

Imagining Amazonia: Narratives of Development and Environment in the Brazilian Amazon

By

Caitlin Rose Patton

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Approved:

David C. Wood, Ph.D.
Beth A. Conklin, Ph.D.

To my family and friends who have supported me throughout this endeavor

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ABBREVIATIONS

REDD	Reducing Emissions from Deforestation and Forest Degradation
UN	United Nations
NGOS	Nongovernmental organizations
SUDAM	Superintendência do Desenvolvimento da Amazônia (Superintendency for Amazonian Development)
BASA	Banco da Amazônia (Amazon Bank)
Polonoroeste	Northeastern Brazil Integration Development Program
IRD	Integrated rural development
FUNAI	Fundação Nacional do Índio (National Indian Foundation)
CVRD	Companhia Vale do Rio Doce
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (Brazilian Institute of the Environment and Natural Resources)
PAC	Plano de Aceleração do Crescimento (growth acceleration plan)
BNDES	Brazilian National Development Bank
WWF	World Wildlife Fund
AIDA	InterAmerican Association for Environmental Defense
CMSE	Electric Sector Monitoring Committee(Comitê de Monitoramento do Setor Elétrico)
IACHR	InterAmerican Commission of Human Rights

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CHAPTER 1

INTRODUCTION

The Brazilian Amazon: a diverse and exotic locale that has inspired exotic imaginaries and attracted equally diverse academic attention. Many paradigms have been used to understand historical trends in the Amazon and contemporary problems of environmental deforestation and poverty. What we have learned from these many approaches is that there is not singular explanation for the current Amazonian conditions of deforestation and cycles of resource exploitation. While many authors have sought to better illuminate these issues, there is still more knowledge to be gained by examining the Amazonian development from the standpoint of how the human-nature relationship is constructed based on different perceptions of nature. Value is implicit in each conception of nature, and by better understanding these foundational ideas with regards to the Amazon case, we can better characterize its relationship to development and environmental realities today. Researchers are able to better contextualize the motivation of Amazonia in specific groups in Amazonia; the state, corporations, latifundistas, small famers, environmentalists and indigenous groups, by examining the assumptions and biases inherent in contested constructions of the human-nature relationship. The question that must be posed is; what type of human-nature relationship do these diverse understandings of nature foster in the Brazilian case?

This question is at the core of this project. Ideas about nature and how people understand the human-nature relationship are central to understanding environmental policy, conservation

practices, and natural resource use. As the editors of the influential book *The Great New Wilderness Debate*, state it “ideas matter” and “names matter...they frame what they label and make what they label available for uses and abuses,” (Nelson and Callicott 2008:4). Therefore, this work will examine three broad philosophies of nature and how these fundamental assumptions impact how we construct nature in practice through environmental policies to affect environmental realities. The specific case to be addressed in this work is that of the vast and diverse Brazilian Amazon, and Brazilian state development projects.

From the allure of its natural resources, Brazil has long been constructed and fetishized as an exotic interest to outsiders. Since colonial times, explorers like the Spanish conquistador Francisco de Orellana, who made the first recorded navigation of the length of the Amazon River, have commented on the impressive and overwhelming nature of the Brazilian Amazon (Mann 2005). Later, in the nineteenth century a new breed of naturalist explorers like Alexander von Humbolt and Euclides da Cunha found the Amazon to be an overwhelming example of Edenic natural splendor (Hecht and Cockburn 2010). Descriptions of the Amazon by these famous explorers have set international perceptions of the Amazon as a lost and ‘pristine’ and wilderness. In the 20th century the Brazilian state viewed ‘wilderness’ as an obstruction to modernity: wilderness became a space that needed investment in the form of human management and civilization (Hecht and Cockburn 2010). Yet, to the outside world, this wilderness or ‘tropical paradise’ is a defining feature of the Brazilian national landscape.

Constructions of an exotic myth and mysterious allure of the Amazon as a new Eden out of time, a land of wealth, a site for exploration and adventure, and the home of incredible diversity and scientific knowledge awaiting discovery, have, for centuries, colored perceptions of

the Amazon and the impact of these ideas reverberates to the present. The Amazon region has, historically since the conquest, been subject to the imposition of Western views of nature, resource wealth, progress and development which have shaped the region. These ideas, or philosophies of nature, have shaped human attitudes and behavior toward the environment in Amazonia and throughout the globe. Ideas of nature have influenced both development and conservation, and by understanding these sources they offer another dimension with which to examine the region's history and development.

There are two principal dichotomies that I will explore in this project related to conceptions of nature and development. Perceptions of value in nature are often framed in terms of a dichotomy between instrumental or intrinsic definitions. The modernization inspired development approach typically has a resource view, or instrumental view, of the value in nature while a scientific or environmental perspective tend to value nature in itself. Both of these two basic perspectives can influence development policy in both positive and negative manners. In addition, this paper will highlight the principal place of the Amazon in the cultural imaginary landscape of Brazil and the romantic fascination this region of the world has produced for outside observers.

The Country of the Future: The Duality of Modernity

In Brazil, two specific, national cultural imaginaries can provide a lens through which we can view environmental and development policy. In her book *Brazilian Science Fiction: Cultural Myths and Nationhood*, researcher Elizabeth Ginway identifies several myths prominent in Brazil's national culture: "the most recurrent myths would include Brazil as a tropical paradise...and Brazil as a country with potential for national greatness" (Ginway 2004:7). She

argues that these myths were endemic to the creation of national identity and ‘Brazilian-ness,’ that they were used to solidify national identity primarily in the modern era beginning with the dissolution of the Brazilian Empire in 1889, through Brazil’s first experiments with republicanism and democracy (1889-1930) and finally as guided by the military (1964-1985). The myth of a Brazilian ‘tropical paradise’ is emphatically tied to issues of environmental policy and natural resources and the Amazon as a source of national wealth and potential. The instrumental, latent potential of Brazil’s ‘tropical paradise’ and vast natural resources is one source for the myth of Brazil as ‘forward oriented,’ or always on the edge of achieving greatness and prominence in the international community.

Often intertwined, the two myths of Brazil as a ‘tropical paradise’ and ‘future oriented,’ mutually reinforced each other through national politics that supported an economy of extraction in the Amazon with an emphasis on the exportation of tropical products (rubber, specialty wood etc.). The institutionalization of this process stems from the colonial model with its origins in the Portuguese treatment of the natural resource wealth of Brazil. Early Portuguese colonial documents depict Brazil as an earthly paradise full of potential, what Elizabeth Ginway refers to as the Edenic Myth of Brazil (Ginway 2004). Early depictions of tropical wealth ripe for harvest reinforced the colonial economic model of extraction of a diverse number of natural products; exotic timber, sugar, gold, vanilla, Brazil nuts and later coffee, rubber and other forest products. Like Ginway, geography and environmental policy researchers Susanna Hecht and Alexander Cockburn underscore the longevity of the view of Brazil’s natural wealth in the Amazon as an ‘Eden under glass’ by generations of European explorers. This view of Amazonian natural wealth became part of the historical impetus for modernization (forward orientation) of the Amazon as a

crucial step in launching Brazil onto the path to its future ‘destiny’ (Hecht and Cockburn 2010: 4, 217, 100, 114). Ronald Foresta’s analysis of Amazonia in his article “Amazonia and the Politics of Geopolitics” likewise categorizes the development and incorporation efforts of Brazil, particularly in the military period (1964-1985), as part of a larger and Positivist inspired legacy to achieve modernization by utilizing the nation’s interior resources (1992).

For those who study Brazil it is impossible to miss the centrality of being a future oriented nation in Brazil’s national identity. “Ordem e Progresso,” or order and progress, the country’s national motto branded across their flag, visually and rhetorically links the nation with ideas of modernity and progress. The Positivist-inspired motto was placed on the flag of the first republic of Brazil in 1889 with the dissolution of the Empire of Brazil. Order and progress clearly became a part of the national project inspiring the construction and dedication of Brasilia in 1960; which was touted as the capital of the future (Eakin 1997; Ginway 2004). The ongoing cultural imaginary of Brazil as ‘future oriented,’ with a vast potential for greatness, was encouraged and adopted as a part of many different nationalist programs and governments, from Getulio Vargas to Juscelino Kubitschek to the military dictatorship, as a way of garnering support for their programs through which each sought to fulfill Brazil’s long awaited destiny of becoming a major economic power (Ginway 2004).

Leading historian of Brazil Marshall Eakin, has described the longstanding trend toward modernity in the history of Brazilian policy. Eakin aptly identifies Brazil as “caught between the present and the past, tradition and modernity...” and observes that: “Brazilians ‘have not abandoned the past and yet embrace the future with all their might’” (1997:6-7). Eakin identifies the inauguration of Brasilia in 1960 as a symbolic turn toward the interior which marked a

political and demographic shift from the coast into the sparsely populated, and little incorporated Center-West region of the country. This process, while begun under the populists, was accelerated under the military regime's development plans in the 1970s (Eakin 1997:3). In this way the modernization efforts of Brazilian leaders to achieve their long-awaited destiny bridged political orientations (Eakin 1997:221; Hecht and Cockburn 2010). However, it is evident that, under the military dictatorship, these orientations were given full institutional backing and, in particular, shaped the fate of the Amazon region.

Begun by the populists, the shift in Amazonian development and environmental-economic policy (from extraction to incorporation) and modernization intensified under the Brazilian military dictatorship through interior colonization, pacification and extraction programs (Hecht and Cockburn 2010). Particularly under the military government, visions of utilizing the latent potential of the Amazon to achieve manifest destiny were employed in state rhetoric (Hecht Cockburn 2010). General Golbery do Couto e Silva, one of the architects of the underlying basis for the military's Amazonian development schemes, stated the nation must incorporate the "vast hinterlands waiting and hoping to be aroused to life and to fulfill their historic destiny" (Golbery quoted in Hecht Cockburn 2010; 114). Although the environment was treated on a larger scale than ever before, the myths of 'future oriented' and 'tropical paradise' Brazil were still complementary policies toward achieving the goal of modernity. However, in the mid-1980s there was a shift in the international community with the emergence of the global environmental movement and differing conceptions of nature and nature's value began to contest the state's complementary visions of 'tropical paradise' and 'future oriented' Brazil.

Review of the Field

In my reading of the literature in the field of Amazonian development there are two principle foci which divide the literature: those who seek to create an overarching narrative to explain the development process including its particular effects, on the region; and second those authors who focus in-depth on particular problems of development in Amazonia. The main division between these two approaches is the issue of scale; either a large-scale landscape picture or small-scale detailed portraits of a particular problem. The different foci of these two approaches have led to differing explanations.

Large-scale Approaches

Traditionally, social science research has followed the case study model, and this is true of the literature produced on Amazonia as well. However, about 25 years ago there was a push from the academy to attempt to address larger-scale issues in a more comprehensive methodology. Many works on Amazonian development have attempted to understand the large-scale deforestation and land use changes that have occurred in the Brazilian Amazon since the late 1970s. These accounts seek to create an extended historical narrative which explains these trends and offer policy recommendations to better human and environmental conditions in the region. This trend in the literature has morphed over the last twenty years as well, as many found the development of overarching narratives to be limiting in their generalities, alienating in their lack of real people, and deficient in the specific data and conclusion that were gained from the analysis of case studies. These realizations have resulted in a new combination of both an

overarching narrative and case studies; for example, an anthology that combines the usefulness of a big picture or regional approach with the detailed orientation of case studies.

There are a several strong works of this large-scale type on Latin American and Amazonia connecting environment and development issues (Nations and Komer 1983; Vandermeer and Perfecto 2005). I have chosen three examples of these constructions of overarching narrative explanations of Amazonia to characterize works in this vein. To illustrate the best of the original intent of large-scale, big picture development narratives I selected the 1990 work by Susanna Hecht and Alexander Cockburn. Although this work was targeted for a more popular audience, it is one of the foundational works in the overarching narrative approach on Amazonia. Hecht and Cockburn combined their expertise in geography and environmental policy to explore how and why the Amazon was developed in such a way that resulted in massive deforestation and environmental degradation. They emphasize the history of economic extractivism and the significant, overarching impact of the “Generals’ Blueprints” which they situate as the creation of a national security oriented development framework by the Brazilian military state for developing Amazonian rural and environmental policy in a manner which fostered a destructive development paradigm for the region (Hecht and Cockburn 2010). Hecht and Cockburn also cite inadequacies in prior uni-causal explanations for the massive environmental destruction in neo-Malthusian approaches, blaming inappropriate technology, effects of the Latin American debt crisis and the tragedy of the commons. They eschew these specific arguments in favor of the idea that the development paradigm fostered and espoused during the military period produced the Amazon, and its problems, as we know it today.

While academics critiqued the limitations of the overarching narrative or regional approach to understanding development and began to reshape this genre, it is still utilized today by large national and international institutions who rely on simplification of regional differences to make problems comprehensible in the national or global context (Cardoso 1998; Fonseca 2011). Thomas's 2006 manual on Brazilian development from the World Bank emphasizes the unequal rates of development and the regional conditions throughout the country. With an institutional focus, this narrative of development is more all-encompassing than the prior work in that it sees the issues in Amazonia as part of the larger whole of Brazilian national-international macroeconomic development. This book focuses on a traditional mainstream definition of development as economic growth, and sees the issues with rural Brazil, and the Amazon, to be a result of inadequate equity and a tendency to favor quantity over quality of economic growth in development. As with many writings on Brazil, this book concludes that Brazil abounds with opportunity and potential, but that it requires reforms in the quality of political and social institutions and regionally-targeted development to reach that full potential (Thomas 2006).

The third selection of a volume on Amazonian development edited by Hall 2000 demonstrates scholars' response to the critique of the issue of scale and limitations of the overarching narrative approach by using a big picture framework, sustainability, to unite case studies of specific development issues in Amazonia. This anthology organizes two approaches: that of continuity in regional extractivism based development, as well as documents recent shifts in policy towards a model of sustainable development. On their argument for the continuity of extractivist development they document the continuation of heavy deforestation for logging and farming, the impacts of gold mining, and exploration for oil and natural gas with works from

Fearnside, Veening and Groenendijk, Cleary, and Kimerling. However, the authors also document recent shifts in the continuity of extractivism, or the legacy of extraction of resources as the Amazon's primary economic function, and they see this as an opportunity for sustainable development, forest restoration, native knowledge in resource management, and agroforestry prospects as documented by Hall, Smith, McGrath and Posey.

All of these writers construct and support an overarching narrative of development, and each offers us a new way to view the challenges and successes of development in Brazil and in the Amazon. These selected works represent the diversity of use and benefits to be gained from an overarching narrative approach to development and the environment. Hecht and Cockburn (1990) was a watershed book that highlighted a paradigm of development that has created the Amazon we know today. Thomas's World Bank report demonstrates that large-scale approaches for understanding regional problems in environment and development still dominate reports for officials and policy audiences with international and national agendas, but have had less impact in scholarly works. Academics addressed limitations of large-scale explanations through new scholarship, like Hall 2000, which combines the benefits of large-scale, big-picture methodologies with detail and actor-driven case studies. With increased academic attention to the issue of globalization and the intricacies of complexly related problems from the 1980s through to the present, there is intellectual space to negotiate a dialogue between large-scale methodologies with the support of specific cases. While these approaches each contribute to the literature on development and environmental issues in Amazonia, none of them fully address the issue of perceptions of nature and the Amazon and how in particular these views have influenced the development paradigm in Amazonia.

Small-scale Approaches

The second orientation that I will explore in the literature on Amazonian development and environmental issues is more targeted in scope. The backbone of social science research has always been in-depth examination of a case study. Case studies of a specific tribe's cultural practices have dominated anthropological research on Amazonia but are limited in that they can isolate issues from the larger national and international socio-economic and political contexts of the development process. This approach examines specific issues that are all intimately related to the environment and development: indigenous rights, deforestation, land use change and land tenure, situated in particular locals which provide a level of detail than is not possible in the overarching narratives.

Academics seeking to understand specific processes of land-use change, deforestation, land tenure, and its corollary land conflict, cross disciplines among geography, anthropology, conservation biology and ecology in an attempt to understand the process of deforestation and its causes in the Amazon (Hecht 2005; Fearnside 2002, 2008, 2013; Moran 1993, Evans and Moran 2002). One of the early issues examined by this methodological approach was land-use change. Moran has extensively contributed to ecological anthropology in the Brazilian Amazonian case, examining early land-use change and economic factors in deforestation. In 1989 he conducted a study which compared land ownership patterns, land-use changes and patterns of deforestation. Moran (1993) argued that specific land regimes, which are supported through current and traditional Brazilian definitions of productive land and traditional patterns of latifundia land

ownership, have produced high levels of deforestation perpetrated by large-scale subsidized agricultural projects, for example, cattle ranches and soy plantations.

A second focus within the detailed case study approach is the regional, social process of deforestation underscored by the works of Fearnside. For more than 30 years Fearnside has been seeking to illuminate the causes and impacts of deforestation. He begins with quantitative data on deforestation and uses social theory and qualitative data to contextualize and explain deforestation as a social process. Fearnside's wide range of publications provide us with a broad knowledge on deforestation rates and processes, which he argues are fostered and influenced by frontier social processes and state development practices (2002, 2013). Fearnside (2008) outlined the movements and motivations of rural Amazonian actors and he identified migrations of capital and people as the single most important factor influencing deforestation rates.

A third area of interest for small-scale localized research is the issue of insecure land tenure which is causally linked to land conflict in Brazil and Amazonia. This topic has also been well discussed in the literature on the Brazilian Amazon from legal, geographic, economic, anthropological and conservation perspectives. Scholars have continued to examine the significance of deforestation, frontier conditions and land conflict in the Amazon, and the role of the Brazilian state in these processes through infrastructure projects and complex land titling systems (Campbell 2013; Perz et al 2008; Simmions 2004). These authors have taken a localized approach to understanding land conflict by examining land use on the household level and the impacts of specific agricultural strategies on deforestation (Aldrich et al 2006; Caldas 2007; Fudemma and Brondizo 2003). This issue of insecure land tenure continues to be a topic of scholarly interest. At the 2013 conference of Society for Anthropology of Lowland South

America, landownership issues and land conflict in the Brazilian Amazon was the topic of a panel at which Jeffery Campbell presented a paper on the Brazilian state's Terra Legal program which was intended to serve as a way to settle the more than 300,000 disputed land claims in the Amazon (2013). However, he found that the program was not equipped to deal with staunchly contested land claims. He concluded that without a plan to clearly resolve the land ownership issues land conflict would rage on in the Brazilian Amazon, and with it issues for biological diversity conservation, the creation of sustainable livelihoods and human development projects.

The final topic addressed here in the small-scale methodology, that of regional land conflict, stems from insecure land tenure and landless movements. This gained significant academic attention during the 1980s and, due to the complexity and longevity of the issue, is still a problem today that attracts attention (Write and Wolford 2003; Wolford 2007, 2010, 2012; Alston, Libecap and Mueller 2000). Schmink (1982) highlights the significance of the Amazon being a frontier region undergoing the process of social, economic and political consolidation by the state. Her work emphasizes the two distinct types of land conflict that sprang from the conditions of the Brazilian case, that of Native Amazonians vs. settlers and that of large land owners and small farmers with "de facto possession of land" (Schmink 1982:342). Other scholars have also examined the role of frontier conditions and the actions of the Brazilian state to develop and incorporate the region as foundational to the current lack of land tenure regime and the resulting violent conflicts (Simmons 2004; Simmons et al 2007). Simmons et al (2007) build on the frontier social process argument by contributing the importance of place-specific history, and contentious politics theory which can engender a landscape of violence.

In both the small- and large-scale methodologies there are a multitude of writings on these and many more related topics. In my opinion the best combination of the two approaches is the development of a dialogue between the landscape and portrait views of the issues of environment and development in Amazonia. I have the most hope for anthology works that offer the benefits of a large-scale narrative and regional focus with the detail and humanity of the case study. However, most crucial for this work is that while all of the above works offer us new knowledge on environmental issues in Amazonia, none does so in a manner which fully addresses the significance of conceptions of nature. It is this void that this thesis seeks to fill.

