cultural fact, this goes back to the Catholic Church actually, that nature is not something to be lived with, it is something to be dominated and therefore nature is something of an enemy and not a friend. This is very different than in Africa [Kenya] where I come from where we live together, we live in harmony with nature, but here [in Brazil] now, man dominates nature.

Unless or until there is a realization in Brazil and everywhere that as biotic parts of the larger ecosystem, we must function within it, we collectively risk creating a world that will not be able to sustain us. At least not in the way we have grown accustomed to.

Development and Education Models

Iracambi NGO has been working in Minas Gerais on local issues related to mining, re-forestation and social justice concerns for years. This is an unintentional consequence of Robin LeBreton's lifelong dream of being a farmer. As a World Bank employee living in Washington D.C., Robin along with his wife Binka, decided to stop talking about his dream and finally set out to live it. This is how they ended up in Brazil in 1989, but how they came to be local change agents, is a different story. Robin shared:

> Community never occurred to me, never thought about them, but when I started working on the farm, I began to realize that the whole question of community with people and environment on the farm and agriculture, that whole thing is a whole—you can't take one part out from another. And one of the problems with the environment was that it was so screwed up because the communities were so screwed up and one of the reasons communities were so

> screwed up was because other people have screwed them up and those were the things that we were trying to sort out.

Robin went on to say that once he and Binka realized that everything was interconnected, farming, environment, local issues, and so on, that community involvement followed. I asked Robin how he set out to change the attitudes of local people in relation to sustainable farming and he corrected me to say that any change that occurred was circumstantial. More often Robin would try something new, a neighbor would question him about it and then before he knew it, the neighbor was trying it as well.

This led to a discussion concerning development issues and I asked Robin if development in the region was doomed because of the mining companies or if the community could somehow rally support for more ethical responsibility. He shared that a new organization had formed called The Development Territory which consisted of nine counties around the park preserve, *Serra do Brigadeiro*. He said:

> Now some of us see this [organization] as really being a tool that can bring people together with a common vision of the development of our area. And we the territory, we wrote a development plan for what the development of this area would be. It is 150,000 people we are talking about. And this is I think the most interesting thing that's been going on around here and this is something entirely new and that gets you away from the four-year political horizon because the people involved in this thing are not just politicians. Politicians are involved, they have to be of course, but a lot of the people are just ordinary citizens who are on this Council and other people like community leaders of various kinds and various other people from the University, people who have an investment in a longer-term vision. So we can say we have a vision for this place and what we would like and what our grandchildren might see so they can see for example what the impact of mining would be on the future generations, whereas the politician can only see the next election, four years time. So naturally we have a different vision and I think this is something that has been very exciting in that if we can keep this kind of thing going, then that would be good, long-term sustainability.

Sister Hoffman spoke about development in relation to Sister Dorothy's work "You work with the people, you respect the people, you learn their ways and then you take off from there to look to the future with them, rather than on them." Robin's comments paralleled the idea that as communities take on local responsibilities and realize their own power and agency, a shift starts to happen in which the people understand their voice matters. A common thread between Sister Dorothy's approach and Iracambi's is the sense that communities must be involved and they must be active participants in the discourse that surrounds issues in their lives.

Don Stannard-Friel, one of the original faculty members who started the DSC at NDNU discussed Sister Dorothy's early work in Brazil. Although her initial intent was to establish elementary schools, she came to realize that as part of the larger community, issues related to the larger community must also be addressed. He said:

> I mean the thing about Dorothy and the social justice issue, here she is going down [to Brazil] to start a school and all of the sudden, it's a huge [social] movement and she's dealing with protecting the people and the land of the Amazon and putting her life on the line and they [ranchers/hired gunmen] took it. So you can't give any more than that.

Sister Joan explained that early development models imposed in Latin America including Brazil, were not always centered on community involvement or participation, but rather implemented a top down approach in which an outsider tells a local what will happen in a vacuum void of discourse. She noted how the SNDdeN development approach, which heavily influenced Sister Dorothy and others, was implemented differently:

> Latin American liberation theology challenged the development model of the time which tended to see people who need to be developed as objects rather than subjects of their own history. And liberation theologians will say, "We all must be subjects of our own history."So we write our history. We are the main

> actors in our story. We're not written on. It's another way of saying what I said in that paper, being inside-out. I define who I am. I don't just take on what someone else defines as me. And that has tremendous power of liberating one, enabling one to be who one is, still open to another and remembering that another is similar, so you're in dialogue in a process of creating yourself. But the development models at that time were largely premised on seeing people as objects.

People such as the LeBreton's and Sister Dorothy are esteemed by their local communities because they embrace the approach Sister Joan described of working with and for others rather than paternalistically telling others what is best for them.

Development seldom occurs without some level of education also being present. At Iracambi, education has taken a front seat in the establishment of the role of children in understanding their sense of place and their connection to the environment. Robin explained the efforts of Iracambi:

> We've got this new junior scientist program which is a lot of fun and we are showing the schoolchildren how they themselves can take care of their environment primarily by monitoring it and seeing what's going on. That's the best thing to do. Later on we'll get on to some other things but that's what they're doing now. We think that people should be aware, well everybody is aware of climate change, that the climate is changing, but what the impacts are, why, where, how and what nobody really knows so I think this is one thing we should be doing, what is going on around here with the climate? What's happening?

The day I was to visit the junior scientists in action happened to be a local holiday so the school at Iracambi was closed. I asked Robin what this program looks like in practice, and in what kinds of activities the junior scientists are participating. He said:

> So let's have a look at how our streams are behaving and what the water flow is like and how the trees are growing and that kind of thing so we started this program that were doing now, it's a pity you couldn't be here one day to see them it's really, really fun and the kids go out and they measure the water flow and measure the trees and measure this and that and record it all been over the course of time we'll collect a database then they can start analyzing it and looking at it in more detail. I think the kids really enjoyed this and it is the first time I think they've been given the opportunity first of all to get hands-on

> knowledge of this thing and secondly to be able to be exposed to some of these ideas that maybe they should be able to do these things themselves and not have to sit down and be told what it's all about from somebody else. They can see things for themselves.

As a science teacher, I have seen firsthand how students are influenced through participation in the inquiry and discovery process. Students' long-term knowledge retention of science content increases dramatically when they are actively engaged in doing the work that scientist's do, which is measuring, observing and collecting data. Moreover, the fact that the children of Rosario da Limeira who participate in the junior scientists program go home and share their discoveries with their parents at the dinner table, brings the education to a wider audience. Binka underscored this second order educational experience:

> I'm working through the kids so the kids can influence their parents, the small farmers, who never had any education but will take it from the kids. So, monitoring the water, the amount of the water and the quality of the water, monitoring the soil, monitoring how forest grows or doesn't grow, and then doing the mapping. Because the mapping is probably the single most successful thing we've done because people who, the parent's generation who are barely literate, they kind of freak out with words and written words, but they can do pictures. And they can do maps. And they can understand, and they love it.

I met with Altair de Assisi in Niteroi, a city across the bay from Rio de Janeiro, who is a friend of Robin and Binka's. Altair, a professor of physics, works with street children who often stop going to school because they feel disenfranchised and separate from the system. We talked about his social work with children in the city and slums of Brazil, and how in many ways, education here is not unlike education of children in rural Brazil or elsewhere. He said:

> Education is not only school, education is a more complex thing. Normally people associate education with a degree, that education is a building. Of course, it is relationship— it is food, it is a library, books, family, this is

> education. So when we just look at the school as a building, this is the wrong way to see it.

This approach is akin to the work at Iracambi. Robin, Binka and Altair see the need to educate children as a way of understanding their environment, whether the environment is rural or urban. Altair's passion to work with street children stems from his history. As a teenager, he was a street child, who through opportunity and circumstance, eventually earned his doctorate in physics. He explained how his life experiences make him uniquely suited for social work with street kids because he not only knows what their life is like emotionally, but he also knows how to approach the situation cognitively because of his formal education. He talked about his approach to education and development in the *favelas* and the way in which it must include both heart and mind:

> In general emotion vanishes with time – it is a dissipative process. Like passion, like a car running without the engine power, it will stop; it is just a matter of time. Reasoning and love do not vanish with time. Passion is good only to start the process, but if we do not build up love and reasoning, all dreams will vanish to nothing in time. Why reasoning? Reasoning is necessary, for instance, to access the cognitive model of the community we want to help, without this access the work can crash with no results whatsoever.

Altair used this example to explain how many people including those working with NGOs come to the *favelas* with the ideal of helping street kids, but their success is limited either by their lack of heart or by their lack of cognitive understanding of the broader social situation. For Altair and Robin and Binka, success in the education of Brazilian children requires access, opportunity and a sense of community.

In my conversation with Eli and Cheryl of the DSC, I wondered if Sister Dorothy's model of sustainability through community involvement and development was a replicable model in other countries or contexts. Cheryl thought that it was, but like

Altair, underscored the need to move beyond the passion that initially motivates people to a place of individual ownership over our lives. Cheryl elucidated:

> I think no one likes to be, or few people like to be either told what to do as you pointed out or be led, people want to make their own changes. And take responsibility for that. And once the ownership that she [Sister Dorothy] was so good at bringing about, ownership over, "we did this" then I think changes will be long-lasting. Without that I think we lose the gains that we made.

Eli weighed in and made the connection between shifting from the passion that starts a movement like sustainability in rural Brazil to how the efforts can be sustained over time. He related this to Sister Dorothy's development approach:

> I think that's the true essence of the sustainable model, individual ownership as well as collective ownership. But there is a tendency to start out with an impassioned…get caught up in the collective experience, the phenomenon, the consciousness of the movement, and that it comes right down to the individual thing, how do we really sustain that? What have we changed in ourselves that allows us to make that a new habit of behavior? And that's the work that Sister Dorothy was still doing that work when she was killed, but the point is that work is still continuing.

Our discussion of Sister Dorothy's model of development through community and participation led Cheryl to reflect on the kind of person Sister Dorothy was. Cheryl's comments resonated with me when Altair discussed the need for heart and mind to be present when we engage in social work. Cheryl said:

> In terms of talking to some of the people who knew her in Brazil, where they say you know, she was a tough nut! So, was her model always successful? I agree with Eli, she probably had to grow into it and she learned as she went and I think she probably learned to do that and accept that. I don't think she would beat herself up when she didn't make her point or wasn't successful. She would learn from that and move on. And I think she, this is my read on this, I think she probably learned from the people she was working with in the community. And I think it's the mark of a good community organizer which she was.

Sister Joan Burke summarized how Sister Dorothy's work intertwined both education and community development concurrently. Sister Dorothy's primary purpose

was to encourage and help local people build elementary schools, but eventually that led to community development as it was the community who became actively involved in the creation of the schools. Sister Joan said of Sister Dorothy and the SNDdeN:

> Gradually, they moved into the countryside and other rural centers to develop small Christian communities. When they spread out and went into more subsistence farming communities, Dorothy and two other sisters, including Sister Joan Krimm, settled in Coroata. This is where I met her during my visit in 1973. The sisters would go around visiting the people in the area and helping them to start these small Christian communities [base communities]. They let the people begin to define what they themselves thought were their needs, and then to accompany them in whatever they thought they needed to do. And this was radical stuff. The poor were beginning to define their own lives and choose to challenge the oppressive structures which made them impoverished.

The crux of what Altair, Robin, Binka, Sister Joan and others shared is that education and development are most successful when realized within a community context in which the people determine for themselves what is best for their future. In the next section, the data that unfolded relates to the government's role in the economic and social progress of Brazil.

Government's Attitude Toward Progress

The role of government in a democratic society is to make decisions by and for the people. In the case of Brazil, with a young democracy and ample natural resources, the current government seeks to be a major economic world player. In my conversations, I came to learn that this is both a benefit and a detriment, because economic progress is not always for the majority of the people and even less often is for the preservation of the land. The views of my conversation participants shared in this section reflect their opinion or position shaped through the experience of living in Brazil.

When I met with Zezhino, we talked about the role of the government in the preservation of the buffer zone, the *Zona da Mata*. I asked him about the contradiction of the government which approved the preserve and buffer zone, but then allowed Vale S.A. mining company to come in and dig for bauxite ore. He explained:

> There are lots of people who want to preserve [the Serra do Brigadeiro] and the government knows that, so it's going to lead to conflict. So inside the buffer zone the government has already said they won't let the miners in. Aluminum is part of the filtration system that the water goes through it and so either the government is going to understand and the mining company is going to understand that the water is more important than the aluminum, or we're going to have to call the international [community] or press to see what's going on, that the government has done this to us…. because sometimes it seems the government is giving to you with one hand and taking away with the other.

He further explained that although a buffer zone has been established, the government knows there are millions of dollars in bauxite ore in the *Zona da Mata,* and they need to decide what is more important, aluminum or water.

Gustavo who works with Robin and Binka through the Iracambi NGO also addressed this in our conversation. He had just returned with Robin from a meeting about creating more preserves with the big mining company, now privatized but originally established and owned by the Brazilian federal government. He commented:

> It was really, really important, the meeting that Robin and I went to, because one of the big mining companies, Vale S.A. which is a very well-known mining company and the second largest in the world or something. They're actually creating a chain of private preserves to link parks and make corridors. We are against the mining company but maybe we needn't accept money from the mining company [the mining company offers local farmers money to rent their land to be mined] but we can encourage them to make private preserves. After 20 years the conversation, the dialogue with the company hasn't been very open, it hasn't been very good, but at least it is beginning.

As I listened to this information, I thought it sounded as if the government and big business were really working together to make progress and balance material needs with

environmental concerns through transparency. But I learned from talking to Robin that it is much more complicated than that and ultimately a poorly written law is akin to no law at all. Robin addressed this issue through the example of the creation of forest corridors, which requires an understanding of the complex biological webs that are actually involved and the fact that current laws do not do their intended job of protecting them. The ecological web Robin described is so multi-faceted that when coupled with sustainability and preservation this part of the discussion is better understood and appreciated if presented in its entirety. Robin explained:

> If you look at the landscape see these little islands of forest where there is a patch of forest, we know that there is a relationship between the size of the fragment of the forest and the length of time in which the biodiversity of those forests can be maintained. As the fragment is smaller, the more quickly the biodiversity will die out. So in that case obviously we need to increase the size of the fragment and how would you do that? You link them together by forest corridors. Wonderful…. but wait a minute, what do you mean by that actually? You mean that you put a corridor and that allows biodiversity to pass along? How does this happen, what kind of biodiversity are you talking about? If you look in the tropical forests there are all kinds of very complex systems of symbiosis for certain species depend on other species, and more than one species are involved with several different species. To take an example, the Brazil nut that you buy in grocery stores in the [United] States comes from a tree, it has big kinds of things on it that look like cannonballs, sitting outside in the front there [of Robin's house], that's a tree related to the Brazil nut tree, the same kind of thing-natural looking pot with a lid on it. The flower of the tree is pollinated by a wasp which actually doesn't come for the flower of the tree; it comes for an orchid that grows on the tree. So you've got orchid, the tree and the wasp. The wasp is a little tiny fellow with a short stubby body and very short wing. It can't fly very far. It can only fly about 200 m so if the orchid that attracts the wasp is more than 200 m away he can't get there because he can't fly that far. Now what has happened in the state of Para in northern Brazil where most of the Brazil nuts come from, it is illegal by law to cut down the Brazil nut tree, it has been for many years. So, when people cleared land they always leave the Brazil nut tree and they stand out there in the middle of the pasture all by themselves. They never produced any nuts; obviously they do not produce nuts because of poor old wasp cannot fly all the way across an open pasture. Even if he could, it wouldn't necessarily solve the problem of the tree because the nuts come down in this big cannonball thing and they fall on the ground and then it has a very hard shell. There is only one animal in nature

> which can open the shells it is called a paca agouti, which is about the size of the big rabbit and it has very, very short teeth. It opens the hard shell, eats the nuts, and the partially digested nuts pass through the digestive system and they germinate. If they don't pass through the digestive tract of the paca, they do not germinate. There is some kind of catalyst. So you can buy, for example your Brazil nuts in the supermarket and try to germinate them and you would not be able to, unless you have a tame paca to feed them to, otherwise they just won't germinate.
> SD: And I'm guessing the problem there is that pacas don't hang around single trees in the middle of nowhere?
> RL: Exactly, in the middle of a pasture. So when you talk about forest corridors, are you talking about a forest corridor for a paca or a wasp or orchid, or fungus or what are you talking about here? And if you are talking about fungus spores, for example which you very well may be doing because fungus spores are very important for the reproduction of orchids and the orchids are important for the wasps and so on and so forth. Now fungus spores are very particular about what kind of tree and what kind of thing they grow on, if you don't have the right kind of thing you won't have the right kind of fungus.

