

THE UNIVERSITY OF CHICAGO

RECONSTITUTING THE NATURE OF THE NATION:  
EXTRACTIVISM, BIODIVERSITY, AND THE RIGHTS OF NATURE IN ECUADOR

A DISSERTATION SUBMITTED TO  
THE FACULTY OF THE DIVISION OF THE SOCIAL SCIENCES  
IN CANDIDACY FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

DEPARTMENT OF ANTHROPOLOGY

BY

NICHOLAS CARBY DENNING

CHICAGO, ILLINOIS

AUGUST 2019

For my parents.

## Table of Contents

<b>Table of Figures</b>	<b>vi</b>
<b>Acknowledgements</b>	<b>x</b>
<b>Abstract</b>	<b>xiii</b>
<b>Introduction</b>	<b>1</b>
Mestizo Translations and Modern Constitutions	11
Overview of the Chapters	19
The View from Ecuador: Ecological Research and Methodology	25
<b>Part I. Equator</b>	
<b><i>“¡Abajo el Extractivismo!”: Plurinational Resistance and the Spirit of Extractivism</i></b>	<b>32</b>
Oil, Territory, and the (Pluri-)Nation: Indigenous Women’s March	35
Questioning the Ontology of Oil: Forest Spirits & Oil Spirits	50
Transducing Extractivism: “Toxic Tour 360°”	63
Conclusion: Translation and Transduction	70
<b>Part II. Mountains</b>	
Interlude: The View From Guápulo	83
<b><i>“Brooms of the World”: Advocacy Work across Ecologies of Oil</i></b>	<b>87</b>
From “Health” to “Environment”: Acción Ecológica and “Amazonia por la Vida”	92
Labor and the Work of Representation in NGOs	101
Oilwatch and the “Birth” of the Movement to “Keep the Oil in the Soil”	110
Conclusion	118

***“May the Cry of the Jungle be Heard!”: Translations and Transductions of Carbon and***

<b>Democracy</b>	<b>120</b>
Yasuní-ITT to YASunidos 2007-2015	128
Protest at the National Electoral Council	135
YASunidos March, June 24, 2015	143
“Batucada” Drumming and Transductions of Political Collectives	147
Climate Justice from the Underground	150
Conclusion: YASunidos’ Translations and Transductions	154

**Part III: Jungle**

<b><i>“A Huge Natural Laboratory”: the Bio-Sovereignities of Tiputini</i></b>	<b>157</b>
Introduction: “Ecuador’s Paradise Lost”	157
Crossing Zones of State, Corporate, Indigenous, and Academic Bio-Sovereignty	162
A Huge Natural Laboratory: Yasuní as an Anthropogenic Forest	178
Conclusion	191
<b><i>“The Wealth of Species”: Re-Imagining Biodiversity and its Loss</i></b>	<b>193</b>
Introduction: What is Biodiversity?	193
Genealogies of the “Biodiversity Network”	198
The “Language of Nature” and the “Wealth of Species”	203
Valuing Biodiversity: From the Paradoxes of the Bio-economy to the Ecology of Selves	210
Visualizing Violence: Biodiversity Loss as a Bio-political Problem of Representation	217
<b><i>“Eyes in the Forest”: an Ethnography of Biodiversity</i></b>	<b>225</b>
Introduction: Ira’s Ear and the Duets of the Titi Monkeys	225
The Caretakers of the Laboratory	232
Jenna and the Woolly Monkeys I: “Group D,” September 19	240
Jenna and the Woolly Monkeys II: “Group G” September 25	246

Tools of Translation I: “Focals” and “Ethogram”	254
Primate Tales	260
Tools of Translation II: Camera Traps, the “Eyes in the Forest”	267
Tools of Translation III: Lost in the Laboratory	277
Digital Mapping and Systems of Global Positioning	277
Conclusion	286
<b>Part IV. River</b>	
<b>“Yakuchaski Warmikuna”: Women Carrying Messages of Resistance through the Extractive Zone</b>	<b>292</b>
Opening Ceremony	294
Yakuchaski: the Women River Messengers	295
I. Mapping and Traversing the Extractive Zone	302
II. Visualizing the Temporalities of Slow Violence	313
III. Mingas: “Environmental Pollution has a Women’s Face”	319
IV. Avatars of Extractivism and Strategies of Resistance in the Sacrifice Zone	326
Conclusion: Reconstituting the Nature of the Nation in Ecuador	330
<b>Bibliography</b>	<b>332</b>

## **Table of Figures**

<b>Figure 1: ANA Pachamama Spiral.</b>	<b>1</b>
<b>Figure 2: ANA Map.</b>	<b>3</b>
<b>Figure 3: Republic of Ecuador, 2008 Constitution, Chapter Seven - Rights of Nature.</b>	<b>6</b>
<b>Figure 4: Mount Chimborazo. Photo by the author.</b>	<b>26</b>
<b>Figure 5: Display of posters at the march of indigenous women in Puyo, March 8, 2016.</b>	<b>32</b>
<b>Figure 6: Indigenous women march through the streets of Puyo.</b>	<b>36</b>
<b>Figure 7: Alicia Cahuiya Iteca.</b>	<b>37</b>
<b>Figure 8: Sápara Community in Pastaza Province.</b>	<b>50</b>
<b>Figure 9: The View From Guápulo.</b>	<b>83</b>
<b>Figure 10: Artwork at Acción Ecológica Office.</b>	<b>87</b>
<b>Figure 11: Entrance to Acción Ecológica.</b>	<b>88</b>
<b>Figure 12: Artwork at Acción Ecológica.</b>	<b>89</b>
<b>Figure 13: A birthday celebration at Acción Ecológica.</b>	<b>96</b>
<b>Figure 14: Yasunidos demonstration in front of the Presidential Palace in Plaza Grande.</b>	<b>120</b>
<b>Figure 15: YASunidos tree in Plaza Grande.</b>	<b>121</b>
<b>Figure 16: YASnidos posters.</b>	<b>122</b>
<b>Figure 17: YASunidos organizers plant a tree in the garden of Plaza Grande.</b>	<b>122</b>
<b>Figure 18: YASunidos protest in front of the Ministry of Environment.</b>	<b>129</b>
<b>Figure 19: YASunidos protest in front of the CNE.</b>	<b>135</b>
<b>Figure 20: A jaguar, parrot, and monkey adorn the YASunidos bus.</b>	<b>136</b>
<b>Figure 21: A turtle and frog on the rear of the YASunidos bus.</b>	<b>137</b>
<b>Figure 22: YASunidos drummers in front of the CNE.</b>	<b>140</b>
<b>Figure 23: The author holding the YASunidos banner.</b>	<b>143</b>
<b>Figure 24: “La bandera real del Ecuador.”</b>	<b>145</b>
<b>Figure 25: Marching with YASunidos.</b>	<b>146</b>
<b>Figure 26: YASunidos batucada drumming.</b>	<b>147</b>

<b>Figure 27: YASunidos poster.</b>	<b>150</b>
<b>Figure 28: Sign that reads: “Tiputini Biodiversity Station, University of San Francisco Quito”</b>	<b>157</b>
<b>Figure 29: Airport Advertisement for the 16<sup>th</sup> Ecuador Oil and Power Exposition and Conference.</b>	<b>164</b>
<b>Figure 30: Gas flares along the Rio Napo.</b>	<b>164</b>
<b>Figure 31: The Catholic University’s biodiversity station.</b>	<b>166</b>
<b>Figure 32: The TBS boat in the Tiputini River.</b>	<b>167</b>
<b>Figure 33: TBS staff members transfer barrels of gasoline from the truck to the boat.</b>	<b>168</b>
<b>Figure 34: On the TBS boat, laden with supplies.</b>	<b>168</b>
<b>Figure 35: TBS welcome sign.</b>	<b>170</b>
<b>Figure 36: Directions to the laboratory and the dining hall.</b>	<b>172</b>
<b>Figure 37: Poster on TBS grounds.</b>	<b>173</b>
<b>Figure 38: Huaorani visitors in the TBS dining hall.</b>	<b>177</b>
<b>Figure 39: The View from the TBS Canopy Tower.</b>	<b>193</b>
<b>Figure 40: Butterfly collection in the TBS library.</b>	<b>207</b>
<b>Figure 41: Terry Erwin “fogging” for insects by spraying pesticides into the forest canopy in 2014.</b>	<b>208</b>
<b>Figure 42: A Titi monkey wearing a radio collar near the Tiputini Biodiversity Station.</b>	<b>225</b>
<b>Figure 43: Ira uses a telemetry antenna to find a radio-collared Titi monkey.</b>	<b>228</b>
<b>Figure 44: Titi monkey eating a flower.</b>	<b>231</b>
<b>Figure 45: Primatologists researchers document fruiting trees.</b>	<b>235</b>
<b>Figure 46: Record of fruiting trees organized according to species and trail.</b>	<b>236</b>
<b>Figure 47: Tree marked with metal tag and plastic ribbon.</b>	<b>237</b>
<b>Figure 48: A bright red and orange “Thorny Weaver”</b>	<b>242</b>
<b>Figure 49: Jenna peers through her binoculars at Woolly Monkeys hidden in the canopy.</b>	<b>243</b>
<b>Figure 50: A wooly monkey hangs by its tail from a branch in the canopy.</b>	<b>244</b>
<b>Figure 51: Jenna uses her telemetry antenna to locate radio-collared wooly monkeys.</b>	<b>247</b>
<b>Figure 52: A wooly monkey climbs a Cecropia (Sciadophylla) tree.</b>	<b>248</b>
<b>Figure 53: Greyson, is that you?</b>	<b>251</b>

<b>Figure 54: A herd of Peccaries swim across the Tiputini river.</b>	<b>269</b>
<b>Figure 55: Several species of parrots gather around the salt lick.</b>	<b>271</b>
<b>Figure 56: Gabby changes the memory card and batteries in a camera trap.</b>	<b>272</b>
<b>Figure 57: Camera Trap.</b>	<b>273</b>
<b>Figure 58: Inside of a Camera Trap.</b>	<b>273</b>
<b>Figure 59: Bridge crossing a river; part of the TBS trail system.</b>	<b>277</b>
<b>Figure 60: Map of the trails that surround the TBS laboratory.</b>	<b>278</b>
<b>Figure 61: Jenna indicates how high the water rises above this bridge during rainy seasons.</b>	<b>279</b>
<b>Figure 62: The Yakuchaski Warmikuna delegation holding banners.</b>	<b>292</b>
<b>Figure 63: A spiral of fruits and flowers representing Pachamama.</b>	<b>294</b>
<b>Figure 64: Walking sticks are arranged around the spiral.</b>	<b>295</b>
<b>Figure 65: A communal fire is lit in a small ceramic pot.</b>	<b>296</b>
<b>Figure 66: Ivonne addresses an audience in a schoolhouse.</b>	<b>302</b>
<b>Figure 67: Ivonne points to a map that depicts how oil block overlap with indigenous territories.</b>	<b>303</b>
<b>Figure 68: Nancy points to a map that depicts the ancestral territories of the Curaray River basin.</b>	<b>303</b>
<b>Figure 69: The map is laid out on the floor.</b>	<b>304</b>
<b>Figure 70: The canoes used by the Yakuchaski delegation.</b>	<b>305</b>
<b>Figure 71: The promise of roads.</b>	<b>306</b>
<b>Figure 72: One of the boatmen reads the river to avoid hitting a fallen tree.</b>	<b>307</b>
<b>Figure 73: Press conference.</b>	<b>308</b>
<b>Figure 74: A photograph of the spear used in the attack.</b>	<b>309</b>
<b>Figure 75: Children stand next to a photographic display of animals covered in oil.</b>	<b>313</b>
<b>Figure 76: Ivonne says “This bird cannot fly when it is covered in oil. What is going to happen to the bird?”</b>	<b>314</b>
<b>Figure 77: Women mind their children and tend to a fire.</b>	<b>320</b>
<b>Figure 78: Women making chicha</b>	<b>321</b>
<b>Figure 79: Women painting pottery</b>	<b>322</b>

**Figure 80: Ana Pledges to defend her territory**

**328**

**Figure 81: Ceremonial "Barras"**

**329**

## Acknowledgements

I am overwhelmed by the immense generosity of the many people whose support, advice, and guidance made this dissertation possible. First and foremost, I am so grateful for the love, patience, and relentless optimism of my partner Adrienne over the many years of research and writing. I am so honored for the perennial encouragement and guidance of my parents who have always been the most incredibly inspirational mentors. I am indebted to everyone in the Department of Anthropology at the University of Chicago who contributed their time, effort, and ideas to help ensure that this research project was a success. I thank my advisor, Susan Gal, for her dedication encouragement, and wide-ranging insights as my research agenda evolved, changed, and grew in unexpected directions. Without her help this project would not have been the same. I thank Judith Farquhar for her enthusiasm and crucial advice at key moments in the development of this project. I also greatly appreciate her close reading of my drafts and the detailed, thoughtful feedback that she provided. I thank John Kelly for the many years of insightful discussions and debates that grounded the theoretical frameworks of this dissertation and have become foundational to my pedagogy. I thank Michael Fisch for opening my eyes to new ways of conceptualizing the world, for helping me think through (and more importantly think with) challenging theoretical frameworks, and for being such an encouraging and generous reader. I also owe a great debt to many others who have been intellectual and spiritual mentors at the University of Chicago including, but not limited to: John and Jean Comaroff, Stephan Palmié, Cathy Cohen, Greg Beckett, Joseph Masco, Kaushik Sunder Rajan, Constantine Nakassis, Kevin Anzzolin, Kate Mariner, and Ryan Jobson, along with many others. Above all, I

want to thank Anne Ch'ien for her incredibly hard work and remarkable dedication and for everything she has done for me and other Anthropology students at the University of Chicago.

I extend very special thanks to the members of my dissertation writing group who have read many drafts of my dissertation chapters and provided amazing feedback including Ali Feser, Andrea Ford, Eric Hirsch, Jeremy Siegman, Matthew Furlong, Meghan Morris, and Nathan Ela. I also appreciate the intellectual generosity and encouragement of so many other colleagues, friends, and guides in Anthropology, the Workshop on Latin America and the Caribbean, the community of the Center for Latin American Studies, and elsewhere, including: Amy McLaughlin, Chris Grant, Christien Tompkins, Denia Djokic, Derek Sheridan, Elizabeth DeLuca, Eduardo Kohn, Erik Levin, George Byrne, Jamie Gentry, Jay Sosa, Jay Schutte, Karma Frierson, Macarena Gomez-Barris, Mayra Hayat, Marisol de la Cadena, Michael Cepek, Rebecca Journey, Sonja Pieck, Suchismita Das, and everyone else that I might be forgetting. Finally, I want to thank the generous support of the Tinker Field Research Grant and the University of Chicago Social Sciences Division Field Research Grant that supported my ethnographic fieldwork in Ecuador.

I am humbled by the incredible generosity and hospitality of all of my Ecuadorian hosts, friends, and colleagues who invited me into their lives, homes, families, and organizations. Without their inspirational ideas and the amazing opportunities that they offered me, this research would have been impossible. My many interlocutors in Ecuador have greatly influenced my thinking and I hope that this research does justice to their incredibly inspiring work. Very special thanks to Esperanza Martinez, Ivonne Yanez, Gabriela Ruales and everyone with Acción Ecológica, YASunidos, Amazon Watch and the many other environmental and human rights causes and organizations in Ecuador who took the time to speak with me and invite me into their

lives. I am also very grateful to Kelly Swing for inviting me to conduct research at the Tiputini Biodiversity Station. Even though my ethnographic research likely diverged from the typical biological studies conducted at the facility, I appreciate his open-minded support of my research project. Thanks also to all of the staff and biologists at TBS who were the most magnanimous hosts and who made my time at the station an absolute pleasure. I also want to extend my sincerest thanks to all of my Ecuadorian hosts and friends for inviting me into their homes, lives, and families; thank you for the festivities, barbecues, adventures, and weekly football games in Parque Carolina, you are all dearly missed and I look forward to seeing you soon.

## Abstract

*Re-Constituting the Nature of the Nation: Extractivism, Biodiversity, and the Rights of Nature in Ecuador* is an ethnographic account of resistance to oil development in Yasuní National Park after Ecuador recognized “rights of nature” in its 2008 Constitution. The “rights of nature” were forged at the intersection of three distinct epistemologies of nature/culture: a de-colonial critique of “extractivism”; the sustainable development discourse of “biodiversity”; and indigenous struggles for territorial autonomy. In the constitution “nature” is alternately referred to as “Pachamama,” a political subject with rights, and “biodiversity,” an assemblage of genetic assets, environmental services, and national patrimony. To make sense of this mixture of Amerindian cosmology and the logics of bio-capital, I designed a multi-sited ethnographic study to investigate strategies of social movement resistance, forms of scientific knowledge production, and modes of resource extraction.

Over sixteen months (2015-16), my ethnographic fieldwork crossed Andean and Amazonian Ecuador. In Quito, I explored how “Acción Ecológica,” a prominent women-led ecologist NGO, birthed Ecuador’s modern environmental movement and launched a transnational campaign to “keep the oil in the soil.” I also studied the protest politics of “YASunidos” a youth movement that held massive public demonstrations to “make the cry of the jungle heard” in the capital city’s streets and plazas to end oil drilling in Yasuní. At the “Tiputini Biodiversity Station,” a laboratory located in the most biodiverse place on Earth along the northern border of Yasuní National Park, I used the methodologies of science studies to explore how biologists’ experiences of the forest’s biodiversity enriched reductive discourses of sustainable development that describe “biodiversity” as merely a commodity in the global

bio-economy. Finally, I travelled with “Yakuchaski Warmikuna” a pluri-national delegation of indigenous women along the rivers of the southern border of Yasuní National Park documenting their efforts to mobilize women for a march against the State’s expansion of the oil frontier. These “river messengers” warned communities of the dangers of oil contamination, they described “extractivism” to be a form of gendered violence and they emphasized the importance of indigenous women’s political agency in territorial struggles against pollution and global movements resisting climate change. Ethnographic analysis of the interconnections between environmentalists, conservation biologists and indigenous activists reveals not only the mestizo genealogies of Ecuador’s “rights of nature” but also the ways in which social movements act as knowledge producers and scientists engage the state and nation as political actors.

*Reconstituting the Nature of the Nation* demonstrates that ecological crisis like biodiversity loss and climate change cannot be disentangled from material struggles over extractive capitalism, the historical legacies of post-colonialism, forms of scientific knowledge production, and questions of race, gender, and indigeneity in the post-colonial Global South. Subaltern actors, like the indigenous and mestizo women with whom I conducted research, must be taken seriously as leaders in an emergent global environmental justice movement that is resisting climate crisis from the Global South.

**Introduction**

*Asamblea Nacional Ambiental*

(National Environmental Assembly)

On June 5, 2015, the International Day of the Environment, the “Asamblea Nacional Ambiental” (National Environmental Assembly or “ANA”), an alliance of Ecuadorian environmentalists whose advocacy was responsible for the inclusion of the “rights of nature” in the 2008 Ecuadorian Constitution, celebrated their tenth anniversary at Quito’s Universidad Andina. The ANA was founded in 2005 by an alliance of NGO ecologists, academics, and indigenous activists. According to a



**Figure 1: ANA Pachamama Spiral. Members of “Saramanta Warmikuna” (Daughters of Maize) construct an altar with seeds, earth, candles, water and flowers as a representation of Pachamama (Mother Earth). All photos are by the author unless otherwise stated.**

film screened at the event, the ANA is a “collective process of social struggle” to “build a socially just and ecologically sustainable society” offering a “space of debate, dialogue and critique to generate proposals and resistance” through the “strategic alliance of diverse environmental organizations working for common objectives.” For their tenth anniversary,

organizers presented their “Agenda Nacional Ambiental” (National Environmental Agenda) a document that outlined the alliance’s diverse environmental struggles across Ecuador.

After an opening ceremony by members of “Saramanta Warmikuna” (Daughters of Maize) who constructed an altar out of seeds, earth, candles, water and flowers as a representation of Pachamama (Mother Earth), participants from the Andes and the Amazon described their regional environmental struggles.<sup>1</sup> Mining activists decried proposed mega-mining projects in Intag and the Cordillera del Condor. One man spoke out against a hydroelectric dam that threatened to displace his community. Another opposed the use of transgenic seeds in agriculture. Yasunidos activists called for a moratorium on oil drilling in Yasuní National Park. Natalia Greene of CEDENMA<sup>2</sup> (Ecuadorian Coordinator of Organizations for the Defense of Nature and the Environment) described the struggle to force Chevron/Texaco to pay a financial settlement owed to the communities whose territories they had contaminated. In a concluding panel, one of the final speakers argued that the testimonies, recounting all of the diverse environmental struggles in Ecuador, demonstrated that the country was under attack from extractivism. “Extractive activities are very mature in Ecuador” which, he noted, is “a mining country according to official policy.” He told the audience that, “if we open the [National Environmental Agenda] and look the map, and what is displayed there, practically the entire country is open to mining exploitation.”<sup>3</sup> Indeed, the map to which he referred

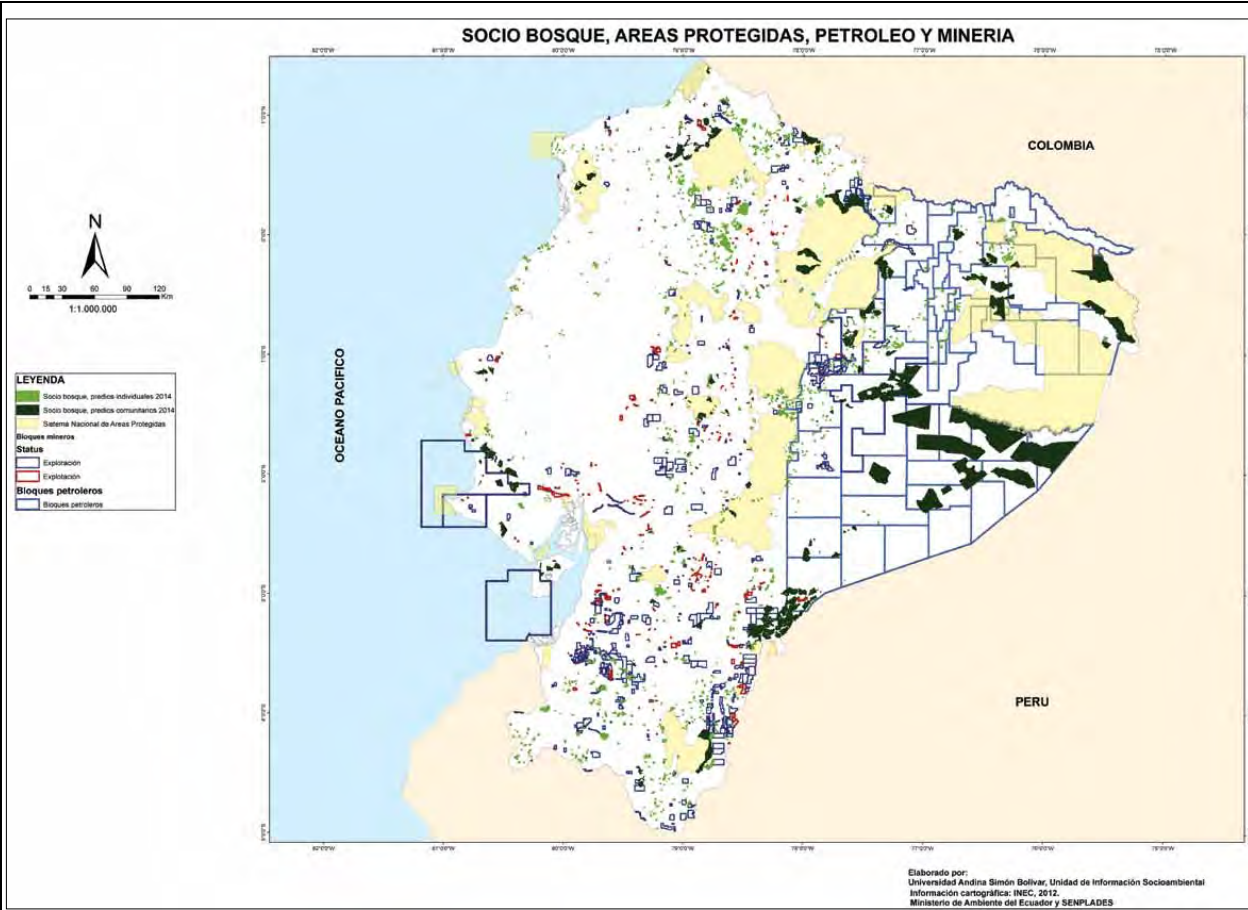
---

<sup>1</sup> For a description of Saramanta Warmikuna’s use of these altars as representations of Pachamama see: <http://www.saramanta.org/>.

<sup>2</sup> Coordinadora Ecuatoriana de Organizaciones para la Defensa de la Naturaleza y el Medio Ambiente

<sup>3</sup> “Los actividades extractivas, son mucho maduro, y voy a poner un ejemplo: El Ecuador, como un país minero, propuesto por la política oficial... Si nosotros abrimos la agenda, y vemos el mapa e lo que expone ahí, prácticamente todo el país esta dispuesta a la explotación minera.”

displayed a patchwork of mining concessions and oil blocks overlaid across the country and its protected areas.



**Figure 2: ANA Map.** This map depicts how oil blocks and mining concessions in Ecuador overlap with biodiverse and conservation areas. Created by the Socioenvironmental Information Unit of Andean University Simón Bolívar with information from the Ministry of Environment of Ecuador and SENPLADES. *Agenda Nacional Ambiental* (Greene et. al. 2015). Accessed at <https://www.ppd-ecuador.org/wp-content/uploads/2017/11/AGENDA-NACIONAL-AMBIENTAL-2015.pdf>

In addition to recounting these ongoing struggles, the ANA also celebrated the success of its advocacy to include the “rights of nature” in the 2008 Ecuadorian Constitution. When populist Rafael Correa was elected president in 2007, his “citizen’s revolution” promised a “twenty-first century socialism.” Correa called for a constituent assembly to rewrite the

constitution. The constituent assembly was primarily composed of members of civil society organizations and presented an opportunity for environmental and indigenous social movements to have their demands incorporated into the new constitution.

The constituent assembly president was Alberto Acosta, an Ecuadorian economist and a member of the ANA. He presided over the process that included the “rights of nature” and named Pachamama a political subject with rights.<sup>4</sup> The 2008 constitution also recognized Ecuador’s “plurinationality” and outlined a plan to achieve “sumak kawsay” (a kichwa term translated as “buen vivir” and “good living”), articulated to be an indigenous form of “bio-socialism” (Ramírez, 2010) that promised to address economic inequality with progressive policies that were in harmony with the environment.

For many observers, Ecuador’s constitutional “rights of nature” was evidence of the growing political power of indigenous movements across the Andes. Anthropologist of the Andes Marisol de la Cadena (2010) attributes the recognition of the legal “rights of nature” (in Ecuador in 2008 and Bolivia in 2009) to indigenous Andean cosmologies that believe that non-humans, such as mountains, exercise political agency in human worlds. She argues “earth-beings” (like Pachamama) are “sentient entities” that are “threatened by the neoliberal wedding of capital and the state.” They are “contentious because their presence in politics disavows the separation between ‘Nature’ and ‘Humanity’” (de la Cadena, 2010: 342). Thus, she contends that these “earth beings” hold a radical potential to transform the political sphere. While the influence of indigenous movements on the 2008 Ecuadorian constitution is undeniable, the text of the “rights of nature” in chapter seven of the constitution oscillates

---

<sup>4</sup> The constitution uses a different spelling than my social movement interlocutors who referred to “Pachamama;” the constitution refers to “Pacha Mama.”

between at least three different discourses: a discourse of indigeneity, a discourse of ecology, and a discourse of economy.

Throughout the four articles of the rights of nature in the 2008 Ecuadorian constitution, references to nature move between these three distinct discourses; nature alternately appears as a political subject, a scientific object, and an economic resource. “Nature” is articulated to be synonymous with “Pachamama,” “ecosystem,” and “natural resources.” As a political subject, “nature” has the right to “existence,” “regeneration,” and the “right to be restored.” As a scientific object, “nature” includes “life cycles,” “evolutionary processes,” and “ecosystems.” As an economic resource, “nature” is composed of “genetic assets,” “natural wealth,” and “environmental services.” The document also oscillates between a discourse of rights and a discourse of environmental risk management. Article 72 asserts that the State must “eliminate or mitigate harmful environmental consequences” posed by “the exploitation of non-renewable resources.” Article 73 argues that the State must “apply preventive and restrictive measures on activities that might lead to the extinction of species, the destruction of ecosystems and the permanent alteration of natural cycles.”

## CHAPTER SEVEN - Rights of Nature

Article 71. Nature, or Pacha Mama, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.

All persons, communities, peoples and nations can call upon public authorities to enforce the rights of nature. To enforce and interpret these rights, the principles set forth in the Constitution shall be observed, as appropriate.