Outline of the Work

This project has been broken into an introduction, three body chapters and a conclusion. The first chapter is an extended review of theory relating to how we understand and construct nature and the human-environment relationship. This chapter will review related theory in anthropology and environmental philosophy to create a framework to contextualize and better understand environmental policy and development trends in the Amazon region of Brazil. Three basic, and interrelated, understandings of the human-nature relationship (each with their own manner of valuing nature) will be examined for the purpose of this project: humans as masters of nature, humans as separate from nature, and humans as part of nature. For each I will trace their specific relation to trends in the case of Amazonian development.

The second chapter will examine the shifts, and continuity, that occurred in the Brazilian Amazon during the military period. Specifically, it will examine the military's large-scale infrastructure projects and colonization schemes. These examples highlight the centrality of the

philosophy of humans as masters of nature to the military vision of utilizing the Amazon's natural wealth to fuel economic development and further integrate the region into the national project through development projects like colonization settlements and heavy investment in mining, ranching and agricultural production.

The third chapter will examine conflicting understandings of humans and nature as they have come to head in the case of the Belo Monte dam. This case highlights contrasting perspectives on the human-nature relationship which resulted in different valuations of Amazonian nature, favoring sustainability and conservation of resources, held by other agents in Amazonian development. This case study will look at conceptions of nature among indigenous groups and international environmental group in juxtaposition to the continuing and traditional economic development interests of the state. The conclusion will summarize the historical and current case conditions and how these reflect understandings of nature in the Amazon. This study highlights an alternative narrative of Amazonian development paradigms which prioritizes the significance and influence of how we construct the human-nature relationship and how these views have represented the Amazon.

CHAPTER 2

EPISTEMOLOGY OF THE ENVIRONMENT

Introduction

Researchers have argued that there is no universal concept of ‘nature’ or ‘wilderness,’ as both of these terms are steeped in particular Western, and English, constructions of these terms which represent nature as ‘untouched’ and the foil of society (Cronon 1995; Descola 2009). Understanding conceptions of culture and nature is fertile academic ground for those who study Amazonia and environmental movements and progress has been made in deconstructing these terms and offering alternative understandings of nature. However, in conservation and development policy and resource management there has been a dominant Western line of thought on the relationship between humans and the natural world, which has gone relatively unchallenged until the past twenty years.

There are two Western conceptions of nature that have been dominant in how humans determine their relationship to the natural world: the idea of humans as separate from nature, and the idea of humans as masters of nature. The view of humans as separate from nature is the most fundamental, and a basic assumption for the humans as masters of nature view. Making a distinction between humans and nature has facilitated the creation of conservation areas to protect the intrinsic value of nature. Yet the separation also fosters the mastery view which acknowledges only the instrumental view of nature and promotes utilization of natural resources for development and. A third conception of the human-nature relationship, that of humans as a

part of nature where interactions mutually reinforce value, is an attempt to incorporate human actions back into the environment, allowing a more fluid interpretation of both ecocentric and anthropocentric valuations.

In the past two decades it has become increasingly critical that we reflect and analyze our cultural constructions and understandings of nature as environmental protection and degradation have become incorporated into geopolitics. With the rise of global environmental concerns in the 1980s and early 90s, and the closure of the Cold War, some international political observers suggested that the environment would be the next paradigm of international relations (Conca 1995; Shabecoff 1996; Wolfgang 1993). However, this became an unfulfilled geopolitical trajectory. Global environmental discourse was overshadowed by the events of 9/11, which led to a new national security discourse. Yet, the environment has remained an important aspect of international relations, NGO activism, and development policies.

This chapter will review related theory in anthropology and environmental philosophy to create a framework to contextualize and better understand environmental policy and development trends in the Amazon region of Brazil. Three basic, and interrelated, understandings of the human-nature relationship (each with its own manner of valuing nature) will be examined for the purpose of this project: humans as separate from nature, humans as masters of nature, and humans as part of nature, and their specific relation to Amazonian development.

Humans as Separate from Nature

The separation of humans from the natural world is the basic assumption of Western environmental thought and conceptions of nature. It is both a conception of nature in itself and

the foundation for the second dominant Western, view of humans as masters of nature. This basic view of humans as beings separate from the natural world is inherent in both the intrinsic and instrumental perspectives on nature's value. For example, in Kant's philosophy, the rationality, (or the potential to be rational) of humans divorces them from animals and obligates a lesser type of moral duty toward animals and nature than toward other humans (Kant 2007). Yet, this distinction is also implicit in the traditional wilderness view of nature, used to support conservation policy, which values nature for its intrinsic worth (Cronon 1995; Nelson 2007). Both of these views are predicated on a delineation of what is the realm of nature and human.

The wilderness concept can be an ideological trap, and it has ensnared several progressive environmental philosophies from the biocentric, or ecocentric perspectives, which accept the view of a wilderness, or the existence of "mature equilibrium states" in the environment (Hettinger and Throop 1999). These scholars' environmental philosophies made radical efforts to situate humans within the natural world; prime examples are Aldo Leopold's land ethic creating a land-based moral community and Arne Naess's deep ecology's creation of a moral ethic based on self-realization and identification. However, they have, in basic way, maintained the separation of humans from the environment though the idea that there is an idealized, balanced state of nature prior to human interference (Leopold 2007:172; Watson 2007:235-7). Though they created a nuanced philosophy which promotes a deep, spiritual connection between humans and the environment, which has much to offer environmental ethics and conceptions of the human-nature relationship, their acceptance of a stable natural state is ecologically flawed. In practice it can foster human-excluding conservation areas justified by

principles of bio-equality that require opportunity for the richness and diversity of life to flourish (Bookchin 2007; Devall and Sessions 2007:231).

In the 1990s the debate over wilderness emerged full force. This was sparked as a result of the publication of William Cronon's article "The Trouble with Wilderness" which critiqued the culturally-constructed idea of wilderness that, he argues, has informed conservation practices since their inception during the US Progressive era and were foundations of US environmental discourse (Cronon 1995:13). Impassioned academics wrote from a wide range of disciplines, including sociology, biology, ecology and philosophy, on either side of the issue. Due to its highly political nature, the body of literature on wilderness is significant. Two sizable and diverse edited volumes have been published in the past decade in an effort to encapsulate the wilderness literature; *The Great New Wilderness Debate* and *The Wilderness Debate Rages On*, which follow the discourse surrounding the critique of the wilderness (Nelson and Caldicott 1998; 2009).

Early U.S. conservationists, influenced by the transcendentalist movement, appropriated the term wilderness from its biblical origins meaning 'wasteland' and re-articulated its meaning to incorporate American frontier nostalgia and romantic understandings of sublime nature (Cronon 1995). Activists and writers like Henry David Thoreau, John Muir and Theodore Roosevelt all advocated for conservation and protection of American 'wilderness,' speaking to a particularly urban and wealthy American environmental history and cultural imaginary of masculinity and national frontier myth (Bederman 1996; Cronon 1995; Guha 1989; Nelson 2007). The efforts of these American pioneers in the field of conservation resulted in the creation

of the top-down U.S. national parks system, which served as the foundational model for conservation worldwide (Blaike and Jeanrenaud 1997; Brown 2002).

Pristine wilderness, or the idea that there is a pure natural state that existed before the arrival of humans in the landscape, is a strong cultural imaginary that, in the Americas, stems from Western colonial expectations and interpretations of the discovery of Columbus (e.g. Balée 1999, 2013; Denevan 1992; Mann 2005). This belief that the Americas are a pristine wilderness denies historical events and the existence (and land rights) of indigenous peoples who were shaping the landscape prior to the arrival of Europeans. For centuries the impact of indigenous societies has been minimized by the wilderness myth, but in the past twenty years there has been very interesting work done on the extent of indigenous modification of the environment in the Amazon region.

The underlying acceptance of a state of pristine wilderness had been the basis of ‘fortress’ (fines and fences) conservation that was advocated and practiced by states and civilian groups over the past one hundred years. This model has since been extrapolated into tropical, developing world contexts where there was not cultural basis for the received wilderness concept. Practical applications of conservation based on the wilderness idea, informed by the myth of a ‘virgin land’ were out of alignment with rural realities and necessitated the removal of indigenous and rural peoples in the creation of fortress conservation areas (Brown 2002; Cronon 1995; Nelson 2007). This traditional conservation approach seeks to defend nature’s pure intrinsic value from the threat of human actions. However, the practical result of fortress conservation and exclusion of the rural community in conservation is to restrict access to natural resources and dispossess rural and indigenous peoples from lands they have lived on for

generations (Guha 1989). With the advent of global attention to issues of conservation and environmental degradation, many international conservation organizations, originating in the developed world, have incentivized the traditional, fortress conservation approach of national parks and enforcement of conservation boundaries in the developing world through debt-for-nature swaps orchestrated by the big three international conservation organizations: The Nature Conservancy, The World Wildlife Fund, and Conservation International (Deacon and Murphy 1997; Ruiz 2007).

Promoted by international conservation NGOs and inspired by the model of U.S. national parks and wildlife protection services, traditional conservation practices operated on the belief that humans were separate from nature and accepted the existence of a pristine natural state prior to human activity. Proponents of fortress conservation promoted the idea of nature's intrinsic value and they fought to create conservation areas where this value could be protected from the corrupting influence of humans. Therefore, the understanding that human interactions with nature were destructive of nature's value perpetuated conservation efforts. In Amazonia, the view of a sublime nature and fortress conservation to protect nature's intrinsic value had practical, negative implications for indigenous groups and rural residents, which in the developing world at large has resulted in increased inequality and exacerbated rural poverty.

In Amazonia

Themes of Amazonia as an 'ancient Eden,' a pristine wilderness, or a land apart from time are recurring in the cultural imaginary of the Amazon region (Ginway 2008; Hecht and Cockburn 2010). The environmental movement adopted the rhetoric of the pristine wilderness

cultural imaginary in campaigns to gain public and financial support for conservation efforts (Coomes and Barham 1997). Traditional conservation publicity campaigns are aimed a public conversant in the cultural constructions of the American wilderness-centric rhetoric, which employs the image of the Americas as an empty and unchanging landscape. These imaginaries have resulted in conflicting and simplified constructions of the Amazon as an ‘unknown,’ ‘virgin forest’ which is simultaneously robustly impenetrable, yet also fragile.

A significant body of literature from history, geography, and anthropology has critiqued the idea of wilderness in the Americas as historically incorrect for its failure to acknowledge the history of indigenous peoples’ interaction with their environment (Balée 1993 1999; 2013; Coomes and Barham 1997; Roosevelt 1993). Wilderness-based conceptions of the Amazon still populate the cultural imaginary, even though research in the last twenty years has dispelled these myths in the social academic literature. The wilderness concept has, however, been maintained by omission in the biological conservation literature (Killeen, Solórzano and Solórzao 2008; Perz et al 2008). This has occurred in part because of the lack of dialogue between the social and biological literature on conservation, and in part because of the fear that a critique of the wilderness concept would result in less funding for conservation and promotes development of natural areas (Nelson 2007). The biological conservation literature’s failure to recognize that conservation is occurring in an occupied landscape maintains the problematic separation of humans from the natural world. This is important because biological studies provide the central support and justification for institutional conservation actions. Making forest conservation dependent on the existence of pristine wilderness areas is a culturally powerful tactic to capture the interest and support of the American public, yet it is dangerous in that, by extension, natural

areas where humans have interacted with the environment are perceived as less worthy of protection, or require the removal of rural people.

Historically, the Brazilian state has not included conservation in Amazonia as an element of official environmental management policy (Lemos and Roberts 2008). Four general periods can be identified in Brazilian environmental policy: state-led colonization of the 1960s-1980s, donor-led environmental management of the 1990s, a return to state-led development planning in the early 2000s, and the nascent avoided deforestation or environmental services compensation period currently occurring through REDD (Reducing Emissions from Deforestation and forest degradation in Developing countries) prep programs (Cambell 2013; Lemos and Roberts 2008; Nepstad et al 2013). The military period emphasized conversion and not protection of the Brazilian environment and, therefore, private donors and not the state led the early conservation efforts. These conditions fostered the development of an important role for international conservation organizations in the Amazon which brought with them a strongly American view of wilderness conservation

The international environmental movement and global concerns about climate change have had a major impact on perceptions and actions for conservation in the Amazon region. With the closing of the Cold War global discourse, there was an opportunity for environmental issues to become the next paradigm of international relations (Conca 1995; Sachs 1993; Shabecoff 1996). The paradigm of global environmental governance became an unfulfilled opportunity after the events of 9/11 and the rising concerns of terrorism and the national security discourse. In the early years following the Cold War environmental issues represented a nascent

international discourse which created a space for differing valuations of nature to confront one another.

It was during this period that the UN Earth Summit was held in Rio de Janeiro, Brazil, in 1992. The developed world's fears of climate change, ozone depletion, and deforestation focused the conference's attention on the developing world's use of natural resources. The global North, armed with a traditional fortress view of conservation, advocated for greater allocations of territory to protected areas and decreased usage of limited natural resources. This view of nature-for-conservation from the global North is in opposition to the instrumental development-oriented view of nature central to the global South's environmental policies. The traditional conservation view does not have rural actors, precluding the possibility of regional development as there is no room for positive human interaction in the conservation landscape. While there were many divisions both within and between nations in the debate, allegations of hypocrisy by the global North polarized the debates between the demands for conservation and the demands for development (Conca 1995 Shabecoff 1996; Uvin 1995). The polarization of interests at the summit prevented the creation of significant binding or enforceable treaties. The unresolved issues of the summit allowed for the continuation of an environmental security discourse focused on the threats to resource scarcity, climate change and environmental degradation (Timura 2001). Continuing to focus on large-scale challenges and problems, this discourse indirectly supported the continuing urgency for more traditional conservation to protect the remaining environment.

The lack of international environmental resolutions and the urgency felt by NGOs to protect the remaining environment resulted in greater activity in the Amazon. Traditional conservation policies dominated Amazonian protected areas from the 1980s onwards, and the

objectives of this type of purely biologically-motivated conservation strategy are evident in the policy recommendations. In the biological conservation literature the Amazon region is defined by quantitative values such as ecotone (gradations of ecological zones) and precipitation rates which identify the “Core Amazon” or area most ecologically valuable, particularly in relation to factors affecting climate change (Kileen, Solórzano and Solóerzano 2008:1882; Perz et al 2008). Other biologically motivated conservation proposals argue for the creation of biological corridors based on species migration paths to protect animal species in danger of extinction from climate change, environmental degradation or forest fragmentation (Kileen, Solórzano and Solóerzano 2008:1881). Again these recommendations do not acknowledge human habitation in these zones or any potential positive impacts these rural residents could have for forest preservation. In the traditional biological view the only role for rural populations is that of destruction (i.e. road building, gold mining and logging) which aggravates the ecological problem.

Traditional fortress conservation strategies lack any form of human interface with the natural world in either identification of protected areas or in the maintenance of these areas. When reading a biological proposal for regional conservation strategies it is as if there are no rural actors, or if there are they are lumped into a neo-Malthusian view of rural populations’ negative impacts on the biosphere (Brown 2002; Coomes and Barham 1997; Kileen, Solórzano and Solóerzano 2008). In these biological conservation analyses, the only reference to human actors in these regions are typically in reference to road building and dam construction and acceleration of forest fragmentation and deforestation. In my interpretation, these traditional conservation efforts are very well oriented to the specific non-human biological conditions of the Amazon, but because they fail to realize that this conservation is occurring in a human landscape

in which there are political, economic and cultural motivations for rural actors' engagement with the environment, their fortress type conservation is flawed and will be unable to meet its biodiversity objectives. By excluding humans from the rural landscape and only recognizing a negative role for them in conservation (as 'the problem') traditional conservation methods maintain a problematic and artificial distinction between humans and the environment which limits the potential of both natural and human landscapes.

Humans as Masters of Nature

The conception of nature as subordinate to human will is considered to be one of the dominant Western lines of thoughts about nature and its treatment. In the late 1970s the scholarly world, motivated by the ecology movement and publications like Rachel Carson's *Silent Spring*, which spoke of anthropogenic environmental crises, began to question the human-nature relationship. This led to a lively debate in philosophy and religious studies over the morality, obligations and the construction of the human-nature relationship. One of the most famous and cited of these essays was by Lynn White. White identified the idea of man's dominion over nature to be the source of the modern ecological crisis and he links this hierarchical relationship to medieval Christian conceptions about nature and technological progress (1967). This essay is often criticized for selectively reading biblical texts, excluding the idea of Christian stewardship, and for not addressing the global nature of environmental degradation, which historically and currently occurs in areas where Christianity is not a major belief system, as well as for missing other Western societal aspects like capitalism, individualism, and technological optimism which could contribute to the ecological crisis (Dobel 1977; Moncrief 1970). Though the essay has its

faults, White's work does demonstrate how a fundamental belief in a society could foster a particular human-environment relationship, and it spurred the academic community to question and examine human-environment interactions.

Traditionally, reflection on nature and humans' relationship to nature has been left to the study of philosophy. Within environmental ethics there has been a strong contingent of scholars and theorists contemplating the conditions of the relationship between humans and the natural world and what regulates it. One camp within environmental ethics are those thinkers who draw a distinction and hierarchy between humans and the rest of the natural world. Kant was of this camp and he argued that human beings were rational and were therefore ends-in-themselves, while the rest of nature and the natural world was non-rational and therefore only means (Kant 2007). Kant's philosophy of environmental ethics creates a hierarchy of the natural world based on the possession of a soul (if it moves), consciousness, and finally if the being is self-conscious and rational. Renewed interest in Kant's philosophy by contemporary scholars make the argument that Kant's philosophy does provide that animals (or 'higher' natural beings) do have inherent worth (because they are intrinsically and extrinsically purposeful). Yet practically, Kant argues that humans only have indirect duties towards animals as our behavior towards them informs our behavior towards other humans who do have moral worth (Wilson 2007:67-68). Kant's basic philosophy is reminiscent of the Great Chain of Being in that both depend on the delineation of humans from other animals as the foundation of their claims for the moral worth of humans.

In addition to formal philosophy, Cronon's work "The Trouble with Wilderness" also addresses historical human-nature interactions. In his characterization of the cultural memory of

wilderness, he asserts that the term's historical meaning reflected fear of nature as a space that was only marginally influenced by human civilization. Like White, Cronon finds support for this barren and fearful view of nature or wilderness in biblical references to the banishment of Adam and Eve, Moses, and Ismael (Cronon 1995:8). The only redeeming value of this site of natural wilderness was in its potential to "be 'reclaimed' and turned toward human ends" (Cronon 1995:9). The concept that nature as "wasted" or "disorderly" before the arrival of humans to tame and convert it also supports the idea of humans as superior to nature and the necessity of human effort to transform nature into something of value.

In this construction of environmental ethics humans are separated from the natural world and specifically placed above nature with only indirect responsibilities to its use. The adoption of technological progress, materialist rational empiricism during the European Enlightenment, and expansion of Western economic systems thought through colonialism fostered the dominance of the view of humans as separate and superior to the natural world (Rees 2007). Kant separates humans from nature and while he claims that some aspects of nature, like animals, have intrinsic value, in this philosophy nature as a whole still lacks moral value (or the ability to have rights) and some aspects of nature lack intrinsic value at all. These theories support the dominance of humans over nature and validates human actions to determine nature's use.

Extrapolating from this philosophical stance, it is not hard to see how this worldview of humans as masters of nature would be put into practice as instrumentalist environmental policy. The nascent cultural and economic institutions of democracy and capitalism also mutually reinforced systems of value which specifically viewed non-animal nature as a means with only instrumental value for humans. Cronon's contribution from his study of the historical wilderness

concept complements Kant's view of value in nature as a means, as well as the idea that humans are superior to nature (1995). Cronon's view also contextualizes the historical cultural definition of wilderness as negative space not occupied by humans and without value until the arrival of humans and their labors of extraction and transformation (1995).