The Brazilian government, like so many others in the world, use natural resources as commodities to economically progress the country, but it must also pacify those who are aware of the shortsightedness of overly using them, risking a future whereby exporting these items means the land and the local people will ultimately suffer. Another friend of Robin and Binka's named Angelika met with me to share her story about working as an adviser with various social groups in Brazil, particularly with Binka on anti-slavery issues. Our conversation turned toward the government's role in social and environmental issues. She stated:

> Brazil has the most beautiful constitution you've ever seen, it is a young constitution, it's beautiful, it reads nice, and it's the most fantastic! This is what the world should be like, but you never see it enforced, that's the big thing. It's on the paper. A lot of things in Brazil are on the paper. We see it with the anti-slavery movement and you can see it now happening with the communities I'm involved with. You could call me a friendly adviser to four or five charities in Rio, and again it's this thing… Things are now happening that occupy what we called *favelas,* you call them communities and again it's this thing that's happening [government crackdown on criminal activity], so they just change the language. They think by changing the language you do away with the problem, so let's say you're invading. No, no, we are not invading we are going

> in [to the *favela*] to pacify. Come on, look at the pictures of when they "pacify"—they go in, they destroy everything on their way, they shoot everywhere they can shoot, they are killing people, but they say they are there to pacify. That's just one example, the same thing I have seen with the anti-slavery movement, you know, this is not slavery, this is culture, they tried to get away with that.

I asked Angelika if the issue had to do with the interpretation of the laws because it seems to me in Brazil there is a pattern of sound laws existing without proper enforcement or understanding. She responded:

> AB: Yes, if you use a different word it doesn't sound so nasty, sexual exploitation of children sounds pretty nasty, let's give it a different wording, maybe say fiddling around with children.
> SD: So degradation of the environment is pretty awful, but if you are cutting trees so you can build homes for families, it's not as offensive.
> AB: Yes, it is a very good example; they call it "progress."

Altair also underscored Angelika's point concerning the importance of progress in terms of education and development as requiring democratic participation between the government and the people. Altair shared how his approach to development and education work seeks transparency and participation as a means of effectively influencing change:

> I try to make this work a joint venture with all people around including the poor we help—all for all! Social work is a joint venture, it never works when you go as a government and give something to people. Just because they are poor, it doesn't work, because if you don't build something together with them, they really cannot understand the meaning of it. It's like the slum [*favela*], in many situations the government says let us renew [improve] the slum, and the government comes and builds the houses and goes home. The slum remains there as it was before, no joint venture, just a government venture, for votes?

This idea of good intentions was a sub-theme that emerged, one that Robin addressed in relation to the forest corridors, one that Zezhino addressed with mining the unprotected sides of mountains and one that Eli of the DSC addressed during our conversation. I asked Eli if the solution was more policy or legislation. I asked him what

his sense was, or how he imagined the future, because it really concerns me when I think about the environment.

I commented, "We read a lot of statistics about Brazil and other places that at this rate, the rate at which trees are being cut down, in 2050 they will be gone. We know 20% of the world's oxygen comes from Brazil's forests so everybody should be concerned about these things." Concerning changing laws to address issues of deforestation, water supply and so forth, Eli said:

> I think the laws can be changed but I'm reluctant to put all of our particular eggs in that basket. I think it needs to stem from the sense of individual consciousness that becomes group consciousness that becomes regional consciousness that becomes global consciousness. And that's where the movement shifts, that is the compelling force that changes the law.

Changing public attitude toward the environment is a difficult undertaking in a world where everyone can see through the media what everyone else has. Even with laws in place to protect certain areas of forest or water, as long as there is a market for goods and money to be made, ecological protection and progress will be an uphill battle. Frei Gilberto, Franciscan priest in Rosario da Limeira, addressed this when he said:

> The right way is to connect everybody in religion, politics and economies, is that everyone together must try to be more powerful about this alternative way of living life. Put together everyone who defends the ecological way of living in the economy. And the other way to complement that is to include the spiritual feeling or way in this process. Because the big cities, the extras in life [present the challenge].

Robin of Iracambi addressed this issue of extras in life as well, relating the issue to kids in particular who tend to want what they see advertised. With global transparency at an all time high thanks to movies, social media and other outlets, young people everywhere are motivated by what they see in the stores to buy or consume more. I asked Robin what his greatest fear for the future of Brazil and the world was and he responded:

> My greatest concern is this whole question of sustainability that people have to change particularly their consumption patterns very seriously. I don't see how that's going to happen. If you ask any Brazilian teenager for example, their model is the United States. Brazilians eat hamburgers; they wear their baseball caps back to front, their T-shirts, so American consumption patterns and all the advertising and everything you read is that, that's what their ideal is. And as long as that persists I don't really know how we're going to change things because of what I was saying before, the basic ethical question about people taking what they need and not what they want is something requires fairly fundamental change of attitude and I don't see that coming. So I would be very concerned about that I must say.

Participatory involvement between the people and the government was a prevalent theme that unfolded during most of these conversations. The interconnection between notions of community, environment, people and government was highlighted time and again demonstrating that to talk about sustainability with an ethical aim without also talking about the role of the government is inadequate. It is noteworthy that Sister Dorothy experienced this interconnection as well and over time, it shaped the way she worked with the community and the government to seek justice for the land and the people.

Summary

The themes introduced in Chapter Five unfolded from my observations and conversations with those from Iracambi and the DSC. The themes that emerged were (1) sustainability in Brazil, (2) the meaning of sustainability with an ethical aim, (3) education and development models and (4) the government's attitude toward progress. The message that sustainability with an ethical aim intersects social and environmental justice emerged as it relates to both community and government.

The narratives shared illuminate the need for sustainable practices to be imbued through the community with support from the government. Also illuminated was the idea

that progress is not just economic advances but equity in education and development so people can live in harmony with the environment. These narratives present a holistic view toward understanding the relationship all people have with the land that nourishes them. Chapter Six includes an analysis of the data through the lenses of ethical aim, imagination and praxis. This second order analysis will render the themes discussed in Chapter Five using hermeneutic theory to frame new understandings. An ethical aim will be analyzed comparatively with social justice and includes the notion that living a worthwhile life, or aiming to live with and for others in just institutions, is an important, universal ideal, and is not just specific to Brazil.

The next section of analysis addresses imagination and what the future may hold in terms of people and the environment. Sustainability is a way of life, and to shift the current consumption driven paradigm requires imagining life differently. Imagining life differently includes considering what environmental conditions may be like in 50 years when our grandchildren will be adults and imagining what we can do now to change the world we inhabit. Additionally, education must be imagined differently if we are to expect ecoliteracy and sense of place to take root in our students. Our students represent the future generations who will be stewards of the earth; therefore we must educate them to live sustainable lives.

The last section in the Data Analysis Chapter demonstrates that praxis means making a difference in the world. Informed action is analyzed in relation to communities and the world context. The community and world contexts are significant to understanding the potential influence praxis may have when fully realized at the individual and collective levels.

CHAPTER SIX

DATA ANALYSIS

As a story unfolds, the experience of the reader or listener is influenced by the way events are configured by the plot. Telling and interpreting stories form a circle: the imagination constructs meanings as they are told and as they are understood (Kaplan 2010: 118).

Introduction

Chapter Five includes stories transcribed and quoted from the research participants. The stories were emplotted to tell a narrative of sustainability with an ethical aim. Chapter Six draws on the narratives told, and using critical hermeneutic theories and ideas, imbue more meaning into this study about models for education and development involving sustainable ways of living in socially just ways.

Themes that emerged from the conversations are considered through a critical hermeneutic lens; moreover these themes are also couched within the premise that sustainability with an ethical aim is a necessary component of the good life (Ricoeur 1992: 172). It has become clear to me that the long-term health and viability of the planet and the living things that inhabit it are dependent on the understanding that to live in harmony means to live in balance with the earth that sustains us. Upset one part of the system and the other parts of the system will be automatically affected in turn. This was evident through the discussion with Robin about the creation for forest corridors, with Frei Gilberto and Everaldo about the connection between politics, ecology and the role of the church, and with Everaldo about the loss of indigenous wisdom.

In light of historical practices in which more is taken from the land than is given back, I posit that the Brazilian public and world citizenry can come to understand that if current consumption patterns do not change, then the lives we lead will not be

sustainable. This understanding will come to light through continued efforts in the arenas of education and development. These arenas can be inroads for understanding our role as living things, part and parcel of a larger, interconnected system.

The conversations I had with participants coupled with my understandings may offer new inroads toward the issue at hand in which the world wakes up to the idea that the time to challenge the *status quo* is now. As Kearney (1998: 228) says, "The *status quo* reigns supreme for as long as we refuse our utopian capacity to imagine things being other than they are" and that is why this work is so important to humanity. We must begin to imagine how to live and be happy without the excesses we indulge in today, so generations that come after us have the same opportunities to live the good life that we have had.

The following themes unfolded from the data analysis which align with my theoretical constructs: (1) an ethical aim is required for a just world, (2) imagination and what the future may hold, (3) praxis means making a difference in the world. Sub-categories within each of these themes also emerged and will be explored in the following sections.

An Ethical Aim is Required for a Just World

From the outset I posited that ethical aim is part of the notion of social justice. The treatment of people and the treatment of the land matter in terms of justice which is socially rendered whereas our personal ethics drive how we act toward both. My use of the word justice stems from the work of Ricoeur (2000: xxi) who states that:

> A general theory of justice finds a complement in the thesis that the just in final analysis qualifies a unique decision made within a climate of conflict and incertitude. The search for justice ends with a *heartfelt conviction,* set in

> motion by the wish to live in just institutions, and ratified by the rule of justice for which procedural formalism serves to guarantee impartiality.

This substantiates the idea that all living things, including the non-living resources the earth provides, require our constant stewardship so that we, and the generations that will come after us, can continue to pursue the good life within just institutions. Ricoeur acknowledges, like many of my conversation partners, that justice is not a given, but a conviction that we must always be vigilant about upholding within social contexts.

Ethical Aim Toward People

The people of Brazil who in the search for the good life, or at least a better life, move to the forest and often find themselves in an unfamiliar context where farming may not be part of their prior-knowledge. The SNDdeN and Sister Dorothy in particular recognized this and understood that these people were not burning forest out of malice, but out of ignorance. Through living with and among them, Sister Dorothy and others sought to help through education and development practices by showing that there were better ways of farming the jungle so that basic needs would be met, and part of the forest would be preserved. Through this work and the discourse that followed, people's minds were open to understand that they had power and agency in their lives to live differently. Sister Joan explained:

> This greatly empowered the people to claim their faith and use it to analyze the social situations in which they found themselves. Understanding this development is very central to understanding how the engagement of SNDdeN with the people, especially the poor, evolved in Brazil as they devoted themselves principally to this work.

Kaplan contributes to this notion of human capability by connecting it with development ethics. Development ethics neatly intertwines issues of social justice with an

ethical stance toward progress. Kaplan's (2010: 114) explanation is applicable to the SNDdeN approach of working with the poor to realize a better life:

> It [capability] simply means the freedom to live a worthwhile life… This notion of capability forms the cornerstone for his [Sen's] version of development ethics, a field concerned with evaluating the moral dimensions of socioeconomic change, primarily in poor countries. Development ethics seeks to formulate ethical principles relevant to social change, to analyze and assess the moral dimensions of development theories, and to resolve moral dilemmas in development policymaking and practice. It aims to help render development actions humane—to ensure that the changes enacted under the banner of improvement do not destroy cultures or cause undue suffering to individuals or groups.

Kaplan's notion of development ethics underscores the significance of the capabilities of the poor or those in a position to be developed. This key idea was shared by Altair as well when he talked about typical government projects in the *favelas* that often fail because they do not include the people as active participants in the development process. An ethical aim toward people includes all parties involved as they contribute to the conversation through open discourse. If this is not present, then the development project, even if it has an ethical intent, is not actually ethical in practice because it is an example of a dominant group imposing change on another group in the absence of equality.

In the case of Brazil as a quickly developing nation, and counties that have already traveled this path, there are many considerations related to progress. First, the question of progress for whom is important to consider, because there is a pattern of the rich becoming richer and the poor becoming more disenfranchised. Although progress related to development affects the people, it is the ethics of development we must reconsider in light of who is making the decisions for whom, for what purpose or goal,

who is involved, and who are the stakeholders? Robin addressed the notion of progress for whom in an interview with another researcher at Iracambi, Clare Raybould.

Clare and Robin discussed sustainability issues that Iracambi are involved in and during the discussion, Robin (http://print.news.mongabay.com/2010/0926-raybould_brazil_lebreton.html) addressed the idea of large scale progress in terms of how it affects local communities. He asserted:

> …we do face a similar threat from bauxite mining. It's essentially the same issue [as dam construction]. Powerful commercial interests wanting to use natural resources, supposedly to bring "development" to Brazil. The politicians see it as creating employment, generating tax revenues and all other kinds of benefits which it may indeed bring—but historically the impact on local people is much less beneficial.

As evidenced by Altair, Angelika and others, those who have the most to gain from being active participants, at least in Brazil, are often the ones not included in the process. Community building programs like those that Sister Dorothy, Altair, Angelika and the LeBretons created or supported have become the cornerstones for transparency in the development process so that all voices, regardless of social status are heard. This is the epitome of social justice and an ethical aim, which is that all are welcomed into the fold of progress as we have equal stake in the outcome.

Ethical Aim Toward the Land

Unlike people, who even when quieted still have the possibility of a voice, the land comprised of an intricate environment and countless ecosystems is at the mercy of the people it supports. Although lacking a literal voice, the land still makes its needs understood through nonverbal expressions like the deadly erosion which induced landslides that Zezhino noted as a consequence to over-logged hillsides. The curious thing about treating the land ethically is that we are in essence treating ourselves

ethically. As a part of the greater ecosystem, we are not separate from, but connected to the land on which we live. The fact that our lifestyles cushion us from the outdoors is a ruse which clouds our interconnection with the earth. Ricoeur (1992) said that communities are significant because it is within them that we are ethically responsible for others. I would add that a community, dependent on natural resources for basic needs, includes ethical responsibility toward the environment as well.

In consideration of an ethical aim toward the land, I was reminded of the work of our past president, Theodore Roosevelt, whose political platform often centered on the preservation of land in our own developing country at the turn of the 20th century. As a result of conversations with Robin and Binka and others, I wonder if this is the case now in Brazil; that Brazil is in need of a voice to say that progress is a necessary function of a developing country, but there are limits to what can be demanded of the environment. Moreover, as Brazil progresses economically and otherwise, it may well be that the country faces the same environmental perils that America did during Roosevelt's presidency. In his book The Wilderness Warrior, Douglas Brinkley notes the issues that worried Roosevelt during the industrialization of America are precisely the same issues that worry my conversation partners and me now. Brinkley (2009: 20) says:

> …Roosevelt was a conservation visionary, aware of the pitfalls of hyper-industrialization, fearful that speed-logging, blast-rock mining, overgrazing, reckless hunting, oil drilling, population growth, and all types of pollution would leave the planet in biological peril. 'The natural resources of our country,' President Roosevelt warned Congress, the Supreme Court and the state governors at a conservation conference he had called to session, 'are in danger of exhaustion if we permit the old wasteful methods of exploiting them to longer continue.'

Given the time that has passed between since this statement was made in the early 1900s, it seems that human beings are slow to learn from past experiences and often,

rather than taking the cue from history, are almost eager to repeat past mistakes as if the outcome this time may somehow be different from the last. Ricoeur relates the idea of recognition to self-reflection, solicitude and justice in such a way that helps to make sense of poor human judgment despite past experiences. Ricoeur (1992: 296) says:

> Recognition is a structure of the self reflecting on the movement that carries self-esteem toward solicitude and solicitude toward justice. Recognition introduces the dyad and plurality in the very constitution of the self. Reciprocity in friendship and proportional equality in justice, when they are reflected in self-consciousness, make self-esteem a common figure of recognition.