The State shall give incentives to natural persons and legal entities and to communities to protect nature and to promote respect for all the elements comprising an ecosystem.

Article 72. Nature has the right to be restored. This restoration shall be apart from the obligation of the State and natural persons or legal entities to compensate individuals and communities that depend on affected natural systems.

In those cases of severe or permanent environmental impact, including those caused by the exploitation of nonrenewable natural resources, the State shall establish the most effective mechanisms to achieve the restoration and shall adopt adequate measures to eliminate or mitigate harmful environmental consequences.

Article 73. The State shall apply preventive and restrictive measures on activities that might lead to the extinction of species, the destruction of ecosystems and the permanent alteration of natural cycles.

The introduction of organisms and organic and inorganic material that might definitively alter the nation's genetic assets is forbidden.

Article 74. Persons, communities, peoples, and nations shall have the right to benefit from the environment and the natural wealth enabling them to enjoy the good way of living.

Environmental services shall not be subject to appropriation; their production, delivery, use and development shall be regulated by the State.

**Figure 3: Republic of Ecuador, 2008 Constitution, Chapter Seven - Rights of Nature.** Excerpted from the Republic of Ecuador Constitution of 2008. Accessed at: Political Database of the Americas  
<http://pdba.georgetown.edu/Constitutions/Ecuador/english08.html>

Finally, nature is branded as “national;” the State must defend the integrity of national ecosystems and forbids the introduction of organisms that might “alter the nation’s genetic

assets.” Later, in a section on biodiversity, the constitution declares Ecuador’s substantial “biodiversity and genetic heritage” to be a key “strategic sector.”<sup>5</sup> Additionally, “persons, communities, peoples, and nations” have a right to the “natural wealth” of the environment for them to achieve “good living;” these “environmental services” must be “regulated by the State” and may not be appropriated.

In each of its guises, “Pachamama,” “ecosystem,” and “genetic assets,” or political subject, scientific object, and economic resource, “nature” is presumed to be threatened by extractive industries. Ecology must be defended; the State must protect the integrity of the “nation’s genetic assets,” prohibit the “appropriation” of “collective knowledge” and “genetic resources,” and ban the use of genetically modified organisms. How should we make sense of this odd fusion of three seemingly incompatible epistemologies of nature?

In this dissertation, *Reconstituting the Nature of the Nation: Extractivism, Biodiversity, and the Rights of Nature in Ecuador*, I will demonstrate that this discursive dissonance in the constitution mirrors material conflicts over territories, ecologies, and resources by indigenous and environmental social movements, biologists, extractive industries, and the state. Discourses of the “rights of nature” and “biodiversity” in Ecuador reflect the overlapping and competing concerns of indigenous movements defending their national territories, biologists conserving biodiverse national parks, and extractive industries exploiting natural resources (including the expansion of the oil frontier in Yasuní National Park, attempts by biopharmaceutical companies to privatize indigenous medicinal knowledges, and the interests of agro-industries to introduce transgenic organisms into the national “genetic heritage”).

---

<sup>5</sup> Constitution of the Republic of Ecuador. 2008. Title VII, chapter two.

The tenure of President Rafael Correa (2007-2017) brought a decade of remarkable political stability to Ecuador.<sup>6</sup> The 1980s and 1990s had been defined by severe neoliberal austerity measures and a revolving door of political administrations; Ecuador had ten presidents in just over two decades. Marc Becker (2008, 2010, 2012) argues that this period of turmoil was a moment of resurgence for indigenous and environmental social movements in Ecuador. The 1990s saw four major “levantamientos” (marches by indigenous peoples to Quito, the capital), that paralyzed the country, prompted a rewriting of the constitution in 1998, and ousted president Jamil Mahuad in 2000 (Sawyer, 2004; Becker, 2012: 67-76). By the turn of the twenty-first century, Ecuador was witnessing the emergence of some of the continent’s strongest indigenous movements whose political platforms extolled “plurinationality” and “sumak kawsay” (Becker, 2010, 2012).

Plurinationality discourse articulates a defense of territory at the intersection of land, ethnicity and nationality. Anthropologists and historians have argued that plurinationality was a strategy to recognize the territorial rights and sovereignty of Ecuador’s diverse indigenous nations and Afro-Ecuadorian communities (Sawyer, 2004; Becker, 2010, 2012). While political opponents claimed that discourses of “plurinationality” would erode the sovereignty of the Ecuadorian State, plurinationalist activists countered with the argument that the unity of the State could only be achieved through the political recognition of Ecuador’s diverse nationalities (Becker, 2012: 142-6).

The slogan “sumak kawsay,” was first articulated in the early 2000s and the kichwa term (translated as “buen vivir” and “living well”), was quickly adopted by activists, intellectuals, and

---

<sup>6</sup> Correa held power over two terms and his party’s successor Lenin Moreno also won election. By contrast, the preceding decade saw eight presidents come and go.

politicians, as an alternative to development. For example, *sumak kawsay* became rallying cry for the Runa people of Sarayaku as they fiercely opposed oil drilling in their territories. *Sumak kawsay* seems to have been first used in its contemporary political sense by Carlos Viteri Gualinga in 2002. He argues that “*súmac káusai*,” comes from an Andean and Amazonian Runa/Kichwa “cosmovision” which he (and others) claim has no notion of “development.”<sup>7</sup> Ecuadorian intellectuals, members of Correa’s administration, and international observers hailed *sumak kawsay* as many things: an “ancestral philosophy” (Acosta, 2003); a form of “bio-socialism” that, “respects Nature,” and “subordinates economic development to social and ecological values as an alternative to capitalist development” (Ramirez, 2010); and even a form of “post-neoliberalism” (Radcliffe, 2001). One commentator argued that “*sumak kawsay*” had become a “conceptual weapon” and “an instrument for coalition building” used by indigenous social movements and ecologist NGOs to defend indigenous territories from extractive industries (Altmann, 2013). Critics I spoke with cynically dismissed *sumak kawsay* as a way for social movements to court NGO funding. Whether one embraces, or is skeptical of, *sumak kawsay* as an indigenous cosmovision or an alternative to development, its articulation in the constitution, along with plurinationalism, demonstrates the power of indigenous movements and environmentalists in the constituent assembly and represents an attempt to articulate alternatives to neoliberal capitalist modernity.

However, these struggles only intensified in the decade after the inclusion of the “rights of nature” into the 2008 constitution. In 2015, at the ANA’s tenth anniversary, seven years after the constitutional recognition of the rights of nature, Natalia Greene, one of the organizers of the

---

<sup>7</sup> Analogues exist in other Andean contexts like Bolivia’s *Suma Qumaña* in Aymara.

ANA, claimed that “extractivism is the biggest threat facing the country.”<sup>8</sup> While the election of President Correa in 2007 had seemed to promise an alternative to decades of neoliberalism, historian Marc Becker (2012:178) notes that “many indigenous militants viewed Correa’s government as highly contradictory,” because although his administration had incorporated symbolic demands like “plurinationalism” and “sumak kawsay” in the 2008 constitution, Correa had also permitted the expansion of mining industries and other extractive enterprises and refused to “grant communities prior and informed consent” before allowing mining activities.

When, in 2008, “anti-extractivist” movements like the ANA, indigenous federations, and ecologist groups like Acción Ecológica had pushed to include the “rights of nature” in Ecuador’s constitution, the moment seemed to represent a constitutional re-configuration of what Fernando Coronil terms the “metabolism between society and nature” (Coronil, 1997: 26-27). However, while President Correa had run on a platform supported by indigenous and environmental movements, once in power he followed in the footsteps of Venezuela’s resource-nationalist leader Hugo Chavez and harnessed Ecuador’s mineral wealth to an unprecedented degree in order to fund ambitious progressive social programs. In this sense, Correa’s political strategy is an example of what Coronil (1997: 5) terms the “magical state” in which “the state astonishes through the marvels of power” and uses oil to manufacture “dazzling development projects that engender collective fantasies of progress.” Thus, at the tenth anniversary of the ANA, the rights of nature were articulated not as a victory, but rather as a point of consensus amongst the movements resisting Correa’s twenty-first century socialist “neo-extractivismo” (as I discuss more in the next chapter). Thus, while the constitutional rights of nature emerged out of a

---

<sup>8</sup> “El extractivismo es la amenaza mas grande que vivimos en el país y no existe un buen vivir con minería” Accessed at: <http://anaecuador.blogspot.com/>

struggle over plurinationality, *sumak kawsay*, and territorial resource conflict, the 2008 constitution failed to resolve these disputes; rather, in many ways, the debate over the future of “extractivism,” “biodiversity,” and the “rights of nature” had only just begun.

### **Mestizo Translations and Modern Constitutions**

To open this dissertation, I want to examine two accounts of the constitutional rights of nature by prominent Ecuadorian thinkers Esperanza Martínez and Alberto Acosta. While anthropologists like Marisol de la Cadena have interpreted the rights of nature as “indigenous,” Ecuadorian ecologist and ANA member Esperanza Martínez Yanez argues that the rights of nature should be understood as “mestizo” with roots in indigenous cosmology as well as western science and jurisprudence. I interviewed Esperanza Martínez in 2015 about her role as an advisor to Alberto Acosta during his tenure as the president of the constituent assembly.<sup>9</sup> In our interview, Esperanza told me that the “rights of nature” was the result of an attempt to translate the campaign for a moratorium on oil drilling in Yasuní National Park into the constitution. She said that the strategy of indigenous and ecologist social movements was to “carry” (*llevar*) the idea of “leaving the oil in the soil” into the constituent assembly. However, Esperanza explained that “a constitution cannot have arguments of this sort,” meaning a “policy” (*política*) and not a general principle. To be incorporated into the constitution, the struggle over oil in Yasuní National Park had to be translated into a constitutional genre of universal and timeless value.

Martínez told me that many indigenous members of the constituent assembly were skeptical of the rights framework as a way to protect nature, saying “nature gives us rights, not

---

<sup>9</sup> Esperanza is the author of multiple books on the rights of nature (including Acosta & Martínez, 2011; Martínez, 2014) as well as one of the leading voices in the global “keep it in the ground” movement. She has been consulted and referenced by a number of authors as an expert on the rights of nature including Naomi Klein (2015) and Rob Nixon (2011).

the other way around.” She writes, “for Amerindian cultures, nature is that which gives rights to persons and not persons to nature” (Martinez, 2014). The paradox of the “rights of nature” is that while it recognizes the political subjectivity of cosmological figures like “Pachamama,” it translates these cosmologies into the peculiar framework of the historically situated liberal rights tradition. However, the “rights of nature” ruptures liberal traditions as well, since liberal thinkers like Locke and Rousseau, much like Ecuador’s indigenous intellectuals, thought that “rights” proceeded from nature to humans: rights were not given to nature but rather resulted from it. Thus conceptualizing the rights of nature as “mestizaje” urges us to confront the fact that this hybrid is neither simply “Indigenous,” nor “Western,” nor is it antithetical to the liberal values of the modern state. Rather, the rights of nature can be made to appear as an unexpected point of conjuncture between indigenous cosmology, western science and jurisprudence, and state and legal institutions.

In fact, Esperanza Martinez told me that the rights of nature was one of three different translations to incorporate the campaign to “keep the oil in the soil” into the constitution. “The best way to protect Yasuní, from our point of view” she told me, was: first “to give rights to Nature”; second, “to question the economic system” with “sumak kawsay” and third, to ensure “recognition that there are peoples [living] there” with “plurinationality.”<sup>10</sup> While informed by indigenous struggle, Esperanza Martinez encourages us to recognize the “rights of nature,”

---

<sup>10</sup> “The idea was to carry “the idea” of “leaving the oil in the soil” in the “constituyente” (constituent assembly). But a constitution cannot have arguments of this sort because they are more policies than general principles. Thus the best way to protect Yasuní, from our point of view was: strengthening the topic of nature, and thus it was decided to give rights to Nature, its own rights. To question the economic system, and for this reason we speak of sumak kawsay. The idea is that the economic model has to respect Nature. And the third point was plurinationality: it was to ensure recognition that there are peoples there.” (Interview with Esperanza Martínez, June 2015)

“sumak kawsay” and “plurinationality” as translations that are not just “indigenous” but “mestizo.” For Martinez, the rights of nature concept is the result of a translation at the intersection of colliding worlds, resulting in the production of something new, that cannot simply be understood as either indigenous or Western but rather as a mix of the two. She writes, “to recognize the rights of nature is to reiterate mestizaje, to recuperate elements of Western culture, on the one hand and indigenous cultures on the other.” The “rights of nature” is born from the “collision of cultures that has left deep wounds, and at the same time, [produced] new identities” (Martinez Yanez, 2014: 11).<sup>11</sup> Martinez’s thought is significant because it disrupts claims that the longue duree of western thought is opposed to indigenous knowledges like the rights of nature. Modernity and science are not, she argues, antithetical to the re-enchantment of the natural world’s political subjectivity. Rather the rights of nature signals a space of translation where “indigenous” and “western” thought can mingle and hybridize; the “rights of nature” results from a productive moment of translation between different epistemologies at the intersection of distinct realities. Written in the genre of constitutional universality the “mestizaje” of these slogans is not accidental but rather signals a point of consensus across diverse cosmologies required for the production of such a document. As a mestizo translation, the rights of nature’s universal appeal is rooted in its mixed genealogies. Crossing between two worlds that seem fundamentally opposed, the rights of nature is a product of mixing, synthesis, and hybridity.

---

<sup>11</sup> “Para las culturas amerindias, la naturaleza es la que otorga derechos a las personas y no las personas a la naturaleza. Reconocer derechos a la naturaleza es una reiteración del mestizaje, por una parte recupera elementos propios de la cultura occidental y por otra de las culturas indígenas, además nacen como resultado de un choque de culturas que ha dejado profundas heridas y, a la vez, nuevas identidades.” (Martínez Yanez, 2014:11)

The rights of nature also must be understood as emerging from a particular political context. In addition to stressing these moments of translation and processes of hybridization, Martinez is conscious of fact that these translations take place in historical moments of struggle. She writes that the “application of the rights of nature opens a way to put to the test both intercultural translation of indigenous knowledge in relation to nature ‘Pachamama’ as well as interdisciplinary knowledge that comes from the natural sciences.”<sup>12</sup> The rights of nature is the historical product of a moment of conflict in which diverse epistemologies were put into conversation by diverse actors in the context of political struggle. “Western” and “indigenous” cosmologies were intentionally synthesized and mobilized in the context of urgent material struggles.

The “rights of nature,” “sumak kawsay,” and “plurinationality” exemplify what anthropologist of Paraguay Mario Blaser (2010: 1) terms the “ontological conflict” at the heart of the “struggle to shape the global age as an alternative to, rather than a continuation of, modernity.”<sup>13</sup> He argues that these ontological conflicts “reveal that alternatives to modernity do exist... because they force modernity to reshape itself in order to deal with radical difference.”<sup>14</sup> Much like Marisol de la Cadena, Mario Blaser argues that these imaginations interrupt neoliberal

---

<sup>12</sup> “La aplicación de los derechos de la naturaleza abre un camino que pone a prueba tanto la traducción intercultural de los saberes indígenas en relación con la naturaleza ‘Pachamama,’ como la comprensión interdisciplinaria de conocimientos que provienen de las Ciencias Naturales” (Martínez Yanez, 2014: 11).

<sup>13</sup> Mario Blaser (2010: 2-3) offers a threefold definition of ontology: first, “assumptions... about what kind of things do or can exist”; second “ontologies... are shaped through the practices and interactions of both humans and nonhumans” thus “ontologies perform themselves into worlds” and third “ontologies manifest themselves into ‘stories’ in which the assumptions of what kinds of things and relations make up a given world are readily graspable.”

<sup>14</sup> “Ontological conflicts entail questions about what counts as knowledge and what different kinds of worlds different knowledge practices contribute to perform” (Blaser, 2010: 3).

modernity. As opposed to what Blaser terms the “authorized imaginations” of neoliberal modernity, I conceptualize the rights of nature as an example of an “*un*-authorized” imagination.

Aside from the success or failure of the constitutional rights of nature as environmental policy in the Ecuadorian context, Alberto Acosta (an Ecuadorian economist, ANA member and the president of the constituent assembly that authored the 2008 constitution) insists that the concept holds a wider significance. Acosta argues that the “rights of nature” holds the potential to resolve the central problem of modernity: a re-founding of the modern constitution.<sup>15</sup> Acosta places the “rights of nature” in historical continuity with earlier anti-colonial struggles for liberation. “Giving Rights to Nature,” he argues, means “politically encouraging its transition from object to subject, as part of a centenarian process of expansion of the rights-holding subjects.” Just as “every extension of rights was previously unthinkable” from the “emancipation of the slaves or the extension of rights to African Americans, to women, and to children,” all previously rejected as “absurd,” the “Rights of Nature” is similarly an effort to “rescue the ‘right to existence’ of human beings themselves.” Nature must be liberated from a “condition of ‘subject without rights’ or simple ‘object of property’” and be recognized as “a subject with rights.” This “struggle for liberation” must begin with the recognition that “the capitalist system will eventually destroy the biophysical conditions of existence”<sup>16</sup> (Acosta, 2010a: 18).

---

<sup>15</sup> In a footnote, Acosta (2010a) cites Bruno Latour (1993: 3) who writes “we are always attempting to retie the Gordian Knot by crisscrossing, as often as we have to, the divide that separates exact knowledge and the exercise of power – let us say nature and culture.” Acosta (2010a: 16) argues that “Latour’s input raises big debates in anthropology on the division between Nature in singular and cultures in plural. When both are combined, politics becomes current again.”

<sup>16</sup> “Giving Rights to Nature means... politically encouraging its transition from object to subject, as part of a centenarian process of expansion of the rights-holding subjects. Throughout legal history, every extension of rights was previously unthinkable. The emancipation of the

Acosta urges readers to place the rights of nature in historical continuity with other anti-colonial struggles for rights and liberation. In each historical moment, Acosta argues, “subjects without rights” emancipated themselves from being no more than “objects of property.” While the rights of nature are currently “unthinkable” he reminds the reader that, in a previous historical moment, he or she may not have been considered fully “human” but rather a subject without rights or simply an object of property. While Acosta acknowledges that while the rights of nature may still seem unthinkable, abolitionism, civil rights, and feminism were all once “unthinkable” in previous historical moments. Acosta raises important questions: How are the “rights of nature” being made “thinkable” in the current moment? Why are they voiced now?

Citing the work of anthropologist of science Bruno Latour, Alberto Acosta argues that the “rights of nature” hold the potential to re-unite Nature and Culture, divided in the modern constitution. “Instead of preserving the discrepancy between Nature and humans, their reunion must be encouraged, something along the lines of attempting to tie the Gordian knot” (Acosta, 2010a: 16).<sup>17</sup> Hybrids like the “rights of nature” and “earth beings” (like Pachamama) hold the potential to collapse the division of Nature and Culture at the heart of what Latour terms the “modern constitution.” The “modern world,” Latour argues, was created by the separation of the

---

slaves or the extension of rights to African Americans, to women and to children were once rejected for... being considered absurd. Central to the ‘Rights of Nature’ is to rescue the ‘right to existence’ of human beings themselves. The liberation of Nature from this condition of ‘subject without rights’ or simple ‘object of property’ requires a political effort to recognize it as a subject with rights. And this struggle for liberation begins by recognizing that the capitalist system will eventually destroy the biophysical conditions of existence” (Acosta, 2010a: 18).

<sup>17</sup> “La tarea parece simple, pero es en extremo compleja. En lugar de mantener el divorcio entre la Naturaleza y el ser humano, hay que propiciar su reencuentro, algo así como intentar atar el nudo gordiano roto por la fuerza de una concepción de vida depredadora y por cierto intolerable” (Acosta 2010a: 16)

natural and social orders, creating “a world in which the representation of things through the intermediary of the laboratory is forever dissociated from the representation of citizens through the intermediary of the social contract” (Latour, 1993: 27). The fact that “nature” is interchangeably articulated in Ecuador’s constitution as “Pachamama,” a political subject, and “biodiversity,” a scientific object and assemblage of national “genetic assets,” exemplifies the potential to collapse the division between Nature and Culture. Nature is simultaneously construed as singular and plural, subject and object, indigenous and scientific, life and commodity; the constitution is a reconstitution of both the “natural” and the “national.”

Acosta suggests that the “rights of nature” offers a counter-strategy to resist the threat that capitalism poses to “the biophysical conditions of existence.”<sup>18</sup> For Acosta, “nature” is more than a form of “scientific” classification, it is a historically constituted category through which power is exercised: science mobilized in the service of imperialism. Feminist science studies scholars, like Donna Haraway (1991, 1997), have explored how techno-scientific classifications

---

<sup>18</sup> The division of Nature from Culture that defines the modern constitution (Latour, 1993) enables forms of gender and racial oppression (as feminists like Donna Haraway (1991, 1997) have traced in early modern scientific practice) and also undergirds the productivity of capitalism (Patel and Moore, 2018). “Nature is not a thing but a strategy that allowed for the ethical and economic cheapening of life,” write economic historians Patel and Moore (2018, 53). “Cartesian dualism was and remains far more than a descriptive statement: it is a normative statement of how best to organize power and hierarchy, Human and Nature, Man and Woman, Colonizer and colonized.... Capitalism thrives not by destroying natures but by putting natures to work as cheaply as possible.” For Patel and Moore (27), “capital is the process by which money flows through nature” and “capitalism *is* an ecology - a set of relationships integrating power capital, nature” (Ibid, 38). Following their logic, one might see Ecuador’s Amazonian Yasuní National Park as a good example of a “frontier,” which they define as a crucial space where capitalism renders “nature” cheap and exploitable. In this way, “Nature is not a thing but a way of organizing life” (Ibid, 47) and “society” was “invented through the policing of a strict boundary with Nature” (Ibid, 46). Thus while “Capitalism didn’t invent the distinction [between Nature and Society... Its innovation was to turn this distinction into a hard-and-fast principle” (Ibid, 51); “The Cartesian revolution... shaped not only ways of thinking but also ways of conquering, commodifying, and living” (Ibid, 54).

of race and gender legitimated forms of colonial rule, domination, and oppression. For Acosta, the exploitation of nature follows a colonial logic and the rights of nature ground a de-colonial politics. Furthermore, as I will argue, contemporary conceptualizations of nature as “biodiversity” function as a mode of objectification that makes “resources” out of potential subjects with rights. In these conceptualizations, “nature” constitutes a condition of “rights-less-ness.” Thus, in addition to the “re-constitutions” of nature and nation in Ecuador’s 2008 constitution, the rights of nature prefigure another re-constitution: the collapse of the division of Nature/Culture at the heart the “modern constitution,” making the “Rights of Nature” relevant to debates in contemporary anthropology.

Combining Martinez’ insights on “mestizo translations” with Acosta’s theorization of broader significance for the “rights of nature,” *Reconstituting the Nature of the Nation: Extractivism, Biodiversity, and the Rights of Nature in Ecuador*, argues that Ecuador’s “rights of nature” are the result of a “mestizo” and “hybrid” translation at the intersection of three distinct epistemologies or ontologies of nature and culture:<sup>19</sup> 1) “extractivism,” as it is understood through a political ecological critique; 2) “biodiversity,” as the object of conservation biology and a focal point in discourses of sustainable development (within the context of the ongoing capitalization of the life sciences); and 3) a politics of indigeneity that articulates struggles over nature as conflicts over human terrains and knowledge. Struggles over extractivism, biodiversity loss, and climate change cannot be disentangled from questions of race and gender in the

---

<sup>19</sup> I invoke “mestizo” to acknowledge complex cultural dynamics at play here in Ecuador whose plurinationality includes diverse Andean and amazonian indigenous nations with many languages as well as Afro-Ecuadorian and diverse mestizo cultures. I use “hybrid” to acknowledge the diverse disciplinary, epistemological, and ontological knowledges and world-views that have influenced the rights of nature.

post-colonial nation-state. Thus, this dissertation is not just about the Ecuadorian constitutional “rights of nature” but rather the ongoing struggles to re-constitute nature and nation in the face of global ecological crises.

### **Overview of the Chapters**

Over sixteen months of fieldwork in 2015 and 2016 in sites across the Ecuadorian Andes and Amazon, I observed the efforts of Ecuadorian ecologists, biologists, and indigenous activists to “keep the oil in the soil” and conserve bio-diverse Yasuní National Park as part of a national effort to create a “post-oil Ecuador” and mount a global movement for climate justice. I plot the interconnections between the Ecuadorian ecologist NGO “Acción Ecológica,” the social movement “YASunidos,” the laboratory “Tiputini Biodiversity Station” located in the forests of the northern border of Yasuní National Park, and “Yakuchaski Warmikuna” a movement of indigenous women resisting oil extraction along the southern border of Yasuní National Park. In each site, I examine the production and translation of knowledge about nature/culture, the complex ecological webs of relationships implicating humans and non-humans. I explore the ways in which both activists and scientists act as political actors engaged in struggles over the future of the petro-state and as producers of knowledges about “extractivism” and “biodiversity.” I attempt to bridge the gap between social movement discourses about “extractivism,” scientific discourses of “biodiversity,” and indigenous discourses of “plurinationality” and “sumak kawsay.” I oscillate between analysis of the representation of “citizens” (and non-humans) in the 2008 constitution and the representation of “things” (and subjects) in a laboratory of biodiversity in order to trouble the separation between these spheres of politics and knowledge, the sovereignties of the plurinational state and the laboratory, and to question the nature of the political subjects found within each.

The first three chapters are a political anthropology of ecologist NGOs and social movements resisting “extractivism”: the large scale expansion of oil drilling and mining across Ecuador, Latin America, and the world. Chapter one, “¡Abajo el Extractivismo!: Plurinational Resistance and the Spirit of Extractivism,” explores my interlocutors concerns with “extractivism,” a neo-colonial form of extractive capitalism and racialized displacement, through the case of oil extraction in Ecuador. I examine three modes of communicating messages against extractivism: a “pluri-national” march of indigenous women opposing the expansion of the oil frontier in Amazonian Ecuador, an ayahuasca ceremony in which the “spirits” of the forest (and its oil) convey the importance of keeping the oil in the soil, and a film produced by environmental activists that depicts the ecological consequences of the extraction of oil from Amazonian Ecuador and its consumption abroad in the United States. I theorize “extractivism” and the modes of resistance engendered by extractive capitalism through the analytic of “transduction” a theoretical framework attentive to the ways in which energetic commodities, like oil, are displaced and converted from one state of being to another.

Chapter two, “‘Brooms of the World’: Advocacy Work across Ecologies of Oil,” is an ethnography of Acción Ecológica, one of the most prominent, and controversial, environmental NGOs in Ecuador that leads campaigns on a range of environmental issues. In Quito, Ecuador’s capital, I conducted participant observation, interviews, and oral histories to examine how the organization, which had begun in the 1980s as an NGO focused on the health of oil workers impacted by the environmental contamination by Texaco’s oil industry, had become recognized as a leader of the Ecuadorian environmental movement and of the transnational “keep it in the ground” campaign. I consider an art installation at the Acción Ecológica office called the “brooms of the world” that this women-led collective uses to symbolize their work in three ways:

first, the brooms represent their efforts to clean up the mess left behind by multinational extractive industries; second, they represent the political struggle as work, a form of gendered labor, and a kind of “wisdom” or mode of knowledge production; and third, the brooms symbolize the “Oilwatch” network, since the brooms came from the members of this global alliance of movements against oil extraction that was founded by Acción Ecológica, extends across the Global South, and launched the global campaign to “keep the oil in the soil.”

Chapter three, “‘May the Cry of the Jungle be Heard!’: Translations and Transductions of Carbon and Democracy,” is an ethnography of YASunidos, a national, mestizo youth movement that organized a petition to demand a “consulta popular” (a national popular referendum) on the question of an oil moratorium in the biodiverse core of Yasuní National Park. While their demand for a “consulta popular” was denied by the state, YASunidos succeeded in translating the question of oil drilling from a problem of development to a crisis of democracy. I examine how YASunidos’ creative and energetic street protests in front of government ministries “make the cry of the jungle heard” in Quito by inviting nonhumans into the public square in Quito. I also explore their continuing efforts to “Yasunizar el mundo” (Yasunify the world) extending their campaign to “keep the oil in the soil” globally, to resist the extraction of oil from Amazonian soils and the emission of carbon into the atmosphere.

The next three chapters are an anthropology of science investigation into the meanings of “biodiversity” from the perspective of the Tiputini Biodiversity Station (TBS), a laboratory on the northern border of Yasuní National Park. Chapter four, “‘A Huge Natural Laboratory’: the Bio-Sovereignties of Tiputini,” examines the socio-political context of the Tiputini Biodiversity Station. The Tiputini region is a site of multiple, contradictory, and competing “bio-sovereignties”: overlapping and incomplete regimes of bio-political governance by the

State, universities, oil companies, and indigenous Huaorani communities. Each regime of “bio-sovereignty” claims a sovereign right to the region and imagines the management of human (and non-human) populations differently. These multiple worlds exist in an uneasy tension that is managed through performative demands and exchanges. As one of these “bio-sovereignities,” the Tiputini Biodiversity Station governs the forest as a “huge natural laboratory” in contrast to the corporate governance of the “oil block” and the ancestral territory of the Huaorani.