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These views of nature as means with only instrumental value are recurrent in the political and economic policy phases of Amazonian development. Within the conventional definition of nature and wilderness as a means or with only instrumental value for humans, is the implication of the need of human extraction and transformation efforts. The Amazon region has been a site of this type of intensive extraction efforts.

Many Western philosophical and societal factors have combined to create a system of valuing nature only for its instrumental value in the region. In Latin America these systems of value developed out of colonial economic structures of extractivism like the *encomienda* and *latifundia* land tenure. Due to the natural wealth of the Amazon region, it has been a site of extraction for the last four centuries and resulted in social and economic systems which perpetuate the view of the Amazon primarily as a latent repository of natural resources (Burke 2012; Lemos and Roberts 2008). The imposed European economic system of colonial extraction created social organizations of labor through debt peonage, which limited the power of previously existing cultural systems (based on different system of valuing nature) and allowed the mercantilist and capitalist view of nature as an input for economic growth to dominate the formal economy of the region (Auty 1995; Baer and Muller 1996; Burke 2012).

This system of extraction of raw materials extended beyond the colonial period, through the Imperial era and has reoccurred in national development plans from the democratic era. These systems of extraction promoted export-led development in the positivist-inspired early republics in the 1890s through the 1920s. In the 1930s, motivated by the economic collapse of the US, Latin American countries opted for import substitution industrialization in an attempt to switch their economic activity from primarily extraction to secondary transformation. Some economic historians and cultural geographers argue that Brazil during this time suffered from the “resource curse thesis” in which a developing nation with rich natural resources relies on extraction and sale of primary resources to meet its balance of payments while slow-to-mature investments are made in industrial sectors (Auty 1995:257). This is the model of development that Brazil shifted to in its application of ISI policies. Brazil’s primary production (or economic conversion of natural resources) assisted in balancing industrial investments in the coast-oriented cities of Rio de Janeiro and São Paulo (Auty 1995). By what is labeled the Autarkic Development Model, resource-rich countries like Brazil attempt to bypass the early stages of industrial development by using loose macroeconomic and industrial policies, supporting the risk from these industries through intensified exploitation of their natural resources base.

Though the true ISI period of Brazilian development ended in political turmoil in 1964, the idea of utilizing the resource-rich Amazon to fuel national economic growth remained consistent in development views through the military period. The military government further opened and exploited the Amazon frontier for a number of reasons, strategic geopolitical concerns (border security and effective control of the region), relief from calls for land redistribution in the south, and for the introduction of large-scale, export oriented projects (Baer

and Mueller 1996:22-3; Ciccantell 1999a; Hecht and Cockburn 2010). The military government viewed economic growth as an aspect of national security to prevent the instability witnessed by the nation in the 1950s and early 60s. In this technocratic, positivist-derived view, which prioritized economic growth at all costs, nature and the environment were again seen as inputs to solve the nation's economic problems (Foresta 1992). The Amazon frontier became the source of latent potential that would propel Brazil into the developed world.

The military generals accepted environmental degradation and exhaustion of non-renewable resources as the price of development and, therefore, national security (Baer and Mueller 1996; Ciccantell 1999a; Hecht and Cockburn 2010). Spurring the Brazilian economic miracle of the late 1960s-1970s was this growth-centric paradigm that advocated for intensive exploitation of natural resources to foster economic growth (Lemos and Roberts 2008). During this period of autocratic control, the state was the primary actor in determining the relationship of humans and the environment. The policies of General Golbery do Couto e Silva in the 1970s, particularly espoused dedication to a heartland view of the interior of Brazil as a land of great natural wealth that the nation must incorporate and use in order to achieve current and future "grandeza" (Foresta 1992:130). The tangled ideas of economic development, national security and effective control of the Amazon region extended to support a nationalist critique of international environmental interests from the developed world that railed against the environmental destruction that had resulted from military development policies. Brazilian nationalism viewed foreign attempts to limit access to environmental resources (though conservation) as an attempt to constrain their development by limiting their ability to convert their natural resources into economic growth (Baer and Mueller 1996; Shabecoff 1996).

By the mid-1980s the military efforts had failed to create sustainable growth and stability in the Brazilian economy. While some of their strategies were abandoned, the idea of developing the Amazon in order to utilize its natural wealth remained and continued into the new democratic period with corporate export-led development, the construction of hydroelectric dams and continued emphasis on extractive industries. In addition to the survival of the nature-as-input idea of using the Amazon for economic growth, there was another nationalist holdover from the military period. Although democratic, Brazil remained staunchly nationalist in response to international calls for increased conservation in the Amazon. At the 1992 Earth Summit in Rio de Janeiro, the developing world, led by Brazil and India, maintained that conservation was an idea specific to the developed world which would have the effect of limiting their ability to develop themselves (Shabecoff 1996).

These Brazilian economic and geopolitical models could not exist without the staunch equation of nature with natural resources, a view in which nature is simply an input or a means to achieving an anthropocentric goal of economic growth. The underlying concept of nature as only having instrumental or use value is an essential assumption of these economic and geopolitical strategies which defend the continued conversion of natural resources into economic inputs against an alternative value of nature espoused by the international environmental movement and pressure to conserve and protect Amazonian nature.

Humans as Part of Nature

The third understanding of the human-nature relationship is distinct from the first two sections in that it does not see humans as separate from the natural world and actively attempts to

create a space for humans within the natural landscape. Early environmental philosophical attempts to place humans back in the biosphere in the creation of a biocentric or land ethic were self-aware reactions against the prior philosophy of humans as masters of nature. These thinkers made landmark shifts away from anthropocentric valuations of nature implicit in the earlier philosophies. Both Leopold's land ethic and Naess's deep ecology's extension of the moral community (through identification) were early attempts to place humans back within the natural world and create an ecosystem ethics based on biocentric equality in which humans would view the natural world as an extension of themselves (Leopold 2007; Naess 2007a 2007b). However, these attempts were flawed in that the ethic was still individual and it maintained the wilderness concept. The primarily individualistic understanding of the human-nature relationship in deep ecology has been critiqued as inherently problematic by both social ecology and sustainable development which argue that environmental degradation is a societal problem which requires complete cultural reorientation and investments in community life. These biocentrically radical attempts were also not able to fully overcome the barrier of the wilderness concept to fully integrate humans into the natural landscape.

In response to the human community-alienating philosophies of deep ecology, others proposed a social ecology which would recognize anthropocentric needs as well as inequality stemming from politicized control over the natural world. This view point maintained the need for an anthropocentric environmental ethic through social ecology (Bookchin 2007; Sterba 2007). Fearing the potential for biocentric 'fascism' in deep ecology, social ecology was proposed as a third option to the divisions of biocentric and anthropocentric debates (Bookchin 2007). It accepts the idea that nature (or the human-nature relationship) is constructed; "natural

evolution has conferred on human beings the capacity to form a ‘second’ or cultural nature out of the ‘first’ or primeval nature” (Bookchin 2007:251). By recognizing humans as primarily social beings and their interactions with the natural world as culturally constructed, social ecology argues for community solutions for the social causes of environmental degradation. By linking the foundations of human society and culture to a natural origin, social ecology rejected the idea of an alienation or separation of humans from the natural world. After debunking the fallacy of separation, social ecology then proposed that the impacts of human culture and society have the potential to positively affect the natural world through a reorientation of human activity directed by a newly ecologically-oriented society (Bookchin 2007:251). Sustainable development has also been explored at a third way and it attempts to balance both anthropocentric biocentric ethics. Sustainable development has become the most widely accepted attempt to re-articulate human culture and society with an ecological grounding and has been proposed as a part of the solution to the ecological crisis.

On a global scale, the problem of humans and their relationship to the environment has been a topic for international discussion since the 1972 landmark UN Conference on the Human Environment. The conference produced the Stockholm Declaration highlighting the growing problems of pollution, overpopulation and environmental degradation fostered by the paradigm of continuous economic growth which views nature as resource inputs for economic development (Conca 1995; Rees 2007). This conference produced more awareness toward the interrelated nature of environment and development and began the trend of focusing international attention to environmental issues demonstrated by the publication of both the 1982 World Charter for Nature and the 1987 World Commission on Environment and Development and it

culminated with the UN Conference on Environment and Development in 1992. All of these events produced important documents. Particularly the Brundtland report, Agenda 21 and the Earth Charter, intended to establish and guide a new interpretation of the human-nature relationship that recognized both anthropocentric needs and the intrinsic value of the natural world.

These three documents defined and fostered the foundation of the sustainable development approach which has a different, though at times still limited, conception of the human-nature relationship. The Brundtland report, or *Our Common Future*, identified sustainable development as a necessary effort to reorient society and stem the ecological crisis which was intertwined with the development process. Agenda 21 is a series of non-binding policy recommendations produced at the Earth Summit to achieve sustainability in the twenty-first century by addressing three dimensions of the ecological crisis: environment, economy, and equity (Agenda 21 1992). It proposed several radical policy recommendations to reorient global society in a more ecological manner. The Earth Charter is a later, significant document promoting a re-articulation of our current society along more ecological grounds. Produced by civil society from 1994-2000 it was begun by Maurice Strong, the Earth Summit organizer, as an extension of the dissatisfaction at the lack of binding agreements and the co-option of the ‘sustainability’ concept by the greenwashing of traditional development that occurred at the Earth Summit in 1992. The Charter was written by NGOs from around the world by “the most inclusive and participatory process ever associated with the creation of an international declaration” and has been endorsed by over 4500 organizations (both governmental and non) (Earth Charter 2000). While Agenda 21 and the Earth Charter documents are non-binding and

have been described as vague, they do represent a strong desire for an alternative path which calls for a rejection of the current human-as-masters-of nature relationship that supports an economic system of resource extraction that is causing intense environmental degradation. Lack of consensus on sustainable development and the complicated nature of operationalizing sustainability recommendations on a large scale have been the major problems with sustainable development. Operationalization of the ideals of Agenda 21 and the Earth Charter has proven complicated as the recommendations they provide are directly opposed to entrenched cultural norms and economic interests. Yet academics and activists see recognition of the global realities of our ecological problems and linkage of human rights to environmental rights as means of making the principles of sustainable development functional (Westra 2007). By linking sustainability issues like global health, pollution and quality of life to the most basic tenets of international law, human rights, advocates aim to demonstrate the necessity of a paradigm shift and are offering sustainable development as that alternative.

Within the paradigm of sustainability, the human-nature relationship is redefined in symbiotic terms which recognize the interrelated nature of humans and their environment. Proponents of sustainable development emphasize the radical shift that must occur in how humans view themselves in the natural world: “the new eco-paradigm must dissolve our separateness and reunite humankind with the biosphere” (Rees 2007:609). This applies to both the perceived ‘positive’ and ‘negative’ effects of this separation. It requires a rethinking of both traditional economic development based on resource extraction and of traditional conservation practices (Rees 2007). While there is significant fear over the loss of the wilderness concept as the basis for conservation and value in nature “history has shown that restrictive measures to

control inappropriate activities are simply inadequate” and a new, more comprehensive paradigm is needed (Rees 2007:609). Conservation without people, and development without respect for the natural world are inappropriate holdovers from the prior systems (of separation and mastery) governing human-nature interactions.

Moving beyond the anthropocentric/biocentric ethics dichotomy, sustainability recognizes the validity of the needs of both human communities and the natural world. Both nature and humans have intrinsic value and their values are interdependently linked; “the well-being of humanity depends upon preserving a healthy biosphere” (Earth Charter 2000). To ensure the continuation of both human society and the natural world, this linkage and its limitations for society, must be recognized to require “fundamental changes...in our values, institutions and ways of living” (Earth Charter 2000). Sustainable development remains a beautiful, but ambiguous, idea to most people. Yet with “acceptance of the need to take a balanced and integrated approach to environment and development questions” and by examining our development initiatives and human-environment interactions it is possible that with a new paradigm a different system of human-nature interactions can be developed (Agenda 21 1992:1).

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By rejecting the idea that humans are either above or interlopers in the natural environment, the sustainability paradigm allows for a positive role for humans in their environment in a new way. In addition, sustainable development’s focus on equity in all its forms (racial, economic, ecological and intergenerational) can offer new opportunities for rural communities in areas like the Amazon which have suffered economic inequality and

underdevelopment due to national policies which accepted the separation of humans from nature and artificial distinctions between economic growth, equity, and the environment. There are myriad examples that could have been chosen to represent sustainability initiatives in the Amazon. I have chosen to briefly examine extractive reserves, sustainable forestry and indigenous-environmental organization partnerships to represent the positive aspects a sustainability paradigm has to offer: community orientation, creativity re-imagining of narratives and expanded rural agency.

Extractive reserves in Brazil were originally proposed by socially conscious groups of rubber tappers in the 1970s in the state of Acre (Brown and Rosendo 2000). These early efforts were interpreted by the conservative state as calls for agrarian reform, and were therefore rejected (Brown and Rosendo 2000). It was not until 1990 when extractive reserve advocates allied with conservation interests, and significant political change had occurred, that they officially became part of the environmental policy of the Brazilian government (Hecht and Cockburn 2010; Rich 1994; Le Tourneau and Greissing 2010). In the Amazon, extractive reserves were proposed as a potential solution to fortress conservation which traditionally excluded rural people from economic resources, motivating poaching and over-harvesting due to ineffective ownership enforcement of protected areas. Extractive reserves were intended to connect conservation efforts to improving rural income and create local environmental stakeholders (Burke 2012; Coomes and Barnham 1997; Fearnside 1989). These reserves attempt to incorporate the economic needs of the people into environmental management, promoting livelihoods based on the extraction of forest products like timber, nuts, palm hearts and rubber (Pollack et al 1995; Sawyer 2008; Le Tourneau and Greissing 2010).

There are also sustainable development initiatives in the Amazon which seek to bolster traditional forestry and logging communities with sustainable forestry management training. Recommendations for sustainable forestry have focused on both specialized and common tree harvests. Specialized tropical hardwoods management, like rosewood, has been recommended for sustainability projects because the exploited trees are almost 100% wild stands and because it has a higher rate of profitability than standard forestry (May and Barata 2012). Depending on the scale, forestry projects are more controversial than extractive reserves in that some traditional companies have simply ‘green washed’ their traditional strategies without refocusing the basic assumptions of the practice, which still prioritize short term economic gains without accounting for the true environmental costs (Zimmerman and Kormos 2012). In addition, larger environmental issues of global climate change have begun to have an impact on how (or if) forests can be sustainably managed given the critical importance of the Amazon as a carbon sink, and the compounding effect of tropical forests’ die-back that will be caused by climate change in the future (Sawyer 2008).

Another sustainability approach that has been used by NGOs in the Amazon region is conservation partnerships between indigenous groups and international NGOs. Analyses of the distribution of protected areas in the Amazon have concluded that protection of a substantial proportion of the world's remaining biodiversity is feasible in part because approximately 2 million km² of tropical forest are already protected under indigenous reserves (Pimm et al., 2001). Officially recognized indigenous lands in the Brazilian Amazon alone comprise half of this total (Pimm et al 2001). These partnerships are often predicated on the cultural myth of the ‘ecological indian/noble savage’ or the assumption that indigenous peoples cultural resource

management practices are always more ‘in tune with nature’ or sustainable than Western models (Hames 2007). In practice, partnerships between Amazonian indigenous groups and international environmental NGO’s have provided new opportunities in transnational advocacy networks for indigenous people, but also limited the expression of indigenous agency by linking political power to the continuation cultural of traditions (Conklin 1997, 2002; Conklin and Graham 1995). These partnerships strengthen indigenous political authority, but also can limit political authority to causes and actions which are deemed culturally authentic by the Western cultural imaginary about who ‘traditional’ indigenous people are. This can result in an inability to accept new legitimate forms of cultural change and denies the existence of other non-traditional motivations in resource management. However, conservation partnerships with indigenous groups and the general demarcation of indigenous land have been positively correlated with the protection of ecologically vulnerable areas and increase in indigenous political advocacy (Nepstad et al 2006; Pimm et al 2001; Schwartzman et al 2000; Zimmerman et al 2001).

Conservationists have learned from the people vs. parks debates that there must be a varied strategy for protected areas to maximize biodiversity protection. Demarcation of indigenous lands is another example of linking both the human and biological landscapes to pursue conservation and minority rights. In the Brazilian Amazon, conservation biologists have found that while uninhabited conservation areas have the highest quality of bio-diversity, they are typically found in difficult-to-access areas of the forest. By comparison indigenous lands are typically located near agricultural frontiers and have protected more vulnerable forest areas and have been shown to have “strongly inhibited deforestation in the active agricultural frontier” (Nepstad et al 2006).

The indigenous areas that are most successful at preventing agricultural deforestation from the expanding agricultural frontier are also the areas in which there have been strong indigenous organizations for political authority and from the groups which have actively enforced legal restrictions on resource exploitation by outsiders (Nepstad et al 2006). While imperfect, this example of sustainable development is significant in that demonstrates the necessity of blending interrelated demands for equity and environmental protection; as only through supporting indigenous political and social rights was the environment also protected. There are still internal issues relating to the socio-economic needs of these residents on the indigenous lands for secure livelihoods, social services and the flexibility for the groups to be able to change should to meet future demands.

Amazonia has been the site of many sustainable development initiatives with varying results. Spurred by international environmental concern for deforestation and biodiversity loss, a variety of NGO groups have sponsored projects that attempt to protect biodiversity while engaging local communities and indigenous groups. Some of these projects, though well intentioned, were not accompanied by a paradigm shift in the donor or sponsoring organizations. Without a formal definition of sustainable development it is left open to the abuses of greenwashing. However, the original intent of sustainable development is not simply a reform to the current paradigm of economic growth that views of nature as an input distinct from human society. It requires the overturning of basic cultural and economic goals of unlimited growth and continuing current rates of resource consumption. Either failing to realize or failing to accept these basic requirements, some traditional practices were simply greenwashed on the surface with buzz words like ‘community partnerships’ and ‘sustainable management’ without truly

accepting the more radical principles of equity and understanding of the complexity of navigating competing economic needs of humans with the need to protect biodiversity.

Sustainability projects- extractive reserves, sustainable forestry and conservation partnerships- have had mixed results on their long-term impacts on the local cultural and economic systems governing resources use in the region. Programs that simplify rural livelihood strategies and fail to examine specific contextual information on “microeconomic, geographic and household features that shape the resource-use patterns of forest peoples” to create market accessible products are less likely to have a sustainable longterm effect (Browder 1992; Coomes and Barnham 1997:181). The variation in results is due in-part to the commitment of NGOs, who often initiate the projects, how much of a paradigm shift occurs in how the natural world is viewed and used, and who maintains authority over the resources. This approach is difficult to operationalize because it mandates a fundamental questioning of past practices and value systems, and it requires dense interpersonal relationships and working with real, and opinionated people. However, I find the ethical balance of biocentric and anthropocentric ethics required of the sustainability paradigm and the recognition of both the ecological and human landscapes to be the most promising structure of the human-nature relationship.

Drawing Conclusions

This chapter has presented three theoretical conceptions of the human-nature relationship and the implications of those fundamental beliefs in resource management practices in Amazonia. Humans as separate from nature and humans as masters of nature are the two dominant understandings of the human-nature relationship in the Western world today. A third

concept, of humans as a part of nature, re-imagines the human-nature relationship and attempts to move beyond the polarization of biocentric and anthropocentric ethics to recognize the potential for a symbiotic relationship between humans and nature.

While the divorce of humans from nature is a prerequisite for the humans as masters of nature worldview, the separation speaks to a larger discourse of wilderness and a belief in ‘pristine nature’ prior to the arrival of humans. This view is the foundation of traditional fortress conservation models which were brought to, and implemented in, Amazonia by international conservation NGOs and supported by the international communities’ fears of climate change and global environmental degradation. With a greater understanding of the significance of American concepts of the environment and wilderness as the underlying ideological support for conservation we can gain a more nuanced view of Amazonian conservation framework.