The act of self-consciously recognizing that through esteeming ourselves as others we must esteem all aspects of our lives, including the environment on which we depend, provides an opportunity for moving toward the idea of justice and equality of which Ricoeur writes. This means self-consciously recognizing human influence on the environment at the individual and collective levels.

One way that we may begin the process of recognition and the development of our consciousness is through imagination. The practice of envisioning our lives in a different context based on choices we make is an important exercise in considering what we are putting forth for future generations. The next section addresses imagination in terms of people, the environment and education.

Imagination: What the Future May Hold

Imagination is about future possibilities. When considered within the context of this study, imagination is a crucial piece that involves taking what we know now about sustainability and ethics and transforming that knowledge into what will better serve us in the future. Sister Joan in particular brought this to bear during our conversation as she highlighted the importance of intergenerational justice. This is the idea that if we do not

preserve and conserve now, we are unjustly preparing future generations for a life fraught with ecological, social and economic hardships.

Imagination and the Environment

Former President Roosevelt encapsulated what Sister Joan, Sister Dorothy, Zezhino and others addressed which is that by taking more than we need now, we are not ensuring future generations will have what they need to sustain them. Roosevelt (1916) wrote:

> Defenders of the short-sighted men who in their greed and selfishness will, if permitted, rob our country of half its charm by their reckless extermination of all useful and beautiful wild things sometimes seek to champion them by saying that 'the game belongs to the people.' So it does; and not merely to the people now alive, but to the unborn people. The 'greatest good for the greatest number' applies to the number within the womb of time, compared to which those now alive form but an insignificant fraction. Our duty to the whole, including the unborn generations, bids us to restrain an unprincipled present-day minority from wasting the heritage of these unborn generations. The movement for conservation of wild life and the larger movement for conservation of all our natural resources are essentially democratic in sprit, purpose, and method.

Roosevelt implored his countrymen and women to consider how over-hunting and rapid industrialization serves short-term desires and completely undermines the capacity of future generations to provide for themselves. As the global population eclipses seven billion people, I do not think these words were an overstatement, but a proclamation of what was to come. Roosevelt was essentially asking citizens to plot current events into an imagined future, what Kearney (1998: 245) calls a narrative imagination that "enables each one of us to relate to the other as another self and to oneself as another." Without the capacity to evoke this kind of understanding, there is little one could say to demonstrate to people that the environment is worth saving, if not on the basis of the environment itself, then on the basis of future generations which will depend on it.

The power of imagination resonated in the research conversations, with the critical difference being the imagination of the government versus the imagination of the common person. The government led by President Dilma Rousseff seeks to position the country of Brazil on the world stage as an industrial powerhouse with ample natural resources to further the economic paradigm of progress. After my conversations, I was left with a sense that the current government leaders are so progress-focused, that forest and water are constantly viewed as products for consumption and consumerism. Whether it is the damming of rivers for electricity or the cutting of trees for cattle grass, the forward progress and actions of the government includes the use of these resources bar none. In terms of imagination, the possibilities for the future are actually more and more limited by the overuse of natural resources because the time will come in which the tipping point is reached. Kearney (1998: 226-7) explains the power of imagination as it relates to action:

> It is the schematizing power of imagination which opens the possibility of some kind of unified horizon for our diverse actions. So doing it provides a sense of common purpose for meaningful social practices. This common purpose of a utopian of horizon of history…The utopian horizons of social imagination are open-ended goals which motivate a free variation of possible worlds…The universality of the *u-topos* derives from the fact that it is the possession of no one and the possibility of everyone.

The ability to harness the environment for what we need while limiting the amount we reap for our desires lies in our imaginative capacity to envisage a future in which our diverse individual and collective actions compels us to be stewards of the earth we inhabit. It is not a question of whether or not the earth will survive man's influence, but whether or not man will survive at all.

Imagination of the People

Kearney (1998: 166) says that "Every society participates in a socio-political *imaginaire*" meaning that as we collectively envision our future it is full of possibilities related to conservation, ethical awareness and sustainable practices. It is the work of the common person and the government to participate in discourse related to what the future holds as our actions now influence what the possibilities may be. Kearney (1998: 159) writes that "seeing–as' provides a key as the sensible aspect of poetic imagination. The seeing-as activated in reading ensures the joining of verbal meaning with imagistic fullness."

During the research conversations with my participants, seeing the future as one without trees and lush jungle, or an abundance of flowing water elevated the verbal discourse to a level of possibility for informed action. In some cases, it was the obvious absence of seeing the future as lacking, which at times was the only rational way to understand how deforestation and other extreme practices could occur. Sister Margret lauded Sister Dorothy's commitment to the land and the people of the Amazon; even though threats were made on her life, she refused to give up the fight for socially just treatment of the land and its people. Sister Margret elucidated:

> You see it in the end there [of the video The Student, The Nun and The Amazon] where she's just so animated and talking about the way the world should be. So you see, she didn't lose in spite of all of the trouble down there, she never lost that buoyancy that really I think comes from faith.

Sister Dorothy had the ability to "see the future as" and implored others to do the same. Her passion did not dissipate but was often fueled by conversations with others. I

saw similar passion in Zezhino, the LeBretons, Angelika and Altair who all imagined different futures for the environment, the people of Brazil and citizens of the world.

In this era of a "flat world" in which the social and environmental actions of any particular country are transparent to all the rest, institutions are in a position to be influenced by ideologies surrounding recycling, reusing materials, a shift to green energy and corporate social responsibility. Clifford Geertz makes the connection that people who make up institutions have the ability to either translate that information into action, or resist change by comfortably embracing our own prejudices uncontested. Geertz (1983: 234) says,

> The primary question, for any cultural institution anywhere, now that nobody is leaving anybody else alone and isn't ever going to, is not whether everything is going to come seamlessly together or whether, contrariwise, we are all going to persist sequestered in our separate prejudices. It is whether human beings are going to continue to be able, in Java or Connecticut, through law, anthropology, or anything else, to imagine principled lives they can practicably lead.

Living transparent lives is part of the challenge in terms of the work that goes on at the DSC, at Iracambi at the base community churches and elsewhere in which through various outlets we begin to imagine our lives in balance with the earth. This can be realized through people; people who are educators, scientists, politicians and everyone in-between, making regular decisions-- that it is not acceptable to drive gas guzzling cars, or throw away tons of garbage or leave the water running while brushing our teeth. At Iracambi and the DSC, strides are being made through educational programs and colloquia to engage the public in collectively imagining how to promulgate a different future.

Imagination and Education

Children have active imaginations, sometimes more easily accessed or acknowledged than adults. Children are encouraged to use their imaginations when they write stories in language arts or create a painting in art class. But education at a deeper level is possible with an alternate conception of imagination in which we practice and teach others to create a vision for the future that is different than what we experience now. Kearney (1998: 53) says:

> Imagination is the foundationless foundation of our 'knowledge of all things.' It is the blind spot of truth which enables us to see things as identifiable objects without itself being seen. It is the invisible source of our vision: that which makes a world possible.

There is a tenable power in practicing this with children and adults through the educative process. Sustainability education, like the junior scientists program at Iracambi, can be imbued with imagination and awaken the potential for influencing our choices as consumers. Education including imagination would be an approach for exploring the meaning of the things, objects, stuff we accumulate and are typically convinced through advertising that we need. Herda (1997: 32) explores the influence of consumerism on our lives and describes the accumulation of stuff as creating hollowness:

> But in this land [America] of opportunity, there is a paucity of virtue and a haunting hollowness hovering over our lives. I believe there is a significant relationship between the ethos of individualism, a preoccupation with self, and this haunting hollowness.

Imagination holds the possibility of allowing children and adults to envision the real meaning in our lives and the true purpose of the stuff we surround ourselves with. We ought to begin to think in terms of where this stuff comes from, how is it produced and under what conditions is it created, so we might begin to use our imaginations in a productive way that moves us from the urge to accumulate to a place where we question

to true value of things. Kearney (1998: 170) explains using Emily Dickinson as an example that this type of imagination requires poetical thinking:

> Thinking poetically, acting poetically or dwelling poetically are all modalities of imagining poetically. They are all ways of realizing the *possibilities* of what we are. As the poet Emily Dickinson wrote:"…possibility is the fuse lit by the spark of imagination."

The real educative value of imbuing teaching and learning with imaginative thinking is that children and adults can use this as a medium for becoming the change they want to see in the world. Herda (1999: 7) says, "When I change, the rest of the world changes," which underscores the significance of teaching people to use their imaginations to create the world they want to inhabit. Whether at the junior scientists program at Iracambi or in a 5th grade classroom in California, the influence imagination potentially has is exponential.

Imagination is an untapped resource, which I discovered during my conversations at the DSC and in Brazil; in most cases, the participants shared that there is an obvious lack of imagination which, at times, is the only way to justify the stripping of the earth. Those involved in over-mining, over-logging and over-consuming are not yet truly aware of the future consequences of their actions, so they do not see the continuation of these practices as being devastating actions against future generations. Despite the realization that imagination for what the future holds is superseded by what is happening in the here and now, Zezhino, Sister Joan and others still recognized the importance of it as an avenue for intergenerational justice and for educational practices. Imagination translated into action is what praxis is about and where the realization of the imagined is experienced.

Praxis Means Making a Difference in the World

Praxis is practical action and is inseparable from an ethical aim, for every action occurs in relation to another. During my conversations with people from the DSC and Brazil, I discovered that action occurs in different contexts, namely in communities and on a world stage. These contexts are important subcategories to praxis because each demonstrates the interconnectedness of seemingly faraway places. In this sense, the context for action demonstrates that, although it may seem like environmental laws in Brazil don't have an effect on the United States, or other countries for that matter, in reality they do. As Herda (1999: 20) says, "Actions express intentions that cannot be comprehended independently of language" and this unfolded through conversations conducted during this study.

Action in Community

Throughout world history we have seen significant movements generated at the community level that have had far-reaching implications. The most obvious contemporary example is the Occupy Movement which was started by a community of people protesting the unethical actions of Wall Street banks in New York, but had a ripple effect across the United States and the world to Oakland, Philadelphia, London and other international communities. The notion that change can occur or originate at the community level is important because it holds each and every citizen accountable for his or her beliefs and actions. The existence of community driven action prevents the complacency of feeling insignificant compared to large issues we face. Communities bring large issues to a level of discourse in which the common citizen has a voice that matters. Jervolino (1996: 68) says that "Praxis is to dwell and act in solidarity. Solidarity

is hence the determining condition and basis of all social reason," meaning that communities are examples of people engaged in praxis.

Sister Dorothy was the consummate community organizer who learned by living with and among the people of interior Brazil that there was strength and solidarity in numbers. As her development skills were honed through field experience, Sister Dorothy learned that the most effective action against an ineffective government was to build community. Murdock (2009: 75) explains:

> Little by little, she became known as she drew people together…Our whole emphasis at that time [1980's] was to help those small groups, isolated out there in the woods, to create strong communal ties, and once they were created, to build strong base Christian communities…There were no villages…It was important…for the people to identify themselves publicly as organized. So we worked on creating infrastructure—a school, a little parish center, roads that went into the forest…little stores.

Establishing communities in Brazil has not been an easy undertaking. Groups of people living in proximity to each other occur naturally due to migration and the search for the good life. However, a true community of people who depend on and look out for one another is different. In Brazil, Robin observed that the obstacle to creating communities is cultural and historical. He shared:

> One of the problems of the thing from the beginning is the concept of community is very weak so it is very hard for people to think in terms of community. It is very much an individual or society, every man for himself, the idea of getting people together and saying let's think about how we can do things together as a community and the larger areas is more difficult for people to understand.

This sheds light on why it has taken Iracambi over 20 years to establish a community of like-minded individuals and why the Franciscans and SNDdeN continue to establish base-communities after four decades in Brazil; because the establishment of a community takes time. In a country like Brazil where Robin notes the cultural heritage

has been predicated on the belief that it is the work of the federal government to care for the people, a shift toward independent communities is meaningful. But the significance of this shift should be understood in relation to the fact that it is local people who live on the land with resources and must live with the consequences of over-mining and over-logging. These communities have a personal stake in the actions of companies and federal government. As Herda (1999: 21) explains:

> In Western industrialized countries, as well as in many developing countries, community and society cohesiveness and purpose suffer at the expense of advancing technology because technological advances rely on skills and technique. Instead, living out a meaningful life in our organizations, communities, and society relies on moral and political imperatives.

Local communities bear the brunt of social and environmental actions. Therefore communities need to be active participants in the discourse that affects them. Robin and Iracambi representatives are aware of this: Frei Gilberto and the Franciscans are aware of this and Sister Dorothy and the SNDdeN are aware of this. Murdock (2009: 75) shares how Sister Dorothy used community discourse to inspire praxis:

> When she had a small group together, Dorothy talked about the power and strength of communities. Together they studied the Gospels for inspiration. Someone, at first Dorothy, would lead a reflection on the situation at hand. She spoke about how they could stand together in the face of crises—disease, lost jobs, and, of course, land struggles.

Ricoeur writes about this intersection where action meets capability. From references about Sister Dorothy's community approach and from discussion with Robin about Iracambi's community approach, the understanding that humans are capable beings surfaced as an important part of community development; the idea that through discourse communities can make informed decisions without deferring to someone else. Ricoeur (2010: 73) says:

> The ultimate purpose of hermeneutic reflection and attestation, as I see it, is to try to retrace the line of intentional capacity and action behind mere objects (which we tend to focus on exclusively in our natural attitude) so that we may recover the hidden truth of our operative acts—*of being capable*, of being *un home capable*. So if hermeneutics is right, in the wake of Kearny and Gadamer, to stress finitude and limits of consciousness, it is also wise to remind ourselves of the tacit potencies and acts of our lived existence.

As people in communities come to realize that the acts of their lived existence are meaningful and important, then the space opens up for change to occur in ways that were not previously imagined possible, such as mining companies operating sustainably alongside the community. As Jervolino (1996: 67) explains, "Praxis exerts a mediating and unifying function among the many branches of human activity proper to the rational, free man, who lives and partakes in a community of free, rational people (the *polis*)," and that is precisely the power of people in community.

Action in the World Context

Figure 5. Binka and Everaldo examining medicinal plants

My conversation with Everaldo, who is a staff member at Iracambi and works with the dairy and daily operations of the farm, began with discussion about his daily life. What I didn't know was that he is the local wise man on the topic of medicinal plants, and people from the community regularly call on him for plant-based remedies. Everaldo took me on a tour of his yard, pointing out common plants and explaining their healing properties. I shared with Everaldo that one of the attitudes I hear

from people in the United States is that Brazil and its jungles are a faraway place, so why should people outside of Brazil care about preserving them?

Everaldo responded that there are plants and trees with special curative properties that medical companies use for treatments. I shared with him that my research shows that at least one-fourth of the all medicines are found exclusively in Brazil's forests including many with anti-cancer properties (Taylor 2004: 24). Everaldo replied that he didn't know that, but if it is true, we should all be wary about the destruction of the forest because it is our kids and grandkids who will suffer if they are gone.

This conversation highlights the significance of Brazil's forests and resources for the world and not just for the small community of Iracambi. Understanding that the actions of companies and government in Brazil influence everyone, in every country, suddenly makes protecting the forest seem the number one priority. Protecting the forest means engaging in conscientious actions that are good for people and the land. Herda (1999: 131) speaks about the role of the individual in change and action:

> To change our lives and our understanding is more a responsibility than our right. When people demand their rights to gain a better life, they are relying on others to do it for them. The bottom line is that we do it for ourselves or it is not done. This is not to say that we do not have an obligation to help others see new possibilities and to help create the context in which such changes take place. In the end, it is our responsibility to think differently, to learn, and to act differently. Field-based research in a hermeneutic tradition can help bring forth community motifs that engender conversation, reflection, and new bases for action.