Chapter five, “‘The Wealth of Species’: Imagining Biodiversity and its Loss,” explores the varied significations of “biodiversity.” I interview Kelly Swing, the founder of TBS, and consider his claims that biodiversity is the “vocabulary” of nature and a “wealth of species.” I examine “biodiversity” from three perspectives: first, a genealogy of the historical emergence of biodiversity discourse in conservation biology and sustainable development that facilitated the construction of a network of institutions like TBS; second, the potential value of biodiversity as an assemblage of genetic resources and a form of national patrimony within the broader context of the capitalization of the life sciences; and third, the problems of representation posed by conceptualizing the “loss” of biodiversity. I conclude that biodiversity must be considered not merely as an assemblage of encoded signs in need of translation, nor simply as a storehouse of genetic resources, but rather as a set of contingent bio-political-ecological relations between humans and non-humans.

Chapter six, “‘Eyes in the Forest’: an Ethnography of Biodiversity,” is an investigation of the research practices of biologist lab workers who act as caretakers of the laboratory and as translators of biodiversity. During my month-long stay at TBS I studied two research projects taking place at TBS: a transnational primatology project and a camera trap project. Biodiversity becomes knowable as a form of scientific knowledge through a systematized techno-scientific

apparatus or “tools of translation” that biologists used to extract signals of species from noisy Amazonian ecologies. I identify a dynamic in which their scientific practices consistently relegate the biophysical referents of biodiversity to a position of “noise” from which “signal” is extracted. While many scholars conceptualize noise as signal without signification, the noise of biodiversity is composed of an excess of signs in need of translation. I critically examine the ways that this techno-scientific apparatus erases noise and smoothes out the density of the biodiverse forest. While biodiversity can only be understood partially, ethnographic analysis of biodiversity helps bring into view the experiential realities of biodiverse ecologies that can be overlooked in the pursuit of specific signals.

The final section examines a plurinational indigenous movement against oil extraction along the southern border of Yasuní National Park. Chapter seven, “‘Yakuchaski Warmikuna’: Women Carrying Messages of Resistance through the Extractive Zone,” follows a plurinational movement of indigenous women travelling along the Curaray river basin in the wake of recent oil concessions granted to multinational oil companies by the Ecuadorian state. These “river messengers” organized the women of these communities to turn out in a march in Puyo to demonstrate resistance to oil extraction. As part of an NGO film crew, I documented the women’s efforts to carry messages of resistance and resilience, including the lessons learned from the ecological and cultural devastation caused by Texaco’s oil operations in northern Ecuador. Against the oil companies’ optimistic promises of development, this movement of indigenous women resists the extractive logics of state and corporate sacrifice by organizing political resistance and protest. Women play a critical role in organizing the defense of indigenous territories, and the river messengers argue that women’s bodies bear the brunt of the ecological cost of environmental pollution, arguing that “environmental pollution has a woman’s

face.” The women articulated “extractivism” to be a form of gendered violence, and emphasized the importance of women’s agency in global movements resisting climate change. This chapter examines the significance of gender in the resistance of indigenous and mestizo women in zones of racialized ecological sacrifice.

Anti-extractivist movements like those to “keep the oil in the soil” emerge not only from those concern by climate change in the Global North, but importantly also from the resistance of peoples living in extractive zones across the Global South: populations who have witnessed first hand the ecological assault of oil and mining industries. Transnational, anti-extractive, indigenous movements in Ecuador play a critical role in global “keep it in the ground” struggles. They seek to avoid catastrophic climate change and biodiversity loss by limiting the extraction and emission of hydrocarbon resources. Biodiversity is visualized as a resource by a colonial gaze of conservation that evacuates wilderness of people and populations as well as the ways technologies of seeing that render large territories exploitable as commodities. However, satellite mapping technologies are also mobilized by biologists navigating and mapping the dense jungle while extracting signals of species from the noise of biodiversity as well as by activists as a form of counter surveillance of the petro-state and extractive industries.

*Re-Constituting the Nature of the Nation* highlights the significance of the re-constitutions of nature by Ecuador’s “defenders of the rights of nature,” at the intersection of vernacular and expert knowledge, and links these gestures to analyses of the global climate justice movement. By tracing connections between my diverse interlocutors concerns with “extractivism,” “biodiversity,” and the rights of “Pachamama,” I argue that taking the “rights of nature” seriously requires an interdisciplinary mapping of the interconnections between economic and ecological circuits of energy extraction and consumption, modes of scientific

knowledge production, and questions of race and gender in the post-colonial nation-state.

Following the practices of my Yakuchaski compañeras described in chapter seven, my ethnography attempts to collect, carry, and rearticulate the messages that I received in Ecuador, from ecologists, activists, biologists, indigenous intellectuals, organizers, and the forest itself. In my translations between these worlds, I aim to aid the emergent projects, processes, and political imaginations of my interlocutors. Following Nancy Scheper-Hughes' (1995) "militant anthropology," my fieldwork takes an ethical stand on the question of oil and climate. During research I tried to be both an anthropologist and a compañero in struggle. This was facilitated by the fact that my ecologist interlocutors were quite often also academics or understood themselves to be organic intellectuals, and they frequently engaged me in theoretical debate as well as in political strategy sessions. Their theoretical frameworks and causes have greatly informed this project; I hope that my work furthers theirs.

### **The View from Ecuador: Ecological Research and Methodology**

On June 30, 2013, while conducting preliminary field research, I hiked Chimborazo, Ecuador's highest peak, located about a hundred miles south of Quito. Two hundred and eleven years earlier, on June 23, 1802, Alexander Humboldt became the first European to summit the mountain when it was still thought to be the tallest in the world.<sup>20</sup> His biographer, Andrea Wulf (2016) claims that as Humboldt "absorbed the view" from Chimborazo he "saw the Earth as one great living organism" and he imagined "a bold new vision of nature" as a "web of life." By

---

<sup>20</sup> In fact, due to the shape of the Earth and Chimborazo's equatorial position, its summit is arguably the furthest point from the Earth's core.

ascending the Andes, and climbing through layered “vegetation zones”<sup>21</sup> Humboldt developed a novel conception of nature as “a global force with corresponding climate zones across continents” (Wulf, 4).

Wulf contends that Humboldt viewed specimens, “not through the narrow categories of classification but as types according to their locations and climate”: he compared specimens from similar climate zones across disparate geographies. The view from Chimborazo,



**Figure 4: Mount Chimborazo. Photo by the author.**

Wulf argues, gave Humboldt a perspective that allowed him to radically re-imagine “nature” as simultaneously singular (one global organism), and plural (a web of lifeforms that spans the whole world).<sup>22</sup>

---

<sup>21</sup> These included “palms and humid bamboo forests” that bore “colorful orchids” to “conifers, oaks, alders” that similar to those in European forests, then “alpine plants” resembling those he had collected in Switzerland, and finally, “lichens” that reminded him of “specimens from the Arctic Circle” (Wulf, 4)

<sup>22</sup> I am skeptical of Wulf’s claim that Humboldt was the first person to summit Chimborazo. She writes “no one had come this high before, and no one had ever breathed such thin air” (Wulf, 2). In Wulf’s analysis, Humboldt’s gaze is also conspicuously gendered, “here was a man who viewed nature as a global force” (Wulf, 5).

Ecuador is once again a place where nature is being reimagined and reconstituted. Contemporary re-imaginings of nature are similarly singular, like “Pachamama,” and plural, like “biodiversity.” Interestingly, in both Humboldt’s time and our own, “nature” was re-imagined and re-constituted in reaction to the ecological threat posed by forms of extractive colonial capitalism<sup>23</sup>; in fact, Wulf argues that Humboldt was the “first scientist to talk about harmful human-induced climate change.”<sup>24</sup> In contemporary Ecuador, resistance to mega-mining and oil extraction have made Ecuadorian environmentalists leaders in the global struggle to curb biodiversity loss and halt climate change.

Just as the view from Chimborazo offered Humboldt a perspective from which to re-imagine the nature of the world, I argue that the view from Ecuador offers a “situated perspective” from which to consider the planet as both “Pachamama,” and as “biodiversity.” Anthropologist of science Donna Haraway (1991) urges anthropologists to acknowledge their position in relation to their research arguing that “the only way to find a larger vision *is to be*

---

<sup>23</sup> Wulf argues that Humboldt theorized the fragility of nature after witnessing “the devastating environmental effects of colonial plantations at Lake Valencia in Venezuela in 1800.” Humboldt recognized that because of the plantation agriculture the “water levels of the lake were falling” and that “deforestation” had “made the land barren.” Humboldt’s theory of nature as a “web of life” made visible its fragility. “Everything hangs together. If one thread is pulled, the whole tapestry may unravel” (Wulf, 5).

<sup>24</sup> Extrapolating from the site of the colonial plantation to the globe, Humboldt warned that, “humans were meddling with the climate” which “could have an unforeseeable impact on ‘future generations’” (Wulf, 5). Humboldt’s theorization of anthropogenic climate change in the site of the colonial plantation offers a productive counterpoint to Dipesh Chakrabarty’s (2009) suggestion that the Anthropocene began in 1784 with James Watt’s invention of the steam engine in England and the inception of the Industrial Revolution. While Chakrabarty’s genealogy traces the Anthropocene to technological innovation and the large-scale consumption and emission of carbon, Humboldt’s view traces anthropogenic change to the extractive logics of colonization: the colonial plantation as ecological catastrophe. Placing these two origin points into productive tension might help anthropologists better conceptualize the complex forms of human agency driving cascading ecological crises like climate change, biodiversity loss and mass extinction.

*somewhere in particular*” (Haraway, 1991: 196) Situated perspectives resist the logic of the “colonial gaze” or the objective view from nowhere. “Situated knowledges,” she writes (Ibid, 198) “require that the object of knowledge be pictured as an actor and agent,” not as “a resource” and never as a “slave to the master that closes off the dialectic in his unique agency and authorship of objective knowledge.” She concludes “the world neither speaks” nor is only “waiting to be read” but rather she insists that “the world encountered in knowledge projects is an active entity.” Haraway’s provocation prompts us to reconsider the active role of Chimborazo as a co-productive agent in the construction of Humboldt’s own knowledge project, as well as the role of Ecuador’s mountains, forests, and rivers in his re-imagination and reconstitution of nature. Situating knowledge within the “view from Ecuador” helps resist what Macarena Gomez-Barris (2017) terms “the extractive view” that envisions the world as “a corporate bio-territory.” For decades, Ecuadorians have been offering the world radical proposals to create alternatives to “modernity.” Many of my interlocutors articulate themselves to be messengers and translators, carrying messages that emerge from Ecuadorian mountains, forests and rivers. This project is an attempt to engage these situated knowledges.

Humboldt’s view from Chimborazo might also be productively conceptualized as an example of what Timothy Choy, an anthropologist of environmental movements in Hong Kong, terms “ecologies of comparison.” In “ecological research” Choy (2011: 12) argues, “the relations among and between different forms of life are not simply ‘out there’ to be discovered, nor are their spatial or temporal scales self-evident. They all must be posited and established through scientific (ecological) research.” For Choy, (11-12) there are three distinct senses of “ecology” that are intertwined: first, ecology as a synonym for environmentalist movements; second, ecology as “a branch of the life sciences concerned with organisms and their environs;” and

third, ecology as “an emergent web of relationships among constitutive and constituting parts, such as when one shifts attention from a particular organism to the entire ecology of which it is a part” in which “ecology glosses roughly as ecosystem.” I similarly plot connections between my field sites across Ecuador through ecological research. In an attempt to “re-tie the Gordian Knot” I move back and forth across the geographic and epistemological distance between social movements and the laboratory, between political activists and biologists to trace the similarities and differences between my diverse subjects’ knowledge projects and to reconnect the re-constitution of “nature” as a political subject in the social contract with the production of scientific knowledge of “biodiversity” in the laboratory.

I conceptualize my ethnographic research methodology through metaphors that I picked up from my interlocutors. At Acción Ecológica, my compañeras represented their labors through the metaphor of the “Brooms of the World” a symbol of women’s labor, magic, and power. Just as a broom’s bristles are composed of stiff fibers tied to a central shaft, their efforts have assembled geographically dispersed movements around a common cause: through the clustering, tying, and organization of threads to leveraging power.

Kelly Swing, the founder of the Tiputini Biodiversity Station, describes “biodiversity” as a “tapestry” through which “nature weaves species.” He laments that his work, and that of many conservation biologists, is increasingly becoming one of reading “threadbare” tapestries that are “irreparable even for the most capable weaver, the last remnants serving essentially no function whatsoever” (Swing 2016: vii). Rather than simply tracing a network, I have begun to think of my research as a process of stitching myself through the tapestries woven by my interlocutors, in an attempt to strengthen them.

The women of Yakuchaski consider themselves to be “messengers,” traveling up and down rivers to “carry,” “collect,” “reconsider,” and “re-articulate” messages and to reach communities as “a form of consultation” and a way to convey “our worries regarding extractivist oil politics.” I have similarly come to conceptualize my research as the collection, consideration, and transmission of messages, to dispersed communities, in order to convey my worries, and those of my interlocutors, regarding extractivist oil politics.

Please note that in the work that follows I have changed the names of individuals with the exception of those persons who are well-known public individuals and/or spokespeople for their organizations and causes in public spaces and mass media outlets.

## **Part I. Equator**

## Chapter One

### “¡Abajo el Extractivismo!”: Plurinational Resistance and the Spirit of Extractivism



Figure 5: Display of posters at the march of indigenous women in Puyo, March 8, 2016. Top center poster reads: “PASTAZA ENDANGERED BY EXTRACTIVIST POLICIES.”

In this chapter, I examine three modes of communicating messages against “extractivism” in Ecuador. My indigenous, mestizo, social movement, and ecologist interlocutors articulate “extractivism” to be a colonial form of capitalism that displaces indigenous peoples as it converts natural resources into global commodities. Theorists have analyzed “extractivism” as a colonial economic system, a form of racialized displacement, a gaze that targets “natural resources” through technologies of surveillance, and a process of extraction, transformation, transportation, and consumption that converts local ecosystems into global commodities.

“Extractivism” is often conceptualized broadly as a logic of resource extraction that includes numerous industries and commodities, from mining, agriculture, and water, to genetic resources and environmental services. In this chapter, I am concerned with oil.

The study of oil, as an instance of extractivism, should be attentive to at least three questions: how oil is a *national* commodity that provokes conflicts over *territory* and *identity*; the nature of oil’s *materiality* and the *mysticism* of its power; and the ways in which oil articulates with the *technical ensembles* and *infrastructures of transnational capitalism*.<sup>1</sup> Thus, in this chapter, I explore the problem of “extractivism” through three ethnographic cases. First, I examine a protest by a plurinational movement of indigenous women against oil extraction in Amazonian Ecuador. Resource extraction has provoked unprecedented resistance by Ecuadorian indigenous movements and inspired plurinational alliances between indigenous nations

---

<sup>1</sup> Here I take inspiration from geographer and oil theorist Michael Watts (2001) who argues that oil has a number of consequences that he explores in detail. However, in his analysis, four themes recur across these categories: territory, nation, identity, and sovereignty; the materiality and magic of oil (its ontology); and the ways in which oil inevitably intersects with the forces of transnational capitalism. According to Watts, the effects of oil include: 1) the “*Petro-state*” meaning “State landed property necessarily converts oil into a theatre of struggle in which its national qualities are paramount”; 2) the problem of “*Petro-imperialism*,” in which “oil is unavoidably an engagement with some of the largest and most powerful forces of transnational capital” as well as “a national project” in which modernity, development and or civilization are purchased at the expense of sovereignty, autonomy, independence, tradition”; 3) the “*territorial quality of oil*” in which on the one hand “wealth literally flows out—it is lost value that flows to the horizon of local territories” and, on the other oil is a “subterranean threat to the environment”; 4) “*Hyper-centralization*” in which state power is organized around “oil rents” which “irrigate the body politic as a way of purchasing some form of state legitimacy or quiescence”; 5) “*Petro-Magic*” a situation in which “oil creates a world of illusion. People become wealthy without effort creating fabulous waste and fiscal madness” since “money is ephemeral, here today, gone tomorrow”; 6) the “*Valorization of Space/Territory*” since oil is “unavoidably a national commodity (a patrimony)” and “oil production [often] happens to occur on lands populated by minorities, territorial disputes are inevitably about identity, rights and citizenship”; 7) the problem of “*Monoeconomy/Monopolity*” in which oil produces the “petrol-ization” of society. “The political economy becomes a sort of company town, and oil rents reinforce particular patterns of class power” (Watts, 2001: 204-5).

defending their territorial and resource sovereignty. Second, I question the ontology of oil by analyzing the dissonance between my interlocutors' articulations of oil as "spirit" and "blood" and oil scholars' theories of oil as "magic," "resource," "money" and "energy." A Sápara shaman urges us to recognize oil as "spirit:" he understands it as agent and life-force intimately connected to territory and ecology. My interlocutors at Acción Ecológica describe oil as the "blood of capitalism," a metaphor that evokes the materiality, territoriality, and liveliness of oil as it circulates through the global capitalist ecology. How, I ask, do we reconcile these diverse ontologies of oil? Third, I analyze a documentary film produced as a collaboration between US filmmakers, Sápara and Sarayaku activists, and the environmental NGO "Amazon Watch," that follows the flow of oil from its extraction out of Ecuadorian soil to its injection into the global economy. By making the ecological and cultural consequences of oil extraction and consumption visible, the film attempts to break the "petro-silence" (Hughes, 2017) surrounding oil: the idea that oil seems to be both invisible and inevitable.

Extractivism, in this case, manifests as a continual "transduction" of oil from one ontology to another. This process transmutes oil from "spirit" into "commodity" in three phases: first, its imagination as a "resource"; second, its extraction, de-territorialization, and displacement; and finally its abstraction into "energy" and "money." As oil is extracted from Amazonian soils, it is divorced from its ecological and cultural situation in indigenous territories, and enters the global economy as interchangeable units of money, and as universally calculable units of "energy" (a concept that only became "thinkable" in the fossil-fueled Industrial Revolution). Since "transduction" describes the way energy is displaced, converted from one form into another, and abstracted into universal units, it offers a theoretical framework well suited to the study of "extractivism." Transduction makes processes of de-localization,

transformation, and translation visible at the limit of the material and the semiotic (Helmreich, 2015).

Both “extractivism” and the modes of resistance provoked by extractive capitalism can be conceptualized as global transductive processes. My research extends the utility of “transduction” from its contemporary usage in anthropology as a way of thinking about translation, to an analytic framework for conceptualizing the complex articulations between transnational, hydrocarbon-powered, technical ensembles, and global political – economic – ecological relations. Transduction makes visible the ways in which energetic commodities and material forms of power are transformed into infrastructures of thermodynamic power and institutions of political power. Conceptualizing “extractivism” transductively reveals the ways in which Ecuadorian oil helps *power* the technical ensembles of global capitalism as it is converted from the “spirit” or “life-force” of biodiverse ecologies into the money, fuel, and energy circulating through the global economy.

### **Oil, Territory, and the (Pluri-)Nation: Indigenous Women’s March**

On March 8 2016, the International Day of Women, hundreds of indigenous women marched through the streets of Puyo, the capital of Pastaza province in Amazonian Ecuador, to protest recent oil concessions along the southern border of Yasuní National Park. The women were a powerful mass: they forced traffic aside as they marched, chanted, danced, and drummed down the street. In front of the Ministry of Environment they shouted: “*¡Arriba la mujer!; ¡Abajo el extractivismo!*” (“*Up with women!; Down with extractivism!*”).



**Figure 6: Indigenous women march through the streets of Puyo.**

Women representing numerous indigenous nations had travelled across Ecuador and around the world to attend. Delegations carried banners that indicated their nation, territory, or community including: the Achuar; the Huaorani; the Sapara; the Shuar; the Shivia; and the communities of Allishungo, Arajuno, the Curaray river, Montalvo, Pacayacu, and Sarayaku. One banner depicted Berta Cáceras, the Honduran “defender of the rights of nature and indigenous peoples,” who had been assassinated five days earlier. A delegate from the Ponca nation in Oklahoma had come in solidarity to speak out against fracking in North America.

Alicia Cahuiya Iteca, the founder of the Waorani Women’s Association of Amazonian Ecuador (AMWE) and a former vice president of the Amazonian Waorani Nationality of Ecuador, declared that “today, most of Yasuni,” where she was born and raised, “is

contaminated”; in response women were proclaiming their rights because pollution “affects us.” She lamented that “our brothers,” the Taromenane indigenous peoples living in voluntary isolation along Yasuní National Park’s new oil frontier, “are suffering,” and added that “we want the Taromenane family and the Waorani families to live together again.” While she acknowledged that some of “the men have said, ‘we will negotiate,’” she asserted that “the women, *we totally*



**Figure 7: Alicia Cahuiya Iteca. Founder of the Waorani Women’s Association of Amazonian Ecuador (AMWE) and a former vice president of the Amazonian Waorani Nationality of Ecuador.**

*reject it!*” and declared that “all the women of Pastaza, of Orellana, of Napo” who had assembled “disagree with new [oil] explorations.” This movement of indigenous women marched so that “the next generation does not suffer as we have suffered.” She noted that her grandmother had inspired her activism explaining that “the life of our grandparents was healthy and free.” In conclusion, she proclaimed “we will not let the state cheat us” and “that’s why we are on the front lines. Let’s not be afraid compañeras. If they come, as they say, with weapons, we can equip our weapons to defend our rights because it is our home... I am not one woman, we are all together in defense.”

Oil is “unavoidably a national commodity,” argues Michael Watts (1999: 7-8), and often provokes “territorial disputes” about “identity, rights and citizenship” against nation-states as

well as against “the largest and most powerful forces of transnational capital.” However, as this march of indigenous women against oil extraction in Pastaza demonstrates, hydrocarbon extraction is also inspiring “pluri-national” alliances and transnational resistance movements. In addition, Alicia Cahuiya Iteca’s speech highlights the fact that indigenous women are critical agents in the formation of alliances across ethnic boundaries, national lines, and state borders (I explore the central role of women in forming transnational and plurinational alliances in chapters two and seven). In recent years, many First-Nations peoples around the globe have been forming a global campaign to “keep it in the ground” often by using environmental NGOs and “transnational advocacy networks” (Keck and Sikkink, 1998) as social movement “mobilizing structures” (McAdam, Tarrow, and Tilly, 2001). Just as anti-fracking activists had travelled from Oklahoma to Amazonian Ecuador, Ecuadorian activists have travelled in solidarity to protest with the Standing Rock Sioux. Resistance against “extractivism” provides a conceptual framework that imagines extractive capitalism simultaneously locally and globally, creating opportunities for transnational solidarity.

What I find novel about the situation in Ecuador is not the logic, strategy, or material effects of the oil industry, but rather, the nature of “anti-extractivist” resistance. My research does not interrogate the intricate dynamics of the oil industry and its impacts on indigenous communities in Ecuador (already well-documented by anthropologists like Susana Sawyer and Michael Cepek), nor will I argue for the specificities of oil extraction in Ecuador (which Michael Watts has productively compared to the situation in Nigeria and which my “Oilwatch” interlocutors insist is typical of, and consistent with, the situation of other tropical, oil-exporting countries across the Global South, as I discuss in chapter two). Rather, Ecuadorian “anti-extractivist” movements have produced a number of unique, exciting, alternative

imaginings to the hegemony of extractive capitalism: from the “rights of nature” as a way to rupture the modernist division of nature and culture (as I discuss in the introduction), to a movement demanding a popular referendum to end oil extraction and the petro-state as a form of post-oil democracy (as I discuss in chapter three) to the pluri-national alliances of indigenous nations across ethnic lines and state borders (that I discuss here and in chapter seven).

The ethnographies of anthropologists like Susana Sawyer and Michael Cepek have well documented the strategies of division sown by oil companies and modes of resistance by indigenous federations (Sawyer, 2004), the ways indigenous communities have used national identity and NGO institutions to assert novel claims to territorial sovereignty (Cepek, 2012), and the ambiguous realities of living in now-toxic oil contaminated ecologies (Cepek, 2018).

Texaco discovered the first major Ecuadorian oil reserve in 1967, and Ecuador’s military dictatorship became heavily dependent upon oil revenues which supplied half of the country’s budget in the 1970s. Oil paved the road to a kind of modernization, with oil revenues paying for infrastructure projects and social services. However, instead of producing prosperity for most Ecuadorians, oil “wealth” created crippling debt, income inequality, political instability and devastating pollution.

For twenty-eight years (1964-1992), Texaco drilled in the northern Ecuadorian Amazon and ignored environmental regulations in order to cut production costs (Sawyer, 2004: 100). With the falling price of oil in the 1980s, Ecuador became heavily indebted, and the government turned to more aggressive oil exploitation as the solution. Texaco’s escalating oil extraction devastated local communities and forest ecologies in and around Lago Agrio. The company detonated dynamite across inhabited territories in its search for oil; seismic exploration entailed “cutting a grid of thousands of kilometers of cleared swaths” across the forest, “drilling... holes

every hundred meters... and detonating ten to twenty kilos of dynamite in every hole” (Sawyer, 65). Texaco’s Trans-Andean pipeline spilled “16.8 million gallons of crude... one and a half times the amount spilled by the Exxon Valdez” (Sawyer, 101). Texaco left crude oil and industrial solvents in open waste pits and burned-off excess oil, creating “black rain.” Texaco’s use of these practices, which were illegal in the US, increased revenues for the company by billions of dollars.

Environmental contamination has affected all forms of life in the northern Ecuadorian Amazon as industrial wastes bio-accumulate. Acción Ecológica, an Ecuadorian human rights and environmental NGO, has documented elevated rates of cancer, reproductive disorders and skin and intestinal diseases (Sawyer, 103). After a protracted campaign and lawsuit, Ecuadorian courts ruled in 2011 that Chevron (which had acquired Texaco) owed over \$18 billion in reparations to affected communities, a sum that the multinational still refuses to pay. In 2018, an international tribunal in the Hague ruled in favor of Chevron, absolving the multinational of responsibility and “leaving the crime unpunished forever,” according to Pablo Fajardo, one of the lawyers representing Ecuadorian communities (BBC, 2018).

Oil extraction displaced communities and spurred resistance movements against the corporate intrusions into indigenous territories. In her ethnography *Crude Chronicles*, Susana Sawyer (2004: 17) argues that oil “oozes widely” into all realms in Ecuador: from the country’s indebted position in global trade; to legacies of ecological contamination by transnational corporations; to histories of indigenous political struggle over the nature of petro-state and pluri-nation. The Runa community of Sarayaku confiscated a corporate delegation’s helicopter in 1989 and closed the air strip, forcing oil company officials to negotiate for twelve days in response to corporate attempts to “buy their consent” (Sawyer, 64). The Cofán community of

Zábalo was created when residents fled upriver from an area near one of Texaco's most productive wells (Cepek, 2012).

“Pluri-nationality” has been the most effective strategy mobilized by Ecuadorian indigenous federations in their efforts to claim rights over territory and resources through ethnicity in Ecuador (Sawyer, 2004; Cepek, 2012; Becker, 2012). As Sawyer documents, “pluri-nationality” discourse has been used to resist attempts by multinational corporations to divide indigenous communities and nations by buying the consent of individual landowners. In her ethnography, Sawyer documented how indigenous activists contested oil company executives' use of a discourse of individual rights with strategic deployments of discourses of collective rights like “nation” and “territory.” Similarly, Michael Cepek (2012: 110) argues, in his ethnography *A Future for Amazonia*, that the Cofán successfully won territorial sovereignty by designating their land an “ecological reserve” for which their “nation” is the legally empowered agent. As historian Marc Becker (2012) notes in *¡Pachakutik!: Indigenous Movements and Electoral Politics in Ecuador*, strategies of division have spurred collective pluri-national indigenous movements that organize across ethnic and national lines and between peoples with diverse cultures, languages and ecosystems in defense of their territorial rights.

“Plurinational” discourse not only re-imagines the Ecuadorian nation-state as plural, it buttresses a strategic, practical politics: an assertion of the rights of human collectives over territorial resources. “Plurinationality” is thus more than a disagreement over a singular or plural imagination of the nation-state; rather, rhetorical struggles over “pluri-nationalism” reflect material struggles over the territorial sovereignty of indigenous nationalities, their control over natural resources like oil, and their concerns over the ecological impacts of extractive industries. Claims to plurinationality by indigenous nations and Afro-Ecuadorian communities articulate

community territorial defense at the intersection of land, ethnicity and nationality. Opponents of plurinationality claimed that the concept would erode the sovereignty of the Ecuadorian State, while pluri-nationalists responded that the unity of the state depends upon the political recognition of Ecuador's diverse nationalities (Becker, 2012 142-6). In retrospect, it seems that pluri-national movements have managed to unite diverse Ecuadorian communities in the face of a common threat that they have labelled "extractivism."