Humans as masters of nature, or viewing the natural world in terms of economic inputs for growth, has been the dominant view which structured economic activity in Amazonia and the efforts of the Brazilian state to promote extractive industries like mining, logging, and intensive agricultural exploitation. The idea that wilderness areas are ‘wasted’ prior to human activities to ‘reclaim’ and organize resources has supported Brazil’s aspirations of stimulating economic growth to achieve their vision of becoming a ‘modern’ country. Interpreting these influences of the Amazonian development process as part of a larger narrative of development and progress, the use or conversion of the countries national wealth becomes clearly part of the national narrative of the future oriented country.

Finally, the more recent view of humans as a part of nature seeks to overcome the philosophical dichotomy of biocentric and anthropocentric ethics by arguing instead that they are

the same thing. This perspective of nature is difficult in that it requires a questioning of earlier assumptions that produced the development paradigm of economic growth. The difficulty in questioning the dominant socio-economic system has led to several 'sustainability' initiatives that do not truly shift their orientation away from growth or build capacity and agency on the local, personal level or allow for creativity in the development of new narratives. In Amazonia the impacts of this perspective can be viewed most clearly through conservation partnerships with indigenous groups and in the attempt to account for rural livelihood strategies with the creation of extractive reserves and sustainable forestry programs.

The ideas and concepts people believe and how they fundamentally construct the human-nature relationship matter. They provide the narrative structure to frame and justify environmental practices and resource management. These structures are implicit in environmental decision making and, by better understanding their origins and assumptions, allow for a deeper interpretations of human-landscape interactions. Acknowledging the power of these conceptions and the narratives they support also provided a framework for re-imagining the human-nature relationship.

CHAPTER 3

A HISTORICAL SUMMARY AND ANALYSIS OF THE MILITARY'S DEVELOPMENT PROJECTS

Introduction

The second chapter will examine the shifts, and continuity, that occurred in Brazilian Amazon during the military period. The actions of the military, inspired by a vision of a modern and economically developed Brazil, reinforced a particular resource-view of humans as masters of nature in their development policies in the Amazon. This chapter will examine two development projects sponsored by the military government, and the particular system of constructing nature that it has produced with regard to regional development initiatives that continue to the present. Specifically, this chapter will examine the military's large-scale infrastructure projects and colonization schemes of Polonoroeste and Carajás. These examples highlight the centrality of the philosophy of mastery of nature to the military vision of utilizing the Amazon's natural wealth to fuel economic development. The Carajás and Polonoroeste projects were also part of the military's plant to further integrate the region into the nation through development and economic growth oriented projects like colonization settlements and heavy investment in mining, ranching and agricultural production.

Historically in the Brazilian case the development narrative has viewed the environment in terms of natural resource inputs for economic growth with a particularly nationalistic emphasis on modernization. Cyclically, the Amazon region has received international attention

for its important exports: of tropical hardwoods during the colonial era and the rubber booms in the late nineteenth century and during WWII (Ciccantell 1999a; Floresta 1992). As with other economic development projects from earlier periods, like the rubber boom, “the changing definitions and uses of the Amazonian region [result from]the imposition of external actors’ goals of capital accumulation and national development” (Ciccantell 1999a:294). During the military period from 1964-1985, the Amazon was viewed anew as a vast resource pool with the potential to spur national development to achieve the elusive future oriented Brazil (Eakin 1997; Hecht and Cockburn 2010). This mentality can be clearly seen in a review of Amazonian development policy and resource history since the 1930s, but it occurred most significantly in the period of the military dictatorship. The military continued the resource-use philosophy of earlier economic investments, but the major shift was the amount of funding and central planning that the occurred in the military era that significantly broadened and deepened their influence over the region. The military regime took out loans and created regional development banks to fund their development projects and created institutions which would construct their vision of the Amazon region through road building, resource extraction and colonization projects like the Polonoroeste and Carajás projects (Hecht and Cockburn 2010; Wade 2011).

Background: Land Tenure and Resource History in the Brazilian Amazon

This section will provide historical context for the Polonoroeste and Carajás projects by examining land tenure and resources use in Amazonia, and how the military period expanded and advanced an existing resource view of the Amazon. The military period formalized large-scale state development and infrastructure projects, which viewed the natural world as inputs for

national growth, as the dominant paradigm for the Amazon. This view, although operationalized by the military, remains central to state actions in the Amazon into the democratic era today.

It is necessary to contextualize the development process specifically to the conditions in which it is occurring. Understanding the colonial legacy, societal structures and motivations, and economic history of Brazil are imperative to contextualize the development narrative and the views of nature fostered under the military regime. Therefore, this section will give a focused review of the Brazilian Amazon's resource history, society and economic development to understand the implications of large-scale projects like Polonoroeste and Carajás. The resource extraction method of Amazonian development is one continuity in the region's history. However, it was the military's projects which finally channeled significant investment into the region and fully expanded the existing narrative of the Amazon as instrumentally valuable to the nation. Through these efforts the state and intergovernmental organizations (like the World Bank) provided the means and infrastructure to remove the forest, viewed as an obstacle to progress and development.

The military in Brazil had long been entrenched in the particularly Brazilian political application of Positivism which has embraced order and modernity as the destiny of Brazil. They have also been vocal supporters in the drive to develop and industrialize Brazil (Eakin 1997:223). Early into the military regime the generals decided that they must incorporate the Amazon more firmly into the national economy in order to exploit its vast and untapped resources (Eakin 1997:245). Therefore, the military government supported development policies during their regime from 1964-1985 which would "transform the Amazon from a backwater into the 'new El Dorado'" by encouraging exploration and investment in raw material extraction

(Ciccantell 1999a:301). The military saw their policy of incorporation a matter of national security, as they perceived ineffective control of the Amazon to be a threat to national sovereignty in the region. They also viewed the opening of an Amazonian frontier a way to stabilize rural demands for land reform and as a solution to the *Questão Fundiária* (the land question) (Skidmore 1988). Two years after the military seized control of Brazil they launched their plan called Operation Amazonia in 1966, with the creation of the Plan for National Integration, PROTERRA (land reform program) and SUDAM (Superintendência do Desenvolvimento da Amazônia). The 1960s marked an important shift in the role of the Amazon region to the overall development of Brazil.

Traditional extractive products in the Amazon region have been: exotic hardwoods, aluminum, iron ore, gold, rubber, Brazil nuts and other tropical forest products. These producers in these extractive industries valued the forest principally instrumentally and economically. The forest as a whole was seen as an obstacle that one needed to overcome to get to the particular products of value. Investors regularly attempted to bypass the forest in order to achieve greater efficiency in the production and extraction of the region's natural wealth. For example attempts to create extensive rubber tree plantations by Henry Ford or the expansion of large-scale open pit mining rather than artisanal mining (Burke 2012; Hecht and Cockburn 2010).

The early rubber boom (and bust) from 1870-1910 set the mold of modern resource extraction in the Amazon region. During commodity price booms there would be intensive regional migration (up to 300,000 people at a time) in to the Amazon from the large, Northeastern coastal cities (Ciccantell 1999a; Hecht and Cockburn 2010). Little-contacted indigenous people were 'pacified,' and removed from their land to make way for extractive

industries, and in the process indigenous populations were often devastated by disease (Ciccantell 1999a; Rabben 2004). This established a specific process of significant regional migration and insecure land tenure which were repeated on a larger scale when the military opened up the Amazonian frontier and land passed from public to private ownership in one of the world's largest enclosure movements. This rapid process in vast area, little managed by the state, and lacking a sufficient land titling program has resulted in 300,000 disputed land claim amounting to over four times the actual area of the Amazon: many of these disputes remain unresolved today (Cambell 2013).

Brazil's land development history exemplifies a pattern similar to the rest of Latin America in that, since colonial times, it was primarily an economy of extraction. The motivation of extracting natural wealth to spur economic growth has remained constant since this early period. The current high rates of deforestation are the subject of much academic dispute and linked particularly to the dominant economic and land tenure systems of the military which made deforestation possible on a large-scale. The major arguments about the recent, dramatic resource shifts classify Amazonian deforestation as: neo-Malthusian, a tragedy of the commons, the fault of the international market, the fault of inappropriate technology, the fault of ill-conceived development planning, or the fault of the 1980s debt crisis that afflicted Latin America (Hecht and Cockburn 2010). These arguments all demonstrate a particular motive of deforestation but are insufficient because they fail to look at systemic causes of deforestation. While there is no consensus on one underlying cause among the literature, and most certainly the causes overlap, a comprehensive argument of contemporary Amazonian challenges must examine the lasting impacts of the state's overarching, regional development strategy and vision of the Amazon as

latent resource wealth which, when harnessed, would transform the nation into a modernized Brazil (Foresta 1992; Hecht and Cockburn 2010; Lemos and Roberts 2008).

Traditionally, Brazilian population and productivity have been centered in the coastal regions, which reflects the economic dominance of sugar and coffee. The vast interior lands were viewed as sites of extraction inhospitable for civilization. Seeing the nation's future in the vast interior of the nation, and as an effort to get the population to move inland, the democratic-populist government relocated the capital in 1960 from Rio de Janeiro to Brasilia: a constructed city in the heartland of the country (Foresta 1992; Moran 1993). After the military coup in 1964, the dictatorship continued the interiorly oriented initiatives of the populists by creating a network of highways to connect and integrate the Western and Northern provinces with the rest of the country (Moran 1993). These roads were the first infrastructure projects allowing westward settlement and migration in substantial numbers to the Amazon. The first settlements were on land adjacent to the highway construction and were done in an unofficial manner. As other roads were built (most notably the trans-Amazon highway) the state directed and organized land settlement. Land reform, or opening up the Amazonian agricultural frontier, began in the late 1960s with the focus of relocating dispossessed and landless peasants in the South and Northeast of Brazil and creating new agricultural activities expanding export agriculture and livestock (Futemma and Brondízo 2003). Here the diverse resources and land in the Amazon were intended as a means of pacifying peasant demands for land reform in the South and Northeast regions and seen as a way to expand Brazil's economic integration and development (Baer and Muller 1996; Moran 1993).

Land colonization, or the opening of a new agricultural frontier, is not limited to Brazilian domestic policy. Colonization projects have been a part of development policy throughout the Americas for various reasons: effective occupation of national territory, as an alternative to land reform, and for investment to facilitate economic growth (Katzman 1978). The Brazilian 'economic miracle' of the late 1960-70s in combination with the nationalist, militarized mood of the nation promoted interior development projects to integrate the sparsely populated North and West regions and to utilize their natural resource wealth (Wade 2011). The military government's focus on the issue of Amazonian development produced many new policies and programs which began to reshape the region's economy.

In earlier frontier schemes in the Southern region of Brazil (between Paraná and São Paulo states) agricultural colonization had been a successful example of traditional infrastructure development. The expansion of infrastructure (railroads) and parceling of the (fertile) adjacent land led to the growth of the Brazilian coffee industry (Katzman 1978). The military government attempted to repeat the success of the 1900's southern colonization project in the Amazon the early 1970s. However, assumptions made about the agricultural conditions and the feasibility of extending infrastructure in the Amazon, which has drastically different ecological conditions than southern Brazil, in addition to corrupt contracts, prevented a similar success from this model in the Amazon. The military's Trans-Amazon settlement plan, a part of the 1966 Operation Amazon, fell victim to entrenched economic interests, corruption, lack of tropical agricultural expertise and inadequate institutional support for colonists (Moran 1993). The primary projects which resulted from the military's Operation Amazon efforts were related to infrastructure (roads and construction), but concessionary contracts for these projects favored the

largest three corporations in Brazil who all benefitted heavily from the project titles (Eakin 1997:245). The project also established new tax incentives and heavy land speculation in Amazonian development projects which favored the expansion of latifundia and low productivity ranching as the primary economic activity.

The Trans-Amazon highway and settlement scheme (1970-1974) resulted in increased land speculation and the introduction of government subsidies for cattle production (which require extensive holdings to compensate for poor soils) and encouraged capitally endowed investors and settlers to consolidate Amazonian land holdings as a safe investment to diversify economic portfolios (Hecht and Cockburn 2010; Moran 1993). The military government hoped for greater economic returns from industrial agriculture and ranching (Hecht and Cockburn 2010). After 1974 state assistance programs began to favor larger land holders. The funding for most of these late infrastructure projects came from external loans from the World Bank (Wade 2011; Ciccantell 1999a). Operation Amazonia would encourage private enterprise and the incorporation of the Amazon region into the larger national economy of Brazil for the benefit of national development. The military proposed to accomplish this goal through three initiatives, the creation of SUDAM, BASA (Amazon Bank), and the distribution of fiscal incentives to investors (Schmink 1982). During this period private investment became more important, but failed to stimulate economic growth as the investments were treated mostly as a tax haven for wealthy Brazilians. The Banco da Amazonia and SUDAM allowed private land buyers to invest 50% of corporate and income tax liability as well as to receive a rebate of three dollars for every tax dollar invested (Moran 1993). These policies resulted in land expansion in the form of large cattle farms, averaging 24,000 hectares, which employed few people (one cowboy per 300

hectares) and have been one of the region's principle deforesters (Moran 1993). The military government created SUDAM, or the Superintendency for the Development of the Amazon, which promoted corporate settlement and regional industrialization: aluminum mining, ranching and logging through US \$836 million in fiscal incentives (Ciccantell 1999a). These early military development projects were entirely nationalistic and served as the model for the later development projects that did take advantage of greater international funding that expanded the scope and mechanization of the military's vision for developing the Amazon.

World Bank Sponsored Development Projects

Under General Medici, the military government designed the Trans-Amazon highway and the Programa da Integração Nacional to be, “the solution to two problems; men without land in the Northeast and land without men in Amazonia” (Ciccantell 1999a: 302). The Trans-Amazon Settlement scheme hoped to relocate 100,000 families from the South and Northeastern regions of Brazil (Moran 1993). However, in 1974 policy changes shifted the parceling of land from family farms to corporate and latifundia individuals. As effective occupation was seen as a matter of national security by the military, outside funding agencies were not a part of the first wave of colonization efforts (Wade 2011). A decade later the second wave of development projects began which revived the economic and resource-use motivations of the 1970s. New financing partnerships between the declining Brazilian military government and the World Bank to fund ‘integrated rural development projects’ would attempt anew to establish infrastructure and colonization projects and extract natural resources. Underlying all of the military's attempts to consolidate the Amazon and develop the region is the assumption that the region's natural

wealth could and should be extracted and consumed for the economic development of the nation as a whole to achieve its modernized destiny (Ginway 2004).

In the 1970s the military's development initiatives so emphasized nationalistic development and upholding national sovereignty that they rejected all international sources of funding for the projects. However, by the 1978 their projects were failing in part due to insufficient funding, and with the political opening of the dictatorship the military accepted several loans from the World Bank and other nations to organize their two largest projects, Polonoroeste and Carajás. This even larger influx of funding and development attentions to the region further mechanized the military regime's framework of infrastructure and incorporation in the region and formally realized the long standing instrumental views of Amazonia's natural wealth.

The World Bank prior to the 1980s adopted a specific narrative of development or "pre-existing normative ideas" which viewed the environment in terms of resources for development and of nature as a space that required human organization or civilizing (Wade 2011:4). This narrative of development advocated efficiently utilizing the developing world's vast natural resources, and became the dominant form of most World Bank development projects. This narrative of efficiency and natural resource management is very clear in the case of two World Banks sponsored projects in the Brazilian Amazon: Polonoroeste and Carajás.

Polonoroeste

The Polonoroeste project was an attempt to consolidate the Brazilian military's early infrastructure and colonization projects from 1970-1974. In the late 1970s and early 1980s Brazil

was still facing the same pressures which motivated the original colonization projects a decade prior: demands for land reform, low foreign exchange earnings and high unemployment, all of which had contributed to some of the most unequal income distribution in the world (Wade 2011). Unlike the prior projects in which the Brazilian military actively avoided international partnerships viewing the projects as having an important national security interest, Brazil approached the World Bank to ask for funding. The Brazilian government received funding from the World Bank in the amount of 457 million dollars in the form of five loans between 1981 and 1983 (Wade 2011). These loans were intended to consolidate the failed agricultural resettlement programs, pave the Trans-Amazon highway, construct feeder roads to new settlements, provide rural healthcare and create ecological reserves.

The Polonoroeste project proposed the resettlement of first-wave migrants onto agricultural plots. World Bank research teams in 1978 and 1979 reported that there was strong agricultural potential. However, the locations of suitable soils were in the northern Amazon, distant from both the source of migrants(east) and the markets for agricultural products(south) and the report stipulated that careful zoning management would be required to prevent dire ecological and demographic consequences if migrants settled outside of the proposed areas (World Bank 1980). In addition, the soil analyses that were used for the report were limited and did not reflect the agricultural realities of the settlement area. Broader and more detailed surveys were not requested, as they were thought to take too long (Wade 2011). The risks, acknowledged, yet de-emphasized throughout the project, became the project's major practical flaw. A second important difficulty were the divergent interests of Brazil and the Bank regarding the project. This resulted in the Bank's efforts to create a new model of development based on ideological

concerns for the environment and indigenous rights, while Brazil pursued a nationalistic infrastructure and economic development project they linked with national security. The result was conflicting interests between the Bank and Brazil, which caused a lack of enforcement for ecological and indigenous protections as well as limiting scientific studies which would increase both the time-frame and costs of the project (Wade 2011).

Throughout the Polonoroeste project there was concern and criticism from within the World Bank itself. Both the Office of Environmental Affairs and the central Agriculture and Rural Development Department published reports and memos on problems with the project, however, they were not heeded. The project became an ecological and social failure by increasing deforestation and erosion, and failing to provide technical or social services to colonists (health centers, schools) (Wade 2011). The settlement region's soils were not suited to continuous cropping and were quickly exhausted, resulting in famine and poverty and continued migration for the settlers. The failures of the project were in part due to a mismatched interest from the two major players; the World Bank and the Brazilian government. The Bank had intended the project to be an example of how they could fund sustainable development on a large scale, while the Brazilian state saw the project as a traditional highway infrastructure project. Due to the Bank's understanding of a universal development process at the time, they also failed to incorporate details of local historical and cultural conditions or to solicit the recommendations of NGO and scholar experts in the region on both indigenous and ecological issues. The World Bank programs manager for Brazil, Robert Skillings, blinded by his specific vision of development, rejected all reports that called for caution in the pavement of the road or questioned the impacts of the project. Two team members, Renato Schulz and Robert Goodland, were

removed from the project team for voicing objections to the project (Wade 2011:16-17). The single local expert, anthropologist David Price, hired as a consultant, left the project in outrage over the unmitigated impacts of the scheme and broke confidentiality agreements by going public with targeted criticisms of the Bank (Price 1989; Wade 2011:17).

National interests exerted influence over the specifics of the project and, as with the prior colonization schemes, Polonoroeste was subject to pressures from the wealthy and organized ranchers and latifundistas. Before Amazonian colonization efforts, cattle farming was not a major economic activity in the region; however, within twenty years of the first agricultural settlement project cattle production increased from near zero to five million (Moran 1993). The financial subsidies to stimulate economic development and private investment in the region were heavily lobbied for by the São Paulo-based Association for Amazonian Entrepreneurs, which was the first to promote ranching as the vocation of the Amazon (Schmink 1982). The efforts of the lobbyists resulted in policies favoring large cattle farms and resulted in low agricultural productivity and ecologically damaging land-use changes. In states like Rondônia, ranching was the primary cause of deforestation (26% of the total) in the 1980s (Moran 1993). The financial subsidies for ranching promoted forest burning for land speculation to collect the tax incentives. However, the claimant could only gain the subsidies by proving that the land was cleared and free of other claims (i.e. indigenous groups and settlers) (Feeney 1992). This practice incentivized extensive deforestation and violent land takeovers by the wealthy.