The possibility for change is ever-present and it is something that the LeBretons and Iracambi have taken responsibility for. When I talked to Robin concerning the idea that miners live here too, so how can they mine with a clear conscience, Robin reminded me that miners mine; that is what they do. The fact of the matter is, if we use aluminum,

then we need miners. The crux of the matter is consumption patterns. Robin observed, you can sell aluminum to the United States and China, but you can't sell biodiversity. That substantiates why praxis in a world context is necessary to the realization of sustainability with an ethical aim in Brazil and anywhere. Herda (1999: 20) speaks to this idea of society's failure to differentiate between the practical and technical aspects of human problems:

> The prevailing tendency to reduce problems of actions to problems of technical control and manipulation results in power being taken away from the people who have the problems and who need to develop capacities for solving them…However, we see the problems similar to this in developing nations as they strive to modernize and imitate industrialized nations in that they confuse needs with wants.

Consciously changing our actions, such as what we do and what we buy directly influences how much land is strip-mined for bauxite, how many rivers are dammed for electricity and how many hectares are razed for cattle grazing. It is the collective actions of the world citizenry that determines the condition of the forests and environments of Brazil or any country that reaps its natural resources for economic progress. To change our actions toward the environment and ultimately ourselves, we must be aware of the agenda of governments and international businesses who Herda (1999: 20) says:

> …bring in more capital and buying power for everyday people along with unchallenged Western values of materialism and individualism. We need to learn how to identify genuine needs at particular times.

Without tempering our material desires and wants, governments and business will continue to provide for our consumer driven demands unchecked and out of balance with what the land can reasonably sustain. According to Taylor, one of the major roadblocks to action in which there is a balance between the extraction of natural resources and preservation is government. Taylor (2005: 23) says:

> Tropical countries are among the poorest countries on Earth…These struggling Amazonian countries must also manage the most complex, delicate, and valuable forests remaining on the planet, and the economic and technological resources available to them are limited. The must also endure a dramatic social and economic situation, as well as deeply adverse terms of trade and financial relationships with industrial countries. Under such conditions, the possibility of their reaching sustainable models of development alone is virtually nil.

Taylor's point supports the notion that monitoring the health and viability of the Amazon, the Atlantic rainforest where Iracambi is located and all of the world's rainforests is the responsibility of everyone. We cannot say that forest protection and monitoring is the work of the local people or the government alone; rather, we must have an active role in speaking up about the intrinsic value of the forest, whether or not it is reaped economically.

Summary

Chapter Six analyzes the themes discussed in Chapter Five. The analysis demonstrates the need to re-imagine sustainability with an ethical aim in a way that everyday people, governments, and industry leaders work more closely with education and development endeavors to ensure that there is a balance between what people need and the lands capacity to provide.

Sustainability with an ethical aim is bound with imagination and praxis as those in Brazil work at the local level to educate and progress in socially just ways. Imagination is a crucial component to this analysis because if people cannot imagine a future without abundant clean water, trees full of animals, and local plant-based medicines then practical action to use them more wisely will not happen. Imagination is also necessary as a looking glass into the future; envisaging what life would be like for the world if there were no rainforests left to scrub the air clean of carbon dioxide and replenish it with

oxygen, or if there were no more plants to be harvested with anti-cancer causing properties; we ought to collectively imagine these possibilities, and the ramifications of remaining passive about these issues. Education and development practices imbued with ethical aim and imagination are pathways for refiguring sustainability in Brazil and elsewhere.

Chapter Seven brings closure to this dissertation with a summary of the research findings, implications, and recommendations for future research. I conclude Chapter Seven with a final closing reflection.

CHAPTER SEVEN

RESEARCH FINDINGS AND IMPLICATIONS

Introduction

In Chapter One, I posited these guiding questions: What examples exist that demonstrate people living in communion with their surroundings? What approaches encourage people to live in ethically sustainable ways? Chapter Seven addresses these questions as well as provides a summary of the research which includes the issue at hand, the literature review, the conversation partners, and the theoretical framework. Implications of my research and possibilities for future research are also marshaled. Chapter Seven is finalized with my personal reflection on this exploration.

Summary of the Research

This research explored sustainable education and development with an ethical aim through the work of Sister Dorothy Stang and the SNDdeN in Amazonia as well as the work of Iracambi NGO. The conversations with faculty at the DSC at NDNU, Iracambi NGO staff, and local Brazilians revealed that these participants seek a future in which the interconnection between people and the Earth is honored. Each of these participants agreed for the need to use natural resources in sustainable ways resulting in a balance between needs and wants.

Brazil's background sets the context for this research in terms of economics, history, culture and government. Brazil is a diverse country with a variety of indigenous groups that were already settled in the country during the time of the Portuguese and African Diaspora. Following these groups was an influx of European and Asian immigrants creating a unique and hybrid culture.

The review of literature substantiates the research topic in terms of anthropology of early and current Brazil, sustainability, education, development and the three hermeneutic theoretical constructs of ethical aim, imagination and praxis. The literature shows the vibrancy and potential of Brazil as a quickly developing country, but simultaneously contextualizes the dangers of progressing at a pace that does not esteem the interconnectedness of the Earth and its people.

The research process was based on critical hermeneutic theories and traditions as outlined by Herda (1999). The researcher engaged participants in conversations from which a text was produced and analyzed in light of three research categories: ethical aim, imagination and praxis. The data from the transcriptions revealed a story about sustainability with an ethical aim from multiple points of view, that when reviewed collectively, is a narrative about the ways in which education and development must be thoughtfully considered. The themes that unfolded from the conversation data were sustainability in Brazil, the meaning of sustainability with an ethical aim, education and development models, and the government's attitude toward progress. These themes undergird the principle of praxis or actions guided by ethics.

Research Findings

The conversations with research participants became a text that was analyzed in light of an ethical aim, imagination and praxis. The participants posited that we must collectively re-imagine what it means to be interconnected with the earth, because the current one-sided relationship between humans and their environment is unsustainable.

The following research based findings resulted from the conversations with participants: (1) sustainable praxis is the responsibility of everyone; (2) education can

lead to sustainability in real world contexts; (3) an ethical aim includes esteem for people and the earth's resources.

Sustainable Praxis is the Responsibility of Everyone

Practical action is the work of every person who inhabits the earth as we are stewards of the natural resources we use to make our lives livable and comfortable. It was clear to me from talking to Zezhino, Everaldo, the LeBretons, Cheryl and Eli that our current consumption patterns reflect a short-sightedness in which we are committing intergenerational injustices as described by Sister Joan because we are not replacing what we use to ensure future generations will have what is needed. Robin (http://print.news.mongabay.com/2010/0926-raybould_brazil_lebreton.html) described this conflict and related it to the flat world in which we collectively co-exist:

> …the conflict is just the same as everywhere else: everybody wants to consume more, but to provide for these consumption habits we have to dig deeper and deeper into our natural resource base. If you look at the World Resources Institute site, you'll see the numbers—how much water it takes to feed a steer to produce a kilo of beef: how much steel you need to build a car. Then do the math of how much of each you'll need if every Chinese is to have the level of consumption that the average Englishwoman has (which is what they want—make no mistake about that) and you can see where we are heading…of course it is unsustainable.

We must collectively act and address this consumption conflict by re-imagining our consumption patterns so they reflect what we need rather than what we want. An unintended consequence of the flat world made possible through the internet, YouTube and the like is that we can see what everyone else has. We are conditioned within our societies to want those items as if having more possessions is indicative of the level of our individual economic success or happiness. Most importantly, I learned from the

people I visited in Brazil, and from the legacy of Sister Dorothy, that the accumulation of material wealth as a measure of progress is not a necessary condition for the good life.

Education Can Lead to Sustainability in Real-World Contexts

Sister Dorothy's original intent in Brazil was to establish community schools. She discovered early on that schools are situated as part of the larger community of people, local issues and the natural environment. To build a school in rural Brazil meant: to interact with and include the people of the community; to help them with land reform so they had homes to live in and land to work on, free from intimidation by ranchers; and finally, to use, but protect, the forest, the water resources and the biodiversity since the community was embedded in the natural environment.

The LeBretons junior scientist program and the DSC's community–based learning courses and colloquia offer community members experiences with sustainability issues in meaningful ways. Students at NDNU read Sister Roseanne's biography about the life and work of Sister Dorothy and take community-based learning courses taught by Dorothy Stang Scholars. The junior scientists at Iracambi engage in hands-on activities with water and soil to understand their role and influence on the ecosystem. In each case, Iracambi and the DSC have re-imagined what it means to learn about environmental justice so that students and community members do more than simply read an article about woeful current environmental conditions. Rather, students and community members learn in real-world contexts which provide an understanding of the interconnection between human societies and their environment which focuses future opportunities for praxis.

An Ethical Aim Includes Esteem for People and the Earth's Resources

The people of Brazil are vibrant, resourceful and gracious. The country they live in is progressing at a pace that the United States, England and other countries experienced more than a century ago. History demonstrates that the process of industrialization was hard on the average person, who worked long hours and often in dangerous conditions for poor pay (https://www.msu.edu/user/brownlow/indrev.htm). Through various reforms, the work place in America became safe and regulated with many policies and laws to ensure workers' rights. All of these strides were an effort to treat all people in an ethical way. Brazil is making headway in this area, although there is room for growth with a large component of the population still struggling to make ends meet. But what about esteeming the earth we depend on?

Sister Dorothy viewed the life giving land, trees, water, and animals as aspects of our lives that deserve esteem as well. Without these elements of our environment, humans would not survive. To destroy the forest and its biodiversity in the name of economic development means we do not give the same ethical treatment to the land that sustains us as we would give another person. People of the world, knowingly or not, depend on resources that the Brazilian forest provides, and as Everaldo and Zezhino said, if we do not protect these resources, then our future is at stake. Esteeming the land means to value what it can provide in terms of food, pharmaceuticals, furniture and water while simultaneously acknowledging that our generation's time here is finite and those who come after us will also depend on Earths resources.

Implications for Practice

This exploration uncovered implications for practice in the areas of education and development which have the capacity to influence people on collective and individual levels. These implications include (1) re-imagining science instruction for sustainability and ecoliteracy through educational policy, (2) coupling praxis and our consumption patterns and (3) envisioning education and development with an ethical aim. These implications are aimed toward individuals, communities, governments involved with sustainability policy-making, educators and those engaged in development work. These individuals and groups each have a stake in what the future of sustainability holds as we are all subject to the consequences of our choices.

Re-imagining Science Instruction for Sustainability and Ecoliteracy through Educational Policy

Students learning in the field in the Iracambi junior scientists program and through service learning projects at NDNU are participants in an educative experience central to their sense of place and being in the world. These students learn how to be stewards of the land as they monitor water quality over time and how to be socially just citizens when they travel to other countries to lend a helping hand. These lessons carry on the legacy of Sister Dorothy Stang who aspired to be the difference in the world she wanted to see through sustainable and socially just practices.

This implication speaks to educational policy in California and the greater United States, as these agendas regularly focus on educating students to be responsible citizens who can problem solve and think critically. But what does that really mean and how does it look during the teaching and learning process? As a former middle school science teacher and current science methods instructor in a teacher preparation program, I am

concerned about the educational implication of this study as it relates to sustainability as well as how it may be brought to bear on science education both in California and on a national stage.

There is currently a nationwide consortium and movement to change the English-language arts and math content standards, which are specific to California, to the Common Core Standards. These standards are more action-oriented and performance based which educators everywhere embrace because unlike current state assessments that favor rote memorization, performance based tasks assess content knowledge as well as real world skills like analysis, critical thinking and problem solving. According to The Common Core Standards Initiative, there are currently no plans to modify the other subject area standards such as those for science. The website (http://www.corestandards.org/frequently-asked-questions) states that

> other subject areas [in addition to English-language arts and mathematics] are critical to young people's education and their success in college and careers. However, the NGA Center and CCSSO will not be developing standards in other subjects and are now focusing on implementing the standards in ELA and mathematics.

The implication of only modifying language arts and math standards is that the content standards teachers are required to teach in science are the same ones originally written and adopted in October of 1998. The world has changed since then, and although many scientific principles and theories remain the same, certainly significant developments have occurred in the areas of ecology, sustainability and the interconnection and interdependence of humans to the environment. Politicians and educators alike ought to create a committee to review and update the science standards, just as has been done for math and language arts.

As I reviewed the State Content Standards in Science, I was struck by the fact that for students to understand their role in the environment, as consumers of natural resources and material goods, it is incumbent on teachers to imbue lessons with these ideas. Since there are not standards in these areas that teachers are required to teach, and their instructional time is significantly devoted to language arts and math because of the No Child Left Behind Law (NCLB), students' opportunities for exploring their relationship to the natural world are diminished. There is one example of sustainability sensitive standards and it is in the fourth grade life sciences standards. The standards (http://www.cde.ca.gov/be/st/ss/documents/sciencestnd.pdf) state:

2. Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:
    a. Students know ecosystems can be characterized by their living and nonliving components.
    b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.
    c. Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.
    d. Students know that most microorganisms do not cause disease and that many are beneficial.

Of particular import is the first part of the standard, "Living organisms depend on one another and on their environment for survival" as this most closely aligns with the findings from the junior scientist program at Iracambi. That finding is that students engaged in hands-on activities in their local environment develops esteem for the land that they may not have if lecture or textbook instruction were their sole experience learning and doing science. The implication is that if there were more opportunities to explore issues of sustainability within place-based lessons, say exploring the water

quality of a local stream, then students may begin to see themselves as part of the ecosystem, rather than distinct from it.

This shift toward education for sustainability validates the idea of getting students out of the classroom and into their communities to explore issues of recycling, waste management, food production and local ecology. Back in the classroom, teachers can write lessons that are cross-curricular, so that a research paper on where the food in the cafeteria comes from is written in language arts, not in science. In this way, instructional minutes are maximized and standards in English-language arts, which would be taught regardless, are made more meaningful through integration with science. Additionally, students build a personal connection between themselves and their influence on the environment.

Opportunities such as this present an arena for teachers who are passionate about the environment to learn how to share that passion with their students in an academic setting that not only imparts a standards-based lesson, but also demonstrates to students' their interconnection to and interdependence on the earth. Administrators and educators must encourage this kind of science education policy change so that our students do not miss out on important life lessons not inclusive of the state content standards. It is these types of lessons that show students how to be responsible citizens and stewards of the planet.

Coupling Praxis and our Consumption Patterns

Practical action is a major implication of this study, because any headway made in the arena of sustainability with an ethical aim will be realized through individual and collective practical action. As education centered on human connectivity to the land

builds understanding that our actions influence the world around us, belief systems may also change. Herda (1999: 33) states:

> Our beliefs affect what we do. For example, if we believe that we can change ourselves and help set up the conditions whereby others can change with us, we act differently than if we are interested solely in producing facts or knowledge without considering the applications or implication of our actions. When we do not address implications, we have made a choice too. Then we only think abstractly about society and use our knowledge solely for academic ends.

Creating the conditions for change related to current consumptions patterns is possible, but the challenges are also clear. Given that in America, and to some extent Europe, we value the accumulation of objects as an indicator of success, shifting the consumer paradigm from wants to needs is a challenging, but necessary implication. It is challenging because of our habits of mind. For example, "Consumers spent $36.4 billion in the 2010 holiday shopping season" (http://www.businessrecord.com/main.asp). Holiday shopping is highly commercialized and completely ingrained in the American psyche as part of what we do to show love and affection to others. To transcend the ideal that more stuff equals greater happiness, students of all ages must be encouraged through discourse to consider other options and ways of living.

One way to address this implication of praxis and our consumption patterns is through a seminar based in discourse. The setting could be a high school civics class or a Sunday school class, but the idea is that the discussion would be centered on how our choices affect the world around us as opposed to just ourselves, and that we have power and agency in our lives to make a difference if we so choose. For example, the teacher or seminar leader would start the discussion with a brainstorming session about the things

students spend money on. From high school age students to elementary students, these children are already a major part of the consumer culture prevalent in the world today, and could consider the implications of purchasing junk food rather than healthy food or walking to school rather than riding in a car. In each example, the students work through the meaning and consequences of these choices and deliberate what their future actions may be by engaging in dialogue about consumption patterns.