What is "extractivism"? While extractivism is often conceptualized in terms of mining, my Ecuadorian interlocutors at the "Asamblea Nacional Ambiental" (the National Environmental Assembly or "ANA"), diagnosed "extractivism" more broadly, its manifestations ranging from hydroelectric dams and the exploitation of water resources, to agro-industry and the use of transgenic crops (as I noted in the introduction). A film made by ANA described "extractivism" as a colonial condition of exploitation and enslavement; a problem of capitalism and racialized displacement.<sup>2</sup> "Extractivism" was articulated to be a central concern for diverse ecological movements; in all instances, it represented the threat of colonization and posed a crisis of democracy.

"Extractivism" can be understood historically in three moments: a colonial legacy, a neoliberal transformation, and a neo-extractivist resurgence. Arturo Escobar (2008: 72-3) traces the "extractive economic model" to the "seventeenth century expansion of the gold mining frontier" in South America. He conceptualizes extractivism as a system of production that depends "on the exploitation of natural resources and the exportation of the surplus, so that the benefits of the economic activity do not stay in the region." A key characteristic of extractivism

---

<sup>2</sup> Film produced by the ANA accessed at: [https://www.youtube.com/watch?v=bhibMdOIw\\_s](https://www.youtube.com/watch?v=bhibMdOIw_s)

in South America is the violent displacement of local and indigenous peoples, a condition which William Sacher (2015), a theorist of mega-mining in Ecuador, has compared to David Harvey's (2003, 2007) theory of "accumulation by dispossession." A number of Latin American theorists of extractivism are particularly concerned with what Uruguayan scholar Eduardo Gudynas (2010, 2011) has labelled "neo-extractivism," a condition in which "the state captures a greater proportion of the surplus," which is then designated for social programs to shore up state legitimacy.

In Ecuador, "neo-extractivism," in the name of socialist development, has been viewed skeptically by indigenous and ecologist movements whose campaigns for "pluri-nationality," "sumak kawsay," and the "Rights of Nature" began as movements of resistance to the expansion of extractive industries in the neoliberal era. Ecuador's President Rafael Correa has followed the "resource nationalism" of Bolivia's Evo Morales and Venezuela's Hugo Chavez, a position that was "willing to sacrifice local or indigenous concerns if doing so would benefit the country as a whole" (Becker, 2012: 179). ANA members, and Ecuadorian theorists of "extractivism," Alberto Acosta and Esperanza Martinez acknowledge that while, in some ways, Correa's socialist policy of "neo-extractivism," can be considered an improvement from neoliberal extractivism, since oil rents helped to finance massive social programs rather than pay for external debt and enrich elites, they argue that in either case it is, "impossible to hide the continuation of colonial legacies" (Acosta, et al. 2013).

Scholars skeptical of the theoretical framework of "extractivism," might wonder how this conceptualization is different than theories of the "oil curse": the idea that, as oil theorist Timothy Mitchell (2013: 1) puts it, "countries that depend upon petroleum reserves for a large part of their earnings from exports tend to be less democratic." According to this theory, oil rents

corrupt state officials who buy the consent of the people through forms of “modernization”: acts that, Francisco Coronil claims, make the state appear to be “magical.” However, Mitchell criticizes those who focus on the “oil curse,” arguing that these theorists “have little to say about the nature of oil and how it is produced, distributed, and used. They discuss not the oil but the money – the income that accrues after the petroleum is converted into government revenue and private wealth.” These explanations address neither how “oil is extracted, processed, shipped and consumed,” nor the “powers of oil as a concentrated source of energy,” nor “the apparatus that turns fuel into forms of affluence and power.” Rather, these critiques “treat the oil curse as an affliction only of the governments that depend upon its income, not of the processes by which a wider world obtains the energy that drives its material and technical life” (Ibid: 1-2). The theoretical framework of extractivism emerging from Latin American contexts addresses these oversights; it is attentive to how oil is extracted, the materiality of the substance, the “apparatus that turns fuel into forms of affluence and power” as well as the consumption by the “wider world” that “obtains the energy that drives its material and technical life.” Rather than conceptualize the “oil curse” as a problem of the “petro-state,” analyses of extractivism are concerned with the cultural and ecological consequences of resource extraction, global circuits of trade, and post-colonial relations of material and political power.

The most useful theorisation of “extractivism” is Macarena Gómez-Barris’ *The Extractive Zone* (2017): like Escobar, she acknowledges the long colonial history of extractive capitalism; like Gudynas, Acosta, and Martinez, she attends to the particularities of contemporary manifestations of extractivism; like William Sacher, she theorizes the racialized displacements caused by extractive industries; and like my Ecuadorian interlocutors at the ANA,

her conceptualization of extractivism is expansive, ranging from mining, to agribusiness, and the control of water.

Macarena Gómez-Barris argues that, “extractivism” is a form of colonial capitalism defined by the racialized dispossession, accumulation, and displacement of land, resources and people from biodiverse indigenous territories in order to create novel commodities that move from the Global South to the Global North. “*Extractivismo*, as extractive capitalism is known in the Américas,” Gómez-Barris (2017, xvii) explains, “indicates an economic system that engages in thefts, borrowings, and forced removals, violently reorganizing social life as well as the land by thieving resources from indigenous and afro descendent territories.” In its “longue durée” Gómez-Barris argues, the “extractive global economy” was “installed by colonial capitalism in the 1500s” to convert “natural resources such as silver, water, timber, rubber, and petroleum into global commodities.” However, “extractivism” extends into what she terms the “afterlives of colonial capitalism” including the “forty-year neoliberal privatization and deregulation process” and the recent “rise and fall of progressive states” in Latin America.

Additionally, Gómez-Barris’ conceptualization of extractivism is novel in its theorization of the role of visibility and digital technology. The “extractive zone,” Gómez-Barris argues, refers to the “colonial paradigm worldview,” including the “technologies that mark out regions of high biodiversity in order to reduce life to capitalist resource conversion” (Gómez Barris, xvi). Unlike most analyses of extractivism, Gómez-Barris is attentive to the significance of the

integration of new digital technologies into the colonial gaze as well as “biodiversity” as a novel target of the “extractive view.”<sup>3</sup>

The “extractive view,” Gómez-Barris argues, makes natural resources “hypervisible,” through the application of novel satellite-mapping technologies and data mining. It renders “native populations invisible” to facilitate the theft of territorial resources, and it conceals the agency of the state and multinational corporations. Extractivism’s “digital phase” has amplified the consequences of the “colonial visual regime” by normalizing “an extractive planetary view” that facilitates continued “capitalist expansion” into “resource rich indigenous territories” (Ibid, 6). The agendas of states and corporations blend as they coordinate to use “reconnaissance systems to collect large data sets, acquire surface readings of the earth, and produce high resolution maps that are deployed to build extractive infrastructures on the ground” (Ibid, 7). Thus, she argues “surveillance,” “data mining,” and “mapping” function together to “extinguish Indigenous and rural communities” (Ibid, 7). The extractive view hyper-focuses on “natural resources,” occludes indigenous peoples and their ecosystems, and conceals corporate-state agency.

While compelling, some specificities, such as how the hegemony of the “extractive view” has been achieved, remain unclear in Gómez-Barris’ analysis. The extractive view, she explains,

---

<sup>3</sup> The exact relationship of technology, the “extractive view” and regions of “high biodiversity” in zones of neo-extractivism, is a bit unclear in Gómez-Barris’ analysis. By which processes are lifeforms are converted into resources and commodities?; I consider this relation of extractivism to biodiversity more in part three, “Jungle.” While “the colonial project” aimed to “render territories and peoples extractible,” through “a matrix of symbolic, physical, and representational violence.” Gomez Barris (2017: 5) argues that “the extractive view sees territories as commodities” and renders “land for the taking” by “devalorizing the hidden worlds” at “the nexus of human and nonhuman multiplicity.” Like the colonial gaze, the extractive view “facilitates the re-organization of territories, populations, and plant and animal life into extractible data and natural resources for material and immaterial accumulation” (Ibid, 5).

simultaneously targets “biodiverse ecosystems” but overlooks “biodiversity;” it makes “natural deposits of human and nonhuman life transparent” but it renders indigenous peoples “invisible” (Ibid, 8). Extractive industries achieve unprecedented hegemony through visual technologies that conceal the agency of both corporations and states. In part three, “Jungle,” I examine more closely the process by which biodiversity is paradoxically targeted and overlooked by the “extractive view.” Biodiversity is often included in the calculus of “neo-extractivist” capital accumulation only to be devalued as unprofitable in comparison to resources like oil. Additionally, “biodiversity” operates as a discursive framework that allows the “extractive view” to imagine landscapes, like Yasuní National Park, as assemblages of “natural resources” and not as “anthropogenic forests” (Rival, 2002): human geographies that are populated and shaped by peoples like the Huaorani.

Conceptualizations of “life-as-biodiversity” constitute an intermediary moment in a process by which “lifeforms” are converted into “economic resources” and “global commodities.” “Biodiversity” as a resource often geographically overlaps with other “natural resources,” such as oil, that offer better profit margins. Tiputini Biodiversity Station founder and biologist Kelly Swing told me that he had hoped that “biodiversity” could offer an economic alternative to hydrocarbon extraction. However, it seems that these attempts to preserve “biodiversity-as-resource” may have inadvertently rendered “biodiversity” commensurable with, and inevitably less profitable than, the hydrocarbon resources that President Correa ultimately decided to exploit when he cancelled the “Yasuní-ITT initiative” (as I detail in chapter three). Thus, I suspect that valuations of “life-as-biodiversity” may have ironically driven the calculus of the “extractive view” to exploit oil rather than “biodiversity” even as the concept was intended to offer a “sustainable” alternative to extractive capitalism.

Finally, Macarena Gómez-Barris' theorization of the extractive view offers grounds for a critique of the "Anthropocene." The "Anthropocene," she argues, is not a problem of "human nature" but rather "colonial capitalism," which she asserts, is "the main catastrophic event that has gobbled up the planet's resources, discursively constructing racialized bodies within geographies of difference, systematically destroying through dispossession, enslavement, and then producing the planet as corporate bio-territory" (Ibid, 4). From the perspective of the "extractive view," the world is a corporate bio-property. For Gomez-Barris, the corporations of neo-colonial capitalism are the primary agent driving the ecological crises of the Anthropocene.<sup>4</sup> This critique problematizes simplistic conceptualizations of human agency as the root of Anthropogenic crises. However, it also offers a political position from which to stand in solidarity with anti-extractivist movements. Rather than imagine the apocalypse as a future imminent collapse, Gomez-Barris posits that, "we are already on the other side of colonial catastrophe" (Ibid, 4). My indigenous, mestizo, social movement and ecologist interlocutors who declare "¡abajo el extractivismo!" offer imaginations like the "Rights of Nature" as a weapon against the worst consequences of this ongoing, unfolding catastrophe.

The study of oil has particular relevance in the study of what some scholars have termed the "Capitalocene," since the scale and speed of all of the global anthropogenic ecological transformations currently underway have depended upon hydrocarbons and petrochemicals.<sup>5</sup> All

---

<sup>4</sup> A position also supported by theorists of the role of the corporation in climate change Christopher Wright and Daniel Nyberg (2015).

<sup>5</sup> Raj Patel and Jason Moore (2018), for example, argue that "cheap energy" is a crucial part of the "Capitalocene." However, the authors seem to give short shrift to the significance of fossil fuels and de-historicize the category of "energy" in the abstract. Perhaps in an attempt to provide evidence to their historical model of capitalism's drive towards cheapening nature, the authors spend significant time explicating the role of biofuels like wood and peat in the emergence of

contemporary manifestations of the “Anthropocene” have hydrocarbon fingerprints: from global carbon emissions to the plastic garbage patch in the Pacific Ocean, to the petrochemicals in agribusiness; from the machines required for mega-mining, to the consumer commodities driving demand for rare-earth minerals; from the global networks of electricity and digital communication, to forms of modern democracy and despotism; from the scale of ecosystem destruction, to the rapidity of biodiversity loss and species’ extinctions. Thus, the current era might be better termed the “Petróleo-cene,” an age that may well have begun with the drilling of the first continuous oil well in Trinidad in 1866 (Hughes, 2017). The Petróleo-cene does not solely focus on oil, but rather is attentive to the centrality of hydrocarbons in all manifestations of “*el extractivismo*.” The concept of the Petróleo-cene raises a key question: what about the ontology of oil makes it such a privileged commodity in capitalism?

---

modern capitalism and the long *duréé* of extractive appetites for cheap nature. On the one hand, this has the positive effect of troubling some critical analyses of the “Anthropocene” that begin with the steam engine and the Industrial Revolution. Patel and Moore argue that deforesting the island of Madeira and the over-harvesting of peat in the Netherlands are energetic precursors in the development of capitalism to fossil fuels such as coal. In this sense, their work is similar to Sidney Mintz’s (1986) study of the implication of Caribbean sugar plantations in industrial capitalism in the UK. However, their analysis does not emphasize the primacy of fossil fuels in the accelerating scale of anthropogenic changes after 1945. Other authors claim that the novelty of the contemporary moment in the Anthropocene is grounded in difference of scale and speed, based on the the exponential growth of industry and energetic consumption since fossil fuels (McNeil, 2014; Mitchell, 2013) might best be conceptualized as a distinct era of human agency.

## Questioning the Ontology of Oil: Forest Spirits & Oil Spirits

In March 2016, I attended a medicinal cleansing retreat led by Manari Ushigua, a shaman and defender of the rights of indigenous peoples and nature, in his Sápara community in Pastaza, an Amazonian province in southern Ecuador. Manari is a prominent voice in the global “keep it in the ground” movement. I had first seen him speaking against “extractivism” at a university conference in Quito in 2015. He attended the COP 21 Paris climate talks in December 2015 and



**Figure 8: Sápara Community in Pastaza Province.**

his public meetings with activist-celebrities concerned with climate change, like Leonardo DiCaprio, appeared on social media. Manari said that he hoped the cleansing retreat (consisting of rituals involving traditional medicines, hikes through the forest and swimming in the river) might offer a form of “medicinal ecotourism” and an alternative to oil development. Participants

included a delegation of indigenous Ecuadorian activists, US environmentalists, a handful of academics, and a crew of filmmakers shooting a documentary about the Sápara's resistance to oil extraction.

At the start of the weekend cleansing retreat, Manari asked participants to introduce themselves to the forest and become acquainted with its spirits. He explained that it would be improper not to introduce ourselves to the spirits that inhabited the forest, just as it would be rude not to introduce oneself upon entering a home. His conception of the forest as a home of spirits contrasted with my experience living at the Tiputini Biodiversity Station on the northern border of Ecuador's Amazonian Yasuní National Park with biologists (an experience that I detail in part three, "Jungle"). There, biologists had conceptualized the forest as a "laboratory" and imagined its "biodiversity" as an assemblage of "species" and "genetic resources" that were not greeted but rather made knowable through research.

Each evening, Manari urged participants to be cognizant of our dreams, which, he argued, were messages from the spirits of the forest. Intense dreams followed an evening ceremony involving the traditional medicine Ayahuasca.<sup>6</sup> After dark, Manari gathered participants in the communal house, and arranged us in a circle. He explained that the Ayahuasca he used in the ceremony came from a vine that had been cultivated by his family, since his grandfather. One by one, Manari filled and offered a cup from which each of us drank. In the near pitch-black, Manari used his breath, rustling branches, tobacco, and incense smoke in a

---

<sup>6</sup> Ayahuasca is one of the traditional medicines that transnational pharmaceutical companies have sought to privatize in their attempt to capitalize on the riches held within the most biodiverse region on the planet. A controversial medical tourism industry has emerged around Ayahuasca in Ecuador and Peru (part of a broader ecotourism industry) leading to accusations of cultural appropriation and at least one violent incident between a tourist and a local community (Collins, 2018).

disorienting ritual. After everyone had partaken, all participants retreated to their bedrolls and hammocks for their visions and dreams. The medicine heightened my sensitivity to the forest ecology: the botanical density; the sounds of insects; the bright bioluminescence of fungus and fireflies. Energy emanated from each of the living beings that surrounded me. The forest was an overwhelming presence, both in size and in time; I felt dwarfed by its immensity and its age. I attributed these sensations to the presence of the forest's spirits to which Manari had referred.

In the morning, Manari listened to participants recount their dreams, and interpreted each individually. Then he addressed the group as a whole, explaining that our dreams were messages that we had received from the spirits of the forest. Most participants' visions had centered upon concern for the forest. One participant, for example, had envisioned the forest transformed and destroyed, its trees replaced by a superhighway and urban development. The forest and its oil, Manari explained, were communicating to us the importance of keeping the oil underground, of leaving these powerful spirits beneath the forest. These powerful spirits wanted to remain within and beneath the forest and did not want to be extracted.

By interpreting our dreams, Manari positioned himself as a translator of the spirits' messages. He also encouraged participants to become translators as well: he said that participants had a responsibility to share the messages that we had received from the forest spirits. Manari urged participants to consider and learn from our visions, to carry them with us, and to tell others of the messages that the forest spirits had communicated to us. Specifically, North American environmentalists, academics, and filmmakers were urged to transmit these messages to the Global North. The knowledge that we had received came with an imperative: to aid in the struggle to "keep the oil in the soil."

Manari also prompted participants to reconsider the nature and materiality of oil. Oil, he explained, was composed of spirits, like the forest. Manari's assertion that the spirits of the forest and oil communicate with humans through visions and dreams might be productively understood as an example of Eduardo Kohn's (2013) proposition that "the forest thinks." However, while Kohn conceptualizes all life as "semiotic," and Amazonian forests as particularly dense "ecologies of selves," the idea that the forest as a whole is communicating a specific message to "keep the oil in the soil" may seem radical even to those who embrace Kohn's main thesis. While anthropologists may find it unsurprising that brutal forms of natural resource extraction provoke powerful movements of resistance by humans, it is certainly more controversial to consider that the forest itself is resisting "oil extraction," "species extinctions," or "climate change" by communicating messages to humans engaged in social movements. I am sure it is equally provocative to consider "oil" itself as an active, sentient, and communicative "spirit" that desires to remain underground undisturbed.

What does it mean to take seriously Manari's insistence on the political and communicative agency of Ecuador's forests and oil? What does it mean to consider oil not just as an inert object, a mineral, a fuel, a commodity, or a resource, but as a "spirit," an agent, and life-force? What do we make of his role as a "translator" of the messages from the forest spirits? How do we reconcile the centrality of these messages to global movements to "keep the oil in the soil," to "keep it in the ground," or, to advocate for the "Rights of Nature?" Asking these questions is an integral part of my attempt to fulfill Manari's imperative that I carry, translate and disseminate the messages that I learned, received, and collected in Ecuador.

As a way of reconciling the contradictory ontologies of oil as spirit or resource, consider a phrase that my interlocutors at the Ecuadorian ecologist NGO Acción Ecológica, uttered

numerous times: “el petróleo es el *sangre* del capitalismo” (oil is the *blood* of capitalism). As blood, oil brings life to capitalism; it enables the circulation, metabolism and respiration of capitalist political ecology. The metaphor of “blood” implies liveliness, materiality and fluidity; it also evokes connotations of ethnicity, territory and nationality.

For oil theorists like Francisco Coronil, Michael Watts, and Timothy Mitchell, the power and magic of oil are inherent in its ontology: its materiality, its mystical ability to generate wealth, its potential for commoditization, its energetic density, and its political economic power. For Coronil, oil wields a seemingly magical, corrupting power on the state apparatus. For Michael Watts, oil and money are interchangeable since oil is “the most global and commercially negotiable of commodities” (Watts, 2001: 204); “oil *is* money” in the words of the CEO of “ARCO” one of the transnational oil companies that operates in Yasuní National Park (Watts, 1999: 7). For Timothy Mitchell, “the powers of oil as a concentrated source of energy,” transform “fuel into forms of affluence and power.” The energetic density of hydrocarbon resources articulates with the political power of labor unions and corporations if they are able to successfully sabotage and control the production of coal and oil. For each of these theorists, the power of oil seems self-evident: oil *is* “magic,” “commodity,” “money,” “energy,” and “power.”

However, Manari’s claim that oil is “spirit” troubles each of these theories of oil. If oil is composed of powerful spirits that dwell within the forest and inhabit a particular territory and ecology, then it is not the extraction, de-localization, commoditization, and abstraction of oil that make it powerful; rather, it is the singularity, territoriality, and rootedness of “oil spirits” in a particular ecology that invest them with power. Imagining oil as a local spirit forces us to consider how oil is transformed away from place into abstractions of space, value, energy, and power in contemporary global capitalism?

What is energy anyway? The scientific concept of “energy” arguably only became thinkable in the age of hydrocarbon power. “Energy,” in an abstract sense, was a historical byproduct of early “fossil-fuelled industrial capitalism” (Hilyard et. al., 2012).<sup>7</sup> Before this moment, Hughes (2017) notes that energy was conceptualized in terms of “life force” and not differentiated from its material content (the sun, human and non-human bodies, biomass, etc.). French mathematician Gaspard-Gustave de Coriolis seems to have been the first to theorize “kinetic energy” and “work” in their contemporary senses, writing in 1829 in relation to the efficiency of machines in transforming forms of “energy” and “work” (Coriolis, 1829; cited in Oliveira, 2013: 183, 198-209). Historian of science Agamenon Oliveira claims that these concepts were influenced by early political economists of the time like Adam Smith and David Ricardo. “The concept [of work] only emerged when the machine was thought of as an economic tool with the possibility of replacing man in productive function” (Oliveira, 2013: 199). “Energy” could only be theorized in the abstract when lifeless machines could replace the liveliness of human laborers.

According to energy security theorists Nicholas Hilyard, Larry Lohman, and Sarah Sexton, the abstraction of “energy” had at least three consequences: it allowed energy to be dissociated from socio-ecological context; it made distinct fuels and spaces equivalent; and it

---

<sup>7</sup> Hilyard et. al. (2012: 16) write that “as a concept from physics, energy may seem to stand apart from human history and politics. Indifferent to class, race and gender. Yet however indispensable and ubiquitous the scientific concept of energy has become, it has, like all other ideas, a historical origin. It was possibly first used in its modern scientific sense only in 1807 (as a replacement for the concept proposed by German mathematician Leibniz of *vis viva*, or ‘living force’), while ‘kinetic energy’ was described in its modern sense only in 1829. Thermodynamics, which is largely about transforming different forms of energy into each other and into ‘work,’ became a central scientific discipline only after 1848. Is it a coincidence that the period when the scientific concept of energy gained respectability was also the beginning of fossil-fuelled industrialisation?”

allowed energy to become interchangeable with money.<sup>8</sup> Physics, they explain, “makes no distinction among energies derived from wood, muscles, coal, oil, gas, nuclear materials, falling water or moving air.” This abstraction, “ignores the diversity of things that different groups want energy for,” as well as “the different types of political struggle connected with each.” Furthermore, the abstraction of energy “hides the different ways in which energies are bought and sold, and the differing politics of class, race, gender and nation that characterise each energy source” (Hildyard et. al., 2012: 6). This abstraction allowed an imagination of “energy” that was disconnected from cultural and ecological context, indifferent to labor, class and political struggle, and blind to relations of race and gender. “Energy” made space and time as well as human and non-human “work” all equivalent for the purposes of capital accumulation.

In Ecuador, the abstraction of oil into “energy” and “money” renders invisible the cultural and ecological impacts of oil on Amazonian communities as well as the class, ethnic and gendered politics of resistance movements. How do we make visible these consequences of oil’s extraction from Ecuadorian soils and its transformation into abstract units of energy and money as it enters the global economy?

---

<sup>8</sup> According to (Hildyard et. al., 2012) the abstraction of “energy” has at least three consequences: first, “fossil fuels allowed emerging industrial elites to abstract from time;” second, “Fossil fuels... allowed energy to be disembedded from the particular socio-ecological activities from which it had been inextricable in the past.” Engines made “heat and mechanical energy equivalent on a practical, mass scale,” while “electricity took the process one step further... transforming the energy embedded in fossil fuels or uranium atoms... into electromagnetic energy, which could be distributed widely, only to be translated back into heat or mechanical energy.” With “electricity, different power plant fuel sources – biomass, coal, oil, gas... nuclear, solar and wind” could become “equivalent;” third, this meant that “abstract Energy could be assessed merely according to price. Just as abstract labour became embodied in the mobile, partially expendable flesh of the first generations of industrial workers, so too abstract Energy took shape through the mechanisation of the fossil fuel era;” fourth, “fossil fuels helped commensurate places, transforming them into equivalent spaces for accumulating capital” (Hildyard et. al., 2012: 15).

Here, I briefly examine three analogous examples of transformations of “energetic” commodities in earlier historical modes of global capitalism. In these cases, I am concerned with three things: the creation of appetites, the invention of “fuel,” and the production of forms of hydrocarbon democracy and despotism. I examine the work of Sidney Mintz (1986), David McDermott Hughes (2017), and Timothy Mitchell (2013). While these authors do not utilize the category of “extractivism,” their studies are attuned to the political economic forces driving consumptive appetites, the production and consumption of commodities, the ecological effects of these extractive industries and movements of resistance provoked by these (neo)colonial processes.<sup>9</sup>

1. The Creation of Extractive Appetites. If oil currently circulates as the “blood” of capitalism, sugar and slaves might be seen as formerly fueling earlier incarnations of capitalist accumulation. Sidney Mintz’s (1986) historical ethnography of sugar production and consumption, *Sweetness and Power*, was a pioneering account of how extractive colonial appetites were created, cultivated and normalized. Mintz’s work is significant for three reasons: first, for highlighting the integral role of slavery the production of modern capitalism; second, for demythologizing Marx’s commodity fetish: the “social relation between men, that assumes, in their eyes, the fantastic form of a relation between things” (Marx, 1967 [1867]: 77); and third, for tracing the political-economic and cultural invention of “appetites” for previously unimagined commodities, like sugar and slave labor, as well as the normalization of their consumption as essential staples of the global economy. Mintz traces how sugar was transformed

---

<sup>9</sup> I argue that even though these authors do not use the term “transduction” each of these models illustrates a process of “transduction” (including modes of energetic displacement, transformation, and abstraction).

from a luxury of the British aristocracy into a caloric staple of the British working class. By documenting the role of sugar in British diets, from monarchs to proletarian factory workers, he simultaneously traces the normalization of the “appetite” for enslaved human labor. His study simultaneously visualizes the intimate relation between the West Indian colonies and the British metropole and the implication of the colonial plantation in the industrial factory. Mintz writes an alternate history of the birth of capitalist modernity by theorizing the industrial revolution as not just a technological history of steam and coal, but also as a colonial history that depended upon the embodied energy of the enslaved and the sugar calories that they produced.

Mintz’s examination of how colonial appetites are produced and normalized is instructive for attempts to question the hegemony of seemingly essential global commodities, like oil, by reminding us that these contemporary necessities were once unthinkable. Furthermore, his work draws attention to the historical emergence of the transnational circuits of energy upon which contemporary formations of global capitalism depend. These circuits function through transductions between at least three distinct regimes of energy: human bodies, sugar calories, and industrial machines. It is by connecting the conversions of energy between these three energetic regimes, that Mintz is able to so intimately connect the Caribbean plantation to the British industrial factory; linking the labor of enslaved Africans in cane fields to the diets of English factory workers. “Transduction” offers an analytical framework by which we can conceptualize this commodity chain as one continuous transduction of “energy:” from the bodies of enslaved laborers, through sugar (an “energetic” commodity), to its metabolic consumption by wage-laborers working in British factories.

2. The Invention of “Fuel.” In *Energy Without Conscience*, anthropologist David McDermott Hughes, (2017) similarly traces a lineage between two historical regimes of

“energy” in Trinidad: the transatlantic slave trade and the contemporary petro-economy. Hughes (30) argues that slave traders “invented fuel” in the sense that “a fuel stores energy in a measurable, countable, transportable, and salable form. Energy becomes fuel as it becomes a resource. But resources... need not move.” Thus Hughes uses “*fuel*” to “emphasize this intrinsically deracinated quality.” In addition, fuel is imagined as disposable; both capitalistic systems burned through fuel in the form of human bodies and hydrocarbons. Humans, like oil, were extracted, transported, transplanted, quantified, exhausted, and rendered disposable for profit. However, the enslaved could, and did, resist, revolt, and flee the plantation; they defied the horrific injustices of slavery that could never be fully concealed.<sup>10</sup> However, in the contemporary moment, Hughes argues, the production and consumption of oil has become so normalized that it is almost truly invisible, generating little crisis of conscience despite creating immense immoral ecological consequences for current and future generations. Oil, Hughes argues, only becomes visible in the moment of the exceptional accident, when it erupts spectacularly and unexpectedly into public view (like the Exxon Valdez crash; the Gulf oil spill; Shell’s contamination of the Niger Delta; Texaco’s contamination of Lago Agrio). “When platforms, pipelines, and pumps work properly, oil arrives safely at the gas tank of a motor vehicle. Then combusted in the engine, the hydrocarbon spews carbon dioxide into the air unnoticed and without protest.” Hughes calls this form of pollution “the spill everywhere” and argues that oil “is most dangerous when it behaves ordinarily and when people treat it as ordinary... as neither moral nor immoral, but amoral” (Hughes, 2). As long as the production and consumption of oil remain normalized and invisible, oil provokes neither a crisis of conscience

---

<sup>10</sup> Followers of Trouillot (1997) may contest this position.

nor any resistance; the regularized emission of CO<sub>2</sub> into the atmosphere goes almost entirely unnoticed.