The nationalist vision and Amazonian development framework established during the military period formed particular conditions and consequences in the region. In Brazil, deforestation is not associated with overpopulation; by contrast the deforested areas for large

ranches and land clearing tend to depopulate rural areas (Moran 1993). The primary years of deforestation were between 1983-1987, at the end of the dictatorship and during the democratic transition, and were the principal years of the Polonoroeste project (Feeney 1992). During this same period violence against trade and peasant organizers in the frontier regions peaked as well. The violence against peasants and indigenous groups as well as burning reached a peak in 1987, as land speculators and ranchers feared that the military land development subsidies would be revoked in the 1988 democratic Constitution (Feeney 1992). The introduction of multiple new, and competing economic interests (particularly colonizers vs. ranchers and indigenous groups vs. miners) led to an increase in the number of violent conflicts in the Amazon. Persistent conflicts have arisen between migrant farmers and latifundistas in the region since 1975 (Schmink 1982). These conflicts were exacerbated by the lack of secure land titling due to the Brazilian government's policy of allowing a land claimant to gain ownership and tax subsidies by proving that their land was cleared (of people and trees) and therefore 'improved' (Cambell 2013; Feeney 1992). Both state-led development framework that produced the Polonoroeste and the social and ecological consequences of the framework are still continue to the present.

Carajás

The Carajás Project, even larger and with greater aspirations than the Polonoroeste project, was also fostered under from the Brazilian military state's instrumental understanding of nature's value as an input to for national development. The military's construction of the Amazon and its natural wealth and predominant ideas of incorporation and resource control and extraction created the large scale of this infrastructure project (covering 10% of national territory).

However, similar to the Polonoroeste project, this program was viewed by its international funders as an opportunity to renegotiate what rural development could look like. Both international environmental and indigenous activists critiqued the program when Brazil's traditional infrastructure and resource extraction goals became evident.

Mining has been viewed as an investment opportunity for Amazonian development schemes. During the military period pollution was a non-issue. When questioned about pollution regarding a new paper mill, national planning minister João Velloso commented that the mill would pollute but that: "we have a lot left to pollute" (Eakin 1997:247). The military-supported Carajás project was intended to mine the world's largest iron-ore deposits. These mining projects and the associated smelters have had devastating environmental impacts from deforestation for charcoal fuel for the plants, to heavy metal pollution of waterways. In addition to corporate mega-mining, the Amazon has also been host to several gold rushes from artisanal miners, or garimpeiros, beginning in the 1980s, which have also contributed to heavy metal pollution, deforestation and destruction of indigenous lands and cultures.

A 1979 survey of the southeastern section of Pará state in the Amazon region found that it was dense in mineral and forestry resources. In 1967, a Brazilian subsidiary of US Steel discovered iron ore deposits at Serra dos Carajás totaling 17.9 billion tons and 66.1% pure (Oren 1987). These reports made the area particularly attractive to the state and private corporations' interests for regional economic development. The project eventually coalesced into a state-sponsored 'integrated' development initiative in 1980 called 'Programa Grande Carajás' which sought to develop an iron ore (and magnesium) open pit mining site, a hydroelectric plant, aluminum and pig iron smelting plants, a railroad and a port facility as well as incentives to

promote forestry and agricultural projects (Oren 1987; Treece 1987). The Carajás program encompasses more than 900,000 square kilometers, or 10.6% of national territory. The infrastructure projects (railroad and port) were completed in 1985, and the mine began operating a full capacity in 1988 producing 35 million tons per year (Oren 1987).

The infrastructure projects were estimated by SUDAM to require up to 2.4 billion dollars in capital investment, but the US Steel pulled out as a foreign partner on the project. With the withdrawal of US foreign investment Brazil approached the World Bank for a loan to support the project. The World Bank loaned the Brazilian state-owned Companhia Vale do Rio Doce (CVRD) 300 million dollars to finance the iron ore project (Oren 1987). As with the Polonoroeste project, the World Bank's support for integrated rural development projects (IRD) viewed this program as a way to promote economic development while protecting indigenous peoples and the environment. However, the same mis-matched intentions shadowed Carajás as in Polonoroeste: the World Bank viewed the program as IRD, but the Brazilian state viewed the program first-and-foremost as an economic project. Brazil had been approached since 1967 to develop the area for mining, but it was not until the 1980s that Brazil themselves initiated and agreed to an international funding arrangement. While significant portions of the funding for both the projects came from the World Bank, the Brazilian state remained the central player and decision maker of the project, guiding its establishment through their now entrenched development framework intent on transforming the Amazon's natural wealth into national economic growth. The mismatched visions and objectives of the project between the World Bank and Brazil allowed for the dominance of the Brazilian military development framework without accountability for the demands of the lending institution.

Without outside enforcement pressure from the World Bank, the environmental and indigenous protection conditions written into the loan terms remained words on a piece of paper. The limited efforts of the World Bank to establish a framework to meet their IRD development goals written in to the loan allowed the Brazilian development framework, which espouses an instrumental view of nature that views protections for indigenous peoples and the environment as obstructions to progress, to dominate the Carajás project. Of the 300 million loaned by the World Bank, 13.6 million of the loan was earmarked to meet the indigenous and environmental protection conditions to be administered by the Fundação Nacional do Índio (FUNAI, the Brazilian version of the Bureau of Indian Affairs). The indirect means of meeting the conditions of the loan, and the use of the notoriously corrupt state indigenous agency, ensured that the funds never reached actual indigenous peoples (Carvalho 2000; Treece 1987). The lack of a strong, critical presence from its chief financial backer allowed the Brazilian state to continue with the formation of its particular framework for development in the Amazon which would create their vision of an incorporated nation whose resources were extracted and developed in a way which would fuel the creation of a modern developed Brazil (Ginway 2004).

The CVRD was founded in the 1940s as a state development initiative and the company has actually had a relatively strong environmental record, and for the Carajás project it consulted anthropologist, agronomists, and state environmental organizations (Oren 1987). However, the project was quickly tainted with claims of both environmental degradation and indigenous rights infringements. As a rule, state environmental and indigenous agencies in Brazil have had difficulties in overcoming the opposition of established industries and businesses which use their political influence and threats of closing their facilities to avoid regulations (Baer and Mueller

1996:25). Brazil developed a somewhat progressive environmental and indigenous policy protection framework in their 1988 Constitution, however, these rights have remained only on paper as entrenched economic interests have prevented the demarcation of the protected areas that some national elites feel would limit the investment potential in the Amazon (Carvalho 2000; Rabben, 2004). Carajás is an example of this in that the affected region of land encompassed over 12,000 indigenous people (in various states of contact with the outside world) whose land rights were more or less ignored, or even sold by FUNAI in favor of economic progress. Specifically, the demarcation of the Awa and Yanomami reserves stalled for more than a decade as their ancestral lands overlapped with mineral-rich areas thought to have strong mining potential for the program (Rabben 2004; Survival International 1990). CVRD made a token effort to be informed on the social and environmental impacts of their project in the region, but it did not take seriously the recommendations or objections made by the cultural and biological experts, who never had the power to significantly shift the project. The CVRD and FUNAI routinely ignored the recommendations of the World Bank-mandated team of anthropologists consulting on the demarcation projects (Treece 1987). NGOs and watchdog groups asserted that the protections for the environment and indigenous groups were “para inglês ver” or to placate the outside world, but not to actually influence the developmentalist and instrumentalist views held by the directors of the state project (Treece 1987).

The failure to reconcile Brazil’s development framework and World Bank indigenous and ecological protections resulted in increased environmental and social costs. With almost no framework in the Brazilian state that would support the protection of the environment or indigenous areas, it is not surprising that the World Bank’s loan conditions were only met on

paper. The policy record of the Brazilian state on protections for indigenous people and the environment and concurrent actions by the state and its mining corporation throughout the project matched the military's development framework and its view of nature's value. The World Bank's actions to promote IRD and protect human lives and the biosphere were woefully inadequate to counter the dominance of the Brazilian state's model. The stipulated demarcation aspects of the Carajás project were severely underfunded by CVRD and the efforts stalled, particularly in areas close to the smelting plant which contain the much needed trees to power the charcoal smelters. In general, indigenous peoples and their demands for recognition of their lands and rights, are seen as obstacles to progress. The project also failed to account for the collateral impacts that the mine would have on the region. For example, the infrastructure projects, feeder roads and the railroad allowed for migrants to pour into the region and set up logging and artisanal gold mining projects that invaded indigenous lands (Survival International 1991). The smelting plants also dislocated thousands of small-farmers and peasants who organized to protest their eviction and were met with increasing land-related violence (Treece 1987). The unaccounted for human and environmental costs of the project were collateral damage from a Brazilian development policy which first and foremost valued the utilization of natural resources for economic growth.

Like the Polonoroeste project, the true social and environmental costs of the development project were not accurately accounted for in the Carajás project goals and objectives. While the CVRD solicited opinions, in general, any recommendation that was seen as too costly or that would slow down the project were rejected. The primary example of the human costs of this 'integrated' development project were the more than 12,000 indigenous people who suffered

significant land restrictions (deforestation for the charcoal powered smelting plant) and severe health impacts (heavy metals leaking into the water and exposure to outside diseases) (Rabben 2004; Survival International 1991; Treece 1987). The Carajás project did not permit indigenous questioning of development and simply pushed the indigenous people and their concerns out of the way even though on paper it supported demarcation of indigenous territory in the program areas. In pursuit of economic development, the Brazilian state has traditionally viewed indigenous people as obstructions to progress (Carvalho 2000; Rabben 2004). When this policy was questioned by indigenous and environmental advocates, the Ministry of the Interior stated that: “there was not enough reasons to justify non-exploration of the rich mineral reserves, fundamental to the national security and development process, just because they were located inside indigenous areas” (Ministério do Interior/Ministério das Minas e Energias 1983). The Ministry of the Interior also demonstrated this view through the successions of restrictions placed on the land demarcation process in the 1980s, and made the enacting of indigenous rights to the minerals that lay beneath their demarcated territory less secure. The process was so complicated that in 1985, only 14% of indigenous territory had been demarcated. Large land owners and the mining industry both lobbied for statutes like decree 88.988 of 1983. The decree opened indigenous territory for state and private mining companies by denying indigenous peoples subsurface ownership rights (Comissão Pró-Índio 1985:4).

The benefits of development were also not as widespread or significant as predicted in the World Bank development models of the project. Many social observers have critiqued the fact that the poor and disenfranchised (indigenous groups, small famers, poor migrants, and artisanal miners) are disproportionality bearing the social and environmental costs of the project,

and are not sharing it the economic benefits of Carajás (Rabben 2004; Treece 1987). The multiple projects of the Carajás program have incestuously subsidized one another to extract power and resources with no trickle-down benefit for the local population. For example, the Tucuruí dam provides electricity at below market prices to the foreign owned aluminum smelting mines, the construction of which displaced 20,000 residents from the town of São Luís (Treece 1987). The Carajás mining project also suffers from the general problem of extractive industries. For example, in addition to World Bank investment, the program also received funding from the EEC that stipulated the sale of iron ore at favorable prices to “preserve the competitiveness of the European steel industry” (Treece 1987). Both environmental groups and nationalist mining interests critiqued the conditions on the sale of iron ore as failing to account for the actual value (and production costs) of Brazil’s natural wealth.

Drawing Conclusions

The Polonoroeste and Carajás large scale development projects in Brazil define the military’s framework of development during the 1980s. Both projects were export oriented infrastructure based projects which reflect the incongruencies between Brazil’s and the Bank’s views of development. These projects were attempts by the Brazilian state to broaden their influence over the region through both economic and physical integration by large-scale infrastructure projects that would reshape the Amazon and its natural wealth into the military’s vision. The Carajás and Polonoroeste projects were also part of the military’s plant to further integrate the region into the nation through development and economic growth oriented projects like colonization settlements and heavy investment in mining, ranching and agricultural

production. These programs reflect the military's instrumentalist priority which promoted the utilization of the Amazon's natural resources to fuel economic development and national incorporation and created a framework for future state development initiatives. The instrumentalist view is central to the construction and execution of the military's development vision, which is predicated on the assumption that humans are the masters of the natural world and are free to use the natural world as means for their end: making Brazil a modern, unified nation.

In both the Polonoroeste and Carajás projects there are many commonalities which help to highlight the instrumentalist vision of the Amazon as a region of great and untapped potential that the military adopted and was able to expand upon. These examples highlight the centrality of the philosophy of mastery of nature to the military vision of utilizing the Amazon's natural wealth to fuel economic development. Three significant central views present in both projects were: that rural traditional and indigenous peoples were viewed as obstructions to progress, that development was seen to be achieved from the conversion of natural resources to economic inputs, and the nationalistic control and tone of the projects which invalidated international critiques of the Brazilian development process and its impacts on the Amazon. These projects helped to formalize and operationalize a particular view of development that accepts humans as masters of nature in which the natural world is valued for its latent economic potential. During the military period planning and funding directed from the national level fostered the creation of a specific development paradigm that remains prominent in Amazonian environmental and infrastructure policy to this day.

CHAPTER 4

CONTESTED NARRATIVES: HYDROELECTRIC PROJECTS, FUELING BRAZIL'S GROWTH OR DESTROYING THE AMAZON RIVER?

Introduction

The military period represented the first significant state involvement in the development of the Amazon. The development practices and regional vision of the Amazon formalized during the dictatorship period survived the democratic transition that began in 1985 and the new constitution written in 1988. Under the military the persistent vision of the Amazon as a region of latent natural wealth that should be extracted and directed toward national economic growth was formalized and operationalized. Brazil's long-term aspiration of becoming a modern nation finally received significant coordinated planning and funding at the national (and international) level during the military period. These efforts created a development paradigm that adopted a mastery of nature/resource view which fostered a system of continued extraction and reshaped the region to meet the state's imagined reality of Amazonia. This state-sponsored Amazonian development paradigm was questioned during Brazil's restructuring period from 1988-1993, but eventually survived with little alteration. After lying dormant during the economic instability in the mid-1990s, it has reemerged in the democratic period and remains a part of national policy up to this day.

Democratic Transition and the Environmentalist Opportunity

The democratic transition in Brazil overlapped with the peak of international attention to the environmental degradation that was occurring in the Amazon during the mid-1980s. Two factors, a renewed political sphere and active civil society, as well as international attention focused on Brazil and the importance of environmental issues, created an interlude of both strong civil conservation efforts and a network of state environmental protections. The resurgence of civil society and increased international attention to Brazil in the form of both aid and attention created political space for environmentalism, which previously could not break through the military's emphasis on development. During this period the state created a new department, the Ministry of Urban Development and Environment which sought to coordinate issues of urbanization and environmental degradation on a national level for the first time and the powers of other environmental organizations were strengthened (Baer and Mueller 1996). This period of transition in Brazil represented the most serious opportunity for substantive change to the development paradigm created under the military. Yet it was an opportunity that went largely unrealized.

Increased environmental attention is evident on the national level in the production of the Brazilian 1988 Constitution, which dedicated an entire chapter to the environment and created institutions and a framework for environmental protection and demarcation of indigenous territory in the Amazon (Brazilian Constitution 1988). This process resulted in the creation of the Brazilian Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (institute of renewable natural resources and the environment, IBAMA) which was intended to execute the protections granted in the new constitution (Baer and Mueller 1996). Under their first

democratically elected president, Fernando Collor de Mello (1990), Brazil attempted to shift international perception to a more positive position surrounding Brazil's environmental protection record (Brooke 1990). This was particularly related to Brazil's role as host to the first Earth Summit in 1992 in Rio de Janeiro. Brazil relished the international prestige granted to them for becoming the host of an important summit and sought to fit the part of a modern, developed nation concerned with environmental protection (Feeney 1992; Seabra de Cruz Jr et al 1993; Shabecoff 1996). In preparation for the Earth Summit the environment, and its protection, enjoyed unprecedented attention from Brazilian politicians at the national level.

However, these shifts in attention and policy were short lived. The Earth Summit ended without any binding resolution on environmental degradation or deforestation, and it demonstrated the polarized, divergent interests of the Global North and South on environmental issues. Complicating the decline of institutional support for international environmentalism was the major recession caused by hyperinflation in Brazil. The fiscal crisis of the mid-1990s negated the rising environmentalism by drawing a renewed focus on national economic stability and growth. Finance Minister Fernando Henrique Cardoso created the Plano Real in 1994 to renovate currency policy and fiscal management and in 1998 there was a new round of economic adjustment and reform policies to further stabilize the economy (Baer and Mueller 1996; Cardoso 1998).

The fiscal crisis of the early 1990s and the accompanying adjustment policies resulted in decreased government funding for Brazilian environmental programs. There was much less investment in new programs and a general drying up of funds for the programs established under the 1988 constitution. For example, IBAMA's budget was cut, making their expensive anti-

deforestation enforcement and policing programs ineffective (Baer and Mueller 1996). In addition, many governors of Amazonian states actively resisted and attempted to supplant the pro-environment legislation and to maintain the military-era fiscal incentive programs for land ‘improvement’ (Baer and Mueller 1996; Cardoso 1998). These problems effectively ended the state’s experiment with significant and enforced environmental protection efforts, and environmentalism never became a serious challenge to the underlying instrumentalist development view. As the economy once again became the king of Brazilian domestic policy, there was a return to military period’s developmentalist paradigm of the Amazon and resource view of its natural wealth as the entrenched mainstream political view.

Brazil’s Hydroelectric Plan for the Amazon

In Brazil, the construction of large-scale dams in the Amazon is directly related to the nationalistic view of development, both metaphorically and practically. Hydroelectric power was first seriously investigated and attempted during the military period as a response to OPEC and the 1973 oil crisis (Barrow 1998). These dams were also viewed as symbols that Brazil was and is capable of reshaping its landscape in the same way that all modern nations are able to do. References to dams like Itaipú and Belo Monte are often linked boastful statements about their status as the second and third largest dams in the world and references to their amazing feats of construction (Portal 2012b). These comments also demonstrate the continuity of development perspectives and views of the Amazon and nature. Even though the projects have received international criticism, for both their scale and impacts and being misleadingly labeled ‘clean

energy' by the state, the hydroelectric projects are again advancing with significant direction and funding from the federal government.

The military began investing heavily in large-scale dams in the 1970s, and by 1985 almost 40% of Brazil's energy demands were met through hydroelectric power (Barrow 1988). One of the largest and most successful projects was the Itaipú dam, which began to fill its reservoir in 1982 on the border between Paraguay and Brazil (Eliseo da Rosa 1983). However, the central flaw with Brazil's hydroelectric power program was and is that the sites of energy production are distant from the major consumers, coastal cities. The national power company Eletrobras and its regional subsidiary, Eletronorte, began to examine the Amazon's potential for dam construction and power generation once the coastal areas had nearly reached productive capacity in the mid-1980s (Barrow 1988). Eletronorte developed a project of 40 dams, originally to be completed by 2000 (Barham and Caufield 1984). These dams were intended to meet the electricity needs of growing Northeastern cities and the population hub in the Southeast, as well as stimulate the development of heavy mining in the Amazon. In the case of Carajás, we saw an example of nested mining and hydroelectric operations (namely the Tucuruí Dam), where energy is offered at cheap rates to stimulate iron-ore mining and refinery investments.

Due to the setback of economic crises in the 1990s, federal infrastructure development projects in the region slowed. Yet the nationalistic elements of Brazilian Amazonian development initiatives are remain strong and unquestioned. At the end of the Cardoso administration and the election of Lula in 2003, Brazil's economy had stabilized and Brazil was once again on the path to achieving its long desired place among the modern nations. This economic resurgence allowed a return to the same modernizing and integrating aspirations that spurred the military's

development projects. Although the democratic transition had renovated the political and civil structure of Brazilian society, the military's emphasis on national development and pursuit of order and progress remained untouched as the national mantra. In this manner, the democratic government became the next torch bearer to carry the modernization banner for the Brazilian state.