On an international level, praxis is necessary for consumers of all ages to consider because it is our spending patterns that dictate and drive the products imported from Brazil. Choosing not to buy these items unless they are sustainably produced is a significant implication of praxis that we all have the ability to exercise through informed decisions. To influence praxis on consumption patterns at a community level could be to promote and support locally grown produce from farmers markets and locally raised beef and poultry. The benefits include such considerations as the food we eat is fresh and free of preservatives needed for shipping, that the local economy profits from money spent in the community and that the environment benefits from a reduction in fossil fuel use for transportation of food.

Purchasing local food does not guarantee it was produced sustainably, although in many cases small farms do use sustainable practices, but it does guarantee that our vegetables and meat did not contribute to the consumption of fossil fuels and the production of carbon dioxide to reach our dinner plates. It also makes sense to eat locally in terms of economics. Forming partnerships with local farmers could ensure that school lunches were not only healthy, but also locally produced with fresh ingredients. Even creating a school garden for eating and selling fresh produce could demonstrate to

students that they have the knowledge to grow their own food, which I observed at the dairy and vegetable garden of Iracambi. These possible relationships support sustainable practices, local food consumption, local economy and community partnerships. A seminar setting at any grade level in which discourse surrounding these types of issues is one inroad for addressing how praxis can change our consumption patterns.

Envisioning Education and Development with an Ethical Aim

Education and development with an ethical aim has been a prevalent theme throughout this study. Sister Dorothy's mission began with education and development for the disenfranchised people of rural Northeast Brazil and culminated with the understanding that for meaningful praxis to occur, the local community must be involved in the decision making process. This theme was echoed by Sisters Joan and Margret as well as by the LeBretons and Altair. When governments or NGOs go into a community and institute change without the participation and contribution of the community, it becomes a paternalistic situation in which the subjects of education or development have no ownership over the changes.

Education and development with an ethical aim has been uncovered by this study as an important implication of social work in countries like Brazil, but in terms of the connection to sustainability, there are still obstacles to overcome. The most obvious is the recent news that the Earth's population has reached seven billion people. The implication of that number on education and development related to sustainability with an ethical aim is profound.

Altair's model, like Sister Dorothy's, involves working in the community with disenfranchised youth to help them realize they have the potential to be more than what

their situation dictates. This model could be applied to a school setting in which a pilot project could be conducted to explore the relationship between education and social work as each is guided by an ethical aim. For example, Altair teaches soccer to children in the favela which provides them with an opportunity to learn collaboration, team work and good sportsmanship. These attributes influence other areas of the children's lives as they navigate the school system and sometimes dangerous neighborhoods.

Some of our students in California are not immune to these types of hardships and could benefit from education with an ethical aim. For example, schools that are labeled as Program Improvement under the NCLB law means that the students in these schools have low annual standardized test scores which do not meet the required adequate yearly progress. The students in these schools are often English Language Learners, who speak a primary language other than English at home, and are from low socio-economic communities. These students are subjected to curricula driven by strict pacing guides that favor English-language arts and mathematics above all other subjects to the extent that science and social studies may only be taught for one hour per week, and art, music or physical education may not be taught at all.

A pilot project in such a school using Altair's model of education imbued with social justice and life skills may be an approach toward education and development practices that have an ethical intent. Instead of relying on test scores as an indicator of success, a pilot project researcher would look at the whole child in terms of education, social skills and life lessons. Instead of strictly learning mathematics and English-Language arts for five hours a day, the project could set up cross-curricular lessons in which a science lesson about sustainability is integrated into the reading minutes, or a

community project like growing a garden and selling the surplus at a school-based farmers market could involve math lessons on money.

The ethical challenge for education and development practices in a flat world is that everyone can see what everyone else has, and wants it. The implication of this is equity, because in point of fact, everyone does not have equal access to the things that reflect the material standard of living enjoyed by many Americans and Europeans alike. To challenge this paradigm means to demonstrate that we all can live the good life with less. Educating for and creating development opportunities that embrace ecoliteracy, sustainable practices and social justice or an ethical aim are ways of approaching this dilemma. A shift toward the devaluation of the accumulation of things and a valuation of living the good life with and for others is the potential power of education and development with an ethical aim.

Suggestions for Future Research

This research focused on the work of Sister Dorothy Stang and others in Brazil as well as faculty and staff at the DSC as a lens for understanding sustainability with an ethical aim. Future research opportunities may bring to bear new understandings related to the topic in other countries such as Brazil, or in the United States through related approaches.

Government Policies and Sustainable Practices

The government of Brazil is working on new legislation in which environmental laws may be lessened so more trees can be felled for export. Practicality suggests that as the population grows, the need for raw materials will also increase, so how can these material demands be met, while simultaneously remain rooted in sustainable principles?

What can other governments like the United States do to promote sustainable practices at home and abroad? Are efforts such as large scale recycling practical and worthwhile?

Implications for Education

The State of California is taking a close look at language arts and math standards so that instead of memorizing a vast set of facts, students will apply a smaller set of content knowledge to real-life situations that emulate experiences students will have in college and in careers. Science education has stagnated since the adoption of content standards in 1998, and if students in the United States are to be eco-literate and aware of their place in the larger context of the natural environment, then the standards must reflect sustainable principles founded in the notion that humans and the environment are interconnected. The junior scientists program at Iracambi is a shining example of what this could look like. Should federal standards include ecoliteracy and sustainable education and how might our nation benefit from such a shift? How might educators include ecoliteracy lessons in their curriculum regardless of state or federal standards?

Conservation and Preservation

Through conversations with Zezhino, Everaldo, the LeBretons and others, this idea that we must use natural resources while concurrently protecting them was a common theme. No one would deny that we need electricity, aluminum, wood and paper products and the like, but we must also consider how much of these items we need and what methods are used to procure them. The practice of taking as much as we desire without imagining the consequences of overuse and misuse must become a practice of the past. How might a balance be struck between taking what we need while preserving for

future generations? What examples exist the demonstrate people living in balance with their environment and can these examples be replicate in other areas?

Personal Reflections from the Researcher

From my travels to Brazil and conversations with people from the DSC and Iracambi, I have grown in my understanding of what sustainability means and what it looks like. Examples at Iracambi demonstrate people living in communion with their surroundings such as Everaldo using natural plant remedies and ancient wisdom for healing, and the junior scientists who learn that clean and abundant water is necessary for life and needs protection.

Traveling to Iracambi was one of the greatest adventures of my life. Although I was well read about the LeBretons and Iracambi from Binka's books and from their websites, I could not have imagined what the journey would be like until I was on it! Transportation to Iracambi in and of itself was a huge undertaking; a plane from San Francisco to Miami, then another plane to Rio de Janeiro. From there, I took a taxi ride to the bus station to embark on a five hour ride to the town of Muriae. Next I rode a second bus for an hour and half to Rosario da Limeira up a very long, bumpy and windy road into the mountains of the Brazilian state of Minas Gerais. At this point, I was finally greeted by an extraordinary Englishwoman and her dog Toffee in an old, dust covered Range Rover. This was an unlikely sight in the remote Brazilian countryside.

Driving in the pitch black of night, we arrived at the *fazenda* where Binka showed me to my room. Much to my surprise, because I traveled to Iracambi in the off season, I stayed in Robin and Binka's house! As a researcher, it is impossible to get closer to your participants than to be a guest in their home and at their dinner table. For four days Binka

drove me around the mountains to various villages so I could meet and converse with people who worked with Iracambi. After experiencing this adventure, I can honestly say that I have seen what sustainable practices look like on a farm in Brazil and that everyday people with a dream and the passion to make a difference can actually do it!

The faculty of the DSC at NDNU promotes understanding of social justice for people and the environment through service learning, community engagement and community based learning courses that encourage people to live in ethically sustainable ways. I am very proud to be a faculty member at an institution that values social justice and eco justice to the extent that it is not just referred to academically, but put into practice in meaningful ways. There are currently 19 faculty members in 15 disciplines teaching undergraduate and graduate courses in the community based learning or community based research areas (CBL/CBR). These faulty have been trained in the best practices of CBL/CBR and are instilling a love of education, social justice and environmental justice to many students from the elementary to graduate levels.

I have personally had the pleasure of being a guest speaker in Dr. Isabelle Haithcox's CBL course entitled Science in Action. This undergraduate course teaches students, some of whom are potential teachers, to conduct hands-on science activities with local elementary school children once a week. I am inspired by what Dr. Haithcox has accomplished with this course; she has taken hands-on learning, a method of science instruction proven to create long lasting knowledge retention in students, to a level that promotes community connections and life-long learning in her undergraduate students and in the students they serve. I aspire to become a Dorothy Stang Scholar myself, celebrating the life of Sister Dorothy with others through education and community.

I believe that this research has contributed to my understanding of the issue at hand and will contribute to the understanding of others engaged in education and development work. I appreciate the interpretive approach that critical hermeneutics has brought to bear on this research as it is predicated on imagination, praxis and an ethical aim. As Kearney (1998: 147) posits:

> The adoption of hermeneutics—as the 'art of deciphering indirect meanings'—acknowledges the *symbolizing* power of imagination. This power, to transform given meanings into new ones, enables one to construe the future as the 'possible theater of my liberty', as a horizon of hope.

Hope is a necessary component to this research, for without it, one risks feeling that the issue at hand is too daunting to grapple. Hermeneutics presents a lens though which education and development for sustainability can be re-imagined with an ethical aim and praxis. It is my sincere hope that others will be inspired by Sister Dorothy's story, and that the narrative I have presented in this study will encourage others to go out into the world and be the difference they want to see.

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Appendix A: List of Participants

ALL PARTICIPANTS ARE FROM THE DOROTHY STANG CENTER AT NOTRE DAME DE NAMUR UNIVERSITY (NDNU) AND IRACAMBI ATLANTIC RAINFOREST RESEARCH AND CONSERVATION CENTER IN BRAZIL

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Everaldo Oliveira da Silva	Iracambi Staff	Iracambi Atlantic Rainforest Research and Conservation Center, Brazil
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Appendix B: Pilot Conversation Transcription with Sister Roseanne Murphy

11-8-10

Ethical Aim

Imagination

Practical Application (Praxis)

SR: Sister Roseanne Murphy

SD: Stephanie Demaree

SD: It's hard to talk about my research because it's not incredibly focused yet. I 'm sort of waiting to see where these big ideas might take me. I've read Binka's book and your book and I feel really passionate about the work that Sister Dorothy did as I think a lot of people do

SR: Oh absolutely.

SD: And I'm trying to think about how her ideas related to sustainable practices but sort with this ethical aim might be really applicable in other places and of course she happened to be working in Brazil but it just sort of got me to thinking in places like India where they are really trying to catch up or Russia or really anywhere but especially those places where they're really working like mad to catch up industrially, you know, could her work almost be a model for other people in other places?

SR: Well, I mean I don't know that her work was all that new in the sense that remember in your US history courses that you talked about growing cotton in the South, and they realized that after a while it wasn't doing very well. And that's when, and I'm trying to think of the man's name, that wonderful African-America form the South, who suggested that they rotate the crops and that they rotate their crops with peanuts. Remember that story?

SD: It does sound familiar.

SR: Ok, as soon as they rotated their crops, and so growing peanuts, remember President Carter's brother was a peanut farmer?

SD: Oh, I didn't remember that.

SR: Growing crops of peanuts put more nitrogen in the soil and made it more fertile, and what Dorothy, see…. Slash and burn method of farming is a typical methods you'll find all throughout Latin America, and the reason that is, you take the indigenous people, they did not have metals. You know if you don't have metals you don't have knives or hatchets or whatever. And so, when it came to clearing section of the Amazon, which was a lot of vegetation, the only way they knew how to do that was to burn it. And then they could dig out what was left of the trees, stumps, and then they could clear the land and grow their maize which was a staple of their diet. Well, the first year, the maize went very well. The second year, it didn't go so well and the third year it was pretty bad. So what they would do is just instead of rotating any crops, which they didn't know to do that, they would go ahead and take another section and that was one way they were destroying the Amazon along with the loggers who were destroying thousands of acres time. You know the farmers were doing maybe one acre, two acres at a time but they were. So, Dorothy tried to help the farmers see that they didn't have to keep moving because every time they had to move, you know, they had to build another house, and so forth and so on. And you've seen the movies I'm sure, haven't you?

SD: I bought the DVD, the "They Killed Sister Dorothy" I believe it's called, and I've been chicken to watch it because I know I'm going to cry, so...
SR: Oh well you probably will.
SD: So, I have it sitting in the plastic wrap
SR: HAHAHA
SD: and I'm garnering the courage to watch it!
SR: Well, there's another film called "The Student, The Nun and the Amazon" by Sam
SD: Oh yeah, yeah
SR: Clements, and I would recommend that you watch that. It's in the library, our library, and...
SD: I need to see that.
SR: Yeah, I think you need to see that because I think you'll get a picture of the houses, of the area and he speaks about Dorothy trying to, well not at great length, but he refers to the slash and burn and how she's trying to help them see that if you rotate your crops, if you use some fertilizer, then you can enrich the soil. Mostly it was not fertilizer because they didn't have any money to buy it but it was this idea of fertilizing it, using regular fertilizer, and staying in one section and trying to sustain as it were the quality of the soil. So the farmers were learning. The fact that the farmers were actually, at that point she was trying to show them how to use oxen to pull the plows. What was really interesting to me, what I didn't know, I had this romantic idea. One of my friends gave me that chart (SR points to beautiful poster on the wall of the Amazon), that's the romantic idea about the Amazon. You know, and there's no question that it's beautiful, I was so busy trying to find the places where Dorothy was, where she was working and all that, I didn't have much of a chance to see the beautiful part of the Amazon to be honest with you. Because of that romantic view I always thought that the soil there would be extremely rich, you know look at all the vegetation and the birds are beautiful. Well, interestingly enough what I found out was the area of the land is only about between 4 and 7 inches, maybe 11 inches and below that is sand. I don't know if you had a chance to see this…
SD: No I haven't.
SR: This was January of 2007 (SR pulls out a copy of the National Geographic Magazine and shows me the cover picture), she was killed as you know in 2005. This is what the land looks like after it has been stripped and burned, this would have been the ranchers, not the loggers, the ranchers basically and they wanted to clear thousands of acres because they wanted to grow their cattle and in Sam's tape, Dorothy talks about how many hectares are needed for each cattle. The man who ordered the killing of Dorothy had 3,000 cows and wanted more. This whole thing is greed pretty much.
SD: Right.
SR: And I recommend that you (flipping through the magazine article on the Amazon), well, this is pretty much showing you….
SD: Isn't it interesting that, I guess that, the government doesn't do more to encourage these practices that surely the indigenous people have been practicing all along? I mean, they would know better than to burn down huge sections of the forest.
SR: Well, yes they would but no they don't because they were doing it too. The slash and burn was destroying the…. This (points to Nat Geo picture) gives you an idea of what this land looks like after it's been stripped. Now, when it's stripped, the farmers, not the farmers, the ranchers bring in fertilizers. They plant cattle grass. Cattle grass is very

strong grass that takes over any other vegetation that's there and in a way it doesn't allow any other kind of vegetation. So, the first year, again, the cattle grass is very good. The second year, they have to start using fertilizers. The third year and beyond, they use a lot of fertilizer. Now, when it rains those fertilizers go into the rivers and they kill the fish. And it's that continual destruction of the Amazon. And the fish of course are, is rather, the food of the native people. They depend on the fish, the animals, and the forest. So, they [ranchers] are destroying a lot of their [native peoples] life. Once the land has been destroyed, it's this (SR points to Nat Geo photo)—it is not recoverable, it is not going to be productive. And as it says here, which to me was chilling…
SD: So efforts to even replant native species aren't very successful?
SR: No, there's a line in my book that…..
SD: It's almost like there's a point of view that there's so much forest that you can keep cutting it and it will never go away. And yet, many people know better. And yet, there's no acknowledgement.
SR: Well, did you go into Greenpeace yet?
SD: Actually, just this weekend. You made some references in here (SR's book) to Greenpeace, that led me to their website and I was reading some of their articles for the first time. I didn't think before, but of course it makes sense that they are active in the Amazon. But I hadn't thought about it before.
SR: Yeah, Greenpeace and Amnesty are very, very active. This shows you (SR pointing to Nat Geo map) this is the United States of America and that's the Amazon border…
SD: Unbelievable.
SR: It's three times the size of Germany. So I think you're right, the guys that want to raise thousands of head of cattle think that there's so much it doesn't matter that they're destroying 3 or 4 thousand acres. And yet, it's creating a?
SD: And what's feeding that? In other words, where's the demand for the beef coming from that perpetuates this?
SR: That's right.
SD: And I have to wonder if it's us (meaning the USA).
SR: Well, it's partly us, but it's mostly England. China is buying some, 50% of the logging in the Amazon is coming to the United States. Another great percentage is going to China and Europe and of course they have mahogany there which is very prized. We're buying mahogany from Brazil, but my brother in law, who is a retired forester, US forester, says that the environmentalists have made logging so strict here in the United States that we have wood rotting in our forests and we're buying wood from the Amazon.
SD: Where's the balance? I guess that's what I'm really interested to figure out to is there has to be a balance. So, of course we need wood, and we need paper.
SR: Of course.
SD: But where's the...
SR: We're so busy protecting our forest that we're destroying the forest of other people. It kills me when I hear... you know, I think we don't seem to think, well…multinationals. It's not wrong to go in to Congo killing people to get their diamonds. Stupid diamonds.
SD: Just rocks.
SR: Rocks…
SD: Coal over time that's changed into something sparkly...
SR: Shiny rocks!