3. Hydrocarbons and the Production of Democracy and Despotism. Timothy Mitchell's *Carbon Democracy* (2013) similarly attempts to reconcile the articulation of hydrocarbon power and political power. His study examines "democracy as oil" by exploring the ways that, "carbon energy and modern democratic politics were tied intricately together" (Mitchell, 2013: 5).

Mitchell raises questions about what kinds of global processes are powered by transductions of hydrocarbon energy. The problem of oil, democracy and despotism depends upon "particular ways of engineering political relations out of flows of energy" (Ibid, 5).<sup>11</sup> What do we make of Mitchell's claim that "flows of energy" are engineered (or transduced) into "political relations?" How is energy transformed not just into mechanical or industrial power but into political power? How are hydrocarbons transmuted into democracy or dictatorship? What kind of "transduction" is this?

"Fossil fuels helped create both the possibilities of modern democracy and its limits" Mitchell (2013: 1) argues. He explains that hydrocarbon fuels created the conditions of possibility for modern democracy, both because of their energetic density, and the potential of labor unions and corporations to control and sabotage their production. On the one hand, hydrocarbon fuels like coal and oil greatly expanded, amplified, and magnified human energies.

---

<sup>11</sup> Mitchell (2013: 5) contends that "if oil appears to affect the producer states largely after its transformation into flows of money, that appearance reflects the building of pipelines, the placing of refineries, the negotiation of royalties, and other arrangements that from the start, in their efforts to evade the demands of an organized labor force, were concerned with questions of carbon democracy. The transformation of oil into large and unaccountable government incomes is not a cause of the problem of democracy and oil, but the outcome of particular ways of engineering political relations out of flows of energy."

Coal production was labor intensive and coal was heavy and hard to move; it could only be transported long distances by rail. This created vulnerable “choke points” at which coal miners were able to strategically cut off vital supplies of coal through strikes and sabotage. Through these acts of civil disobedience, coal miners, and other industrial workers, were able to win modern democratic rights and reforms; in other words, the “sabotage” by organized labor unions proved to be an effective way for workers win what Mitchell terms the modern democratic state.

However, oil was harder to control: as a liquid, it flowed through pipelines; lighter than coal, it floated across oceans in ships that could be diverted to any destination depending upon market fluctuations; the sites of oil production were more numerous than coal and its extraction depended upon fewer laborers who were often dispersed across geographies of difference. The materiality of oil made industrial actions more difficult; supplemental supplies were able to compensate for any shortages caused by local strikes. Since oil’s networks of extraction, transportation, and consumption were more fluid, Mitchell posits that modern, multinational corporations, and not laborers, became the primary controllers of oil: corporations were able to sabotage the production of oil at will and thereby control its price and supply; this empowered corporations to limit democratic claims. Thus, in Mitchell’s analysis, multinational extractive corporations have become the hegemonic political force of the oil era.

Finally, Mitchell’s analysis implies that the democratic gains made in the Global North have come at the cost of authoritarianism in oil-producing nations across the Global South. Oil provides the energy required for the high living standards that are taken for granted in the North, while funding autarchy and repression throughout the Global South. Mitchell argues that the “resource curse” is not just a problem of “petro-states” but is foundational to the creation of “carbon democracies” as well.

Oil, like sugar and slavery, can be understood as an invented “appetite” for an “energetic commodity,” produced through modes of domination in the (neo)colonial Global South, for consumption in the democratic/imperial Global North, originally as a luxury, then as a basic necessity. Much as colonial appetites for sugar drove the normalization of slavery, appetites for oil drive “carbon democracy” in the North and petro-despotism in the South. Control over energetic commodities can thus be transduced into different political relations of power. Although these three theorists use neither the analytic of “extractivism” nor that of “transduction,” Mintz, Hughes, and Mitchell provide good examples of transductive thinking and methodology; their work is attuned to the flows and disruption of energetic commodities through these historical forms of extractive capitalism and they connect transductions of metabolic and thermodynamic power to institutions of political power.

In the case of Ecuador, I am concerned with the intersections of thermodynamic power, technological power and political power. On the one hand, Ecuador is a node in a global political ecology: its oil *powers* global technical ensembles.<sup>12</sup> On the other hand, I am concerned with the political power of oil both in Ecuador and the global political economy: in particular, the relation of the Ecuadorian State to its oil reserves and peoples, and the efforts of ecologist collectives in Ecuador to imagine (and create) “post-oil” democracy in Ecuador and, more broadly, a “post-oil” world.

---

<sup>12</sup> In this sense, oil (and other hydrocarbon fuels) approach the limit of what Mackenzie (2006), drawing on Simondon, terms “pure technicity,” in the current historical moment they are highly de-localizable and recontextualizable in global circuits of energy consumption.

## **Transducing Extractivism: “Toxic Tour 360°”**

“Toxic Tour 360°” is a virtual reality documentary film produced as a collaboration between Sápara activists, the US-based environmental NGO “Amazon Watch,” and the documentary filmmakers “RYOT.”<sup>13</sup> The film traces the travels and transformations of oil as it is extracted from Ecuadorian soils, passes along jungle pipelines, across communities and sacred sites, and through shipping networks, refineries, gas stations, car engines and tailpipes to be emitted into the atmosphere in the form of carbon dioxide.

In virtual reality, a headset completely obscures the viewer’s physical surroundings and projects a digital environment on screens in front of the eyes. While in traditional film, the position of the camera is static, in virtual reality, the viewer’s perspective of the scene changes with a turn of one’s head; this allows viewers to feel “immersed” in a virtual world. Like Ayahuasca, virtual reality has a hallucinatory quality; it aims to simulate the illusory experience of ecological immersion.

“This is Ecuador,” a woman’s voice says to the viewer who virtually stands in a canoe traveling down an Amazonian river. “These jungles have been our home for thousands of years” says the narrator, who introduces herself as Nina Gualinga, a “daughter of the first uprising,” and a member of the next generation of indigenous militants resisting oil exploitation in the Ecuador. Nina, like Manari, is a prominent “keep it in the ground” activist; I first met her when she was helping to organize the indigenous women’s march in Puyo, but I had previously seen her advocacy on digital social media. “When I was seven years old, I had a vision,” she recalls, “there were trees bare, the rivers polluted. Everything was ash. A place where there was no life.”

---

<sup>13</sup> “Toxic Tour 360°: Oil Exploitation in the Ecuadorian Amazon” accessed at: <https://www.youtube.com/watch?v=8lBI98Ez8ec>

As she speaks, the landscape surrounding the observer is deforested. In a moment, the viewer has left the verdant forests of Sápara territory in southern Ecuador and has been transported into the post-industrial landscape of Lago Agrio in northern Ecuador: the site of decades of contamination by Texaco's oil industry. "Today I stand face to face with that nightmare," Nina says, "the dragon of imperialism."

Through a virtual tour of the oil industry's impacts on Lago Agrio, Nina warns the viewer of "what could happen to my people and our land," in her home community of Sarayaku, "if we allow them to drill for oil." The scarred landscape of Lago Agrio illustrates her dystopian fears. As Nina speaks, the viewer's surroundings transform. The viewer stands in a river next to children "bathing in contaminated waters beneath pipelines that now snake through every corner of the jungle, even through sacred graveyards." Next, in a field, a man appears; he offers the viewer a handful of oil-sodden soil that he digs out of the ground with a machete. Nina explains that "crude oil sits in exposed pools where untouched rainforests once thrived." These visions make visible the toxic legacy of Texaco's drilling in the Lago Agrio region; the contamination that provoked historic movements of indigenous resistance across Ecuador.

"Toxic Tour 360" continues in the ocean off of Ecuador's coast. The viewer rides in a dinghy that circles an oil tanker. Nina blames Ecuador's plight on "humanity's endless thirst" for oil, a substance which "mother nature intended to lock away, out of reach, never to be released." In front of a Californian gas station, she states that, "sixty percent of the oil taken from Ecuador ends up here on the west coast of the United States." The "dragon of imperialism" is revealed to be the United States: the virtual Toxic Tour unveils North Americans' complicity in Ecuador's ecological and cultural devastation.

In a final scene, “Toxic Tour 360°” transports the viewer back to the lush forests of Sápara territory in southern Ecuador. A caption reads: “The Sápara people once numbered 200,000. Today they are less than 500. Their territory lies directly in the path of new oil leases granted by the Ecuadorian government in once protected lands.” Manari appears, identified as a “Sápara Shaman and Indigenous Rights Warrior.” Gesturing to his surroundings, he tells the viewer, “the Nature you are seeing now, this forest, this land, this jungle, this water, they have life, they have a spirit. They want to live just like us. What happens if we extract the oil? It will disrupt the balance of Nature.”

Nina, the narrator, returns and says “my brothers and sisters in the north used to live like this,” referring to the life ways of the Sápara, “but everything has changed since the oil companies exploited their lands.”

They have no choice but to live in government-built housing projects, living on the polluted land they have been left with rather than the jungles they thrived in. What will happen to these people if we do nothing? What will happen to my people if we do nothing? From the age of seven that nightmare has haunted me. But we are still here and we will fight. We are still here.

Nina’s voice is defiant in the face of oil imperialism; her visions compel the viewer to reconsider one’s own culpability in humanity’s thirst for hydrocarbon energy. By visualizing the ecological effects of oil in Ecuador, it breaks the “petro-silence” (Hughes 2017) surrounding oil; it demands that the viewer accept complicity in the global petro-economy; it casts oil as immoral, as a problem of conscience.

Toxic Tour 360’s visualization of the global commodity chain of oil is not just an instance of the critique of “extractivism” (in the film Manari asked: “what happens if we extract the oil?”); the film makes visible, to a global public, the contaminations produced by global,

imperial, and industrial formations as well as the rippling political and ecological mutations that follow in oil's wake.<sup>14</sup>

The RYOT film “Toxic Tour 360°” illustrates what Adrian Mackenzie terms the “double bind” of technology in the constitution of human/non-human collectives: on the one hand, technology appears as a threat (ecological crisis) and on the other, as a form of liberation (technologies such as “carbon capture” or the potential of “virtual reality” to convey the political urgency of climate change). However, before we can properly comprehend the role of technology in complex global problems, Mackenzie argues that we need more precise ways of articulating the role of technology in the constitution of our collectives. In *Transductions, Machines and Bodies at Speed*, Adrian Mackenzie (2006) uses transductive analysis to theorize the “technicity” of seemingly divergent technologies (such as a handaxe and a nuclear weapons system; a seventeenth century clock and GPS). Drawing upon the writings of Gilbert Simondon, Mackenzie argues that the “technicity” of any “technical element” (like a handaxe) depends upon both its “concretization” (of the local contexts involved in the making of the technology: like “Toledo” steel) as well as also its potential for de-localization and re-contextualization. If the utility of the axe, for example, comes from the “hardness” of “Toledo” steel, the axe would be similarly useful in other geographical-historical-cultural contexts. Thus, ironically, while a nuclear weapons system may appear to be more sophisticated, it would have lower “technicity” since it depends upon an elaborate assemblage (of communication systems, computers, cables, missiles, etc.) in order to function. Thus, the axe would have a higher “technicity” than a missile

---

<sup>14</sup> The film is also an example of what Adrian Mackenzie calls “thinking transductively.”

since it has greater potential for de- and re-contextualization. An axe is more dependent upon its substance (like hardness) than its context (like a digital communications network).

“Oil” might similarly be considered to have its own “technicity.” As the film demonstrates, oil is the concretization of a local context (Amazonian Ecuador, for example, has a particularly heavy crude) but when it is extracted (de-localized) from Amazonian forests and refined (abstracted) abroad, it can enter global circuits of trade as universal units of energy (litres of gasoline) and interchangeable units of money (US \$). Since oil is “the most global and commercially negotiable of commodities” (Watts, 2001: 204) oil might approach a limit of “pure technicity” (Mackenzie, 2002: 15).<sup>15</sup> In the contemporary global economy, oil has the potential to be re-contextualized into almost any technical process through its transduction into electricity. However, Manari’s conception of oil as spirit(s) and life force resists the reductive logic of imagining oil in terms of “technicity.” Perhaps, what oil gains in “technicity” it loses in “spirit?”

How might we reconcile the “technicity” of Ayahuasca and virtual reality? Ayahuasca and virtual reality are both technological mediations that have both been used to translate a common message “to keep the oil in the soil.” Both technologies seek to achieve a sense of immersion in Ecuador’s ecological and cultural contexts through analogously “hallucinatory” experiences. Yet, while both forms of mediation arguably translate a common message, these two technologies, when juxtaposed, may seem, at first, incomparable. How do we reconcile the “technicity” of Ayahuasca and virtual reality?

---

<sup>15</sup> Mackenzie (2002: 15) writes: “Pure technicity is very elusive, because technicity endures or persists through dispersed, even discontinuous, repetitions across clusters of technical elements in interaction.”

Ayahuasca and virtual reality both depend upon distinct practices of “concretization” in Amazonian Ecuador and abroad. As Manari explained, the Ayahuasca used in the ceremony was the product of generations-long cultivations (human/non-human co-productions). The virtual reality film “Toxic Tour 360°” was concretized by an assemblage of indigenous activists, environmentalists, journalists, and 3D cameras filming in Sapara territory during the cleansing retreat, as well as across Lago Agrio, in the Pacific Ocean, and in California. The two technologies are not equally de-localizable: the Ayahuasca ceremony was an event distinct in space and time; virtual reality offers a way of distributing its hallucinatory experience throughout the global communications infrastructure of the Internet (ironically powered by the transductions of hydrocarbon energy that the “keep it in the ground” campaign opposes). In another sense, “Ayahuasca,” like the hand-axe, may have a greater “technicity” (as in potential for concretization and delocalization) than virtual reality. Consuming virtual reality depends upon a complex assemblage of digital technologies, while transnational pharmaceutical companies have attempted to “de-localize” and commodify the traditional medicine “Ayahuasca” as a therapeutic molecule (Sunder Rajan, 2006, 2017). Both technologies rely upon their concretization in local contexts, at the intersection of complex cultural practices, and also depend upon appropriate infrastructures for their re-contextualizations (ritual, medicine, and internet access).

Ayahuasca’s bio-chemical mediation and virtual reality’s digital mediation are both used in attempts to translate a similar message to “keep it in the ground” (from forest spirits, indigenous activists, and filmmakers) by creating a feeling of sensory “immersion.” Thus, both technologies might be understood as “structures of transduction” as evoked by anthropologist of sound Stefan Helmreich, by which he means “how immersion as a sense of presence and immediacy [is] produced” (Helmreich, 2015: 224-5). Helmreich argues that “experiences of

sonic immersion” are made possible by successful “transductions” meaning the “transmutation and conversion of signals across media.” This process “summons up experiential realness” to create “a sense of being in the unmediated presence of a sensation or feeling.” However, while seemingly unmediated, this sensation is actually “the result of work, of labor that, when done well, produces a sense of seamless presence.”<sup>16</sup> For transductions to be effective, transducers (like shamans and filmmakers), and their technologies (Ayahuasca and virtual reality), must recede from view. Both technologies are most effective when messages seem “unmediated,” and their “structures of transduction” remain invisible. As I have noted, the “structures of transduction” that make these technologies possible extend beyond traditional medicine and virtual reality headsets to generations of human/non-human cultivations and global networks of digital communication.

Since a sense of unmediated presence is simulated through successfully-hidden transductions, Helmreich argues that a “transductive anthropology” must listen closely for “tell-tale distortions and resistances” since these “turbulences... might reveal the condition beneath any self evident presence” (Helmreich, 2015: 225) Indeed, during the medicinal retreat in Sápara territory, members of the film crew told me that they hoped that virtual reality would offer a more “immersive” form of storytelling and thus, a more compelling mode of advocacy.

---

<sup>16</sup> Helmreich (2015: 225-6) argues that transductions are effective when they can elicit affective sympathies. He provides the example of “screaming yeast,” an experiment in which “sprinkling alcohol on a yeast cell to kill it” raised the pitch of the cell’s normal vibration. “Turning up the volume’ on these cellular vibrations “was a transduction that summoned up human sympathy and anxiety” raising the question: “Were these yeasty creatures suffering?” Helmreich posits that through these sonic transductions “laboratory auditors were transported into the immersive cellular soundscape.” However, in this process transduction “vanished as the mediating operation that permitted researchers to believe they were ‘hearing’ a genuine auditory emanation from the world of yeast.”

The filmmakers of “Toxic Tour 360°” told me that they hoped that the sense of immersion created by virtual reality would summon the sympathies of an audience in the US, who could virtually travel to the rainforest, be surrounded by its peoples, trees, and sounds, and witness for themselves the impact of oil operations on Ecuadorian communities and ecologies. In their imagination, the immersive technological mediation simulated by virtual reality might help change North American attitudes on oil extraction by more effectively breaking the “petro-silence” surrounding oil, a term that I borrow from David McDermott Hughes to refer to the seeming “inevitability” and “invisibility” of oil. Virtual reality, they hoped, might offer indigenous activists, from Sarayaku and the Sápara, a powerful tool to convey the message of “keeping the oil in the soil” to publics in the US and the Global North. While a feature-length documentary film, “*Crude*” had been made about Texaco’s contamination of Lago Agrio with a similar aim, the RYOT filmmakers hoped that virtual reality might offer a more “immersive” mode of storytelling than traditional film. The messages embedded in Ayahuasca and virtual reality concerned the extraction of oil: its extraction from Ecuador, the problem of its consumption abroad, and its ontological status (as fuel, a commodity, and as an agentive, sentient, powerful spirit).

### **Conclusion: Translation and Transduction**

In this chapter, I have examined three attempts to communicate messages against extractivism in Ecuador. First, at the women’s march, Alicia Cahuiya Iteca denounced the State’s oil concessions in her home, Yasuní National Park. Second, in Manari’s Ayahuasca ceremony, participants received messages from the spirits of the forest and oil about the importance of “keeping the oil in the soil.” Third, in “Toxic Tour 360°,” filmmakers traced the global contaminations that follow in the wake of oil as it is extracted from a well in Ecuador, passes

through jungle pipelines, crosses communities and sacred sites, enters shipping networks, refineries, gas stations and car engines and is emitted from a tailpipe in Los Angeles.<sup>17</sup> How do we reconcile these ethnographic moments as different modalities through which the message, “keep the oil in the soil,” is being articulated? How might we conceptualize each of these moments as “translations” of a similar message against extractivism? What kinds of translations are taking place in each of these moments?

One might consider the rights of nature, biodiversity, and extractivism, and the idea to “keep the oil in the soil,” as examples of particular claims to universality. Universals for Anna Tsing (2005) as forms of “knowledge that moves – mobile and mobilizing – across localities and cultures.” For Tsing, claims to universality must be understood as practical projects that “form bridges, roads, and channels of circulation” across “distance and difference.” Yet, Tsing notes, “universals erase the making of global connections” so while they are forms of “local knowledge” that are culturally relative and historically contextual, claims to universality seem to conceal their origins. Thus I suggest we conceptualize knowledges of the rights of nature, biodiversity, and extractivism not in terms of their supposed “movement” around the world but rather as the products of translations by diverse actors across distinct contexts. Linguistic anthropologist Susan Gal argues that while “the impression created” by acts of translation is the illusion that “words, texts, or discourses ‘move,’ ‘travel,’ and ‘circulate,’” she explains that, “it is not words that move” but rather “it is speakers who take them up as signs by interpreting them, each from his/her own perspective” (Gal 2015: 213). According to Gal (2015, 236) translations and transductions are a productive processes: these “interdiscursive practices” are “generative,

---

<sup>17</sup> Amazon Watch reports that 10% of the oil refined in California is from the Ecuadorian Amazon.

producing new objects, practices, person-types, and knowledge.” Thus in the cases that I examine, messages like “keeping the oil in the soil” cannot be traced as moving in a linear trajectory from spirits, to shamans, to social movements, to environmental NGOs to a “global public” through biochemical hallucinations or networks of digital communications. Rather, in each of these moments, different actors are articulating a similar problem of oil extraction through diverse forms of mediation in complex nonlinear translations.

Thus, the translations of messages like “keeping the oil in the soil” (or the rights of nature, biodiversity, or extractivism) should not be conceptualized in terms of “movement” but rather “production” as emergent “imaginings” that are coming into being through the intersection of multiple articulations by both humans and non-humans. Anthropologist Mario Blaser (2010), for example, argues that translation is not characterized by the “movement, displacement and change of something which nevertheless manages to retain its original properties” but rather, translation should be conceptualized as a “process by which new imaginings come into being” (Blaser, 2010: 151). In Blaser’s analysis, translation should be conceptualized not as a practice of commensuration but rather as a productive process by which novel imaginings and worlds emerge out of the intersection of different articulations. According to Blaser, the “(corpo)reality” or material reality of “imaginings” depend upon the volume of their articulations by many diverse actors operating as if they are real. “Mutual articulations” Blaser (152) argues, “make imaginings (corpo)real, and the same is true for the realities/worlds that a group of imaginings shape. Articulations are the work of “translation” which “is fundamentally a mechanism of reality-making.” Blaser’s insight is that “translation” produces intersecting articulations that create novel, hybrid imaginings and ontologically different worlds.

In the Ecuadorian case, translations of the rights of nature, biodiversity, extractivism, and “keep the oil in the soil” might be understood as “imaginations” that are being given “(corpo)reality” as they are articulated by different (and often distant) actors: pluri-national indigenous movements; shamans and spirits; environmental NGOs; documentary filmmakers; or academics and scientists. These translations do not “move” but rather are made increasingly corporeal as they are articulated by diverse actors at the intersection of distinct worlds in Ecuador and abroad in the rhetoric of pluri-national indigenous movements, or the advocacy of transnational networks of environmental NGOs, or in the discourses of conservation biology, sustainable development or the capitalization of the life sciences. Blaser’s theory of translation in a relational ontology allows us to conceptualize “translation” across extreme difference as a reciprocal and collaborative process: as novel co-productions between diverse collectives of humans (activists, artists, ecologists and biologists) and non-humans (spirits, ayahuasca, virtual reality). Anti-extractivist resistance in the Petróleo-cene is an emergent process, a political-economic-ecological struggle, in an incomplete state of “corporeal-ization,” to shape an open-ended, but inevitably mutating future.

In addition to these productive conceptualizations of “translation,” linguistic anthropologists like Michael Silverstein (2003) encourage us to distinguish between “translation” (the way that denotational meanings of languages or utterances are “calibrated” or brought into alignment) and “transduction” the way that “untranslatable culturally contextual meanings” (like indexical, iconic, performative or other metapragmatic registers) are conveyed from one context

to another.<sup>18</sup> Silverstein explains that, “Cultures as such cannot be ‘translated’ in so far as most of their manifestations are non-linguistic.” For Silverstein, linguistic “transduction” is a strategy for “glossing” culturally-specific, indexical, iconic and/or performative meanings: the semiotic excesses of culture that resist easy translation from one context to another.<sup>19</sup>

An example of this kind of “transduction” occurs in *Toxic Tour 360°* in the scene where Manari appears in the virtual reality film. Manari gestures to his surroundings, the forests of Sápara territory, and tells the viewer “the Nature you are seeing now, this forest, this land, this jungle, this water, they have life, they have a spirit. They want to live just like us.” The metapragmatics of Manari’s gesture are only meaningful in the film because of the simulation that the forest appears to surround the viewer. In that scene, Manari stands along a hiking trail where participants in the cleansing retreat were asked to introduce themselves to the spirits of the forest. Manari’s gesture is only meaningful in the context of the forest simulation that is transduced by virtual reality; it is a way for distant viewers to be introduced to the spirits residing in the culturally meaningful, ecological context of Sápara territory.

In order to illustrate his theory of transduction of meaning, Silverstein uses the metaphor of the transduction of energy through a hydroelectric generator.<sup>20</sup> Within an “energy transducer”

---

<sup>18</sup> Silverstein (2003: 91) writes, “More than really translating material... transducing material moves us between a source cultural system and a target one. In each system words and expressions are indexically anchored within entextualizations in context, and we attempt to move across these. ... In transduction, operating as we do in the realm of culture more frankly, there is always the problem of transformation... into configurations of cultural semiosis of a sort substantially or completely different from those one has started with.”

<sup>19</sup> Silverstein (2003: 84) provides an example of the appropriate situations in which one might use analogous but culturally distinct terms “father” and “daddy” to reflect not just similar denotational meanings but also social roles, relations, age and register.

<sup>20</sup> Silverstein (2003: 84) writes, “Much of what goes into connecting an actual source language expression into a target-language one is like such a transduction of energy.”

like a hydroelectric generator “one form of organized energy,” the “rush of water against turbine blades,” is “converted into another kind of energy at an energetic transduction site” a spinning axle within “a coil in a magnetic field.” Within the transducer, “mechanical energy” is “converted... into another kind of energy altogether,” that is, electric energy (Silverstein 2003; 85-86).<sup>21</sup> Just as forms of “energy” are de-localized from their source context and materiality, cultural realities can be abstracted and glossed from one context to another. Interestingly, within this metaphor, the material and semiological collapse into one another; meaning is transmuted between material-ecological-cultural realities much like Sápara territory is transmuted through the digital mediation of virtual reality.

The potential of transduction “to unite the material with the semiotic” is signaled by Stefan Helmreich (2015: 222) who argues that transduction “narrows the distance between cultural analysis and technical description.” Transduction, for Helmreich, is the movement of energy “across or between media” like sound, which is “a form of energy transmitted through a medium,” like air, and converted through “an antenna to a receiver” and from an “amplifier to an ear.”<sup>22</sup> These material transformations change how a signal can be apprehended and interpreted. While Helmreich is concerned with the ways that sound is transduced to create a sense of “immersion,” the plurinational indigenous women’s street protest, the Ayahuasca ceremony, and

---

<sup>21</sup> While Michael Silverstein uses the metaphor of a hydro-electric turbine as a metaphor for transduction as translation, his metaphor does not engage the question of what processes such a turbine *powers*. While the transformation of mechanical energy (rushing water) into electrical energy with minimal loss is apt, energy is transformed for a productive process. In what ways are transductions harnessed as a mode of powering other processes?

<sup>22</sup> Helmreich (2015: 222) argues that “transduction names how sound changes as it traverses media, as it undergoes transformations in its energetic substrate... transsubstantiations that modulate both its matter and its meaning. When an antenna converts electromagnetic waves into electrical signals and when those are converted via loudspeaker into patterns of air pressure we have a chain of transductions.

the virtual reality experience of “Toxic Tour 360°,” can all be understood as three different forms of mediation through which the message to “keep the oil in the soil” is both translated and transduced.

Thus, as I invoke throughout this book, transduction offers a theoretical framework as well as a form of ethnographic methodology. First, thinking transductively offers political-economic anthropology a mode of conceptualizing “commodity chains” as “chains of transductions;” an analysis attentive to the ways that transductions of energetic commodities engineer political relations. Second, conceptualizing transduction as a mode of translation, reveals both how transduction operates at the intersection of the material and the semiotic, and the ways in which transduction offers a way to decode the complex processes at play in practices of translation and the imaginative construction of emergent, alternative worlds. Third, transduction offers an ethnographic methodological approach attentive to tracing connections between heterogenous sites connected by emergent processes that transcend local and global scales. Transduction also offers a mode of participant observation and ethnography attuned to distortion, turbulence, resistance, and transformation.

1. “Thinking Transductively:” Extractivism and Power. Transduction provides a powerful analytic framework for theorizing extractivism. As I have argued, extractivism manifests as both a “global commodity chain” and a “chain of transductions.” Extractivism continually transduces commodities from one state of being into another to another: the “extractive view” identifies “resources,” commodities which are transported from “nature-exporting” nations (Coronil) to nature-consuming nations, where they are abstracted into money, profits, and power. These transductions are not just transportations and transformations; they set complex processes in motion.

Transductions *power* global technical ensembles, political economic processes, and ecological transformations. This raises important questions: What processes do these transductions power? How do transductions of sugar, slaves, coal and oil power the global technical ensembles of extractive capitalism? How do material forms of thermodynamic, biological and embodied power articulate with institutions of political and economic power? How does a theory of transduction inform political-anthropological analyses of power? Transduction, I argue, offers a theory of power that is attentive to the ontogenesis of emergent political-economic-ecological processes. To answer these questions, political anthropology needs to apply a theory of transduction to understand how forms of material and thermodynamic power intersect with institutions and mechanisms of political power. Tracing the global circulation of “energetic commodities,” like sugar, slaves, coal, and oil, can illustrate how these energetic commodities have fueled distinct historical instantiations of global capitalism.