With renewed economic capacity and political stability the administration of Lula renewed the government's interest in infrastructure development projects in the Amazon. Fearing an economic slowdown as the result of pursuing a preservation trajectory in the Amazon, the democratic government refocused their development efforts in the region (Baer and Mueller 1996). However, the Lula administration conceded on environmental concerns regarding deforestation. He made significant cuts to funding for logging and increased policing of protected areas to catch illegal loggers. These efforts cut deforestation by almost two-thirds and allowed Brazil to state at the 2009 Copenhagen Climate Summit that they would reduce Amazonian deforestation by 80% by 2020 (Faleiros 2011). The democratic government has made clear moves to stand apart from the heavily criticized land-based development programs of the military era and have refocused their regional infrastructure development goals on the water resources of the Amazon. The democratic government has maintained growth of the domestic energy sector as imperative for national security and national development. In this line the Brazilian government has expanded offshore drilling for oil, exploration for natural gas, biofuel developments and most significantly for this paper, revived hydroelectric dam projects on the Amazon River and its tributaries (Ciccantell 1999a, 1999b; de Onis 2008; The Economist 2013). In a statement on the Brazilian governments website the Secretary of Planning and Energy

Development lauds the hydroelectric plan as the solution to Brazil's need for greater energy output for development: "to meet the growing demand for energy, the government has decided to install hydroelectric dams to benefit from the electric potential of the North" (Filho 2014).

Brazil's energy demands have risen steadily with their economic boom from the early 2000s, both as Brazilian industrialization accelerates in the South and Northeast and as Brazilians move out of poverty and begin demanding more consumer conveniences (de Onis 2008; The Economist 2013). The democratic government, like the military state, view utilization of Brazil's natural resources and energy potential to be the best way to meet the nation's needs and integrate the country as hydroelectric power from Amazonian dams will be linked by the central grid sending power all over the country.

In the creation of their hydroelectric program the democratic government literally took a page from the military's development project book. In 2003, under the leadership of Minister of Mines and Energy Dilma Rousseff, the state unveiled an updated version of the military's dam project as part of the federal Plano de Aceleração do Crescimento (PAC- the plan of growth acceleration) (Millikan 2013). The project proposed the construction of a massive network of over 160 dams on Amazonian waterways. The government has stated their intent to construct 60 large dams in the next 20 years (International Rivers 2014). As with the prior state development projects there is a distinctly nationalistic element to the dam construction. Many of the dams have received significant financing from the Brazilian National Development Bank (BNDES) with other major sources of funding and project management coming from state run companies like Eletrobras, its subsidiaries Eletronorte as well as investments made by public pension funds management groups (AIDA 2014; Amazon Watch 2014). This nationalistic element extends to

international perceptions of the dam projects. As with the nationalistic rejection of international environmental criticism of the environmental and social costs of the military's land-based infrastructure projects in the 1980s, the current dam efforts are also soundly defended by Brazil against international critique.

Dams as Icons of Modernity

Historically and ideologically dams have been linked to the idea of modernity and human mastery of the natural world. Through the physical nature of dams, human ingenuity and engineering circumvents nature, physically expressing human will in the process of reshaping the natural landscape. Due to dams' visible sublimation of the natural landscape to a constructed human one they are often central elements in the process that scholars term 'the urbanization of nature,' or the idea that: "the production of modern cities went hand in glove with the production of nature" (Kaika 2006:276). Like the arguments about the 'human mastery of nature,' the 'production of nature' both are predicated on the creation of separate civilized and natural spaces. The domination of nature reinforces the boundaries of the wild and civilized spaces. The creation of dams in the Amazon, therefore, affirms the power of humans over nature and verifies civilized space. The goal of modernity to order and control nature has allowed for intensive urbanization which can only be sustained through continuously extracting and funneling resources to the ever-growing urban centers (Kaika 2006). Through the domination of nature, mega-earth works like dams are seen as liberating humans from the limitations of the natural world: irrigating dry lands, making rivers navigable, and creating power from the elements (Kaika 2006; Kirsch and Mitchell 1998; Marless 1992).

In this manner traditional dams represent human domination of the natural world more clearly than disruption or destruction of the preexisting ecosystem. The physical expression of the dam serves “as embodiments of the dialectics between geographical imaginations and material practices in the process of modernization” (Kaika 2006:277). The dam itself becomes an icon of modernity and of human mastery of the natural world in the landscape (Demeritt 2001; Marless 1992; McCully 1996; Oliver 2000). The constructive and destructive potential of dams has the capacity to reshape the Amazonian environment into the Brazilian state’s modernist vision of a developed region. The physical reshaping of the natural world in the Amazon is part of the larger project of modernity to create order and control over both the natural world and human society through the expansion and integration of civilized spaces, typically the urban areas (Kaika 2006:276). Dams and mega-earthwork constructions are not limited to the Brazilian idea of progress and the modern nation. These efforts are portrayed as ‘heroic’ examples of human progress and the dominance of technology over the natural world permitting the “earth-moving [to be] the ‘measure of man’” (Oliver 2000:104). In many cases these mega-earth work projects are typically not necessary to significantly improve the human condition or even a response to economic motivations. Instead these projects serve as important symbolic monuments to human ingenuity and civilization in the natural world. The Brazilian hydroelectric program can be viewed through this lens as the creation of civilized spaces in a region has long been viewed as a wild, disorganized backland. These dams produce and divide natural from civilized space through the taming of the river and the creation or reservoir to be the sites of future associated agricultural, navigational or mining projects.

In the Brazilian case, the country is blessed with many energy resources: oil, natural gas, solar, wind, yet the government is investing heavily, and some would say unwisely, in mega-dams in the Amazon region which have a low return on investment (Millikan and Poirier 2010; WWF-Brasil 2007). The Brazilian state and its Secretary of Planning and Energy Development have argued that hydroelectric dams are the best solution to meet Brazil's increasing energy demands (Portal Brasil 2012a; Forero 2013). Yet, many technical reports and proposals have been put forth by NGOs like the World Wildlife Fund, International Rivers and Amazon Watch which have challenged the necessity of these mega-dams in economic terms (Amazon Watch 2014; International Rivers 2012; WWF-Brasil 2007). World Wildlife Fund Brasil's 2007 "PowerSwitch Scenario" argued strongly that the mega-dams like Belo Monte or Balbina are net deficits that incur massive power losses of up to 70% by inefficiently transmitting power thousands of miles from the remote dam sites to population centers (Millikan 2013, WWF-Brasil 2007). The 2007 WWF-Brasil report also proposes that investments in energy efficiency alone could would help meet 40% of Brazil's growing energy demand by 2020 which would equate to the output of 14 dams like the controversial Belo Monte (WWF-Brasil 2007). Inefficiency statistics like those cited above raise the question that perhaps large-scale dams in the Amazon have an important symbolic meaning for the Brazilian state which overrides the limited economic motivations for large-scale dams in the Amazon.

Case Study Belo Monte: Background

For the purpose of this project this chapter will look specifically at the contentious Belo Monte dam as a site of conflict between the central paradigms of understanding nature and their

corresponding visions of the Amazon region. In the Belo Monte case the conflict between the state's instrumentalist-value paradigm which prioritizes infrastructure, development and incorporation and the environmentalists' intrinsic-value paradigm which seeks to protect the Amazon's biodiversity are clearly visible. Brazil's hydroelectric projects represent a continuation of the longstanding latent-resources view of the Amazon as well as a continuation of the military's dedication to large-scale regional investments in infrastructure development. Yet, the democratic state in Brazil respects the importance of maintaining good international opinion in a way that was not relevant in the military period. With this in mind, their publications and reports have specifically deployed and engaged with 'green' rhetoric in support of its dam projects which acknowledge the importance of maintaining a progressive, ecologically and socially positive image. Since the late 1980s the dam has also been a site of conflicting views over the value and future of nature in the Amazon. Communities affected by dam construction and environmentalists have joined forces to challenge the state's dominant view of development and technological progress in the region.

What is now known as the Belo Monte dam was originally named Kararaô Complex and was one of several major dams proposed along the Xingu and Iriri rivers as a part of the military's larger hydroelectric program for converting the latent power of the Amazon's rivers into electricity to power Brazil's future growth (Amazon Watch 2014; International Rivers 2012). A coalition of indigenous and environmental activists managed to defeat the proposal in 1989. However, the new wave of economic growth and industrial expansion in Brazil that began in the early 2000s led to a renewal of the military's theme of expanding economic growth and infrastructure instead of protection of the natural environment. Fearing a return to the economic

crises of the 1990s, the Lula administration, and his Minister of Energy and Mines Dilma Rousseff, renewed the military dam projects in 2003 as a part of their Plan of Growth Acceleration which seeks to promote national economic growth and growth of the national energy sector by 2020 (Amazon Watch 2014; Filho 2013). The renamed Belo Monte dam project was approved by the Brazilian National Congress in 2005 (Amazon Watch 2014). The project was held up for five years as legal challenges were made by both environmentalists and indigenous organizations over the environmental impacts of the dam.

However, in 2010, under political pressure and controversy (the agency's head resigned as conflicting reports on the dam's impacts were issued) IBAMA granted the preliminary environmental permit allowing construction to begin (Amazon Watch 2014; International Rivers 2012). The dam construction was taken over by the majority state owned consortium Norte Energia (heavy investment coming from Eletrobras and its subsidiaries Eletronorte and Chesf and public pension funds) (Faleiros 2011). The nationalistic aspects of the funding and construction of the dam allowed the Brazilian state to claim that the project would contribute to increased local and national industrialization as the dam would temporarily create up to 18,700 direct and 23,000 indirect jobs and stimulate domestic industry production through Norte Energia (Portal Brasil 2011, 2012b). Though the preliminary license was granted in 2010, Brazil's notoriously complicated development project licensing has allowed many organizations to file for legal injunctions to halt construction. These injunctions have been filed by the workers' union to protest inadequate infrastructure conditions for dam workers, by several environmental NGOs to protest the lack of appropriate environmental assessments by IBAMA,

as well as by the community of Altamira and various Xingu indigenous groups, namely the Kayapô to protest and fight for their land rights (Faleiros 2011; International Rivers 2012).

While the Brazilian state has presented the renewal of the dam project as meeting the demand of the private sector for industrial growth, it is actually an extension of traditional state-led infrastructure development projects in the region (Portal Brasil 2012a). The project is administrated by a majority (77.5%) state-owned consortium and independent economic analyses of the dam have challenged its profitability (Millikan and Poirier 2010). A report released by the Instituto Tecnológico de Aeronáutica (Institute of Technology and Aeronautics) predicted spiraling costs and difficulties from constructing the dam in a remote, tropical area (Cabral de Sousa and Reid 2010). They also created economic predictions that demonstrated that the net present value of the dam could range from positive 670 million to negative 3 billion dollars (Cabral de Sousa and Reid 2010). Lack of private investment in the project (due to fears of escalating construction costs, uncertain electricity productivity, and costs for the mitigation of social and environmental impacts) have made the Brazilian state development bank BNDES take an even more active role. In 2012 BNDES approved 22.5 billion reais in financing for Norte Energia for construction of Belo Monte (Portal Brasil 2012b). In addition to state-dominated funding and administration of the project, the dam's construction, licensing has been legally challenged for granting a first construction license prior to complete environmental impact assessments, the lack of a plan to mitigate the direct and indirect environmental aspects of the dam and the inadequate infrastructure for dam workers (Amazon Watch 2014; Faleiros 2011). However, construction of the dam and federal and environmental licensing have gone as scheduled with only lip service paid to the legal, environmental and social concerns raised by the

project. These conditions: majority state control of the project, majority state financing, bending of state environmental regulations make the execution of the Belo Monte dam project almost identical to the infrastructure development projects of the military era.

NGOs have used the disingenuous funding structure of the dam to challenge the viability of Belo Monte (Millikan and Poirier 2010; Sousa and Reid 2010; WWF-Brasil 2007). NGO technical reports have challenged almost every aspect of the Belo Monte project: the demand for its energy, the investments, the dam's productivity and efficiency, and the profitability of the dam. Yet, despite these reservations, the project has been able to continue due to the significant role of the state as the project designer, major investor and licensor. This project is an example of the continuation of the military era's paradigm of development which has survived to inform policy and projects today. The military viewed the Amazon as an area of enormous resource potential that needed to be ordered and controlled through infrastructure development projects to harness its economic potential for the nation. Therefore, the military acted on preexisting conceptions of the Amazon's natural wealth and its purpose (to become economic in-puts and propel national development) in large-scale nationalistic development projects which would reshape the region into the state's vision.

Contested Visions: Representing Amazonian Dam Projects Case Study Belo Monte

The Brazilian state, under both the leadership of the military and in the democratic period, have had a specific view of the Amazon as a source of energy and resources to fuel national development. The military state operationalized and formalized national investment and development projects in the region to realize their vision of an effectively controlled and modern

nation. However, in the 1980s the international environmental movement began to critique the national development projects and, by extension, the foundation of the state's vision for Amazonia. In the early 1990s there was a moment for substantive change in Brazil's development and environmental policy. The international community was supportive of environmental reforms and protections. At the same time Brazil was in a moment of flux with the rebirth of civil society and democratic rule which made them more receptive to these influences. However, with the economic crises of the mid-late 1990s the moment passed without substantive or enforceable changes to the longstanding infrastructure development paradigm. The significant shift that has occurred between the military and democratic periods within the continuation of the development paradigm is the shift from land to water based projects. This shift occurred in part because the democratic government recognized the need to maintain favorable international opinions on their efforts in the region. By its nature the military government did not recognize these same pressures. By moving away from the highly criticized land-based projects the democratic government was able to maintain the same basic development framework, but was able to cloak it in a new rhetoric that could address potential ecological and social critics of the projects. The switch from land-based projects to water-based projects allowed for a new usage of positive 'clean energy' and 'progressive green' discourse in addition to the traditional national development rhetoric. The shift also allowed the democratic government to distance themselves from the strongly internationally criticized deforestation burns that resulted from the land-based projects. Therefore, the shift provided a double benefit for the Brazilian state, they were able to continue the traditional large-scale infrastructure development paradigm while gaining international prestige from constructive investments in 'clean energy.'

These environmental groups, often in conjunction with indigenous groups instead proposed a different vision and narrative of the Amazon based on the inherent worth of the Amazon's biodiversity. The state had adopted an instrumental view of nature while the environmental contingent advocated for the intrinsic value of nature. These two views have been in direct conflict with one another since the mid-1980, yet they are not equally matched. The state has the resources and political will to enact their vision of a productive Amazon. Although the environmentalist side has influence in the court of international opinion, they lack direct political control to enact their vision. For this reason the environmental side has focused on critiquing the large-scale infrastructure projects of the state for the ecological and social harms they cause in the Amazon. For example, they led the anti-Polonoroeste campaigns highlighting deforestation, infringement of indigenous rights and lack of social support for relocated colonists.

Dams have been, and still are, sites of the contested visions of the future in the Amazon between the environmentalist and the state. Dams create specific locations and contexts for what is primarily an ideological battle about perception and representations of nature. The visibility and physical presence of dams allows them to function as icons in the landscape and also makes them particularly visible sites of the two conflicting conceptions of nature's value. As discussed above, dams are conceptually and practically linked with development and the expansion of civilized space into a 'wild' or 'natural' area. Dams are broad and expansive human changes to the natural landscape and have, therefore, become easily identifiable expressions of the Brazilian state's abstract policy. Under the military's instrumental conception of dams, they are an achievement to be celebrated, and viewed as an improvement to previously disorganized and

non-productive space (Osava 2009; Portal Brasil 2011a, 2012b, 2012b, 2013). However, in the environmentalist conception of nature as having its own intrinsic value, dams are perceived as examples of human hubris seen as destructive violations into an invaluable biodiverse landscape (AIDA 2009; Amazon Watch 2014; International Rivers 2012;). Dams in the Amazon are therefore unique and important sites for research on the contested conceptions of nature and its value in the region.

The following sections will examine how dams in the Amazon represent and express the competing visions of these two groups: the modernizing developmentalist view of the Brazilian state and the conservationist view of the environmentalists. Democracies have to care about public and international opinion in a way that dictatorships do not. For this reason the Brazilian state used the switch from land-based to water-based development projects to deploy a national development rhetoric which acknowledges and can converse with environmentalism. The data for this section is taken from published statements from the Brazilian government's department of infrastructure, national and state political leaders, environmental NGOs analysis of dams and reports from environmental coalitions. These data will be treated not as conclusive statements, but rather as indicative of the two vision that each side hold and how they construct the issue of dams in the Amazon.

Vision of the Brazilian Government

As argued in earlier sections of this work, the Brazilian state's vision of the Amazon was formalized and operationalized under the military regime through the establishment of large-scale infrastructure and development projects intended to reshape the region into an engine for

national economic growth. This vision fostered expansive nationalistic development schemes in the 1980s (Polonoroeste and Carajás) was dormant in the 1990s due to economic instability and regime transition and has reemerged as a state project with the consolidation of the Brazilian economy and democracy beginning in 2003 with the Lula administration. The state's vision of capturing the energy and resources of the Amazon and transforming it into a vehicle for national economic growth has remained the objective of the state and influences their projects in the region today, particularly the hydroelectric dam network. Through the government's representations and publications of its dam projects (both nationally and internationally) we can see adherence to the established narrative of resource use and development that presents a new strategic face of the traditional development paradigm.

The Brazilian state has continually repeated, under the military in the 1980s, at the Earth Summit in Rio de Janeiro in 1992 and again today, their need to defend the Global South's right to develop from Northern detractors. Brazil has engaged this argument more recently when advocating for the inclusion of large-scale hydroelectrics to be labeled as clean energy. For example, in 2004, then Minister of Mines and Energy Dilma Rousseff, insisted upon the inclusion of large-scale hydroelectric dams in the clean energy category the World Renewable Energy Conference in Germany. After the conference in an interview with the British newspaper *The Guardian*, Rousseff was asked about her combative position on the mega-dam classification issue and responded: "we have to be watchful, because it seems to me that some countries are trying to push technology to the developing countries" (Faleiros 2011).¹ Her mention of technology here is in reference to the older Brazilian idea that nations have the right to determine

¹ Translation by Faleiros

their own technological paths for development and not be hemmed in by developed world classifications or judgments. Rouseff is also re-asserting the nationalistic nature of Brazilian development projects. The democratic government does differ from the military regime in that they are more sensitive to international opinion and wish to appear as a progressive member of the international community. Since the early 2000s, the democratic government has attempted to tack and limit deforestation, the central international environmental concern for the Amazon region. President Lula's administration began a strong policing program to prevent deforestation from illegal logging which has been extremely successful and his successor, Rouseff, has reduced the deforestation rate even further to a record low 650,000 hectares in 2011 (Faleiros 2011). In switching from large-scale land based to large-scale water based development projects Brazil has been able to gain prestige from publicly addressing deforestation while still maintaining their traditional infrastructure development focus.

With the public social and ecological failures and critiques of the massive development schemes under the military, new state infrastructure and development initiatives in the Amazon needed to be rebranded. The state perceives these changes in policy as significant shifts away from the military's destructive legacy and towards a more progressive and environmentally friendly approach to development. While to NGOs these changes may seem superficial, the state views this effort and the switch from trees to water (as the subjects of development) as a significant concession toward the environmentalists' position against deforestation while still maintaining their development paradigm. By sanctifying their Amazonian dam projects as 'clean energy' the government hoped to avoid a strong and organized outcry from the international environmental contingent that had mired the earlier land-based infrastructure projects. The

democratic government has successfully rebranded military-style development projects in the Amazon by limiting traditional deforestation causes (i.e. the land-based development initiatives of colonization, logging and ranching) and promoting the image of mega-dam development projects as progressive initiatives for clean energy growth (Forero 2013). The Brazilian government has also attempted to reform perceptions about their relations with indigenous groups and has publicized that they reduced the potential generating capacity of hydroelectrics by almost 11,000 megawatts to protect indigenous areas (Portal Brasil 2012a).