SR: Shiny rocks…
SD: Literally carbon.
SR: And actually the artificial ones look just as nice.
SD: They do.
SR: You know, why ladies have to have something sparkle. Well, anyway. So, that's the injustice and the immorality of what's going on. It's greed that's destroying the Amazon, and it's greed that's destroying the people there. They're murdering people there.
SD: And it doesn't...there's laws against most of those things, if not all of them, and yet it's so lawless here (pointing to Para on map) because it's so remote, because there's corruption, because of a lot of reasons I'm sure.
SR: That's right. Because of the poverty they can pay off the police, the judges, and it's sort of...it's so prevalent, it's not even seen as all that bad. In other words, Bida, one of the ranchers who's now sitting in jail...
SD: Right, right.
SR: he said to Tato, the middle guy, that hired these two men, well, they were boys, but men, they were just a couple of losers looking for money. They just, it's the macho thing... if you have the courage or the guts…
SD: Well, like you said, it would have been the payoff is more money than they had ever seen. It was completely about the money. I mean, somehow they managed to turn off any conscience they had toward humanity in the name of money.
SR: And they were scared to death. They said at the trial, that one of them, Rayfran, the one who pulled the trigger, he was running, he was afraid that her (Sr. Dot) spirit was going to appear to him. So, he knew it was wrong. And he… it's so interesting, in that first trial, Rayfran and Codorado's trail, they decided to tell the truth, and Tato decided to tell the truth. I was amazed at that, that he told the truth. But the second trial
SD: Did they retract it?
SR: They retracted it, you know why? Codorado, when you see They Killed Sister Dorothy (documentary film), you'll see why Codorado did. They beat him up, they almost killed him. And he came out and said they have me. I'm gonna change my story. And then they said to Rayfran, if you don't change your story we are going to kill your family. And then, to Tato's wife, they gave her $200,000 to get Tato to change his mind. So, its lies, and they know it was lies. They knew it was lies. And right after Bida was released, we had a general? here and Sister Webster and Jane came up and they said Bida was seen strutting around Anapu, bought himself a new car , kind of sneering at the farmers.. which? that they find them, tell the truth. Part of it was because she was American, because international press was right on them.
SD: It was heavy.
SR: It was heavy. And that their reputation as a country was on the line. And Lula himself,
SD: The President (of Brazil)?
SR: Yes, he realized he was embarrassed by that second acquittal, he said this is wrong. The third trial came up they declared that null and void and went to the third trial.
SD: Was it 2008, the third trial?
SR: Yeah, it was 2008, you're right.
SD: Unbelievable, it's just mind blowing really.

SR: You know what, I'm not sure it was 2008; I have to go back and look. I think it was 2009, but you could look it up on Google.
SD: I will. So I'm trying to decide, it seems to me that sustainable practices are really interrelated and interwoven with some kind of ethics.
SR: Absolutely.
SD: Because, in my mind, I don't see how they are separated. In other words, if we are going to respect all living things, if we are going to take what we need and use what we take, it is bound with an ethical aim.
SR: Absolutely.
SD: I guess I'm thinking about when you get too touchy-feely with things, sometimes people will say, well no, that's not for us. But I think they are linked anyway, so I guess I'm wondering how her work could be replicated elsewhere without people feeling that it's touchy-feely?
SR: Well, I don't think it's touchy-feely right now, If you go to Greenpeace, or you go to any environmental group, they are going to talk about respecting the land and not destroying the land. I mean, even in the Salinas Valley, when I go down to our place in Carmel, and pass those fields, that land is so rich and so beautiful and Sister Anna Voss who was such a love, died several years ago, she was born and raised in that Santa Clara Valley, and they had a farm and she would weep over the fact that we're putting some of the best farming land under asphalt. And we are, and cement. We are destroying in a way, some of our own. Now, the good news about California is by and large, not like down in Mojave Desert which is all sand, but by and large there are fertile areas still in California that maybe we use as pastures and so forth and so on, and I think it's amazing that California is still one of the top agricultural states in the union. I just think it's amazing.
SD: It is amazing.
SR: I mean, we are so metropolitan, you know, and yet, when you go up to the Napa or Sonoma area and see all the vineyards, it's like another world, I love it.
SD: Well, I grew up in rural Northern California, west of Chico in a town of 5, 000; we had one stoplight, no fast food...
SR: hahaha
SD: I mean, most Californians can appreciate we have country, and I grew up there, so I know it exists! Our house was surrounded by almond orchards and walnut trees and oranges and olives… all these amazing things I don't think most Californians realize that we are so agricultural.
SR: Yeah, I think you're right, I think well, you know, if you're some kid raised in some slum area of LA or San Francisco…we, Don Stannard-Friel our sociology professor, brought some kids down from the Tenderloin, and they were just amazed at the trees and squirrels—they had never seen squirrels.
SD: Isn't that amazing? And it's so close. And I wonder how many of them have ever even seen the ocean?
SR: When I first got finished at Notre Dame with my doctorate, it was just a couple of years after the Watts riots in LA, we had two school in the LA area, we serve two schools and we served this one that unfortunately the sisters have withdrawn from, but anyway. This other sister and I raised enough money to put on a summer program and we took some of those children, 12 in each group, we had the two schools we took them to the

beach, we were a half an hour from the beach, and they were so cute. We wouldn't let them bring swim suits because we certainly didn't want them to drown...
SD: Not on your watch!
SR: No No, and so these little boys rolled up their pants, and of course they wanted to get their feet in the water, every child does. And this cute little boy, he came out and he got sand all over his feet so he went to wash them off and he got sand all over his feet and he went back to wash them off and…he said, sister, I come out and I wash my feet and I still have sand. And I said, that's what happens when you get wet, he was learning!
SD: Oh my goodness! It's almost like there is a connection between the example you just shared and the loggers in Brazil, which is to say that there's this lack of understanding between our connectedness as people to the environment and resources we depend on. And even as a science teacher, I taught science for six years, and there was nothing in the content standards about interconnectedness between human societies and the environment. You know, so in other words, kids go to the grocery store and there's the steak in a package, there's no sense that it came from a cow, or there's the lettuce that is pre-washed and cut in a bag and there's no sense that that came from a plant or what that might look like?
SR: I now because my grandmother had a little farm outside of Nevada City in the Sierra Nevadas, and so we spent a lot of time in the summer, my sister and I, were raised in a hotel, my father was a hotel manager, my mother couldn't wait to get us out in the country in summer, so we would scream and yell and do whatever we wanted up there, that we couldn't do in the hotel. But I remember some friends of my parents came to visit one time and the boy was from this area and we went out to take the milk pans, where the milk was separated, and he said that's not milk, and I said yes it is it came from our cows. And he said, no milk comes in bottles, no it doesn't it comes from cows. He wasn't just a little kid, he was in 6th or 7th grade, but he'd never seen milk come from cow so milk comes in bottles.
SD: And so many of our necessities are packaged and bottled that way, I think we are very disconnected from the Earth that provides all of those things. And I guess that's how I come full circle with the fact that sustainable practices have to have this ethical piece. And we have to understand where it comes from to be able to respect that.
SR: You know, you think of indigenous people having a greater respect for the environment, they take only what they need and they don't exploit the land in a way that we have, and agribusiness has, but on the other hand, you have that slash and burn and so they were destroying the land too. But it was out of ignorance. They didn't know that you could enrich the soil. They could only use what they had and the other thing in the Amazon is the disregard, it's horrible, I told this story not in the book, but I couldn't believe it, when they were building the Amazon highway, they were going to go right though one of the tribes, one of the many tribes in the Amazon, ancestral lands, and the tribe was objecting to going through their ancestral lands, and so for two weeks, they flew over and dropped boxes of food for them, supplies and trinkets, and the Indians were thrilled, they would run out (and kills/poison the Indians). And the worst part of it all, they don't even think that's wrong. I was feeling outraged, hearing this story, feeling angry inside and sickened by it and I think God tapped me on the shoulders and said don't be so righteous, what did the white people do the Indians? And it's the same thing.
SD: It's true.

SR: They slaughtered them.
SD: Or the British to the Aborigines in Australia or any number of examples we can come up with. But it never makes it right, does it?
SR: NO, it doesn't but it's the sad example of people who perceive other people as less than human.
SD: Exactly, it's a total lack of humanity.
SR: Yeah, I met this Jesuit who had been taken out of Colombia, is also on the border of the Amazon, and he was on a mission there, but he was also working on the Colombian side of the Amazon, and finally his provincial said I'm taking you out because he had been receiving death threats, and he said I don't need another dead Jesuit, so he brought him up to Sacramento State and I was talking to him and telling him the story and he said when he was down there he said there was one area they wanted to clear the Indians out so somebody went over in a helicopter with a machine gun and just machine gunned them. They were never brought to justice of course because they were considered animals, and I'm thinking dear God, we're not stupid, I mean, did these people ever go to school? I mean, what…how…it's hard to grasp that.
SD: It is, hard to even understand that, and the government turns the other way, and that's what's most upsetting I think, there are ignorant people who do ignorant things, that's easier to digest than the government knowing about it and turning a blind eye. Because it's not that they don't have laws against, that, they certainly do, but they're not enforced. And what good are laws that aren't enforced?
SR: If they're not enforced, there are no laws. And it's true what you said, in Para, the state of Para, 99% of the logging going on there is illegal. And actually, when Dorothy was killed, some people celebrated. Because she was reporting illegal logging and they were shutting down some of those.
SD: She was costing them money.
SR: Yes,
SD: It does come down to greed, but you write, and a lot of other people who have written about her write about her hope, no matter how desperate, and it was always so desperate, she always had hope. And I was reflecting on that and thinking she must have had a really huge imagination because if she didn't have the capacity to imagine what it could be like there would be no reason for hope, because every day the situation really seemed hopeless.
SR: Absolutely
SD: So she must have had this really wild and creative imagination for what it could be, and I only can guess that's what really propelled her every day, because it was never easy.
SR: You know the miracle when I was writing this book was I managed to go back to Orbis Press and we got a phone call from Brazil, Annie Wheatly, and I wasn't there or Joe couldn't find me but she called back that evening and she said, you're writing about her spirituality, and I said absolutely and that's what I was asked to do when I was asked to write the book and she said, well in Sao Luis we have a convent and there was a novice there. She was looking through some old papers that they were just about ready to throw away, she came across that letter that Dorothy had written to Saint Julie, it's in there (her book), I couldn't believe , I said it just has to be God's will that that happened, because

SD: That was the exercise in which they were asked to write what would Julie say about you and instead she turned it around...
SR: and wrote it to Francoise, but it shows the anguish she was going through and shows her humanity, you know I don't know if I'm (Sr Dot) doing the right thing, not is it worth it but..
SD: How do you continue to persevere when you have so many setbacks?
SR: I know.
SD: Here it is (the letter) it's on page 112. Yeah, this is right after she celebrated her 50th...
SD: Oh yeah, here it is...
SR: (reading from book) I arrive back from Brazil very happy… I thought I would be able to face whatever was ahead, you know, I was wrong. It's really powerful. Oh, when I got that letter, I thought, God wanted it.
SD: And yet she's so aware, (reading form book) the projects not wanted by the government are weeded out by beauracracy. The people are becoming poorer and poorer and fighting among themselves. I mean, to face that every day, it really is a burden, and yet she never gave up. Our mission is to be at the side of the people as never before to live the challenges of the gospel and together enter into the third millennium with plans to enter into an alternative society that gives life. And it's so interesting how that's capitalized (LIFE), there's so much meaning and symbolism there
SR: Yeah, yeah...
SD: I assume when she wrote the letter she capitalized that with intention.
SR: Oh yeah, exactly.
SD: I mean it really shows why people are so passionate about her because she was so passionate about life, about doing what's right, no matter what the cost. And I really liked... it seemed like she always had a deep passion and conviction for either uneducated children or women's rights or farmers or whatever it was, but when she took the courses at, was it Mills? On creation spirituality...
SR: Yeah, it was at Holy Names…
SD: Holy Names, that seemed to just open up her mind even more ...
SR: It made her more passionate about the environment…
SD: And I was thinking I need to research that because it sounds like that whole idea is that if you believe God is in all living things, then to cut down the forest or to pollute the river, to do these things… it is ecoterrorism, it is destroying God's creation and when you destroy God's creation you're also destroying yourself.
SR: Well, you need to read some of James Barry, he is very big on spirituality of ecospirituality he writes about seeing God in creation and seeing God's work and referencing creation.
SD: I think a lot of people can identify with that.
SR: Well, and the other thing is maybe God is bringing this consciousness to us because we are destroying things that are so beautiful, but if we destroy them, like this land (nat geo picture of Amazon) is never going to be restored. So what is it going to be, it's going to be a wasteland. And you strip the beauty and left nothing.
SD: that is such a powerful image, the cover of that magazine, I've never seen it before, but it's incredibly powerful, and symbolic. I was wondering about The Women with Hearts as Wide as the World, that you wrote about, (reading from book) the Sisters of

Notre Dame continue to present Dorothy's story as a model of the mission of the congregation to become Women with Hearts as Wide as the World. They are determined to raise awareness wherever they could about the dangers to the environment resulting in the destruction of the Amazon. Is that a group then?
SR: Yes, the Sisters of Notre Dame, that's our model, Women with Hearts as Wide as the World. Now, I can't say the sisters in Japan or the sisters in Brazil are that conscious of the Amazon, but certainly those of us who are more aware of the environment in the United States, and of our missionaries in Brazil, are very aware, Ohio for instance, because they have sent missionaries down, we've sent missionaries down, one of our missionaries was killed down there. Well, in an accident, she was on her way out to a village and her car….it was so weird, she had just left her home visit and her mother was sick, and whenever she went back there (Brazil) she said I wonder if I'll see my mother again,…
SD: It was foreshadowed in some strange way, wow, there's just so much information to think about.
SR: So, what is it, what do you think generally, what are you trying to do with this?
SD: I'm really trying to figure out, so I'm starting out with Sister Dorothy's work almost as a springboard, because I think that her model of building community and rallying the community to see and understand that this is for the benefit of all, is the best way to go. And I feel that way because, we've seen how many examples that the government can have good intentions, and they can have good laws, but if they're not enforced, they do no one any good. And so, it makes more sense to me in terms of education and development if instead, people who are passionate and understand the interconnectedness between people and the Earth, if we go in and start building community, and working with people and saying, what alternatives do we have to this? Is there a way that you can make money and make a living and not be destroying the environment, working in communion with it and in harmony with it, I think is what her work embodied and I think it's the approach that should be taken elsewhere, India for example, Russia, even China. I mean, its people who are so desperate for money that they're mining and doing things that don't benefit the environment and ultimately don't benefit anyone, and yet their situation is so dire, they have no other alternative than to these things because they have to eat. So I guess I'm sort or trying to figure out how her work might be transformed in other places using that community model for educating people and creating development practices that are sustainable.
SR: Well, I think Dorothy is doing what a lot of people are doing, you know, Greenpeace has been at this a long time, so it isn't like she was doing something that no one ever thought about. But she could be seen as a model of someone who's actually putting that into practice of educating people to see the relationship between ourselves and the environment. And it could be a good relationship. You know I love the part when she says they set up the center there at San Nazerre and they planted flowers for color and so forth and so on, so Dorothy had a way of translating her belief into action. So as I say, it is not anything that is unique, it's just; she's a model of someone who did it.
SD: And did it well.
SR: And did it well.