The dissonance between Manari’s conception of oil as “spirit” and political ecologist’s theories of oil as “energy” and “money” demands a transductive analysis of energetic commodity chains, not just a dialectical analysis of capitalism. Few theorists interrogate the idea of “energy” that grounds the idea of transduction. On the one hand, conceptualizing “energy” in the *abstract* allows us to examine how different energetic commodities are transduced into different forms of political power; on the other hand, paying attention to the *materiality* of energetic commodities makes visible how extractive appetites are created and how distinct forms of political struggle and relations of race, class, gender and labor are enabled or occluded by different kinds of energy.

As Adrian Mackenzie (2006: 18) puts it, a “transductive process calls for transductive thought.” Transduction, he argues “aids in tracking processes that come into being at the

intersection of diverse realities,” be they “corporeal, geographical, economic, conceptual, biopolitical, geopolitical, and affective.”<sup>23</sup> Transductions “entail a knotting together of commodities, signs, diagrams, stories, practices, concepts, human and non-human bodies, images and places.” As I have explored in this chapter, the study of “extractivism” requires “transductive thinking” to plot connections between actors as diverse as social movements, traditional medicines, and virtual reality. “To think transductively,” Mackenzie (2006:18) writes, is “to mediate between different orders, to place heterogeneous realities in contact, and to become something different.” Thinking extractivism transductively requires analyzing: the articulation of bodies and ecologies; the circulation and transformation of commodities through global political economies; and transnational modes of bio-political governance. The creation and circulation of global commodities is *not* self-evident: consumptive appetites are invented; extractive infrastructures are constructed; and global commodity flows are normalized. Thinking “extractivism” transductively makes visible the articulations between thermodynamic and political transductions; it traces the conversion of fossil fuels into mechanical and heat energy and its thermodynamic byproducts: carbon emissions filling the atmosphere and institutions of political power. Transductive thinking demands attention to the modes of resistance that attempt to disrupt extractive flows as well as the modes of translation and forms of mediation through which knowledge about “extractivism” is produced and transmitted. Finally, for Mackenzie, to think transductively is “to become something different.” As I read him, to theorize transductive

---

<sup>23</sup> Mackenzie (2006:18) argues that “transduction aids in tracking processes that come into being at the intersection of diverse realities. These diverse realities include corporeal, geographical, economic, conceptual, biopolitical, geopolitical, and affective dimensions. They entail a knotting together of commodities, signs, diagrams, stories, practices, concepts, human and non-human bodies, images and places. They entail new capacities, relations and practices whose advent is not always easy to recognize.

processes is to intervene in them.<sup>24</sup> For my interlocutors, diagnosing “extractivism” and making oil “visible” is integral to their projects of resisting “extractivism” and bringing their alternative imaginations into being.

2. Transduction and Translation. Second, transduction operates as a mode of “translation” at the intersection of the material and the semiotic. In one sense, transduction straddles the line between the material and the semiotic and holds the potential to collapse the distinction between the two. On the one hand, transduction is the transformation of energy across a medium; on the other, it is the translation of a signal and its interpretation. For Helmreich, the study of transduction is attentive to the transformation of signals as they pass through and across media. For linguistic anthropologist Michael Silverstein, transduction offers a way to conveying the “untranslatable” from one cultural context to another across fields of difference.

However, in a different sense, transduction offers a way of decoding the complex processes implicated in the practices of translation that construct imaginations like “extractivism,” “keep it in the ground,” and the “Rights of Nature.” On the one hand, Blaser (2010: 151) argues that, “translation is the process by which imaginations come into being” as a “mechanism of reality-making” where imaginations and worlds become “(corpo)real” through their “intersecting threads” (or “communicative conduits”) that are “entangled in a mutually reinforcing exchange.” On the other, Mackenzie claims that transduction, is a mode of “tracking

---

<sup>24</sup> Michael Fisch explained to me in correspondence, that in transductive ethnography, the ethnographer does not merely represent observations made in the field but rather is part of a process of potential becoming. It shifts the emphasis from thinking *about* what happens in the field to thinking *with* it to enable its becoming. More than just a critical representation of one’s field site, transductive ethnography involves creating something new from the encounter. The ethnographer becomes part of the individuation. The empirical nature of this research includes the conceptual interventions that emerge from fieldwork.

processes that come into being at the intersection of diverse realities” which are composed of a “knotting together” of “commodities,” “signs” “stories” and “bodies.” Thus, if translation is a process of reality-making that operates through the en-tangling and knotting-together of articulations into worlds, then transduction seems valuable as a methodology for un-tangling the knotted commodities, signs, bodies and ecologies that compose these diverse realities.<sup>25</sup> Mackenzie (2006: 18) concludes, somewhat cryptically, that transductions “entail new capacities, relations and practices whose advent is not always easy to recognize.” This ethnography takes “transduction” as a theoretical methodology that attempts to track and facilitate the emergence of alternative worlds to “extractivism” and the “Petróleo-cene,” like “keep it in the ground” and the “Rights of Nature.”

3. Transduction as Methodology. Third, and finally, transduction offers an ethnographic, methodological approach that is attentive to tracing connections between heterogenous sites, all connected by emergent processes that cross local and global scales. For Helmreich, transduction is a mode of participant observation that is attuned to sensory engagements and a form of ethnography that attends to “distortion” and “resistance.” Helmreich (2008) argues that transduction offers anthropologists an ethnographic methodology that can be critical of the anthropologist’s own conditions of “immersion.” Transduction, he argues, is a “device” by which an ethnographer can recognize the “hidden conditions” of her immersion, tune in to “textures of disjuncture” and the “corporeal character” of signals and the “physical, material dimension” of information transfer. Particularly relevant for the following chapters is the way

---

<sup>25</sup> Mackenzie’s conceptualization of “transduction” offers an inverse mode of analysis to Blaser’s theory of translation: a mode of unravelling the knotted intersection of different worlds where novel imaginations come into being.

that transductive analysis “summons up questions of resistance and distortion, complicating a rhetoric of flow with one of turbulence” (Helmreich, 2008: 631). Transduction, in this sense, is not only useful as a device for understanding “energy transfer” or “translation,” it also helps the ethnographer “tune in” to modes of resistance, moments of distortion, and conditions of turbulence. This mode of analysis highlights the moments when transductions of energy and translations of meaning are *not* smoothly conveyed but are instead *resisted, opposed* or *transformed* in (un)intended and chaotic ways.

In this chapter, I have examined “extractivism” as a colonial condition of racialized displacement through modes of pluri-national and territorial resistance, the ontology of oil as “spirit,” “commodity,” and “energy,” and the problem of representation in attempts to make oil “visible” from its extraction in national territories, to its abstraction and consumption in global relations of thermodynamic and political-economic power. Transduction is a mode of analysis well suited to tracing the global infrastructures of extractive capitalism as well as the worldwide dissemination and translation of my interlocutors’ knowledges about extractivism.

“Transduction” offers a powerful analytic framework for conceptualizing both “extractivism” as well as the translation and transmission of knowledge of “extractivism.” At stake in the crisis of “extractivism” is the historical and material reality of extractive industries in Ecuador, their intersection with forms of transnational capital, and the modes of resistance that they engender.

## **Part II. Mountains**



**Figure 9: The View From Guápulo.**

### **Interlude: The View From Guápulo**

While conducting fieldwork in Ecuador, I lived in Quito's Guápulo neighborhood. Guápulo overlooks a forested valley that surrounds the Iglesia de Guápulo, a colonial cathedral and monastery around which the neighborhood grew. Guápulo occupies a liminal position between these deep colonial roots and the recent processes of gentrification that have lined the hillcrest with the towering skyscrapers of the Gonzalez Suarez neighborhood. Guápulo lies along the Avenida Francisco de Orellana, a steep, narrow cobblestone street that wends precipitously between small homes and shops that is named after the leader of the first conquistadors to enter Quito carrying Catholicism and colonization from the Amazon to the Andes. A modernized highway now proceeds along the path of the conquistadors between Guápulo and the sprawling suburbs of Cumbayá, home of Quito's new airport. Further east, out of sight, is "the orient": the Ecuadorian Amazon and Yasuní National Park.

Guápulo was always peaceful on Sundays and holidays; the cathedral grounds filled with families coming to pray or heading out for a stroll in the nearby botanical gardens. Occasionally,

mourners would silently gather for a solemn ceremony in a neighborhood cemetery. On Saturday mornings, a marching band would assemble in the Iglesia's plaza and fill the natural amphitheater of the valley with music. On Wednesday nights, a local bar would leak live jazz into the evening air.

On weekdays at rush hour, however, Guápulo was thrown into a cacophonous chaos of car horns and smog. A deluge of drivers, commuting between the Cumbayá suburbs and Quito, careened through Guapulo's steep, curving, cobblestone streets in order to avoid traffic where the highway reached the Túnel Guayasamín. Thus, twice a day, the sleepy community became a congested speedway filled with the sound of tires squealing up and down paving stones.

In reaction, neighborhood organizers posted signs along the road that read, "*Guápulo is a neighborhood not a highway!*" After a few weeks, tensions boiled over. One evening, the residents of Guápulo poured into the street at rush hour, marching, chanting, and blocking traffic with their bodies. Demonstrators held signs that read "*Guápulo is a community of people not a freeway!*"; "*Cars are destroying our livelihoods and heritage*"; "*Cars have taken our peace and liberty!*"; and, "*40,000 cars assault Guápulo every day!*" Cars came to a halt in both directions. As traffic piled up, drivers began to turn around, realizing they would have to find an alternate route. After about an hour, the traffic and the rally died down and ebullient protesters piled into local pubs for cold pints of pilsener and hot cups of canelazo<sup>1</sup> to celebrate.

Guápulo's residents claimed that cars threatened the neighborhood's livability; they posed a danger to pedestrians, and they increased air pollution. Protesters had included both the indigenous and non-indigenous members of Guápulo's community, including a transient

---

<sup>1</sup> Canelazo is a hot spiced drink, like the Ecuadorian version of a hot cider, but with orange, cinnamon, and cloves, mixed with aguardiente, the fiery local liquor.

population of non-Ecuadorians like myself (teachers, artists, visiting researchers, and government workers). Traffic threatened the “livability” of the community for all of its residents.

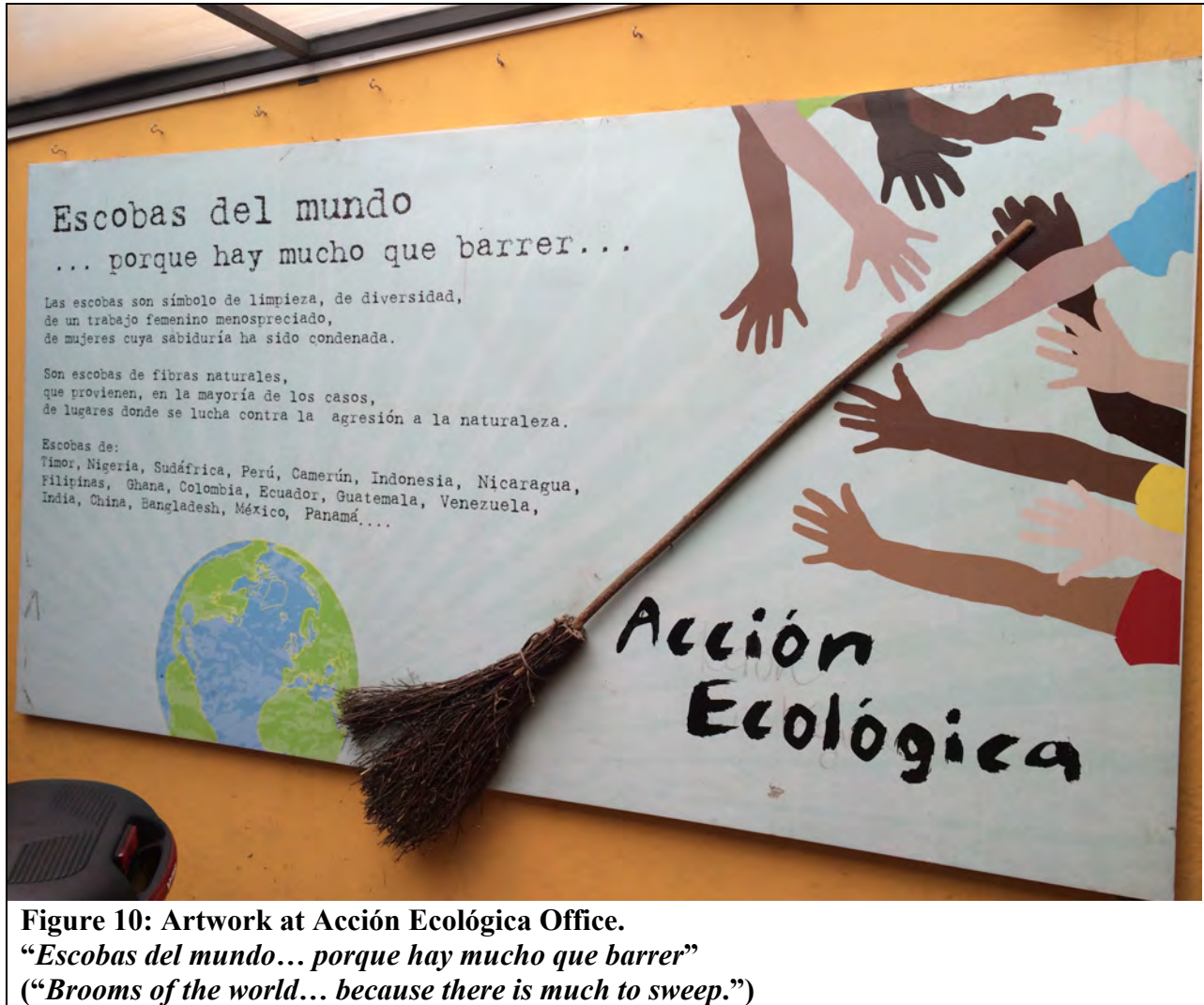
I noticed that the slogans voiced in this local traffic dispute echoed the concerns of the anti-extractivist movements that I had been studying across Ecuador (from Andean communities being displaced by mega-mining to Amazonian communities living along the oil frontier) as well as the ongoing discourse over how to achieve “good living.” This demonstration of solidarity and civil disobedience in Guápulo was fundamentally about autonomy, livability, heritage and ecological health; it was a struggle to over local sovereignty against the threat of what Rob Nixon (2011) terms “stationary displacement”: a situation in which one’s ecosystem is made unlivable even as residents have no choice but to remain. In this way, the Guápulo traffic protest is a microcosm of national struggles over the meaning of “good living”: what indigenous movements have termed “sumak kawsay,” and what the State’s twenty-first century socialist development plan labelled “buen vivir.” The Guápulo protest also exemplifies the ways in which all peoples ultimately rely on the livability of their environs, which are increasingly threatened by “stationary displacements” and ecological crises.

I write from this situated perspective, the view from Guápulo: at the intersection of crystallizing colonial histories and the rapid transformations of modernist development projects. The situation of Guápulo, like Ecuador, is a complex historical assemblage of colonial legacies, national development, and neoliberal globalization: cathedrals, skyscrapers, highways, suburbs, and airports. Thus, while the view from Guápulo is a culturally and historically contingent perspective, its situation is far from unique in the age of the Anthropocene. From the perspective of an anthropologist living in this cosmopolitan, urban, and indigenous Andean neighborhood that looks towards Amazonia, I hope that the view from Guápulo presents a position from which

to reconsider extractivism and ecological crisis, and offer a place from which to reimagine nation and nature.

## Chapter Two

### *“Brooms of the World”*: Advocacy Work across Ecologies of Oil



**Figure 10:** Artwork at Acción Ecológica Office.

*“Escobas del mundo... porque hay mucho que barrer”*

*(“Brooms of the world... because there is much to sweep.”)*

I am interviewing Gabriela, an organizer with “Amazonia por la Vida” (Amazon for Life), at the offices of the prominent, if controversial, Ecuadorian environmental NGO Acción Ecológica (Ecological Action). We sit outside at one of the picnic tables used as meeting spaces in the garden behind the office. The “office” is peaceful and optimistically colorful; it feels more like a home than a workplace. It is brightly painted orange and red and is nestled on a quiet side

street in a university neighborhood. Upon arrival, visitors leave Quito's congested urban streets, filled with the viscous smog that pours out of tailpipes into the thin Andean air, and enter a sheltered garden where a cat can be seen silently stalking among the leafy, flowering bushes or gliding between the outstretched branches of a large cactus. Everyone receives a warm welcome from the receptionist, whose friendly smile is contagious. Children run gleefully throughout the garden, greeting everyone as they come and go. A covered driveway that leads to the



**Figure 11: Entrance to Acción Ecológica.**

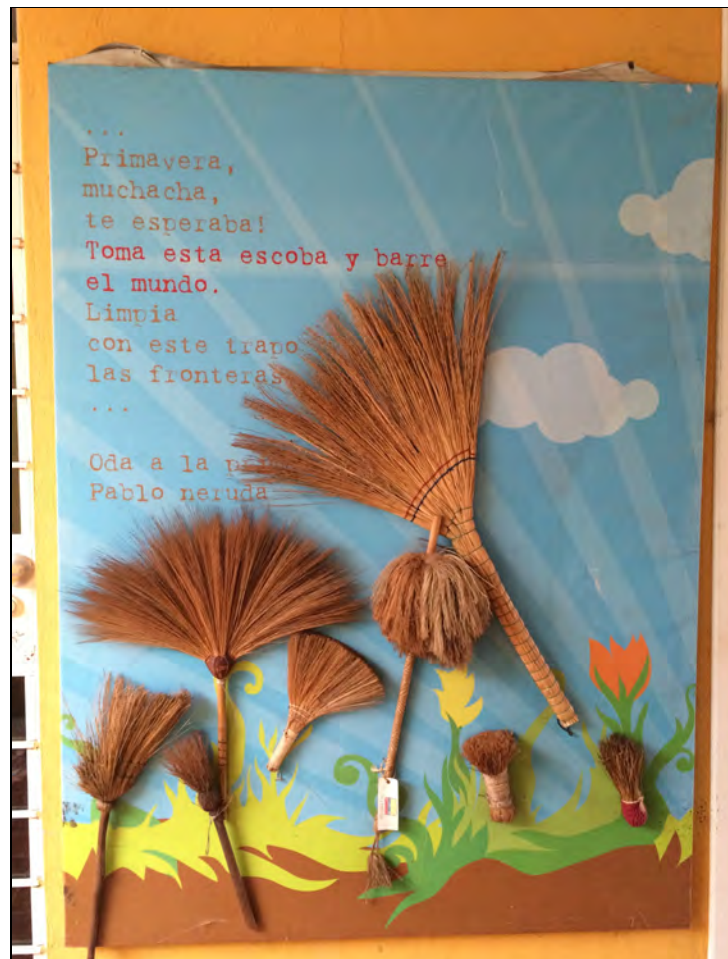
backyard is filled with an assortment of odd objects like a bicycle-powered washing machine and small concrete stoves, examples of sustainable alternatives for urban and rural communities. In this space one can also find props used in YASunidos demonstrations, including a menagerie of animals like a paper-mâché jaguar and turtle and stuffed-animal parrot and monkey.

On the walls of this space hang painted canvases that incorporate Pablo Neruda poems, as well as a variety of brooms made by women from around the world. One of these canvases describes the work of Acción Ecológica as a feminine labor of cleaning:

“Brooms of the world... because there is much to sweep... Brooms are symbols of cleanliness, of diversity, of an under-appreciated feminine job, of women whose wisdom has been condemned. They are brooms of natural fibers that come, in the majority of the cases, from places where the aggression against nature is resisted. Brooms from: Timor, Nigeria, South Africa, Peru, Cameroon, Indonesia, Nicaragua, the Philippines, Ghana, Colombia, Ecuador, Guatemala, Venezuela, India, China, Bangladesh, Mexico, Panama... Acción Ecológica.”<sup>1</sup>

Gabriela told me that four-fifths of Acción Ecológica’s members are women. When I asked why, she responded, “I don’t know, it is very curious. Many people have asked why, and there are many explanations.” On the one hand, she pondered whether women have some “sensibility” in their

relation to “nature” (an idea echoed elsewhere in my research that women are more concerned with environmental protection or are more impacted by contamination). On the other hand, she



**Figure 12: Artwork at Acción Ecológica.** “Spring, girl, I was waiting for you! Take this broom and sweep the world. Clean, with this rag, the frontiers...” From “Oda a La Primavera” by Pablo Neruda.

<sup>1</sup> “Escobas del mundo ...porque hay mucho que barrer...Las escobas son simbolos de limpieza, de diversidad, de un trabajo femenino menos apreciado, de mujeres cuya sabiduría ha sido condenada. Son escobas de fibras naturales que provienen, en la mayoría de los casos de lugares donde se lucha contra la agresión a la naturaleza. Escobas de: Timor, Nigeria, Sudáfrica, Perú, Camerún, Indonesia, Nicaragua, Filipinas, Ghana, Colombia, Ecuador, Guatemala, Venezuela, India, China, Bangladesh, México, Panamá... Acción Ecológica”

speculated jokingly that perhaps it was “because they are witches.” Gabriela laughed. “This thing with the brooms, it’s no coincidence” rather “it touches a bit on mysticism.” She explained that they are “not decoration” rather they are “symbols.” As I interpret Gabriela, the “mysticism” of the brooms stems from the fact that they symbolize the power of women who have been subject to government repression and targets of ridicule for years.<sup>2</sup> She said with much admiration that the important thing about the work of the women who had founded Acción Ecológica was their *experience*, everything they had done, “errors and all.” She said that in Ecuador, and in the world, “they had created a space that had generated a lot. A lot of thought, a lot of action, a lot of important things,” adding, “for me, my senior compañeras are people I admire, and will forever owe a debt to, their ideas and their proposals.”

The brooms of the world is an appropriate metaphor for Acción Ecológica for three reasons. First “because there is much to sweep,” the brooms symbolize the efforts of this women-led collective to clean up the mess left behind by multinational extractive industries, like the contamination left by Texaco across large areas of the Northern Ecuadorian Amazon. Second “as an under-appreciated feminine job,” the brooms represent political struggle as work, a form of gendered labor and a kind of wisdom, or mode of knowledge production. Third, the “brooms of the world” come “from places where the aggression against nature is resisted”: the brooms were collected from “Oilwatch” an alliance of movements against oil-extraction from tropical nations across the Global South that was founded by Acción Ecológica; they were given by the women who launched a global campaign to keep the oil in the soil.

---

<sup>2</sup> For examples of detailed testimonials of this kind of gendered repression of female mestizo and indigenous activists see: Plan V. 2015. “Cinco Mujeres Denuncian Al Gobierno.” *Plan V: Política Historias*, October 19th, 1–17.

In this chapter, I examine each of these meanings of the “brooms of the world” with the lessons I learned from the women of Acción Ecológica through written and oral histories, in interviews and conversations, and in the workplace. First, I begin by exploring the organization’s roots with the story of how an environmental movement grew out of an NGO concerned with the “health” of oil workers. Members worked to connect the ill health of workers, affected populations, and contaminated Amazonian forests, to the pathology of the Petro-State and the neo-colonialism of the multinational, extractive oil industry. In this chapter “labor” is relevant for me in two ways: on the one hand, Acción Ecológica supported laboring populations exposed to oil pollution. On the other hand, the labor of NGO and social movements organizers is a “work of representation” (Hall, 1997) as NGO workers communicate across fields of power both by “depicting” ecological crises and “standing in” for human and nonhuman political subjects as their representatives. Thus, second, I am concerned with the labor of Acción Ecológica’s NGO advocates, specifically, their work of representation, collaboration, and translation. Acción Ecológica advocates work both in Quito’s urban center and in marginalized rural communities. This labor that consists of *depicting*, or making ecological crises visible, *representing* constituencies as well as *maintaining* themselves and their campaigns and organizations. These forms of labor are often rendered invisible and gendered, like the results of their efforts to shape state policy. An example is the globally praised, but ultimately cancelled, “Yasuní-ITT initiative,” the campaign to keep the “oil in the soil” in Yasuní National Park, and the inclusion of the “Rights of Nature” in Ecuador’s 2008 Constitution. In both cases, credit went to President Correa, who opposed these ecologists and openly derided them in the media with misogynistic insults. Third, I explore the founding of Oilwatch and the emergence of a global campaign to “keep the oil in the soil.” Acción Ecológica and Oilwatch were formed in response to the brutal

consequences of neo-colonial oil operations. My interlocutors argue that it was the shared experience of oil's commodity ecologies in Ecuador and other tropical countries that drove ecologists at Acción Ecológica to engage with other southern NGOs and found the "Oilwatch Network" as an attempt to expand their campaign to "Keep the Oil in the Soil" globally across tropical, oil-exporting countries. The crisis of Amazonian oil became visible to, and was translated by the women of Acción Ecológica as a medical pathology: they diagnosed the ill-health of the Nation through the contaminated bodies of laboring oil workers and the neo-colonial economy of oil through ecological crises deployed across racialized boundaries of post-colonial inequality.

### **From "Health" to "Environment": Acción Ecológica and "Amazonia por la Vida"**

Ivonne Yanez, then president, legal representative and one of the co-founders of Acción Ecológica, told me that when the group was established in 1986, "the idea of 'environment' practically didn't exist in Ecuador."<sup>3</sup> While there were "conservationist" organizations, there were no "organizations that understood environmental problems from a more *structural* point of view."<sup>4</sup> Acción Ecológica was different, she said, born from a group of "biology students" that were influenced by "movements on the left, biology, and communications" which, she explained, noticed a lack of conceptualization of understanding environmental problems as

---

<sup>3</sup> Ivonne said: "El tema ambiental prácticamente no existía en el Ecuador (obviamente problemas ya habían) pero no había una organización ambiental. Digamos que entendía los problemas ambientales desde un punto de vista más estructural" (Interview with Ivonne Yanez, President of Acción Ecológica: July 2015).

<sup>4</sup> Ivonne explained conservationist organizations were ones "similar to the World Wildlife Fund." Ivonne told me: "lo que había en ese momento eran organizaciones más que todo conservacionistas con una inspiración sobre todo desde instancias internacionales, por ejemplo, la fundación natura que era como la WWF del Ecuador" (Interview with Ivonne Yanez, President of Acción Ecológica: July 2015).

structural. This “seed” gave “birth” to Acción Ecológica.<sup>5</sup> She said that, “for us, the rights of nature was only *natural*.” Ivonne explained that when she and her colleagues founded Acción Ecológica in 1986, Ecuador had “only recently become a democratic country.” The dictatorship had lasted until 1979 when it was followed by popular elections. She and her colleagues began “working on oil early” in the eighties so she said that it really bothered her when president Rafael Correa claimed that Acción Ecológica had not been working on the problem of oil contamination before the Yasuní-ITT initiative in 2007.<sup>6</sup> In the 1980s moment, “the most visible social movements were labor unions”<sup>7</sup> so Acción Ecológica had started by collaborating, with unions “on the issue of pollution.” At that time, “the issue of environment” Ivonne recalled, was “tied to the theme of health.” So when Acción Ecológica was “born,” it “was originally registered in the Ministry of Health, because we understood environmental problems to be linked to the problem of health... the health of workers, oil workers, agricultural workers.” Workers were “the most important actors” for us, “to understand... environmental contamination.”<sup>8</sup> By

---

<sup>5</sup> Ivonne said, “cuando AE nace por la conjunción de estudiantes de biología, pero, militantes de la izquierda... el tema ambiental lo hacemos desde la biología. Por eso yo creo que para nosotros el tema de los derechos de la naturaleza es casi natural. Entonces en los años 80s con ese germen que se da de movimientos que vienen desde la izquierda desde la biología, desde la comunicación y viendo como un vacío de entender los problemas ambientales de una manera más estructural, es que nace Acción Ecológica” (Interview with Ivonne Yanez, President of Acción Ecológica: July 2015).

<sup>6</sup> Acción Ecológica made enemies with President Rafael Correa over the question of oil drilling Yasuní. He was known to berate the ecologists as being “infantile” in his sabatina addresses which he delivered to the nation each weekend on TV.

<sup>7</sup> Even though, she lamented that unions had lost much of their former power even then.

<sup>8</sup> Empezamos a trabajar muy de cerca con movimientos sociales como los sindicatos, son los otros tuvimos un proyecto con los organizaciones sindicales porque para nosotros el tema ambiental además estaba muy vinculada al tema de la salud y la salud, cuando nace acción ecológica de hecho por eso acción ecológica de hecho por eso se registró originalmente en el ministro de salud, porque entendíamos el problema ambiental también vinculado al problema de la salud y obviamente la salud de los trabajadores y los trabajadores petroleros, de los

the time Acción Ecológica had turned its attention to the oil industry in Amazonia in the 1980s, there had already been at least “fifteen years of brutal contamination” since the oil industry had expanded under the military juntas of the 1970s. Ivonne recalls, “It was brutal,... it was *a lot*.”<sup>9</sup> Acción Ecológica documented elevated rates of cancer, reproductive disorders, skin and intestinal diseases in and around cities like Lago Agrio and Coca.