Linked to the democratic state's efforts to employ the progressive environmentalist rhetoric in their presentation of the new development projects is a shift in the Brazilian state's end goals from a nationalist (integration and economic growth) to an internationalist (economic growth to be a modern nation and claim an important place in the international community). The Brazilian state views engagement with the progressive or environmentalist rhetoric as essential to their new focus on international perception and in securing Brazil's place among modern nations. One way in which this is symbolically achieved is by Brazil becoming a country with the capacity to host important public world events like the World Cup and the Olympics. The central representational strategy with regards to hydroelectric projects now is to present them as an economic necessity for continued growth and to sustain upcoming world events in Brazil (Portal Brasil 2012b, 2014b). In the first meeting of the Electric Sector Monitoring Committee (Comitê de Monitoramento do Setor Elétrico or CMSE) they released a favorable report on the levels of the hydroelectric reservoirs and stated that expansions would be necessary for the planning and security of the upcoming World Cup (Portal Brasil 2014b). For the Brazilian state, increasing their international prestige by hosting two important world events and developing energy

infrastructure and the capacity to host these events have become two twined objectives in the pursuit of modernity.

Through their public relations campaigns and government publications the state has attempted to conceptually equate dams, economic growth and rising income levels to make distant dams imaginarily connected to citizens' everyday life. Statements by the Ministry of Mines and Energy have attempted to make the dams more personal and relevant to the average Brazilian by stating that the dams allowed for: "this historic reduction[in energy tariffs] [which]was the item that most contributed to the preservation of family income in the country" (Portal Brasil 2014b). Government publications on the Belo Monte dam have several common refrains: that the dam is progressive and 'clean,' that the dam is necessary to meet the nation's growing residential and business energy demands, and that the dam helps the average Brazilian. In government reports and public communications the Belo Monte dam is praised as being progressive by more efficiently using a smaller reservoir, 'run of the river' flow techniques and attempting to minimize the flooding of indigenous lands (Portal Brasil 2012b). The state and Ministry of Mines and Energy tout the progressive use of dam technology to create Belo Monte, which is to be the third largest dam in the world and one of the most modern (Portal Brasil 2012b). Rather than addressing specific local effects of the dam, government reports and publications focus on the national impact of increasing electricity generation. This national level focus is consistent with the state's overarching view of the Amazon as a latent source of resources to promote national development rather than regional development. For instance, the Minister of Mines and Energy, Edison Lobão, has argued that dams have improved the competitiveness of the national economy (Portal Brasil 2014a, 2012). In addition, there is a real

effort to construct the dams as benevolent policy-making and long-term planning for the benefit of the average Brazilian: "in addressing claims of society, President Dilma Rousseff, had the courage to adopt measures that resulted in the reduction of electricity tariffs" (Portal Brasil 2014b). This discussion of the long-term policy planning and association with Dilma credits the democratic state with ownership of the hydroelectric plan, reinforces the dam's national significance and distances the act of energy consumption (national) from the act of production (local).

Maintenance of the state's national-level focus on development issues is a line of continuity that connects the military and democratic regimes development efforts. The Brazilian state upholds the centralized development strategy of large-scale solutions for large problems. In this manner the mega-dams are continuations of a development policy that views nationalist large-scale infrastructure as the only solution to a national problem. When asked to address why Brazil is pursuing controversially 'clean' hydroelectrics and infrastructure-heavy hydroelectric energy plan as opposed to either of their more sustainable (with highly rated potential) energy sources of wind power or biofuels, the government has maintained, contrary to the renewables proposals, that these energy sources should only be used to supplement traditional forms of energy generation (Portal Brasil 2012a; WWF-Brasil 2007). In a press release the Ministry of Mines and Energy stated that: "they[renewables] are complementary and not competitors. Both could be used in the dry season, for example, from May to November, to preserve the hydroelectric reservoirs" (Portal Brasil 2012a). The Minister of Mines and Energy, Maurício Tolmasquim who took the office after Dilma Rousseff, has maintained that the Belo Monte dam is an extremely important strategic element of Brazil's national energy plan which could not be

replaced by other energy sectors. He has also threatened that if the Belo Monte dam is held up in litigation or if a settlement is reached the “all regions of the country will feel the impact in your pocket” (Portal Brasil 2012a). The Brazilian government has repeatedly situated Belo Monte in a national context, arguing that it serves a national need of the people for economic expansion and affordable energy. These efforts to remove the dam from the massive destruction it will cause in its local context are strategic efforts of the Ministry of Mines and Energy to create an imaginary of necessity by arguing that Belo Monte is strategic and, therefore, cannot be replaced by other types of energy. The government has also promoted a conceptual separation of consumption of the dam’s energy from how it was produced.

The Belo Monte project (previously the Kararaô Complex) is both conceptually and practically linked to the military’s development legacy. It was the economic instability of the 1990s, not a conceptual change in the national development ideas which halted the large-scale development projects of the 1980s. The overarching development paradigm of the military prioritized large-scale infrastructure projects and viewed the Amazon’s resources as potential economic growth in need of transformation by humans went unaltered. Practically speaking, the Belo Monte dam, and most of the 60 proposed dams of the democratic state’s Plan for Growth Acceleration, are directly linked to the military’s vision of the Amazon because they were copied from the military’s dam proposal with minor updates in technology. For the Brazilian state, the switch from transforming the land to transforming the water of the Amazon has been minor since it allowed for a continuation of the development-at-all-costs paradigm which accepted human utilization of the natural world for economic benefits. Many aspects of the current democratic state’s development projects become clear when viewed within the context of the narrative

formalized under the military of the Amazon as a source of latent wealth and the attempts to realize their vision through large-scale infrastructure development projects.

Vision of the NGOs

One significant difference since the military era is the growth of the environmental-indigenous contingent, both nationally and internationally, which accepts a different conception of nature and a different view of the Amazon's future. The transition from dictatorship to democracy has allowed environmental and indigenous organizations to blossom as part of civil society. The democratic state may have adopted the military's view of development and the resource potential of the Amazon, but unlike under the dictatorship, there is civil and social space to contest the dominant vision of Amazonia perpetrated by the state through its development projects. These organizations have created campaigns which challenge the state's regional development vision economically, socially and legally as well as creating an alternative vision to replace the developmentalist resource view.

Environmental and indigenous rights NGOs have a distinctly different view of nature's value (promoting conservation to protect nature's intrinsic value) than does the Brazilian state. Since the 1980s environmentalists have clashed against the Brazilian state's national development-inspired instrumental view of nature. The Brazilian government had downplayed local environmental impacts of their development projects in favor of promoting the national economic benefits that demand that modernization and development occur. Conversely, the NGOs focus particularly on the local environmental and social impacts of the destruction of the natural Amazonian environment implicit in the state's projects. Each side has a different

underlying view of the Amazon and nature's value informing their efforts and statements. These differing views come into conflict over the enactment of the state's vision through large infrastructure projects which reshape the geography of the Amazon. NGOs identify the state's efforts to enact their development paradigm and vision of nature (the dam's separate natural and civilized space) as an opportunity that allows them to contest the state's vision and to advance their own understanding of nature.

Environmental and indigenous NGOs have been major players in the fight to stop the Belo Monte dam. These groups had early successes in the late 1980s during the period of surging civil society movements in Brazil and at the height of international attention to issues of environmental degradation. While economic instability was the major factor halting large-scale infrastructure projects in the 1990s, the NGOs played a major role in the abandonment of the Belo Monte project (previously incarnate as the Kararaô Complex) and viewed it as a victory. When the dam projects were revamped under the 2003 Plan for Growth Acceleration NGOs again joined the front lines organizing protests, legal challenges, environmental surveys and international campaigns to try and stop dam construction.

NGOs like, International Rivers, Amazon Watch, World Wildlife Fund-Brasil, the InterAmerican Association for Environmental Defense (AIDA) and Xingu Vivo Para Sempre (Xingu Alive Forever) have all adopted the use of a particular rhetoric in their critique of the Brazilian state's vision of the Amazon as well as in the alternatives they propose. There are four dominant rhetorical arguments these NGO and indigenous coalitions have used: valuing biodiversity over development, challenging the state's argument for the economic necessity of the dam, the linkage of human rights with environmental protection and emphasizing the local

impacts over the national. All of these organizations begin their analyses with a questioning and deconstruction of the state's understanding of nature's value and their motives for developing the Amazon before proposing a sustainable alternative often based on renewable energy sources and support for traditional riverine communities.

The environmental NGOs adopt the discourse of biodiversity and represent the Amazon as a biodiverse and productive landscape. This is the primary underlying division between the vision of the Brazilian state and the vision of the NGOs: how nature should be valued by humans. These environmental organizations take up a position that argues for nature's inherent value, which is directly opposed to the state's instrumental view of nature. These organizations have created campaigns to counter the public relations programs of the government and they claim to see the project not only as destructive dam, but as part of a larger vision of the future of the Amazon: "the most controversial dam project facing Brazil today, Belo Monte is a struggle about the future of Amazônia" (International Rivers 2014). It is clear from their statements and actions against large-scale dams in the Amazon that these organizations view the protection of biodiversity as a war against the developmentalist ideological legacy of the Brazilian state. While the Brazilian state represents its development projects as positive improvements to the region, bringing jobs and civilized infrastructure, these NGOs understand the state's vision to be a war on biodiversity: "the Amazon will become an endless series of lifeless reservoirs, its life drained away by giant walls of concrete and steel" (International Rivers 2014). To these groups, dams on the Amazon rivers are not just necessary energy projects, but representative of Brazil's modernization efforts to create order and progress. For groups like International Rivers, the destruction of biodiverse natural areas in the Amazon, like the Big Bend of the Xingu River

(where the dam is being constructed) serve a greater ideological purpose for the Brazilian state: “in its current configuration, the Belo Monte hydroelectric project represents the imposition of civil engineering works on a monument of biodiversity” (Magalhães and Hernandez 2009:1). These organizations have also published reports which challenge the viability of large dams and propose alternative energy portfolios which would be equal to or more profitable than the current hydroelectric network (Magalhães and Hernandez 2009, Millikan and Poirier 2010; WWF-Brasil 2007). Like the dam theory earlier examined, in the eyes of these NGOs the network of dams proposed by the Brazilian state holds equal or greater symbolic value for the creation of civilized modern spaces than for their practical use. Amazon Watch, International Rivers and AIDA decry the construction of symbolic modernity at the expense of valuable biodiversity.

To strengthen the claim that they are engaged in an ideological war to protect the future of biodiversity in the Amazon from senseless modernization, these NGOs have made serious challenges to the state’s proposed economic reasons for constructing this network of dams. Employing authoritative technical and economic discourses, the NGOs have attempted to counter the modernist argument of the state. The WWF-Brasil and International Rivers have convened expert panels and published technical reports on the economic practicality of the dam proposals (Magalhães and Hernandez 2009; WWF-Brasil 2007). Their reports have focused on debunking the viability of the dam’s profitability as well as the unaccounted for costs of the project. One of their major criticisms has been the strong role of the state in financing and planning the project: “critics highlighted the lack of private capital in the project, demonstrating that the dam was considered a toxic investment” by private investors as 77.5% of the project was funded by a state company consortium (Amazon Watch 2014). These reports also argued that insufficient risk and

impact assessments severely underestimated the cost of the project, threatening the project's profitability (Amazon Watch 2014, Millikan and Poirier 2010). These technical challenges extend into assessments to the project costs, financing sources and electrical generation capacity. The government initially stated that the project would cost US\$ 13 billion, but spiraling costs from working in a remote tropical environment have led the project's projections to hit over US\$ 18 billion (International Rivers 2014). At the same time these organizations argue that the project has overestimated the generation capacity of the dam by failing to account for seasonal variation in water flows and that the 11,233 MW generators would only produce around 1000 MW during the dry season (International Rives 2014). A final example of how these NGOs are challenging the state's arguments for the necessity of the project for national development is the lack of due process regarding public hearings and impact assessments. An expert panel convened by International Rivers in 2009 concluded that the government intended to build the dam regardless of demand or impacts: "the project's unprecedented energy inefficiency and the accelerated and forced process of public hearings show that the government and construction companies intend to build a huge project do matter what the cost" (Magalhães and Hernandez 2009:3). These arguments form the NGOs support their recognition that the Belo Monte dam holds a more important symbolic than practical position for the state as well as a part of Brazil's energy portfolio. This line of argument allows for the NGO's to undermine the dominant vision of the state by destabilizing two of their strongest arguments, of the economic demand for the dam and its generation capacity.

These organizations' vision of the Amazon as a socially and biologically diverse region creates a linkage between the human rights of traditional and indigenous communities and

environmental protection. Their linkage of human and environmental rights fit the NGOs' perception that indigenous and traditional communities' lifestyles are authentic examples of how human should live as a part of the natural world or linked to land. This view has been challenged by social scientists as ignoring the social and economic realities and challenges faced by these communities and in limiting their agency by imposing stereotypes on to their communities and cultures (i.e. Ecological Indian constructs) (Conklin and Graham 1995; Rabben 2004; Hames 2007). However, the linkage of human rights with environmental protection problematizes the state's paradigm of development-at-all-costs and proposes a foundation to create an alternative to the modernization quest of the Brazilian state. Along this line Brent Millikan of International Rivers stated in an interview that the state's efforts represent a: "sort of 1950s development mentality...often proceeds in a very authoritarian way, in terms of not respecting human rights, not respecting environmental law, not really looking at the alternatives" (Forero 2013). Linking human rights and environmental protection creates a strong platform for NGOs to critique the hydroelectric plan at large. To expand their argument in international terms, NGOs like AIDA and Xingu Alive Forever often combine the social and environmental consequences of the dam projects to create a broad based argument for the dual protection of the environment and human rights. With this argument they have found legal support from the progressive reforms established in the 1988 Brazilian constitution which makes specific provisions for environmental protection and the rights of traditional indigenous and riverine communities with regards to the sale and inundation of their lands. AIDA and the InterAmerican Commission of Human Rights (IACHR) have filed legal challenges to the dam's construction based on Convention 169 of the 1988 Brazilian Constitution (AIDA 2014). AIDA has also appealed to the United Nations Human

Rights Council to consider the matter a violation of the human rights of the indigenous and traditional peoples whose livelihoods are threatened. These organizations also contradict the state's arguments that no indigenous lands are to be flooded, or directly impacted by the dam. They argue that even the adjustments made to prevent the direct flooding of indigenous land are insufficient because it is the very nature of the project, the reshaping of the region's ecosystems, that will hurt indigenous groups the most: "diverting more than 80% of the stream flow of the Xingu will directly affect indigenous people" (Magalhães and Hernandez 2009:3). In a publication by The Xingu Alive Forever Movement (a coalition of local NGOs and the affected communities) supported and disseminated by AIDA, International Rivers, and Amazon Watch they have reinforced the imaginary linkage of the rights of the local people and the rights of the environment: "The river is the heart of our land and our people... We will not sit back and watch while those in Brasilia attempt to determine our future without our consultation, without hearing us, without respecting us... Neither the Xingu River nor our lives are for sale" (Xingu Alive Forever Movement 2010:1). By creating a linkage between human rights and environmental protection the NGOs are capitalizing on the most susceptible point of a Brazilian development paradigm that has historically placed the protection of both the environment and rural populations as the lowest priority (i.e. international critique and the Carajás project). Yet, the equation of human rights with environmental protection is not just a strong method to critique the Brazilian state's development plans, it is also the foundation of envisioning different future for the Amazon which is inherently more internal and local than the state's external and national vision.

The Brazilian state's vision of the Amazon prioritizes the national over the local when establishing resource use patterns. The environmentalist NGO view, which values nature in its unaltered state, necessarily emphasizes the local over the national when discussing the impacts of development projects. Rather than looking toward resource potential, these organizations focus on the value in nature's unaltered state. This allows them to support the traditional livelihoods that understand to have adopted a humans-as-part-of-nature view and fit their discourse of the linkage between human rights and environmental protection. In combating the state's proposals, NGOs like AIDA focus on the unique local impact of the dams on the people who live in the immediate region: "traditional fishing grounds would be irreversibly destroyed; thousands of people would lose access to water, food, labor supply and river transportation" and "thousands of people would lose their homes, livelihoods and culture" (AIDA 2014). In this manner the two visions portray the dams in exactly opposite ways: the state lauds the dam's national value as a source of energy for the whole country or the benefit to the average Brazilian, while these NGOs decry the harm caused by the dam to the diverse populations immediately surrounding the site. The NGOs also contradict the state's representation of the dams as modernizing and beneficial progress project that will spur economic growth in the region by focusing on worker's revolts against the construction company. NGOs ironically link the state's assertion that dam and infrastructure construction "represents progress and dignified employment" by comparing it with worker revolts in 2012 and "violent protests demanding better labor conditions" at the construction site (Amazon Watch 2014). They also argue that the dam's infrastructure will merely serve to open the region up to more extractive industry like mining, logging, and soy monocultures: "cumulative and long term impacts of Belo Monte upon indigenous communities

are of even greater concern as they add to the impacts of other unsustainable industries” (Amazon Watch 2014). The work of the NGOs places them in direct contact with the groups and communities marginalized and hurt by the state’s vision of development and they, therefore, take up the local banner to make visible what the spatial and temporally distant goals of the state can overlook: the severe local impacts caused by a complete restructuring of the local environment.

The environmental and indigenous rights NGOs have a distinctly different vision of the Amazon region’s wealth and what its future could be that is drastically opposed to the state’s vision of development and resource extraction. Their campaigns call Belo Monte a “monster dam” that will transform the biodiverse river into “endless series of lifeless reservoirs” in part their vision of the Amazon is most clearly defined by what they disagree with in the current development efforts (Amazon Watch 2014; International Rivers 2014). Although the organizations that make up what I have loosely grouped as environmental and indigenous rights NGOs do not have a specific formalized vision of what they want the Amazon to become, there are several changes that they advocate for. These include promotion of the inherent value of the Amazon’s biodiversity, questioning of the economic viability of Brazil’s hydroelectric model, recognition and protection of the link between human rights and the environment, and construction of a local perspective. In particular they advocate for support for traditional riverine communities, protection of biodiversity and investments in Brazil’s renewable energy sector to meet growing energy demands. The efforts by these NGOs to deploy targeted discourses on biodiversity, human rights and scientific rhetoric to challenge and supplant the state’s dominant

vision of resource extraction and infrastructure development in the Amazon represent the contestation for control of how the Amazon is imagined and represented.

Drawing Conclusions

This section has examined Brazil's hydroelectric program and the continuity in the state's development paradigms that survived the democratic transition. At the end of the military dictatorship in 1985 through the presidential impeachment and beginning of the fiscal crises in 1993-4 there was a period of flux in the ideology of the Brazilian state. At this time an environmentalist vision, supported by the international community's attention to environmental degradation, had the opportunity to supplant the traditional state development rhetoric of the military which had come under international critique. However, with the election of Cardoso and the focus on stabilizing the national economy and spurring economic growth, the dominant paradigm of large-scale infrastructure development projects remained entrenched and the opportunity for substantive change was passed. Once the Brazilian economy was stabilized, the democratic government returned to the development formula operationalized under the military in their approach to new Amazonian projects. The current hydroelectric plan has represented a switch in the focus of the state development programs from the land-based ones of the 1980s to new water-based projects. The dams of these new water based projects were also a new manifestation of the state's underlying narrative of Amazonia and resource view of nature. Dams in the Amazon become physical extensions of 'civilization' or order into a natural or 'untamed' area. Dam sites have also become spaces of contestation between differing values of nature and visions of the Amazon.