SD: Was she the one that would say now that we've talked about this issue, now let's go do something, now we're called to act. It's really the call to action. I mean, we can all sit around and conferences and classrooms and talk about...
SR: That's true
SD: all these things to do, but if there's no action…
SR: That's right.
SD: Then, what's the point? You have all this knowledge and you're not doing anything with it. And I guess that's where in my research I'm trying to figure out the next step. (I'm thinking about how it's common knowledge that the Amazon is so vital and yet the gov't allows it to be pillaged. WHY? Why not act to stop it? GREED?) The action piece. You know, I see how it all makes sense and now I'm trying to figure out how to put this into action. Because I really embrace this method, this research method which says, I'm not an objective outside observer, I have opinions and the research will be most powerful if I'm participating with the people, getting my hands dirty, getting involved. And I think I'm at that point where I'm trying to figure out what that means. And I'm not sure yet.
SR: Sure, yeah...
SD: But I'm hoping through these conversations to try to figure that out and really guide the research to be more specific.
SR: Uh-huh. I gave Cheryl Joseph a card, a business card, for a man….there's another organization that speaks about water. And that's the other thing.
SD: Did it have to do with water locally, or…
SR: No, because water is also a problem, as you know
SD: Right
SR: But people were afraid that the United States was interested because we wanted to take their water, in the Amazon.
SD: Well I guess that is right along with the conspiracy theory that Dorothy was an infiltrator from the American government and that she …
SR: She was the niece of George Bush!
SD: Right! It couldn't be that you're just there to help people who have less that you, it must be something deeper and more sinister…
SR: But anyway, there is an organization about educating people about what is happening to the water supplies and that is a big threat. That millions of people are eventually going to be out of potable water and so, that's another thing. And as Dorothy says, in the film with Sam, when she first went down there they had 9 months of rain, and now that's down to 5 months of rain and the reason being is that you don't have the vegetation that holds the water..
SD: That's right, it's a cycle…
SR: it is a cycle.
SD: I mean, if the leaves aren't transpiring water back into the atmosphere, then there's no rain to be had.
SR: No, and the Amazon is one of our sources of oxygen, so, she certainly saw the global reality, she saw the global situation…
SD: Why isn't that causing more people to panic? You know, I also started researching yesterday on the huge percentage of medicines that are only found there and the huge number we've yet to even explore, but the potentiality for more medicines, it's like, why

doesn't everyone feel this critical need to protect this biodiversity for everyone, I'm grappling with that I guess.
SR: It's a good question and I don't the answer for it, except, I think we can lull ourselves into ignoring the reality because it's not happening to us today. It's like saying the next big earthquake is coming in 30 years, well I can't spend a lot of time worrying about that because I might have 30 years, and then again, I might not. But if I sat here and worried about it, it isn't going to change anything.
SD: It's true, worrying is unproductive, but planning…
SR: Well, planning, absolutely, and acknowledging the fact…it's like, anyone that's got a farm and whose method of farming destroys the soil, as long as he has another 1000 acres, he's not going to worry about the 500 that he destroyed. But when it gets down to 2 acres he's going to say, oops I shouldn't have done that. So, in a way, I suspect because it's so large, there are people in Brazil who are very objecting to the fact that there's any kind of concern about destroying the Amazon. That's an area that should be exploited, that's part of our country; the United States is just doing it because they're jealous or the United States blah, blah, blah. But you know, they are ignoring the fact that there are things besides just the land...
SD: Exactly...
SR: the pharmaceutical, the oxygen, the water supply—it's all very, very connected.
SD: Yes, yes. Are there any questions that you think might be helpful for me to explore or, you know, I'm trying to get involved with the Dorothy Stang Center here and chatting with Eli and Cheryl..
SR: Uh-huh, good...
SD: just, anything that you might think is worth researching or any questions you think are valuable?
SR: Well, I think Greenpeace, Greenpeace is the one the year after she was shot, they were the ones that went down for the year anniversary of her death and……. Did you know a woman was just elected President?
SD: Yes, yes, I don't know her platform.
SR: I don't either, but she was a Marxist. They put 800 white crosses and 74 red crosses at the site of her grave...
SD: To symbolize local people who have death threats?
SR: Yes, the Bishop of that area has so death threats that the government has paid for his protection.
SD: Wouldn't it just be easier to deal with the loggers, or wouldn't it just be easier to deal with the gunmen?
SR: They don't know who it is; they don't know who's going to strike. They get away with so much, over 700 murders, they ones they knew and there were probably other ones they don't know about.
SD: it's literally like the Wild West!
SR: It was! It is, that's what they call it.
SD: They do call it that?
SR: And they call it mafia and Wild West, and it's exactly that. They hire some poor down-n-outer to go kill somebody and they pay them off and of those, only 9 convictions, all of them the down-n-outers….
SD: Who are really just pawns...

SR: They are pawns. They are losers. They are just losers. And then, the only rancher ever to do jail time was Bida. Well, Dalmao was in jail temporarily, but he got out, apparently, he was the more wealthy of the two. And the thing is, it's so insidious, it's like, why shouldn't I do this, because everybody does!
SD: Well, because they know they can get away with it.
SR: That's right.
SD: And, if you know you can get away with something then you feel it's no big deal.
SR: It's like police officers taking payoffs from drug dealers.
SD: I don't want it just to be a paper, I want it to matter and I want it to change me as a person. So I really want it to be meaningful and I really want to figure out a way I can get involved.
SR: You know that Wednesday night the PBS station is doing a, Jacques Cousteau's son, is doing it on the Amazon. And he's very much concerned with the same issues that you are.
SD: Oh, I need to record that. Because interestingly for the literature review we can use multi-media sources...
SR: And Greenpeace, I bet you, has things to, so as I say, they would be a really good springboard.
SD: Exactly. What do you know about the Iracambi? That's Binka and her husband's, it's not in the Amazon, but it's in the southern jungle region...
SR: I haven't read the book. I don't know that much about it but my guess is pretty much they are doing very similar things to help the people.
SD: Right. I've been emailing them about potentially doing research there but again, I am not focused enough just yet. I need a little more focus.
SR: And I think that's very important, to know what questions you are going to ask. When I went down there I went with someone who spoke Portuguese, I don't speak Portuguese, and so if Binka is willing to spend time with you, you'll be okay. But if not, just remember you can't just walk down there and say here I am. We had sisters down there to help us, Binka is not in that area, but I am sure she would be really good about helping you.
SD: Well, thank you so much!
SR: Well, I wish you the very best and I'm here if you need me.
SD: I'm sure I will, this is so early, this is the pilot phase, so the goal now is to type up the conversation and look for connections to these themes. And the themes I picked were ethical aim, practical application and imagination.
SR: Good.
SD: So, I have a 40 page paper to write by December 4th, hahaha. Which I am going to get busy on. Maybe the direction is, what alternatives for money making are there that doesn't involve raping the environment? Maybe it lies in the medicines or some of those other things?
SR: Chico Mendes was someone, he was a rubber tapper and he was seeing to destruction of the forest. Rubber tapping doesn't destroy the tree, you know, expand that market.
SD: And yet you had a number in there (pointing to book) that it's still some small, tiny fraction of the nationwide rubber comes from that source, and yet it's so sustainable and it's so enduring.

SR: yeah, yeah, it is. But as you know from the book, the military government opened the Amazon for settlement, they didn't know what to do with it, hundreds of thousands of acres, and then the secular government came in and tried to decentralize, because it had been a dictatorship and in the decentralization, it gave a lot of autonomy to various sectors. So, they had general laws, and then each section had its own laws. But no one was really around to check everyone, so that's why Para became a lawless area. They just didn't have the federal government people. In fact when they sent the 2,000 troops up after the murder, it was the first time the farmers felt safe.
SD: I took such an act of violence to do what was right.
SR: And violence against a nun, let's be honest. They've been doing that for years.
SD: Right, all those crosses indicate that. (skip ahead through 4 minutes of unrelated small talk)
SR: What do you teach here?
SD: My passion is still the science class. And it's always, always bothered me that there's everything about scientific principles and the dynamics of the universe and ecology and all of these things, but there's nothing about the interconnectedness and interdependency of people on these things and it's always been so in my face, that I can't understand why we aren't teaching that.
SR: So, you can bring that into your class.
SD: I do and I want to even more, but the tough part of course is with No Child Left Behind the instructional minutes are so devoted to language arts and math, that science and social studies and PE, and art and music gets pushed aside. So, when you look at the standards you have to teach, you are so overwhelmed with that the idea of anything else is overwhelming. So, they (teachers) end up doing a little something for Earth Day and often that's it. And I just feel like whether people are religious or not there's an ethical piece...
SR: Oh, absolutely...
SD: that is important that I'm always kind of thinking about how I can weave that into education. I just think this example (Sr. Dot) is so powerful that people can connect to it, so that is what started all of this.

Appendix C: Pilot Study

Background of Conversation Partner

NDNU is grateful to have Sister Roseanne Murphy on staff who is a SNDdeN and the Executive Director of Planned Giving. I met with Sr. Roseanne to talk about the life and work of Sr. Dorothy Stang, as well as to hear about her adventures in writing the book Martyr of the Amazon: The Life of Sister Dorothy Stang. Sr. Roseanne was asked by the SNDdeN of the Ohio Province to write a biography about Sr. Dorothy as Cincinnati, Ohio was Sister Dorothy's home province.

Data Presentation

Sister Roseanne Murphy and I met on November 8, 2010 in her office on the third floor of the Ralston Hall Mansion at NDNU. I began by sharing ideas about my research, stating that I was interested in Sister Dorothy's work as it pertains to sustainability with an ethical aim, and wondered how her work could be a model for others. Sister Roseanne jumped right in and clarified that what Sister Dorothy was doing in terms of education and development was nothing new. She was teaching crop rotation and other basic farming skills to a group of settlers who only knew the slash-and-burn method. She shared about the farmers' experiences planting:

> Well, the first year, the maize went very well. The second year, it didn't go so well and the third year it was pretty bad. So what they would do is instead of rotating any crops, which they didn't know to do that, they would go ahead and take another section and that was one way they were destroying the Amazon along with the loggers who were destroying thousands of acres at a time. You know the farmers were doing maybe one acre, two acres at a time but they were. So, Dorothy tried to help the farmers see that they didn't have to keep moving because every time they had to move, you know, they had to build another house, and so forth and so on.

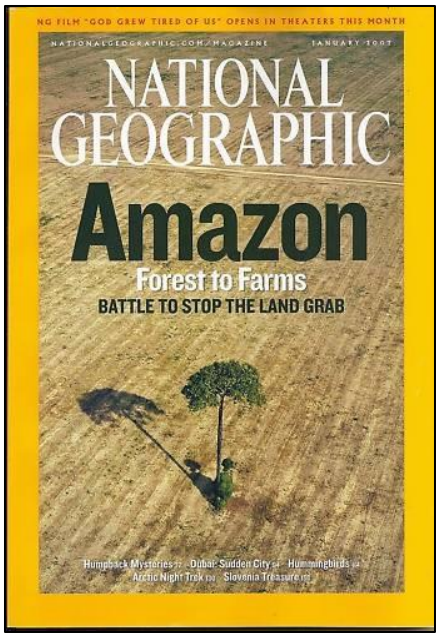

Figure 6, National Geographic Magazine Cover, January 2007

Sister Roseanne spoke with conviction as she pulled out a National Geographic magazine from 2007 to demonstrate the destructive influence of the loggers and ranchers. She shared her disgust of the wealthy few perpetuating this environmental and social injustice. We both sat and stared for a few silent moments at the photo, in disbelief that anyone could cut down such a beautiful and bountiful swath of forest (see figure 2). She explained using the magazine for emphasis:

> This was January of 2007 [the magazine publication] and she [Sister Dorothy] was killed as you know in 2005. This is what the land looks like after it has been stripped and burned, this would have been the ranchers, not the loggers. The ranchers basically, and they wanted to clear thousands of acres because they wanted to grow their cattle and in Sam's tape [referring to the documentary film The Nun The Student and The Amazon], Dorothy talks about how many hectares are needed for each cattle. The man who ordered the killing of Dorothy had 3,000 cows and wanted more. This whole thing is greed pretty much.

The primary focus our conversation centered on the categories of ethical aim and praxis (see appendix B), not because of any intention on my part, but because those were the themes that naturally unfolded. Praxis or practical application was the crux of Sister Dorothy's belief system. Through her efforts and actions, she helped the people to learn they did not have to burn the forest and move on every year or two if they adopted sustainable farming techniques. Sister Roseanne shared:

> But she could be seen as a model of someone who's actually putting that into practice of educating people to see the relationship between ourselves and the environment. And it could be a good relationship. You know I love the part

> when she says they set up the center there at San Nazerre and they planted flowers for color and so forth and so on, so Dorothy had a way of translating her belief into action. So as I say, it is not anything that is unique, it's just she's a model of someone who did it.

What unfolded from the conversation was a story not about one, but two Sisters passionate about fighting injustice and being champions of the environment; Sister Dorothy living in Brazil and Sister Roseanne emploting the events of the story. I left Sister Roseanne's office feeling more convinced than ever that this narrative needs to be shared by the world, if for no other reason than we all live in it and depend on its bounty.

Data Analysis

Several themes unfolded in conjunction with my research categories. The data revealed the following connections: 1) greed and lack of ethical aim and solicitude; 2) destruction of natural resources reflective of insufficient imagination; and 3) Sister Dorothy's social justice and educational work and praxis.

Greed and Lack of Ethical Aim and Solicitude

Solicitude refers to an attitude of care and concern for the other. Although Sister Dorothy and those working with her imbued their practice with solicitude, the land grabbers operated under extremely contrary notions about the other. The land grabbers denied the farmers their land rights and used coercion and violence to forcefully evict them if their threats didn't work (Murphy 2007). Sister Roseanne reflected on this ethical emptiness, "That's the injustice and the immorality of what's going on. It's greed that's destroying the Amazon, and it's greed that's destroying the people there."

Sister Dorothy was perpetually frustrated by the ineffective government. Rather than trekking out to the jungle to view the madness firsthand, officials routinely generated all sorts of reasons not to experience it. To convey the injustice, Sister Dorothy

became a storyteller, a voice for the suffering, willing to travel and talk to whomever would listen. Just as Sister Roseanne explained, greed and insufficient solicitude are what is destroying the land and the people. Kearney (2002:62) speaks to this in relation to memory:

> Sometimes an ethics of memory is obligated to resort to aesthetics of storytelling. Viewers need not only to be made intellectually aware of the horrors of history; they also need to experience the horror of that suffering as if they were actually there.

It is relevant to show that solicitude can be redeemed toward both people and the land. Ricoeur's critical hermeneutic theories (e.g. narrative, solicitude, understanding oneself as another) open a space for understanding human suffering and responding to it. I would include with human suffering, environmental suffering, because both are inextricably linked. When the ranchers burn down trees to make way for pasture, they are not only degrading the land but also hope for their own future.

The profits to be garnered from cattle today are terribly finite, whereas the destruction to the land will reap ill-effects for years to come. Ricoeur's explanation of phronesis and solicitude have the ability to enlighten the issue by showing that through reflective deliberation, actions benefitting people and the land are possible. Herda (1997: 32) underscores this issue of greed and lack of ethical aim:

> In highly industrialized societies in the West, in addition to nationhood and traditions, the individualistic ethos has played a major role in establishing a concept of identity. This same individualistic ethos also plays a role feeding material greed, over-consumption, and a desire for instant gratification.