In response, Acción’s Ecológica launched the “Amazonia por la Vida” (Amazon for Life) campaign in 1989. In a written history of the movement, activist Ana Maria Varena recalls, “I will never forget the march of the Amazon for Life campaign” in 1988 when a group of “women dressed as oil workers, descended down Guayaquil street upon Quito’s historic center... announcing that there they would begin excavations because oil had been found.”<sup>10</sup> This parodic demonstration by women demanding to drill in front of the presidential palace in Quito’s Historic Center, a UNESCO World Heritage site, was intended to “create awareness” about plans on the part of the the oil company Conoco to drill in Waorani territory. Ana Maria believes that this was the moment when the campaign to save Yasuní was born.

---

trabajadores agrícolas ... que son digamos como para nosotros en ese momento los actores más importantes para entender lo que es la contaminación del ambiente y todo eso no cierto pero al mismo tiempo” (Ivonne Yanez, President of Acción Ecológica: July 2015).

<sup>9</sup> Ivonne said, “cuando el presidente dice “donde estaban ustedes para el caso de Texaco? - Discúlpame, nosotros en los finales de los ochentas ya estábamos trabajando el tema de la contaminación por Texaco entonces tempranamente empezamos a trabajar el tema petrolero, no? Fue brutal. En 75 empieza la actividad petrolera, y estamos hablando de los años 89-90 15 anos de contaminación brutal. Era bastante” (Ivonne Yanez, President of Acción Ecológica: July 2015).

<sup>10</sup> “Nunca olvidaré la marcha de la campana Amazonia por la vida, creo que en el año 1988, cuando un grupo, sobre todo mujeres vestidas de trabajadores petroleros bajábamos por la calle Guayaquil en pleno Centro Histórico de Quito, Patrimonio de la Humanidad, anunciando... que allí se iniciaron excavaciones.” (Colectivo de Investigación y Acción Psicosocial - Ecuador, 2015: 16)

Ivonne told me that in the case of Acción Ecológica, NGO workers developed a political consciousness of oil activity through witnessing the medical pathologies (including cancers) that it was producing in the laboring bodies of oil workers. The work of the women of Acción Ecológica speaks to the political challenge of representing human and non-human subjects that may “speak” in cryptic ways, through medical pathologies and species loss. Crises of ecological health must be heard, decoded, diagnosed and represented to spur political action. In the case of Acción Ecológica, these women translated the illnesses they witnessed in the Northern Ecuadorian Amazon to diagnose the Petro-State, and the multinational oil industry, as pathological at a large scale.

Acción Ecológica worked to make the ecological crisis of Texaco’s oil pollution visible and illustrative of a political crisis of the petro-state. The health of forests, populations, and the state anthropologist Jake Kosek (2006: 62-103) reminds us, are often conceptualized as intimately connected. However, as environmental humanist Rob Nixon (2013) notes, ecological contamination constitutes a form of “slow violence” and poses challenging problems of representation since slow-moving ecological crises take place over long temporalities and dispersed, even global, geographies. For Acción Ecológica, health was a lens through which the environment could come into view; and the illnesses of oil workers became a way to represent industrial malpractice, and the ecological crisis of oil extraction and ultimately a way to imagine an “Ecuador Post-Petrolero” (Post-Oil Ecuador).

Since “Amazonia por la Vida,” Ivonne argues, Acción Ecológica has been “a promoter of environmental movements which didn’t exist until then.” Gabriela similarly described Acción Ecológica as a “nursery of ideas,” a space where diverse movements have been cultivated.<sup>11</sup> Not only does Acción Ecológica feel like a home and a community, it has become a home to a community of many diverse organizations and movements.

Although it is not uncommon for NGO workspaces to blur the line between “labor” and “life,” Acción Ecológica has even more of a close-knit, intimate, family feel than other NGOs where I have worked and studied.<sup>12</sup> The large outdoor dining area, where I sat to observe meetings and conduct interviews, is the site of large, family-style lunches and parties where colleagues celebrate birthdays with cake, wine, cheese and prosciutto. An indoor conference room has projection



**Figure 13: A birthday celebration at Acción Ecológica.**

equipment for presentations and press conferences, and there are two outbuildings in the backyard with additional office space, where I was assigned a desk. From one outbuilding, a colorful hammock hangs temptingly under leafy green plants. The garden was the site of

<sup>11</sup> Interview with Gabriela May 2015.

<sup>12</sup> In previous research (Carby-Denning, 2010) I examined how US environmental NGOs market their advocacy work as a “calling:” a novel interpretation of “politics as a vocation” (Weber, 1946).

marching-drum practice in the afternoon and, occasionally, a barbecue in the evening. Ivonne tells me that Acción Ecológica is a *community*, noting that everyone around the office helps mind the children, who run and play in the yard. One thing that is really important for understanding Acción Ecológica, Ivonne says, “is the Andean Kichwa principle of rotation... of not accumulating power. We recognize traditional leadership but at the same time understand that *we are not an organization*, but rather that we are... a *community*.”

When I first started conducting ethnographic research at Acción Ecológica I was confused by the bewildering number of campaigns and organizations that seemed to be housed in the modest two-story building. Gloria described Acción Ecológica to me as a “tree.” Its roots, she said, were the collective’s basic principles and objectives, from which the work branches into different areas. Within Acción “we each have our areas of work,” Gloria explained, “each person has a campaign” on issues ranging from mining, to oil, biodiversity preservation, environmental services, and hydroelectric dams. Within the collective of Acción Ecológica, campaigns are the “leaves” of the tree. “Some leaves stay, some leaves fall, new ones are born.” The oldest was the oil campaign “Amazonia por la Vida,”<sup>13</sup> which has recently given birth to the “YASunidos” movement. However, in addition to campaigns on oil, the group has gained notoriety for working on other prominent campaigns. For example, Acción Ecológica played a leading role in resisting an attempt by Shaman pharmaceuticals to patent Ayahuasca in the 1990s (Dorsey, 2003), and Acción Ecológica has criticized regimes of “bio-prospecting” instituted by the Convention on Biological Diversity as a form of “bio-piracy.”

---

<sup>13</sup> Amazon for Life

In addition, Gloria said that Accion Ecologica had “given birth” to other organizations some of which are still housed in the same building. These included, among others, the “Institute of Ecological Studies of the Third World”<sup>14</sup> which produced academic publications; “Tegantai” an “Ecologist Information Agency”<sup>15</sup> that produced journalistic news coverage on environmental issues; the “Environmental Clinic”<sup>16</sup> a project on socio-environmental reparation; The “Observatory of Mining Conflicts in Latin America” (OCMAL);<sup>17</sup> the “The Network for Transgenic-Free Americas”<sup>18</sup> and “Oilwatch.” Each of these organizations has its own “legal personhood” but their “link” is that all emerged from the “womb” of Accion Ecológica. In addition, Gloria explained that each of these organizations was engaged in international work and had formed its own transnational networks and collectives.

It was this diversity of campaigns and organizations, as well as the relative independence of collective members, that signaled to me why Acción Ecológica might be such a productive space of new ideas. The “Instituto,” Gloria explained to me, was a group of “academic faculty” connected to popular environmental struggles. The idea, she said, was for “popular ecologists in the field” to be able to have encounters with “well-known academics” and scholars who could themselves benefit from exchanges with grassroots activists working on oil and mining issues. These kinds of collaborations between social movement organizers and university faculty seemed to be a hallmark of Acción Ecológica’s work. Over the year I conducted research at Acción Ecológica, the NGO (and its related campaigns and groups) organized almost weekly

---

<sup>14</sup> Instituto de Estudios Ecologistas del Tercer Mundo

<sup>15</sup> Tagentai: Agencia Ecologista de Información

<sup>16</sup> Clínica Ambiental

<sup>17</sup> Observatorio de conflictos mineras de america latina

<sup>18</sup> Red por una América libre de transgenicos

seminars and lectures at Quiteño universities. Lawyers, engineers, ecologists, political economists and other scholars regularly lectured to students and activists in lecture halls or even on skype in Acción Ecológica's meeting room. University panels often included scholars alongside movement organizers and indigenous intellectuals. On one panel, Sápara shaman and "Keep it in the Ground" activist Manari Ushigua spoke of the Sápara's resistance to the oil industry alongside Canadian theorist of extractivism William Sacher who lectured on the environmental impacts of the Cordillera del Condor mega-mining project. At one point, Ivonne Yanez led a university course on environmental services that featured Ecuadorian and international academics as well as the indigenous women of Saramanta Warmikuna, an organization that led the "Yakuchaski" movement against oil drilling in the southern amazon (that I describe in chapter seven). While the campaigns that Acción Ecológica members organized were diverse, the articulations of these ecologists with university academics and indigenous leaders and environmental social movements meant that there was continual overlap and interaction between seemingly diverse campaigns. Conversations often quickly moved from mega-mining in the Andes, to oil drilling in the Amazon to the commercialized "environmental services" provided by bees.

Many of the members of the Acción Ecológica collective seemed to be engaged in these kinds of collaborations that straddled activism and the academy. Gloria, for example, was a member of a social-psychology collective<sup>19</sup> which worked to produce reports on the "collective health" impacts of the "socio-environmental conflicts" around mining, and "political violence" like state repression of indigenous activists. The idea, she said, was not to produce "academic

---

<sup>19</sup> Colectivo de Investigación y Acción Psicosocial

investigations” but rather to be “part of the process of monitoring affected populations” as a kind of activism. The aim was to document “from a health approach what is happening in the territories,” and develop a “concept of collective health” of populations impacted by extractive industries and state repression. The collective produced book-length reports that documented repression of activists who had organized resistance to mining in the biodiverse cloud forests surrounding the village of Intag and documented repression of YASunidos activists by police and government agencies. Tagentai, the collective’s affiliated media outlet, helped document protests and forms of territorial defense, confrontations over resources, and examples of government repression through social media and the internet.

Ivonne, Gabriela, Gloria and their compañeras often used feminine gendered and familial terms, like “birth”<sup>20</sup> to speak of Acción Ecológica and the collective of organizations and campaigns that its members have cultivated. When I ask Ivonne about her job; she tells me: “I’ve worked in Acción Ecológica for almost 30 years, no? So, for me, it’s more than a workplace, it’s my life. Here are my friends, they are like my sisters; my colleagues are more than colleagues, they are my companions in struggle.”<sup>21</sup>

---

<sup>20</sup> Ivonne said, “Porque desde la biología aprendemos como son los ciclos vitales como funciona los ecosistemas. Entonces para nosotros los derechos de la naturaleza es una cosa casi como una consecuencia de nuestra aproximación, desde la biología y al mismo tiempo esto de los derechos de la naturaleza de ahora ... siempre, yo creo, un proceso histórico y es un poco de donde nace Acción Ecológica” (Interview with Ivonne Yanez, President of Acción Ecológica: July 2015).

<sup>21</sup> Ivonne said, “Yo trabajo en Acción Ecológica desde hace casi 30 años, no? Entonces... para mi Acción Ecológica es más que un espacio laboral, es mi vida. Aquí están mis amigas, son como mis hermanas; mis colegas que son más que colegas, son mis compañeras de lucha” (Interview with Ivonne Yanez, President of Acción Ecológica: July 2015).

## **Labor and the Work of Representation in NGOs**

“Labor” as a category is conspicuously absent from the theoretical study of NGOs (non-governmental organizations) despite how widespread NGOs are globally and the large numbers of people they employ. Mark Schuller notes that in Haiti, for example, “NGOs provide up to one-third of all jobs within the formal economy” (Schuller, 2009: 91). Numerous theorists have outlined various kinds of NGO-work practices, but rarely does “labor” emerge as a central theoretical analytic (Alvare, 2010; Hilhorst 2003, 2007; Schuller 2009; for an exception see Cepek, 2011). By contrast, innumerable anthropological studies have examined corporate workplaces: analyzing the kinds of subject formations and novel forms of citizenship formed in the workplace (Ong, 1988; Miller and Rose 1990, 1995; Dunn, 2004; Sennet 2006; Ho, 2009; Rajak, 2011). Developing an understanding of NGO practices as “labor” enriches our understanding of the effect of “NGO-ing” (Hilhorst, 2007) on political consciousness and collective action in three ways: this perspective insists that: a) social relations between NGOs and stakeholders are material relations; b) labor is at the heart of the production of value in NGOs; c) avoiding the notion of labor with the use of other analytical tools risks obscuring these facts. I suspect that the absence of “labor” as an analytic category in NGO studies is symptomatic of a broader problem, the occlusion of “labor” through linguistic ideologies inherent in NGO discursive practices. This is to say that it is difficult for NGO laborers to understand their productive capacities in maintaining NGOs in terms of *work* or *labor*.

Many of my interlocutors at Acción Ecológica (as well as in environmental NGOs in the US) did not talk about their work at the NGO primarily in terms of “work” but as a form of political struggle. Ivonne tells me, “I am lucky to be able to do what I like; to fight for my ideals and my commitment” and if “I pay myself for it, then it is perfect!” She laughs. “No, not ‘pay

myself,' we pay each other, because Acción Ecológica is a 'horizontal' organization. It's an organization where there are no 'bosses.' It's an organization that is built collectively." Ivonne's joke about "paying myself" or paying "each other" reflects a common preoccupation amongst NGO laborers about the tension between doing "the work" (militancy, activism, advocacy, etc.) and paying oneself for the work of maintaining NGOs (what my interlocutors in US environmental NGOs would call "covering your costs").

Much NGO labor consists of what I term "NGO maintenance work." This "maintenance work" consists of fundraising, development, registration, staff recruitment, networking, creating a formal organizational structure, and getting access to technology (for a good analysis of these kinds of practices see: Alvaré, 2010: 179). The paradox of "NGO maintenance work" is that even though it is crucial, it is often taboo to talk about. Laborers often rhetorically subordinate this kind of maintenance work to the "real work": what my Ecuadorian interlocutors would refer to as "militancia" and what anthropologist of NGOs William Fisher (1997) terms "doing good."

In my experience both in US NGOs and Acción Ecológica, "maintenance work:" (whether writing fundraising grants, deleting members from a database, or posting articles to Facebook), is a peculiar aspect of NGO labor. Many NGO laborers often reflexively and rhetorically define one's own labor *as* "not work," (or, at least, not the *real* work) while one is engaged in it. NGOs fundraise with the promise of the "good works" and attempt to minimize "administrative costs." As anthropologist Michael Cepek (2012: 119) notes, "NGO employees must find a way to pay themselves while producing an identifiable "product" – the purchase of a piece of land, the cutting of a boundary trail, or the construction of a guard station – that justifies the grant." Driving this economic and rhetorical subordination is the idea that the donor wants to give to the cause and not merely pay the salaries and administrative costs of the organization.

Many of my activist colleagues worked on their projects while simultaneously finding time to search for opportunities to fund their campaigns through international grants. While NGO-ing is (rhetorically and in practice) about “doing good for others” it is also, for many, an occupation and means of subsistence: “doing good” and “providing for oneself” need not be separated.

However, because of the problematic appearances of NGO workers “paying themselves” NGOs can be viewed by donors and communities as “un-accountable organizations that are primarily concerned with advancing the material development of their own staff” (Hilhorst, 2007: 305). NGOs must materially support their staff; however, as part of the negotiation of accountability, but this fact is often downplayed in the performance of accountability to stakeholders. As an example of this, Acción Ecológica and Oilwatch co-founder Esperanza Martinez recounted a related smear campaign against her to a journalist in an interview. In advance of a popular consultation with a community considering alternatives to mining, her image was used on a billboard that read “Yes there is responsible mining. The NGO doesn’t pay my salary.” The implication of the billboard was twofold: on the one hand, the viewer is forced to consider that while activists’ salaries are paid by an NGO, their livelihood may depend upon mining opportunities. Thus the credibility of the NGO is put into question: viewers are compelled to ask, are NGO activists only opposed to mining because they are being paid to? How will I make a living if I oppose mining? Materially benefiting from “doing good” seems to compromise the legitimacy of the cause; it corrupts the appearance of being impartial, disinterested, and idealistic.

However, while NGO laborers attempts to justify their work to constituents and donors, this imperative can lead to overwork and self-exploitation. As Gabriela explained to me

“sometimes the difficulty is that one exploits oneself.”<sup>22</sup> As “feminists,” she and her colleagues had “analyzed” this condition a lot: “we put so much of ourselves into the struggle that we forget to take care of ourselves<sup>23</sup>.” This kind of “self-exploitation” is dangerous because one needs “to be well and strong to be able to fight.”

Acción Ecológica had a paid staff, but I also met many people working around the office in a more informal capacity as volunteers, interns, or students on stipend. I was told that staff were often paid by their campaigns or one of the related organizations. Staff of the “Amazonia por la Vida” campaign, for example, had salaries paid by Oilwatch. Some projects seemed to have less secure funding than others. Mario, who worked for the independent journalist agency, funded his own work by juggling different grants that funded Indymedia, environmental, and human rights causes. Funding oneself required thinking strategically and creatively. He found funding to travel to the COP21 meetings in Paris, for example, by securing a grant to host a “forum of radios” event at the conference.

Making “labor” an explicit category of analysis is crucial to de-mysticizing seemingly cryptic practices like fundraising and grant applications - as well as re-asserting “labor” as a central category in the production of value (Smith, 1999 [1776]; Marx, 1967 [1867]). Scholars have noted “the opaqueness” of the development apparatus, the promise of foreign money, and the mysticism of its forms, practices and rituals, which can seem to take on magical quality (Sampson, 2005; Comaroffs, 2009). “The whole apparatus of fundraising, the often unfathomable application forms, and even the currency used, all have their own mystique” (Sampson, 124). The enthralling ‘magic’ of NGO funding might be seen as example of what the

---

<sup>22</sup> “Una misma se auto-explota” (feminine gendered).

<sup>23</sup> Again, gendered feminine: “nosotras mismas.”

Comaroffs (2009: 156) identify as the “experiential contradiction at the core of neoliberal capitalism” the way that it “appears to offer up vast, almost instantaneous riches to those who control its technologies” like the grants and documentation necessary for NGO-ing while threatening “the very survival of those who do not” like miners skeptical of the claims of middle-class environmentalists employed in NGOs.

For my colleagues applying for international grants to fund their work, this money was simultaneously hard-earned, desperately needed, and yet seemingly ephemeral, appearing, or not, at the whim of a distant granting agency. If the “NGO form” itself is imagined to be potentially generative of value, as a credential for entering networks of international funding for example, then “value” is experientially divorced from “labor” as its source of production; reinforcing the fetish that capital is the ultimate source of value generation, rather than human labor. Fundraising is a kind of “work of representation,” the successful performance of legitimate need to donors. How does Acción Ecológica change our understanding of NGOs? How do we make sense of complex articulations between social movements, the academy and state policy in the NGO structures of the Acción Ecológica collective?

The study of “NGOs” is often premised on a mythology that they occupy a “third space” between the state and the market, and accordingly, that “NGOs” constitute a new “global civil society” (Anheier, 2001; Chandhoke, 2002; Najam, 1996; Salomon, 1994). In this imagination of an emergent transnational or global “civil society,” NGOs have been heralded as a resurgence of what Habermas (1991) has termed the public sphere: a space of reasoned intellectual thought and rational debate for the era of globalization. Akira Iriye, for example, argues that NGOs embody a global community and constitute a global consciousness: the idea that “there is a wider world over and above separate states and national societies and that individuals and groups, no matter

where they are, share certain interests and concerns in that wider world” (Iriye, 2004: 8). One problem with this presumption that NGOs occupy a “third space” is the notion that they are cordoned off from spaces of state and capital, which Fisher (1997: 442) describes as the “idealization of NGOs as disinterested apolitical participants in a field of otherwise implicated players.” Interestingly, NGOs acquire legitimacy from this mythology of “civil society,” the idea that NGOs are somehow idealistic actors sheltered from the worlds of politics and profit. For theorists of global civil society, this sense of community produced by transnational social movements is not particularly new. It has roots in the nineteenth century, from abolitionist and suffrage movements, to the founding of the Red Cross, and internationalist labor movements (Keck and Sikkink, 1998; Iriye, 2004; Tarrow, 2005). However, I argue that imagining contemporary NGOs like *Acción Ecológica* in terms of nineteenth-century voluntary associations, only further mythologizes and naturalizes their role as inheritors of “global civil society.” Despite these deep historical roots, the recent emergence of NGOs globally is, in a few ways, unprecedented.

The founding of *Acción Ecológica* in the 1980s reflects an explosive emergence of NGOs around the world at the dawn of the neoliberal era from the 1970s to 1990s. This moment represents varied things to different theorists: the emergence of a “global consciousness” and “community” (Iriye, 2004); the “democratization” of processes of “development” and “environmental conservation” (Keck and Sikkink, 1998; Gunter, 2004; Martin, 2011); the privatization of welfare services and the retreat of the state (Biehl, 2007; James, 2004); new, insidious forms of global governance, intervention and micro-finance (Duffield, 2001; Elyachar, 2002; Pandolfi, 2008); as key “mobilizing structures” for social movements” (Macarthy, McAdam & Zald: 1996); and, finally, opportunities for global social movements to challenge the

hegemony of neoliberalism and articulate “alternatives to development” (Escobar, 1995; Juris, 2008; Mertes, 2004).

Early NGO studies critics contended that NGO theorists could not all be talking about the same theoretical object, since NGOs seemed to be central to contradictory and politically diverse projects; “NGO” and “civil society” had become catch-all terms for radically divergent organizations and agendas (Fisher, 1997). However, recent studies have increasingly shown that NGOs hold emancipatory potential while being embedded at the same time in modes of domination and implicated in logics of governmentality (Foucault, 1990, 1991, 2003; Rose, O’Malley, and Valverde, 2006). Thus, some theorists question not what NGOs *are*, but rather why people choose to associate as “NGO” and how “NGO-ing is done” (Hilhorst, 2003, 2007). Studies of NGO practice examine the unexpected ways that “NGO-ing” can transform collective action, including how tensions between activism and “anti-politics” operate within NGO institutions (Alvaré, 2010; Schuller 2009, 2012). NGOs function as intermediaries “gluing globalization,” (Schuller, 2009) and serving as sites of articulation between different constituencies. NGOs navigate worlds of complex entanglements: they model collective action through incorporated institutions; they seek funding from the state, foundations and philanthropic donors; they work with social movements and intellectuals; and thus must balance the diverse needs and demands of these multiple constituencies.

Adopting the NGO form as a mode of organization offers the possibility of making collective action *legible* to the state, donor agencies and global governance institutions like human rights commissions. Because decision-making bodies and resource-providing institutions have adopted and endorsed the NGO category, it opens up a space to define activity as “NGO” in order to incorporate collective action into global processes and also to access resources. This is

important when trying to understand the emergence of so many diverse NGOs globally. The emergence of NGOs is not simply a result of the neoliberal dismantling of the state, rather the form is a normalized mode of engagement with a hegemonic neoliberal order; it is a legible, regulated, and official mode of production and value creation. Hilhorst argues that “NGO-ing” can act as a strategic framing of collective action to gain legitimacy, power, and resources as an appropriation of neoliberal discourse. Other anthropologists, like Breton Alvaré, have documented the ways in which adopting the NGO institution as a mode of collective action comes with unintended consequences. NGO rituals including seeking legal recognition and responding to regulation, writing grant applications, and registration processes can facilitate state surveillance and lead to the de-radicalization of social movement demands.

Thus the agency, independence, and power of NGOs in defining their agendas is of central concern to NGO theorists, who sway between deterministic views that describe NGOs are driven by donors’ demands and others who argue that NGOs as independent, rational, calculating actors. In response to this debate, NGO theorist Alnoor Ebrahim (2007) has compellingly argued that NGOs have more significant leverage with donors than has generally been theorized. The relation, he argues, between NGOs and donors is less determinist and much more one of interdependence. This interdependence is embodied in the interactions between NGO and donors, specifically through ritual practices of accountability. Though NGOs seek continued funding from donors, Ebrahim argues, donors also seek to gain symbolic capital in exchange (Ebrahim, 144). Based on my observations, I suspect that by cultivating an array of organizations and campaigns that specialize in different areas of work, the *Acción Ecológica* collective has demonstrated this kind of strategic organizational resilience in relation to donors and the state.

In the context of these critical analyses, I argue that Acción Ecológica is best understood as an example of what historian of Ecuadorian environmentalism Tammy Lewis (2016: 51) terms an “ecoresistant” NGO. Acción Ecológica, she argues, is “the most ‘radical green’ group in Ecuador,” and was one of the earliest members of the nascent environmental movement. In contrast to “ecodependent NGOs,” whose “paid staff” depend upon international “eco-imperialist” NGOs, “eco-resisters” like Acción Ecológica, “oppose the dominant development model and seek independence from outside influences; they have created alternative visions for development and taken concrete steps toward making their visions reality.” Ecoresisters, like Acción Ecológica, are more radical, economically independent, and focused on facilitating national struggles against extractivism rather than fulfilling the mandates of foreign funders. Ecoresisters work “at the local level in response to specific grievances such as the threat of mining... with a volunteer labor force,” they “facilitate the processes of local popular organizations standing up to fight in defense of their territories and rights... through workshops they teach communities how to monitor their environment, grab media attention and pressure the government.” They “create their own agenda; funders do not. They address problems that don’t have sponsors” (Lewis, 51).

Lewis’ framework for understanding Acción Ecológica as a “eco-resistant” NGO emphasizes what is unique about the group from other kinds of NGOs. In addition offering a more precise analytic framework to social movement studies’ conceptualizations of “mobilizing structure” Lewis connects Acción Ecológica’s economic independence to its radical agenda and its position organizing at the intersection of indigenous movements, activist intellectuals and state policies. Remarkably, Acción has managed to maintain a radical political platform despite

increasing institutionalization; it has retained its ability to create its own agenda and “address problems that don’t have sponsors.”

I suspect that part of the strength of Acción Ecológica is rooted not just in its use of NGO institutions as mobilizing structures but its organizational form as a “collective.” It seems like collective members are able to recruit resources from different sources for interrelated goals by using a number of different campaigns and organizations often with quite diverse agendas. Individuals fluidly move between roles and organizations; people might be employed by one group or campaign but would volunteer in other efforts. Other folks would fund their work by applying to multiple grants for different projects, travel, or equipment; much like graduate students in the academy suturing together a salary from different sources. While these grant applications and forms of flexible labor and funding were described as stressful, it seemed that part of what has kept the collective radical is a strategy of not funding all projects campaigns and organizations through one increasingly large NGO but rather giving “birth” to new projects as needed and finding funding for each project where available.

### **Oilwatch and the “Birth” of the Movement to “Keep the Oil in the Soil”**

In December 2016, Ecuador’s ministry of environment tried to close Acción Ecológica shortly after the organization’s thirtieth anniversary, claiming that the organization had “violated the Constitution” by “straying from its mission.” In a press release, Acción Ecológica cited a government memo the organization had obtained about the attempted closure that referred to the group’s efforts to raise awareness about the serious environmental impacts and violation of the rights of indigenous communities that would result from the extractive activity in the Cordillera del Condor area where a Chinese owned mine was located. Acción Ecológica responded that they had been “scrupulous in our compliance with the law” and that their actions were in “full

harmony” with the State’s “National Plan for Good Living 2013-2017” stating that their position “regarding the conflict in the Cordillera del Condor is and has been to request that a Commission of Peace and Harmony with Nature be established.”<sup>24</sup> The US-based environmental NGO “Amazon Watch” came to the defense of Acción Ecológica, arguing that the move was a “clear reprisal” against the group’s support of the Shuar indigenous people’s resistance of a “mega-copper mine” in their territory. Kevin Koenig, Ecuador Program Director with Amazon Watch said, “the government is trying to shutter Acción Ecológica for doing its job,” adding, “this is a witch hunt which illustrates the Correa administration's rollback of rights for civil society and indigenous peoples.”

This conflict exemplifies the fraught relationship between Acción Ecológica and the Ecuadorian State, the kinds of contentious issues the organization tackles as an “eco-resistant” NGO, as well as the ongoing conflicts over extractive industries in indigenous territories in the wake of the constitutional assertion of the “rights of nature.” President Correa’s administration had previously tried to shut down Acción Ecológica in 2009, and the organization had been documenting the displacements of communities in Cordillera del Condor for years. While I was conducting ethnographic research with the group they published reports on displacements cause

---

<sup>24</sup> Acción Ecológica wrote in a press release: “We reject the assertion of the Ministry of the Environment (MDI-CGAJ-2016-261) that we have violated national law. We have been scrupulous in our compliance with the law and our actions are in full harmony with Goal 7.12.b of the National Plan for Good Living 2013-2017, which states that it is a priority "to optimize participatory environmental management and social control for the conservation of terrestrial and marine biodiversity, through processes of community integration that consolidate a culture of peace and sustainability in territories under special arrangements, as well as in the Amazon region", as well as with other articles of the Plan. The position of Acción Ecológica regarding the conflict in the Cordillera del Condor is and has been to request that a Commission of Peace and Harmony with Nature be established. We believe that in order to achieve peace, we need a complete and common understanding about what is actually happening in the territories of the Cordillera” (Translation by and cited in Amazon Watch, 2016).

by mega-mining projects across the Andes, and at a university conference they had shown footage of houses being demolished by mining companies. While the attempt to close the organization was worrying, in many ways, the press release was emblematic of the contentious politics surrounding extractive industries in Ecuador, the radical work of Acción Ecológica, and a history of State repression. However, while the attempted closure was unsuccessful and unsurprising, interestingly, the press release by Amazon Watch was notable for a few reasons.