The Belo Monte case highlights the contested nature of the state's vision of the Amazon and the assumptions about nature's value that it is predicated upon. Belo Monte has had a strong history of NGO/environmentalist involvement and has been a contested space for over 20 years. By examining how the two sides, the state and the NGOs/environmental contingent, represent the dam and its impacts we can clearly identify two distinct visions. On the part of the state the dam represents modernity, order, and national economic progress. For the environmental contingent the dam is locally destructive, economically unnecessary and an effort to shift traditional rural patterns. The state has appeared interestingly dynamic in their ability to maintain the continuity of the dominant development paradigm while also engaging with environmental and progressive rhetoric in an attempt to sell their projects to national and international audiences which was unnecessary during the military period. The environmental contingent has also shifted their position since the 1980s as the democratic era has opened up new doors for them to challenge the project on legal grounds. The establishment of official channels of opposition to the state have afforded NGOs the opportunity for a more direct impact on development and environmental policy in Brazil. Yet the democratic shift also incentivized the environmentalists to employ more scientific discourse to combat the argument of the state and strengthen their position from a more romantic and moral discourse. Both sides have had to evolve their strategies and visions under the democratic conditions in Brazil, but the underlying differences of vision have not been resolved and the state is still poised to reshape the region in line with the dominant development paradigm of large-scale, state-sponsored infrastructure projects in the Amazon region.

CHAPTER 5

CONCLUSIONS: BRINGING IT BACK TOGETHER

This work presented three conceptions of the human-nature relationship and demonstrated how these conceptions inform the particular worldviews of the Brazilian state and environmentalists. These differing conceptions also contribute to an ideological impasse in the contestation of the Amazon's future. Our underlying values and conceptions of the world form the basis for our worldviews which shape our behavior as we enact and construct those views onto the landscape. In the case of the Amazon, the region has been the subject of outsider projections for generations, and they have resulted in several attempts to reshape the region based on those perceptions. The Brazilian state has been the entity with the most influential vision of Amazonia. The idea of latent economic value in the Amazon predated the military regime. Yet, it was the military's adoption of that vision, combining it with nationalistic economic development, and ability to provide continuous institutional support, that permitted their vision to become dominant. The military's formalized vision was passed on to the democratic regime which made its own adaptations in refocusing the subject of their vision and the rhetoric deployed. The trajectory of the state's vision of the Amazon as natural region full of economic potential has resulted in significant physical reshaping of the region through the enactment of sequential versions of their vision for the Amazon via infrastructure programs and projects. Although the state's view has been the loudest in the region, native Amazonian visions

and international environmentalist visions have also been able to shape perceptions and realities in the region.

Conceptualizing the Human-Nature Relationship

By examining dominant narratives and their assumptions we can contextualize the efforts of social actors in the Amazon over time to enact their vision. The first philosophical approach examined in this paper was the separation of humans from the natural world. The first approach also is inherently related to the second philosophical approach, that humans are masters of nature. Traditional Western conceptions first extract humanity from the natural world before claiming dominance over it. Theoretical and philosophical Western thinkers have defended this separation both in support of the wilderness concept and in support of viewing nature as a means for humans' economic growth. In the Amazon the separation of humans from the natural world has been employed to justify fortress conservation to defend nature from human intervention which is assumed to be inherently destructive. A second conception, correlated with the separation of humans from nature, is the conception of humans as dominant over the natural world.

The dominance of humans over the natural world and the ability to view nature as means permits the state to view the region's resources in primarily economic terms. It is this basic assumption that has played the largest role in informing visions of the Amazon as it underscores the state's actions and views on the economic potential of the region. The third conception explored was the view that humans are a part of nature. This view is, for some Western thinkers, a conscious effort to place humans back into the natural world, rectifying the separation that occurred in the past. Activists and proponents of sustainable development have attempted to

incorporate this view into their ideologies and to mobilize it in the Amazon in the form of integrated rural development strategies. It is easy to observe how all three conceptions overlap in how the region is imagined. For the purpose of the cases explored in this paper, the conceptions of humans as masters of nature and humans as a part of nature have been most influential in the region as they inform the competing visions of the Brazilian state and environmental contingent.

For the Brazilian state, the adoption of traditional development strategies and goals underscores the imaginative separation of humans from the natural world. This separation allows the distinctions between civilized and natural spaces. The narrative structure of the anthropocentric human-nature relationship has been enacted upon the landscape through large-scale infrastructure projects which delineate natural and civilized space in the Amazon. The vision of the Brazilian state is predicated upon the acceptance of an instrumental view of nature that accepts the premise that the natural world is available for human consumption: that nature has the most value when put toward human ends. Humans as masters of nature, or the instrumental resource view of the Amazon, has informed the dominant paradigm which has structured economic activity in the region. This pattern can be identified in the efforts of the Brazilian state to promote extractive industries like mining, logging, intensive agricultural exploitation and hydroelectric projects. When interpreting these influences on the Amazonian region, individual state policies and projects can be seen as part of a larger narrative of development and progress. Here the country's natural "wealth" is incorporated as part of the national narrative of modernization.

The view that humans are a part of the natural world informs international environmental groups' vision of the Amazon. The environmental contingent's visions are not formalized and

span the scale of conceptions about the human-nature relationship. This range is in part as a reflection of the coalitionary nature of the international environmental contingent. The traditional environmentalist view embraces the separation of humans from the natural world, through fortress conservation, with the belief a pristine state of nature exists prior to human intervention. A second, more recent environmentalist conception (emphasized in the Belo Monte case) is more comprehensive and adopts the humans as part of nature conception and recognizes an interrelation between humans and their environment. While the vision of the environmental contingent is not unified, NGOs' and other groups' beliefs along this continuum have negotiated a loosely organized vision for the Amazon galvanized through their contestation of the Brazilian state's vision. NGOs working together on specific campaigns against the state's vision of the Amazon have unified and promote a common vision of Amazonia by making conservation compatible with traditional rural livelihoods.

The broad narratives inform how the state and other actors construct the human-nature relationship, and these narratives matter for the future of all diverse natural areas in Brazil. In the Brazilian case they are the important fundamental differences that inform competing visions that attempt to shape the Amazon's future. These conceptions of nature provide the narrative structure to frame and justify environmental practices and resource management, but they have the ability to change over time. These narratives are implicit in environmental decision making and by better understanding their origins, assumptions, and practice, they provide greater understandings of the continuity of vision in human-landscape interactions.

Formalization and Operationalization of the Brazilian State's Vision of the Amazon

During the military regime the state adopted prior narratives of nature and the Amazon as latent wealth and formalized it into a development paradigm. The instrumentalist view was central to the construction and execution of the military's development paradigm. Their vision is predicated on the assumption that humans are the masters of the natural world and are free to use the natural world as means for their end. For the military this meant making Brazil a modern, unified nation. The military period in Brazil was a decisive period for the formalization and operationalization of the state's vision. The military period adopted the preexisting idea of the Amazon's latent economic potential. Yet they also adapted the previous ideas by infusing them with nationalism and arguing that Amazonian projects would contribute to making the nation modern. Most significantly, the military regime allowed for the continuation of an instrumental narrative in a new form and provided institutional support for the enactment of this vision.

The military period was the first time that significant funding and national level attention had been seriously directed at the Amazon region, but the military adopted earlier myths and narratives about the Amazon's natural wealth. From the colonial history of Francisco de Orellana's navigation of the Amazon River in search of El Dorado, glory and the riches believed to lie in the interior of South America in the Amazon region have inspired visions of wealth waiting to be discovered. Later in the nineteenth and early twentieth century, the myths of the Amazon's Edenic splendor and natural wealth inspired several industrial attempts to extract wealth and rubber from the region. Both the Madeira-Mamoré railroad project and Henry Ford's Fordlândia are examples of projects based on the assumption that if modern infrastructure and order were implemented in the Amazon there would be significant economic rewards. While

these three examples are diverse in time period and results, they were all spurred by the notion of economic potential in the Amazon. The latter two projects also represented modernizing notions about the need to create infrastructure in the Amazon to extract wealth from nature. The idea of latent wealth in the Amazon in need of infrastructure to extract it has extended beyond the failure of these two projects and it resurfaced during the military period. For the first time, under the national modernization project of the military, the state acted upon these long-held visions of the Amazon as a vast natural resource depository with latent economic potential. This action took the form of large-scale infrastructure development projects intent on promoting economic growth and national integration. Once the military dictatorship had been consolidated politically, the ideals of order and progress inspired national investments, re-imagination and physical reshaping of the Amazon.

Instrumentalist assumptions about the human-nature relationship informed the creation of the state's development paradigm as explored in the second chapter. To understand the state's vision of the region and the process it formalized I explored in two case studies: Polonoroeste and Carajás. The Polonoroeste and Carajás projects had significant similarities that underscore the central assumption of human mastery of nature and the imperative to utilize the Amazon's resources to spur economic development at the national level. Three significant central views present in both projects were: that rural traditional and indigenous peoples were viewed as obstructions to progress, that development was seen to be achieved from the conversion of natural resources to economic inputs, and the nationalistic control and tone of the projects which invalidated international critiques of the Brazilian development process and its negative impacts on the Amazon. Both the Polonoroeste and Carajás projects were part of the military's plan to

further integrate the region into the nation through development and economic growth oriented projects like: colonization settlements and heavy investment in mining, ranching and agricultural production. These programs reflect the military's instrumentalist priority which promoted the utilization of the Amazon's wealth to fuel economic development and national incorporation. These projects helped to formalize and operationalize an earlier view of the Amazon as a source of latent resources with development potential that needed structure and investment to harvest. During the military period planning and funding directed from the national level created a specific development paradigm that remains prominent in Amazonian environmental and infrastructure policy to this day.

The military state adopted preexisting visions of the Amazon and combined them with nationalistic development goals and enacted this vision through continual institutional support for these projects in the form of steady financing (nationally and internationally) and centralized direction. Through these projects the military physically and imaginatively reshaped the Amazon from being viewed as a drain on national development to being central to national development. This vision continued into the democratic period and it has shifted and changed again in response to new social and political contexts. Although the development paradigm of the state has shifted over time in response to changing conditions, there is an important line of continuity in the instrumentalist foundation of the state's vision that continues to the present in a new manifestation.

Examining the Belo Monte Case

The Belo Monte case demonstrates continuity of the development paradigm, fostered under the military, which has been adopted into the current Brazilian state development policy. Examining the Belo Monte case sheds light on the shifts and continuities that have occurred in the competing visions of the Amazon held by the state and environmental contingent. While the foundational assumptions about the human-nature relationship in the two narratives held by the Brazilian state and the environmentalist groups have not changed, other aspects have. Both visions are situated within changing social and political contexts and they are also participating in a mutual discourse in the contestation of the dam projects. NGOs and the state have reacted to internal and external changes in conditions which resulted in adjustments in their vision and shifts in how they present their narratives.

The Brazilian state's vision has maintained its instrumental core, but new challenges have demanded and negotiated fringe modifications of their narrative. The internal change from dictatorship to democracy has significantly impacted the Brazilian state's vision of the Amazon and paradigm of development. The Belo Monte dam project is an excellent case to examine to better understand the nuances and negotiation that occurred in the state's development paradigm due to the democratic transition. The internal structural shift in Brazil's regime type has significantly changed how the state represents their development initiatives in the region. The Belo Monte dam's conflict-filled history spans from the late military period up unto the current day, and it highlights the more nuanced approach of the state that has developed over time. Unlike the military regime, the democratic state participates in the international community and responds to pressures to justify their projects. The most visible shift in the state's development

paradigm has been in how the state engages and employs green and technologically progressive discourse to situate their dam projects. The existence of external pressure for environmentalism is a variable in that the democratic state's incarnation of their development paradigm must engage with, but which the military could ignore. Use of green rhetoric has also resulted in the state making environmental concessions to gain the low-hanging fruit of environmental protection (i.e. limiting deforestation in less strategic areas). This allows the state to legitimately employment green, environmental discourse. In addition, Brazil's current hydroelectric plan demonstrates the state's efforts of representation to differentiate their water-based programs from the land-based ones of the 1980s. By shifting the visible focus of development from land to water, the democratic state figuratively separated themselves from military's highly critiqued infrastructure projects. This shift to water-based projects also more easily allowed the state to represent their new infrastructure projects as creative and productive (of energy and jobs) than land-based infrastructure which were perceived as highly destructive (cutting and burning trees for ranches). However, these fringe shifts and new representations should not disguise the lines of continuity that have remained in the state's development paradigm. The underlying conception of an instrumental view of nature remains intact and the dam projects are updated manifestations of the state's development paradigm. Following the democratic transition, the state continued to enact their development paradigm with its instrumental view of nature. However, the state has dynamically employed new discourses which have provided new methods of representing their project, allowing them to successfully continue their development paradigm.

These two external structural shifts: the changed political position of the Brazilian state and the changed international conditions for environmentalism, have precipitated shifts in the

environmentalist's use of discourse. These structural shifts are not simply cause-effect, but actually reflect the reciprocal and ongoing nature of the contestation of the state and environmentalists' visions of the Amazon. The major external shift that has directly impacted the Belo Monte case for the environmentalist contingent is the transition of their opponent from a military to a democratic regime and decline of international environmentalism. As with the Brazilian state the environmental contingent has also shifted their position since the 1980s, and the democratic era has opened up new doors for them to challenge the project on legal grounds. Since civil society now has space to officially protest the state's paradigm of development NGOs (like AIDA, Xingu Alive Forever, and International Rivers) have made many legal challenges to the dam's construction and succeeded in delaying the project through litigation. The existence of an official channel to challenge the vision of the state has significantly altered the strategies of the environmental contingent. A second significant external change that has affected the environmentalists' employment of discourse is the decline of the power of international environmentalism. The decline of environmentalism as a method to structure relations in the international community in the 1990s has greatly impacted how the environmental contingent represents their narrative and vision of the Amazon. These structural shifts in the context of the Belo Monte case have motivated NGOs to shift their representation of the dam. The NGOs have switched from employing a more moral rhetoric (which was effective against an easily villainized military regime) to a scientific one to protest the construction of dams in the Amazon. The NGOs' shifts in rhetorical arguments also reflect the interplay between NGOs and the state as NGOs react to shifts in the Brazilian state's employment of discourse. NGOs have shifted their representation of the dam to critique it on technical and scientific grounds, in response to

the Brazilian state's recent deployment of green and environmental discourse to support the dam by presenting as a source of clean energy. In the face of a perceived legitimate opponent the authority implicit in scientific rhetoric and technical data has been employed to make the environmentalists' argument against the state's vision stronger.

While there have been shifts in the state's Amazonian narrative, there remains two core elements which are constant: the notions of modernizing infrastructure development and an instrumental conception of the human-nature relationship. Through dam sites, particularly Belo Monte, differing conceptions of nature and visions of the Amazon's future have conflicted as environmentalists and indigenous groups contest the vision and values of the state. Due to internal and external changes in context there have been some significant shifts in the visions and representations of both the Brazilian state's and the environmental contingents' views since the democratic transition. Yet, the state's practice and representation of their development paradigm in Amazonia is often manifestations of continuity in their vision. Both of the two sides in the Belo Monte case have demonstrated their abilities to dynamically respond to changing external circumstances as well as to each other. Both sides have had to evolve their strategies and visions under the democratic conditions in Brazil, but the underlying differences of vision (their understanding of the human-nature relationship) have not been resolved. The state is still poised to reshape the Amazon in line with the dominant development paradigm of large-scale, state-sponsored infrastructure projects and NGOs still vehemently reject that plan through new discourse.

Making Predictions

Based on the evolution of these two narratives and their current engagement with one another there are several likely outcomes and new opportunities for both the state and NGOs. Although there is continuity in the development philosophy, significant external structural changes and fringe adaptations to policy making demonstrate that the state's development paradigm is dynamically reacting to changes in context. The current positions of the state and environmental NGOs have undergone changes in response both to each other and to external changes in context. Both sides are informed by different basic assumptions about the human-nature relationship and through their contestation of narratives for the Amazon have shifted their employment of discourse over time. Based on the current positions of each side I will outline opportunities for the state and NGOs, as well as likely outcomes. The state has maintained the dominant position of its development paradigm in enacting its vision of the Amazon. While the environmental contingent has remained a stalwart critic and the main challenger of the state's vision. These internal and external changes have restructured how the groups' negotiate with each other and their opportunities for advancing their narratives.

State

In my opinion, the shifts in representation and contestation of the state's and NGOs' positions in the last fifteen years have provided mixed results for the two sides, but have granted the state more advantages than the NGOs. If the state continues to employ this diverse range of nationalist, environmentalist and progressive discourses and make some progressive environmental advances, then I believe that their dominant position is likely to be preserved. The

Brazilian state has maintained their national focus with regard to the new infrastructure projects and rather successfully portrayed their new hydroelectric projects as environmentally friendly. They strongly argue that the dams and associated projects are an investment in progressive clean energy technology which will better the lives of the average Brazilian (through cheaper electricity) and promote national development. The state strengthens their position through continuous promotions of the projects on official communications and public relations campaigns. The state's recent establishment of anti-deforestation projects allow the state to maintain the core of their development paradigm by making some environmental concessions. The dynamic discursive efforts of the state, combined with some progressive reforms to environmental policy place the state's narrative and vision of the Amazon in a strong position to continue to structure activity in the region. The state has retained the ability to initiate and control development in the region, even though the projects are presented as public-private partnerships. In addition, the state has done a good job of employing green, technical and nationalist discourses to cloak their projects and promote them as a national necessity for modernization and betterment of the average Brazilian's lifestyle. In my estimation, the likely result of the current struggle is that state will make some environmental accommodations for conservation (most likely in non-strategic areas) due to their usage of environmental discourse.

NGOs

Despite efforts of the NGOs adapted approach, the Belo Monte dam is already under construction and the state is poised to continue the hydroelectric plan in the rest of the region. The state has maintained their control of the vision of the Amazon through their development

narrative. However, there are a few opportunities for the environmental contingent to continue to contest the state's vision. The two most prominent opportunities that I can identify are in the increases in international scrutiny due to upcoming world events in Brazil and the engagement of Brazilian civil society. Currently the Brazilian state's position is strong and it is their vision of the Amazon which is being enacted most prominently. However, I do see a few potential opportunities for NGOs to advance their vision against the state. For one, as with the Earth Conference in 1992, upcoming world events (World Cup and Olympics) will shed extra international scrutiny on Brazil, and may give NGOs greater international support to leverage for environmental protection, particularly if they engage climate change rhetoric. With decline of international pressure it has been much harder for NGOs to organize against the march of mainstream development discourse. If they strategically target international media attention as they did in the anti-Belo Monte campaigns in the 1980s there is an opportunity to increase pressure on the Brazilian government to alter their development plans for the region as part of a larger critique of the negative impacts of infrastructure projects in Brazil (i.e. favela resettlement, corruption in stadium construction). As the government is now democratic and desires recognition as a developed modern nation, international pressure could have a significant, positive impact for the NGOs' position. Secondly, the existence of an official channel to contest the state's vision could be utilized by the environmentalist contingent to engage Brazilian civil society to support their vision. Although, thus far having access to an official channel to contest the state's vision has not produced many substantive changes to the state's paradigm, being an accepted part of civil and political society could provide other options to the environmentalist groups. For example, if environmentalists are able to capitalize on the recent waves of youth

political and cultural activism, they might be able to counter the state's vision from within.

Having an opportunity to work within the Brazilian system (even if it is flawed one) is important if NGOs wish to gain support for their vision by engaging Brazilian civil society.

The future of the Amazon is still in flux and this topic begs continuing research as the position and vision of the state and other players are still in active contestation. Brazil in both size and regional influence is a vital case for environmental protection with regards to climate change. Economically, the evaluation of Brazil's development paradigm is also relevant as it provides insight into potential flaws in Brazil's economic growth plan. The emphasis on national level growth and development planning, while beneficial for coordination and support of projects, typically ignores more creative or appropriate local and regional development strategies. National development allows the sacrifice of one region for national good, and limits creative approaches to specific local development problems. If environmentalists and NGOs continue to challenge the state's vision of the region the outcome is more likely to meet the diverse needs of the national and local levels as well as having a progressive environmental and indigenous influence. If both sides continue to negotiate their contested narratives of Amazonia it is likely that the results will include more balanced environmental and development policy as the state is forced to consider new alternatives and engage with environmental discourse.

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