As Brazil progresses toward industrialization there is the potential risk for consumption to perpetuate more and more greed. This illuminates the need now more

than ever to embrace the efforts of people like Sister Dorothy, who are visionary enough to balance human needs with environmental capacity.

Destruction of Natural Resources Reflective of Insufficient Imagination

Sister Roseanne shared her passion in tandem with Sister Dorothy's about the ignorance and greed of the few, bearing huge consequences for the many. When I asked Sister Roseanne why Brazilians aren't planning with the future in mind she replied that

> …anyone that's got a farm and whose method of farming destroys the soil, as long as he has another 1000 acres, he's not going to worry about the 500 that he destroyed. But when it gets down to 2 acres he's going to say, oops I shouldn't have done that. So, in a way, I suspect because it's so large, there are people in Brazil who are very objecting to the fact that there's any kind of concern about destroying the Amazon. That's an area that should be exploited, that's part of our country; the United States is just doing it [becoming environmentally involved] because they're jealous [of Brazil's vast natural resources].

The most disturbing aspect of this sentiment is not only the lack of solicitude as explained previously, but also the insufficient imagination. If one cannot imagine a future without forest or people to exploit, then one is in serious denial about the issue at hand. It would seem those in government who care are opposed by those who see profit in the land. Unless or until there is an orientation toward reaching understanding, the social and environmental devastation will continue. Kearney (1988: 364) explains that an ethical imagination is lacking because

> …an ethical imagination alert to both the liberating and incarcerating potentials of postmodern culture would be one determined to use all available technologies to pursue its concern for the other.

I wondered aloud to Sister Roseanne about grappling with understanding the enormity of the injustices. I could not discern why more people aren't panicking about

the degradation of the land and abuse of the people. She acknowledged that she didn't have the answer, but surmised:

> I think we can lull ourselves into ignoring the reality because it's not happening to us today. It's like saying the next big earthquake is coming in 30 years, well I can't spend a lot of time worrying about that because I might have 30 years, and then again, I might not. But if I sat here and worried about it, it isn't going to change anything.

Perhaps it is this complacency about the situation that gives people a false sense of comfort. If the trees aren't going to disappear today, then why spend time worrying about it? Imagination would help the same people to realize that future generations will depend on the oxygen, water and pharmaceuticals that the rainforest has to provide. Kearney (1988: 387) explains the shift that will need to occur from self to other insofar as

> …another kind [of imagination] must now reappear—an imagination schooled in the postmodern truth that the self cannot be 'centered' on itself; an imagination fully aware that meaning does not originate within the narrow chambers of its own subjectivity but emerges as a response to the *other*, as radical interdependence.

The impasse is between people like Sisters Roseanne and Dorothy, who have the capacity to envision future possibilities, and people like the land grabbers who cannot move beyond their present desires to ethically imagine at all. The future health of the Amazon is incumbent on people willing to think beyond material needs in the moment, to future possibilities for the well-being of the other.

Sister Dorothy's Social Justice and Educational Work and Praxis

Sister Dorothy's work involved esteeming others and the environment. She worked for 40 years to educate people so they might have the capacity to imagine the good life. Her spirit was driven to act, to put into play sustainable development projects that the community could benefit and learn from. She exemplified the SNDdeN mission

which is that **"**Each of us commits her one and only life to work with others to create justice and peace for all" (http://www.sndden.org/index.html).Through her ministry to serve others, supported by her personal convictions, Sister Dorothy aspired to dedicate her "one and only life" for the betterment of others. Shahideh (2004: 39) describes praxis in terms of the other:

> We must keep in mind that, while maintaining our autonomy is an important element in our lives, the capacity to act should not be examined in relation to each individual. The capacity to act should be measured according to results of how individual decisions and actions may affect other members of the society.

Sister Roseanne also referred to Sister Dorothy's praxis. When I questioned whether or not her work might be used in other places as a model for educating people and creating sustainable development practices, the conversation unfolded in this way. Sister Roseanne reminded me that many people and groups like Greenpeace have been working toward the amelioration of social and environmental injustices for a long time, but that Dorothy was an amazing example of someone who demonstrated it through her very being. Sister Roseanne said:

> I think Dorothy is doing what a lot of people are doing, you know, Greenpeace has been at this a long time, so it isn't like she was doing something that no one ever thought about. But she could be seen as a model of someone who's actually putting that into practice of educating people to see the relationship between ourselves and the environment. And it could be a good relationship. So Dorothy had a way of translating her belief into action. So as I say, it is not anything that is unique, it's just she's a model of someone who did it.

From a Ricoeurian point of view, this quote demonstrates the success of Sister Dorothy accomplishing the good life with and for others in just institutions. Although the full potential may not have been realized, she made differences for the people and the land every day. Following her death, the land she fought to protect was made into a

preserve. In death, as in her life, Dorothy reached beyond her grave once more in practical application of ethics for the good of others.

Sister Roseanne shared that Sister Dorothy's actions toward maintaining the forest in Brazil was in response to the material demands of other countries. She said that the beef raised by the ranchers is exported to England and China and 50 percent the timber logged goes directly to the United States. So not only was Sister Dorothy educating for sustainable development to a strong Brazilian opposition, but she was also working against the material demands of her own countrymen. Sister Roseanne shared the following example to illustrate the point sharing

> … my brother in law who is a retired forester, US forester, says that the environmentalists have made logging so strict here in the United States that we have wood rotting in our forests and we're buying wood from the Amazon. We're so busy protecting our forest that we're destroying the forest of other people.

This example is characteristic of ongoing praxis and demonstrates why it is important to have an understanding of others actions and intentions. If Americans were educated in sustainable practices in their science classes for example, then we might learn to take from our forests only what we need and not import from countries whose governments are desperate to industrialize no matter the human and ecological cost.

A disconnect exists between the consumers (USA) and producers (Brazil), thereby limiting the responsibility of society in general and individuals specifically. If it were understood that the exploitation of people and forest was involved in the purchase of a new kitchen table or wooden bed frame, there would at least be the opportunity for informed practical action to choose differently. Karl Otto Apel (1999: 147) addresses the balance needed between knowledge and praxis when he says:

> from a *moral* perspective, the conception of a multicultural society has to be conceived as grounded by principle of *complementarity* …the pluralism of belonging to different sociocultural forms of life and their different value traditions and, on the other hand, the *universalism* of fundamental norms of justice and of co-responsibility concerning the solution of common problems of humanity.

Collectively, we are not yet co-responsible for the conditions in Amazonia and how we can ethically act to change them. This was the work of Sister Dorothy and it is her legacy; that by living in communion with the land in a democratic way everyone will have what they need, which is distinctly different from having everything we want.

Conclusion

My conversation with Sister Roseanne Murphy revealed the ways in which Sister Dorothy was able to inspire others to ethically act both during her life and now in martyrdom. The ideal of being in relationship with others in a completely unconditional way is an ethical aim worthy of aspiration. More than that, inspiring others to ethically act in imaginative ways is an endeavor that has deep meaning for those engaged and interested in social and eco-justice.

From the work of early anthropologists in Brazil to the present day, it is clear that there are many opportunities in Brazil and beyond where inspirational models can promote sustainably ethical practices. However, for widespread meaning-making and praxis to occur, the world needs a revolution of supporters to encourage others to engage in practices conducive to fulfilling human needs while maintaining mindfulness about the natural resources required for sustaining us.

The beauty of this research was expressed by Sister Roseanne who reminded me that Brazil and Sister Dorothy were but one example of action; every day we wake, we are greeted by the opportunity to go out and make a difference. As Ricoeur (1992: 231)

wrote, “On the level of ethical aim, however, solicitude, as the mutual exchange of self-esteems, is affirmative through and through.” Through our esteem and solicitude for others, the phronetic exchange of ideas and practical applications permeate one person, and then another, then another until the cumulative effects have multiplied into meaningful change. Sister Dorothy’s enduring legacy represents a place to start.

Implications

Sister Dorothy Stang’s story has already inspired people around the word into action. Two such people who heard Sister Dorothy’s story wondered if she really even existed. They set out in the summer of 2003 on a journey into the Amazon. The two were students and documentary filmmakers named Sam Clements and James Newton. Sister Dorothy welcomed Sam and Jim with cautious, but open arms, because by the time they ventured to meet her, she already had a price on her head.

Sam and Jim were influenced by their visit to create both a documentary film and website promoting the good will and legacy of Sister Dorothy. Sam (Clements and Newton 2005) poetically described the ethical need for action after his life-transforming visit with Dorothy:

> The environmental crisis we face is really a crisis of consciousness. The ills of the world are not caused by the few doing maximum wrong, but by the majority doing minimum right. Sister Dorothy was yet another peaceful warrior fighting for something just, real and greater than herself - an incredible example of what one person can do; what we all can do. Just imagine if we were all to step up, choose a higher vision for ourselves and our fragile world, and act in accordance with it…with purpose!! We have been hypnotised by society to think we are less than we are, to think that consuming brings happiness, that success means money, and we have forgotten what truly sustains us. The world needs each and every one of us to be leaders - to take responsibility, and to make better choices.

In this poignant statement, Sam has managed to include ethical aim, imagination, leadership and praxis all at once. His statement is a call to action reminiscent of the many Sister Dorothy made in her lifetime. This example is one of many possible answers to the issue of sustainability with an ethical aim and how people everywhere can engage in conscious acts toward the good life. Educators, leaders, students and people engaged in development can see and hear the story of Sister Dorothy and immediately feel mobilized to act. Even if it is to decide not to buy wood imported from Brazil, or to show Sam and Jim's video to a class of 8th grade science students, we can all appropriate the story for ourselves and find meaning in its message.

There are indications of hope everywhere, from the research work at Iracambi to eco-municipalities springing up around the world. Sometimes what people need is a little inspiration to act in an ethical way that transcends laws, norms and boundaries.

The implications of educating about sustainable practices with an ethical aim is far reaching, because it is not confined to legislation or formal education; it is about everyday people aspiring to esteem others as themselves and intentionally acting in ways that honor the bounty of the earth for generations to come.

Appendix D: Letter of Invitation and Research Questions

Date:

Participant's Name
Participant's Address

Dear (Name of Participant),

I am a doctoral student at the University of San Francisco in the Organization and Leadership Program. I am conducting my dissertation research on the use of sustainable practices with an ethical aim as it relates to understanding the interconnectedness between human societies and their environment.

My research is grounded in interpretive theory and has a participatory orientation. In place of formal interviews or surveys, I engage participants in conversations using guiding questions directed toward their experiences with sustainability. Upon your approval, the conversations are audio and/or video recorded and then transcribed. You may request the recording device be turned off at any time during the conversation. I will send you a copy of the transcript for your review. At that time, you may add, delete or change any of the transcribed text. Upon receipt of your approval, I will analyze the data. Please note that participation in this research, including all data collected, the names of individuals, and any affiliations is not confidential. Before participating in the research you will be required to sign a consent form.

I am particularly interested in discussing how approaches to sustainability with an ethical aim may influence development and education endeavors. Looking at the relationship between ethical aim and sustainable practices may help others involved in education and development work to come to an understanding that societies are interdependent on their environment; therefore the environment must be cared for. The following questions may be used to guide the conversation:

1. What are the ethical implications of Sister Dorothy's work?
2. How do you see the work at Iracambi as being ethical? Where are issues of ethics in your work?
3. Why is the focus of research and practice at Iracambi focused on sustainability and ethical aim?
4. In my experience as a teacher of science, and as I am thinking about my research, I believe ethical aim and sustainability are interconnected, but I think there could be a case where they are not. What do you think about that? Are sustainability and ethical aim naturally connected? Do you see this as a relationship?
5. You have had a variety of life experiences in many parts of the world, how can what you are learning here in terms of sustainable development transfer to other contexts or areas of world?

6. In a previous conversation my participant says that Brazilians don't mind cutting down forest for profit, because it is their land, their country, etc. and that many Brazilians do not see a problem with cutting forests to graze cattle. Do you notice this? How do you envision the work at Iracambi as influencing the Brazilian community?
7. What would a relationship between the government and people look like if sustainability with an ethical aim was present?
8. What did Sister Dorothy's 'call to action' mean for the people of Brazil and how can this legacy be carried on by others doing education and development work?
9. What are the best practices that you have discovered that work in terms of sustainability? Is it possible for the average Brazilian to make a living by using sustainable practices rather than slash and burn practices?
10. What action can the government take to support sustainability with an ethical aim?

In my professional role as a professor of pre-service elementary teachers who will teach science, I am very interested in learning how real world examples of people working in communion with their environment may lead to deeper understandings about our own connectedness to the earth. In an effort to better work with student teacher candidates and assist them in their growth as eventual elementary teachers of science, I am drawn to the issue of sustainability with an ethical aim.

If you are willing to participate in this research, or if you have questions about this study, please feel free to contact me. I can be reached via email at sddemaree@dons.usfca.edu or by telephone at (831) 419-6713.

Thank you for considering this request.

Sincerely,

Stephanie Demaree
Research Doctoral Student
University of San Francisco
School of Education
Organization and Leadership Program
sddemaree@dons.usfca.edu
(831) 419-6713

Appendix E: Research Participant Confirmation Letter

Date

Participant's Name
Address

Dear (Participant's Name)

Thank you for agreeing to speak with me about the research I am conducting for my doctoral dissertation. I look forward to hearing your insights about sustainability with an ethical aim as it pertains to education and development endeavors.

This letter confirms our meeting on ***Day, Month ##*** at ***Time***. As discussed, we will meet at ***PLACE***. Please contact me if you would like to arrange a different time or meeting place.

With your approval, I will be recording our conversation (audio and/or video), transcribing it into a written text, and providing you with a copy of the transcripts for your review. After you have reviewed and reflected upon the transcript, you may add, delete, or change portions of the transcript as you deem appropriate. The conversations are an important element in my research. Please take notice that all of the data for this research project including your name are not confidential. Additionally, I may use your name in my dissertation and subsequent publications.

I appreciate your contribution to this research and look forward to speaking with you.

Best regards,

Stephanie Demaree
Research Doctoral Student
University of San Francisco
School of Education
Organization and Leadership Program
sddemaree@dons.usfca.edu
(831) 419-6713

Appendix F: Thank You/Follow-Up Letter

Date

Dear (Participant's name)

Thank you for meeting with me on ***DATE***, and for sharing your experiences and insight regarding your experiences related to sustainability with an ethical aim. I value the opportunity to speak with you and thank you for your time.

Included in this letter is a hardcopy of our transcribed conversation for your review. The transcript is a very important part of my research. I ask that you please review the transcript for accuracy and make any notations regarding changes, deletions, or additions you deem appropriate. I will contact you in the coming weeks to discuss your comments and notations. Once the review and editing process of the transcript has been finished, and upon your approval, I will use the revised transcript for my data analysis.

Again thank you for participating in my research study. Your unique perspective about this topic is a valuable contribution to the research material I have collected. If you have any questions or concerns, please feel free to contact me at your convenience.

Sincerely,

Stephanie Demaree
Research Doctoral Student
University of San Francisco
School of Education
Organization and Leadership Program
sddemaree@dons.usfca.edu
(831) 419-6713

Appendix G: Copy of IRBPHS Letter

March 17, 2011

Dear Ms. Demaree:

The Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (USF) has reviewed your request for human subjects approval regarding your study.

Your application has been approved by the committee (IRBPHS #11-023). Please note the following:

1. Approval expires twelve (12) months from the dated noted above. At that time, if you are still in collecting data from human subjects, you must file a renewal application.

2. Any modifications to the research protocol or changes in instrumentation (including wording of items) must be communicated to the IRBPHS. Re-submission of an application may be required at that time.

3. Any adverse reactions or complications on the part of participants must be reported (in writing) to the IRBPHS within ten (10) working days.

If you have any questions, please contact the IRBPHS at (415) 422-6091.

On behalf of the IRBPHS committee, I wish you much success in your research.

Sincerely,

Terence Patterson, EdD, ABPP
Chair, Institutional Review Board for the Protection of Human Subjects

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IRBPHS – University of San Francisco
Counseling Psychology Department
Education Building – Room 017
2130 Fulton Street
San Francisco, CA 94117-1080
(415) 422-6091 (Message)
(415) 422-5528 (Fax)
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http://www.usfca.edu/soe/students/irbphs/