Acción Ecológica was recognized by Amazon Watch not only as a significant actor in Ecuadorian politics, but also as a leader of the global climate movement (Amazon Watch, 2016).<sup>25</sup> Not only was Acción Ecológica responsible for Ecuador's modern environmental movement (campaigning on issues as diverse as "resource extraction, climate change, GMOs, deforestation, free trade, ecological debt, and globalization") Acción Ecológica was also significantly responsible for both of the radical environmental initiatives for which Ecuador was globally-praised. Although President Rafael Correa's administration took credit, the 2007

---

<sup>25</sup> "Acción Ecológica celebrated its 30th anniversary this year, and is largely responsible for the country's modern environmental movement. On issues ranging from resource extraction, climate change, GMOs, deforestation, free trade, ecological debt, and globalization, Acción Ecológica has been an instrumental and outspoken voice in shaping environmental policy and corporate accountability in Ecuador and beyond. It was the founding member of Oilwatch, a south-to-south network of resistance to oil activities in tropical countries, and was one of the first groups to explicitly make the call to "Keep It In The Ground," which has become a worldwide movement and scientific mandate to keep fossil fuels in the ground. Many of the Correa administration's landmark environmental initiatives actually originated with Acción Ecológica, like the the 2007 Yasuni-ITT initiative, which sought to keep close to a billion barrels of crude in the ground underneath Yasuni National Park in exchange for financial contributions equaling half of the country's forgone revenue. After Correa pulled the plug on the initiative and approved drilling, the group spearheaded the formation of Yasunidos, a national grassroots collective that gathered over 750,000 signatures to force a vote on drilling plans in Yasuni. And the groundbreaking inclusion of the Rights of Nature in the country's 2008 Constitution, which constitutionally enshrined the rights of mother nature, would not have happened without the organization's work." Amazon Watch (2016) in a press release.

Yasuní-ITT initiative, a plan to keep “a billion barrels of crude in the ground underneath Yasuní National Park,” and Ecuador’s Constitutional “Rights of Nature” initiative in 2008, both originated with Acción Ecológica and would not have happened without the organization's work. Moreover, Acción Ecológica, “spearheaded” the formation of the “YASunidos” campaign when President Correa cancelled the “Yasuní-ITT initiative” in 2013 and allowed oil drilling to begin in the region. As I discuss in the next chapter, the YASunidos campaign demanded a national popular referendum on the question of an oil moratorium in the “ITT” region of Yasuní National Park; the first example of a popular democratic movement to vote on the question of whether to “Keep it in the Ground.” While the campaign led an impressive grassroots effort and collected over 750,000 signatures, more than required to call a popular referendum, the National Electoral Council denied a popular vote on oil drilling in Yasuní National Park.

Finally, Amazon Watch makes the important claim that Acción Ecológica was one of the first environmental organizations to propose keeping fossil fuels underground, an idea that has since been adopted as a “scientific mandate” and has spawned a global “Keep it in the Ground” campaign. This campaign can be traced back to Acción Ecológica’s founding of Oilwatch a “south-to-south network of resistance to oil activities in tropical countries.” Acción Ecológica’s legacies, after thirty years of work, had been the birth of an environmental movement in Ecuador (represented by the wide array of activists and ecologists that gathered for the tenth anniversary of the National Environmental Assembly described in the introduction) as well as the emergence of a global “Keep it in the Ground” movement; from the founding of Oilwatch in 1996 as “a south-to-south network of resistance” against oil extraction in tropical countries, to their leadership in the now-global YASunidos movement.

Considering Ivonne's stories about Acción Ecológica's modest origins as an NGO focused on the health impacts of the oil industry on workers in the northern Ecuadorian Amazon, how, I wondered, had an organization focused on the health of oil workers become recognized as a global pioneer, leading transnational campaigns to demand the most ambitious transformations of national and global environmental policy? While the "Keep it in the Ground" campaign has gained visibility throughout the Global North in recent years (thanks to the "Shell No!" Kayak-tivists in the Northwest US, the "Keystone XL" pipeline protest by the Standing Rock Sioux, and "divestment" campaigns on US college campuses) the story of Acción Ecológica and Oilwatch indicate that the "Keep it in the Ground" campaign began with alliances between women-led resistance movements in petro-states across the Global South, like Ecuador and Nigeria. What can we learn from the idea that climate resistance stems not from the "ecology of affluence" in Northern carbon democracies but rather is rooted in the "environmentalism of the poor" with campaigns against petro-despotism?<sup>26</sup>

The founding of the Oilwatch network arguably represents the birth of the global "Keep it in the Ground" the movement. Ivonne told me that while Acción Ecológica has taken on a variety of issues, they have "always put a lot of emphasis and lots of force on the issue of oil" but after about six or seven years of "working on oil issues," the collective came to the realization that the "realities in other [oil-exporting] countries" echoed the situation in Ecuador. The Oilwatch network emerged out of solidarity networks across diverse nations in the global south who found themselves in similar positions of neo-colonial domination by petro-states and multinational oil industries.

---

<sup>26</sup> For a examples of the debate over the "ecology of affluence" vs. the "environmentalism of the poor" see: Guha, 1997 and Nixon, 2011.

“Oilwatch was formed in 1996,” Ivonne told me a year when when she and her compañeras in Acción Ecológica invited environmental, biodiversity, and human rights activists from across the global south to the Acción Ecológica office. “That was when we decided to create Oilwatch” and to “have a dialog and approach the peoples and organizations that were facing the problem of oil. But also, to convince other organizations that they should begin to work on oil issues.” Through dialogue with international oil advocates, Ivonne and her colleagues discovered that Ecuador’s experience was far from unique; that it followed a predictable pattern of exploitation. “They were the same companies, the same practices, the same violations of human rights, the same strategies of resistance.” Ivonne explained that “oil activities are always related, in all countries of the world, with processes of devastation, of the violation of human rights, of war and militarization, there’s a pattern tied to oil activity.” Ivonne explained that the idea to globalize the campaign against oil extraction stemmed from their recognition that the ecological crises they were witnessing in Ecuador were not anomalous, but rather endemic to tropical oil-exporting countries, which led them to launch the Oilwatch network and the global “keep the oil in the soil” campaign.

Until Acción Ecológica began organizing internationally, she recalled that “oil activity in countries like Ecuador was always seen as something natural,” meaning, “it was obvious that the country extracted oil” and “there was never an interrogation of what oil activity was. No one ever questioned the contaminations, no one ever questioned the social and economic problems associated with oil. No one ever questioned the debt tied to oil activity or the militarization. This is to say, many of the evils, which we saw in the society, were not conscious, they were tied to the situation of an economy dependent upon oil.” Oilwatch is a good example of a movement that addresses a problem without a sponsor; an ecoresistant movement that mobilizes through

NGO forms but created its own *raison d'être* that eventually became a global campaign. Ivonne's description of the transnational forum of Oilwatch members at the offices of Acción Ecológica is a good example of these processes of cultivating new movements. The ecologists of Acción Ecológica played a crucial role as translators both between Ecuadorian indigenous communities devastated by oil, and in the creation of transnational South-South networks of NGOs and social movements all attempting to dispel the "magic" of their extractivist petro-states.

The women of Acción Ecológica and Oilwatch might be productively conceptualized as "rooted cosmopolitans," in the words of social movement scholar Sidney Tarrow (2005; 43), meaning "individuals and groups who mobilize domestic and international resources and opportunities to advance claims on behalf of external actors, against external opponents or in favor of goals they hold in common with transnational allies." Existing research on transnational social movements that addresses the novelty of contemporary transnational mobilization is notable simply as a matter of scale: globalization provides both more causes for resistance and increasing opportunities and resources for collective action. Thanks to the expanding flows of technology and capital, theorists argue, movements have become internationalized, creating transnational advocacy networks of which NGOs are the nodes (Keck and Sikkink, 1998; Tarrow, 2005). As "social movement organizations," NGOs offer a kind of "mobilizing structure" through which to take advantage of novel "political opportunity structures" provided by globalization that offer new modes for social movement representation and citizenship claims (McAdam, McCarthy and Zald, 1996). Anthropologists have documented how social movements often use the same networks, technologies, logics and forms of the oppressive state, corporate, and multilateral economic institutions they oppose (Keck and Sikkink, 1998; Sawyer, 2004; Juris, 2008). The study of global social movements generally celebrates the ways in which

processes of neoliberal globalization have created new possibilities for activism and resistance. As many scholars have noted, globalization offers new possibilities for emancipation, empowerment and claims for citizenship along lines of neoliberal, colonial, or historical inequality. In his study of anti-corporate globalization activism, Jeffery Juris details how grassroots movements use the “networking tools and logics of global capitalism” against institutions and logics of capital and how the network form itself becomes a political “model for reorganizing society.” Suzana Sawyer (2004: 16) similarly demonstrates, in her ethnography of indigenous resistance to transnational oil corporations and the Ecuadorian state, how “subaltern oppositional movements proliferate precisely through the same transnational processes that enable hyper-exploitation under globalization.” Annelise Riles (2001) rightly critiques the “network form” but overlooks the significant relations of solidarity created by common experiences of neo-colonialism across the Global South.

In Keck and Sikkink’s classic “boomerang” case, a network of Brazilian and American activists pressured the Brazilian government by leveraging power imbalances between the World Bank, the US, and Brazil. By harnessing neo-colonial modes of domination exerted through global governance institutions like the World Bank and hegemonic powers like the US, these activists were able to pressure and move an unresponsive Southern State apparatus. However, the case of Oilwatch differs: Ecuadorian organizers engendered solidarity between and resistance amongst movements across the Global South without relying upon manipulating power disparities between North and South. The case of Oilwatch suggests that rather than the “boomerang,” we might better conceptualize the environmentalism of the Global South through the metaphor of the “brooms of the world.”

## **Conclusion**

In this chapter, I have examined the evolution of Acción Ecológica from an NGO concerned with the health impacts of the oil industry on laborers, exemplified by the “Amazonia por la Vida” campaign that protested Texaco’s contamination of the Ecuadorian Amazon, to the “birth” of a modern Ecuadorian environmental movement, radical state policies, and transnational campaigns. Through the metaphor of the “Brooms of the World” the women of Acción Ecológica invoke a gendered tool of the labor of “cleaning” to symbolize their “work of representation” of both ecological crises and affected populations. The role of Acción Ecológica as a founder of Oilwatch, a South-South transnational network of resistance between tropical oil-exporting countries aiming to keep the “oil in the soil,” signals the ways in which this modest NGO has become a leader of a global “anti-extractivist” movement. Finally, this case reminds the reader of the ways that the ecological problems of pollution, biodiversity loss, and climate pose problems of representation that are inseparable from questions of gender, race and post-coloniality. The “brooms of the world” represent their relations of solidarity with marginalized communities across pluri-national Ecuador and throughout the Global South. These brooms symbolize the transnational extension of “anti-extractivist” struggles outside of Ecuador to other oil-exporting tropical countries across the Global South through the Oilwatch network. In the next chapter, I examine the extension of the campaign to “keep the oil in the soil” from the Oilwatch network to the Ecuadorian state’s Yasuní-ITT Initiative and the YASunidos, movement which emerged when President Correa’s administration cancelled the Yasuní-ITT Initiative.

If, as Mario Blaser (2010) claims, new imaginations and worlds are created through practices of translation at moments of intersection and articulation between diverse constituencies, then Acción Ecológica (which is situated at the nexus of a wide array of

ecological struggles, pluri-national movements, local communities, state environmental initiatives, international funds and transnational campaigns) offers an optimal site to witness the emergence of new imaginations and worlds as they come into being at the intersection of colliding worlds. If humanity achieves a “post-oil democracy” then, I believe, that it will have been in no small part “birthed” here by Acción Ecológica.

## Chapter Three

### **“May the Cry of the Jungle be Heard!”: Translations and Transductions of Carbon and Democracy**

“¡Que el grito de la selva se escuche!” (“May the cry of the jungle be heard!”) - YASunidos slogan



**Figure 14: Yasunidos demonstration in front of the Presidential Palace in Plaza Grande.**

On a bright Sunday morning in April of 2015, I sat on a bench in the botanical gardens of Plaza Grande in Quito’s historic center, observing crowds of families, musicians and merchants. I listened to the soundscape of their voices, chords, and calls floating across the square. As I bathed in the light of the Andean sun, I considered the trees of Plaza Grande’s carefully

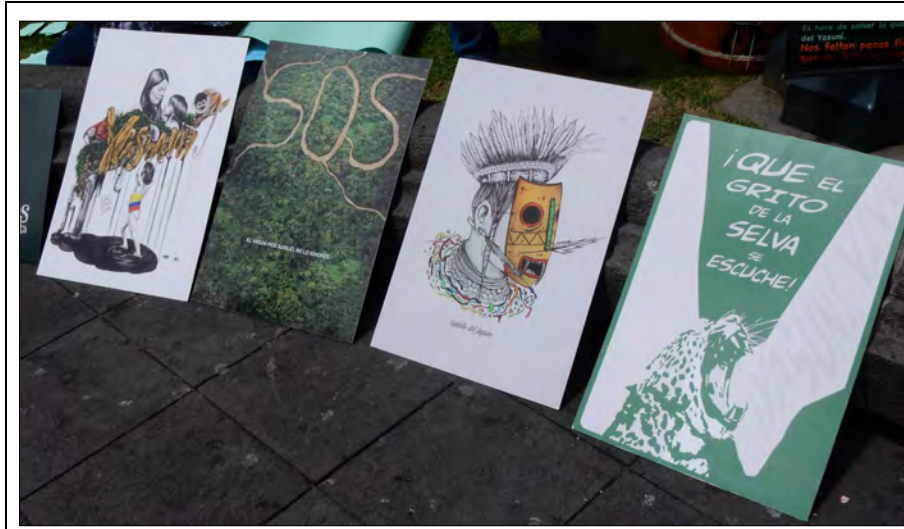
cultivated colonial gardens. Suddenly, my eye caught sight of one tree that was *moving* across the square and I watched as its swaying branches wove their way through the crowd. Finally, I saw Fernando, the tree's bearer, wearing a YASunidos t-shirt and cradling the sapling in his arms. He set the tree down in front of the presidential palace with a sign that read: "Un árbol por la democracia, un árbol por al Yasuní" (a tree for democracy, a tree for Yasuní).

YASunidos organizers began to emerge from all directions, carrying small plants, arranging seedlings in a circle around the sapling. Colorful posters were propped up around the tree. On one, rivers cut through the rainforest to spell "SOS," a caption read: "Yasuní asks for help, do not ignore it." On another, trees spelled out "Yasuní" but out of this forest protruded metal pipes dripping black crude; a child, adorned in the colors of the Ecuadorian flag, waded through a pool of oil. One poster depicted a Jaguar that roared "*¡Yasuní Vive!; ¡Que el grito de la selva se escuche!*" (Yasuní lives! May the cry of the jungle be heard!).

Fernando grabbed a shovel and began to dig, tearing a hole in the plaza's immaculately manicured lawn. Up came the tree and down it went in the hole. The crowd cheered as the insurgent tree was planted in front of the Presidential palace. A megaphone was passed around for speeches and chants. The seedlings were distributed amongst the onlookers, who eagerly



**Figure 15: YASunidos tree in Plaza Grande. "Un árbol por la democracia, un árbol por al Yasuní." ("A tree for democracy, a tree for Yasuní.")**



**Figure 16: YASnidos posters.**

gathered the little insurgent plants, to situate in their own homes, and the protest dispersed as quickly as it had begun.

Plaza Grande is no stranger to protest. Indeed, as the seat of state and religious authority since the colonial era, it has also been a center of political insurgency, regularly hosting the massive rallies of indigenous movements as well as recent large demonstrations in support of Yasuní. Much like other public squares in other colonial Andean cities, the centerpiece of Plaza Grande is its historic botanical garden that, at first glance, seems dwarfed by the imposing colonial structures that surround it. However, as environmental historian Richard Grove (1995) notes, colonial gardens were not just decorative but



**Figure 17: YASnidos organizers plant a tree in the garden of Plaza Grande.**

often instrumental to colonial projects and power.<sup>1</sup> By planting an insurgent tree in the gardens of Plaza Grande, in the face of these halls of power, YASunidos organizers recast the meaning of the colonial garden. By inviting “nature” or “Yasuni” into the political square, they defied the extractivist politics driving an ongoing ecological crisis. YASunidos’ insurgent tree reconfigured the political significance of all the plants populating Quito’s Plaza Grande as nonhuman political subjects protesting oil drilling in Yasuní.

Ecuadorians first rallied around the slogan “YASunidos,” (YASunited - United for Yasuní) in August 2013 when Ecuadorian president Rafael Correa cancelled the Yasuní-ITT initiative and allowed oil development in the Ishpingo–Tambococha–Tiputini oil blocks, the biodiverse core of Yasuní National Park. YASunidos organizers hoped to reinstate the oil moratorium indefinitely by calling for a “consulta popular” or national popular referendum on the issue in order to override the president’s cancellation. In order to invoke the constitutional right of “consulta popular,” YASunidos had to collect more than 600,000 petition signatures (5 percent of eligible voters) within six months. On April 14, 2014 YASunidos organizers successfully submitted 756,291 signatures to the National Electoral Council (CNE<sup>2</sup>). Unfortunately, their petition was rejected by the CNE, which capriciously invalidated enough

---

<sup>1</sup> In *Green Imperialism*, Richard Grove (1996) argues that islands, gardens and indigenous knowledges contributed to the idea of the environment and conservation through the imagination that humans could transform (and destroy) the environments in which they live. The “island” and the possibility of its radical transformation by colonial plantations and agriculture, he argues, acted as a microcosm of the world in the colonial imaginary. By witnessing the transformation of a contained ecosystem by human hands (or modes of production), colonial scientists, like Alexander Humboldt were able to imagine the large-scale transformative potential of global human activity. These scientific theorizations were politically effective and influential in transforming colonial policies, given imperial anxieties of empire’s survival.

<sup>2</sup> Consejo Nacional Electoral

signatures to deny the popular referendum (Jarrín, 2013). The Plaza Grande protest that I had witnessed marked the anniversary of the submission of the YASunidos petition signatures.

The YASunidos protest in Plaza Grande made me reconsider the political power wielded by trees. Perhaps nonhumans, like trees, are able to protest biodiversity loss, mass extinction, and global climate change. In what ways might a tree, or a forest, be constituted as a political subject with rights? I had come to Ecuador in the wake of the state's recognition of the "rights of nature" in its 2008 constitution to find answers to this question. How might this form of politics help humans conceptualize the ways in which non-humans constitute the conditions of possibility for our existence? What rights should nonhumans possess in our social and political worlds given the profound transformations, extinctions, and crises that we are enacting upon our non-human companion species? In this chapter, I examine the strategies that YASunidos deployed to represent the humans and non-humans living in the biodiverse ecologies of Yasuní. I analyze how the energetic protests of the YASunidos movement aim to interrupt, frustrate, and contest the normalized extraction of oil from the soil in an attempt to resist the transduction of hydrocarbons into energy and CO<sub>2</sub> emissions in the atmosphere. In these protests, Yasunidos invited non-human actors into political spaces to "speak" for themselves, like the tree planted in the colonial gardens of Plaza Grande in front of the Presidential Palace, which was summoned to represent "Yasuní."

In this chapter, I explore four protests by YASunidos. First, at a press conference at the Ministry of Environment, YASunidos organizers used satellite images and government maps as a mode of counter-surveillance to shame state agencies by revealing to the assembled media that a new road had been constructed in Yasuní contradicting promises made by the state to minimize the environmental impact of oil drilling in sensitive areas of the park. By displaying satellite

maps of the new road cutting through the forest organizers let Yasuní speak for itself and challenged state authorities with the slogan “if there is nothing to hide, then let us enter.” By exposing contradictions within state policy, YASunidos activists disputed President Correa’s narrative that the cancellation of Yasuní-ITT was the inevitable symptom of a global neo-imperialist economic order, a case of the “oil curse,” and evidence of the impotence of the post-colonial petro-state. YASunidos activists insisted that drilling in Yasuní represented a crisis of popular democracy in Ecuador. Thus, second, I examine a rally in front of the CNE (the National Electoral Council) YASunidos declared “democracia en extinción” (democracy in extinction) as they demanded the return of their disqualified petition signatures. These signatures, YASunidos activists argued, were unjustly discounted so the state could block their “consulta popular”: a form of direct democracy in Latin America that has long been used by social movements to resist incursions by extractive industries. At this demonstration, YASunidos translated the debate over oil drilling in Yasuní National Park from a problem of development into a crisis of democracy. However, in addition to demanding recognition of the rights of human citizens, YASunidos activists also brought a menagerie of animal props to this protest and other representations of nonhumans to constitute “Yasuní” as a coherent political subject. Through loud, lively street protests YASunidos harness human and nonhuman energies (animal props, chants, car horns, and drums) and transduce them into demonstrations of democratic discontent in an attempt to give voice to the humans and nonhumans that inhabit the National Park. Thus third, I consider a march through the streets of Quito to the “Centro Histórico,” as YASunidos’ “Batucada” drumming and chants echoed throughout urban soundscapes in an attempt to make the “cry of the jungle heard” in the capitol. Collective public expenditures of embodied energy, (like “Batucada” drumming) protest the transductions of hydrocarbons through the global

networks of extraction, consumption and emission. The noise produced in protest works not only to disrupt politics as usual but also to constitute political collectives like YASunidos. Fourth, and finally, I explore how YASunidos organizers have not conceded to the failure of their campaign but have rather sought to extend the campaign globally. Through Indymedia radio broadcasts, to international alliances, and protests at global climate conferences YASunidos organizers aimed to “Yasunizar el mundo,” (“Yasunize the world”) by carrying their campaign to “keep it in the ground” from Ecuador to the “COP 21” Paris climate accords in 2015.

I conceptualize the protest politics of the YASunidos movement through analytics of translation and transduction. On the one hand, YASunidos movement undermined government narratives that normalized the role of extractive industry as an engine of socialist development, in order to translate the question of oil drilling in Yasuní from a problem of development to a crisis of democracy. On the other hand, YASunidos activists attempt to make visible the regularized transductions of oil into the energy and money of the Petro-State, and resist the continual, and seemingly inevitable, expansion of the oil industry across Amazonian Ecuador. YASunidos’ modes of public protest are designed to draw public attention to the problem of oil to interrupt what environmental anthropologist David McDermott Hughes (2017) terms “the spill everywhere”: “the normalized, regularized and invisibilized consumption and emission of hydrocarbon energy.” The analytic of transduction helps make visible both the global transductive chains of energetic commodities that constitute “extractivism” as well as the strategies of resistance that, through the production of noise and discord, attempt to resist and disrupt these normalized flows.

As discussed in the chapter one, “extractivism” manifests as a continual transduction of commodities from one state of being to another as they are displaced from the Global South to

North and abstracted into money, profits, and power. Hydrocarbons are extracted from Amazonian soils, pass through jungle pipelines, into global shipping networks, and out of petroleum refineries, to be converted into global commodities to be consumed, and emitted from tailpipes into the atmosphere.

Transductive analysis of these energetic commodity chains must also be attentive to the kinds of political struggle and modes of resistance that they engender. In YASunidos' protests the embodied energies of street protest and the production of noise and discord, attempt to disrupt the normally smooth transductions of oil into development through demonstrations of democratic discontent. Thus, I attempt what Stefan Helmreich (2015: 225) terms a "transductive anthropology": that considers ethnography as a kind of transduction and the ethnographer as a kind of transducer. For Helmreich, transduction offers a method of participant observation, which is attuned to sensory engagements and enables an ethnography that attends to distortion and resistance. Transduction, in this sense, is not only useful as a metaphor for understanding energy transfer or translation, it also helps the ethnographer tune in to modes of resistance, moments of distortion, and conditions of turbulence. This mode of analysis highlights the moments when transductions of energy and translations of meaning are not smoothly conveyed but are instead resisted, opposed, or transformed in either intended or unexpected and chaotic ways. What I hope emerges from this transductive ethnography, is a glimpse of the lived experience of urban activists bringing into the capitol a conflict over the activities of extractive industry in the Amazonian periphery. I am concerned with the ways in which these transductions are collaborative, dialogic, creative, and productive processes as well as how ecologists' interests, ideas, and texts, translate and transduce energies of carbon and democracy across urban and rural divides, racialized class hierarchies, and regional and global fields of power.

Through transductive analysis of YASunidos' demonstrations against the state, I show how YASunidos translated the question of oil from a discourse of development into one of democracy. I am concerned with the way in which one kind of project, "Yasuní-ITT," labelled as an initiative of "sustainable development," was transformed into something radically different, "YASunidos," a movement that demanded a popular democratic vote on the extractive capitalism of the petro-state, contested the hegemony of a global hydrocarbon-based energy system, and resisted a future of climate crisis. If, as Timothy Mitchell argues, the "possibility of more democratic futures... depends on the political tools with which we address the passing of the era of fossil fuels," then YASunidos poses an instructive case study for imagining alternative possibilities for post-carbon democracy.

#### **Yasuní-ITT to YASunidos 2007-2015**

*"¡Si no hay nada que ocultar, dejemos entrar!" ("If there is nothing to hide, let us enter!")*

In March 2015, I attended a YASunidos press conference that was held in front of the Ministry of Environment. YASunidos organizers held up maps and satellite images of the Ishpingo–Tambococha–Tiputini blocks (ITT), the core of Yasuní National Park, which had, from 2007 to 2013, been a region protected from oil development. Organizers held maps which depicted a road under construction in the region. Their maps contradicted the government's promise not to build roads in the area and instead to fly industrial infrastructure in only by helicopter. Roads, according to biologists with the Tiputini Biodiversity Station, a scientific laboratory located near the ITT region, would bring increased poaching and colonization into the "Zona Intangible," a sensitive area known to be inhabited by "aislados," indigenous Tagaeri and Taromenane peoples living in voluntary isolation and protected under international human rights

law. The maps also showed the proximity of industrial activities to “aislados” communities that had recently been sighted and documented by the Ministry of Environment.



**Figure 18: YASunidos protest in front of the Ministry of Environment.**

YASunidos organizers used satellite images and government ministry data to shame the state institution which had promised to regulate industrial activity. YASunidos showed the press and the public evidence of oil industry activity that had been officially denied by the state, intending to expose the contradictions within and between government ministries. Standing outside the Ministry of the Environment, YASunidos activists held signs that read: “*¡Si no hay nada que ocultar, dejenos entrar!*” (“*If there is nothing to hide, then let us enter!*”)

Yasuní National Park is touted for its “extreme biodiversity” and the ITT blocks are considered the world’s most biodiverse region, containing “more species in one hectare than all

the wildlife in North America” (Watts, 2013). In the Amazon region, this area is characterized as the most biodiverse, the most intact, and the wettest, meaning that it is expected to stay wet even if drought in the eastern Amazon intensifies because of climate change (Martin, 2011: 34). As noted, the region is home to “aislados” (indigenous peoples living in voluntary isolation) including the Tagaeri, Taromenane and Oñamenane. The Inter-American Commission on Human Rights recognized the rights of these uncontacted peoples in 1997 and in 1999, and Ecuador designated part of Yasuní park the “Zona Intangible” (or the “uncontacted zone”) prohibiting logging and oil extraction in the area (Martin, 35).

Kelly Swing, director of the Tiputini Biodiversity Station, argued that “from a purely philosophical perspective, two specific arguments should have individually sufficed to justify keeping all of Yasuní intact – the extreme level of biodiversity and the presence of human beings living in voluntary isolation.” He explained that “the uncontacted Tagaere and Taromenane people have no vote and no voice; their right to self-determination will certainly be violated if we continue to develop more and more in the areas they occupy, whether or not those happen to fall inside an officially designated protected area that they cannot possibly know about” (Swing, 2013).

From 2007 until 2013, Ecuador seemed, from the outside, to be an exemplary environmentalist state. The government seemed receptive to the demands of indigenous and environmental social movements. Correa’s government oversaw the inclusion of the rights of nature in the 2008 constitution, which many environmentalist and indigenous movements hoped would further buttress the protection of Yasuní and indigenous territories. In 2007, President Rafael Correa announced the “Yasuní-ITT initiative,” a plan to forego the oil reserves located underneath the biodiverse core of Yasuní National Park as a mode of conservation and a stand

against climate change. The policy incorporated the demands of social movements like “Amazonia por la Vida” (Amazon for Life) to “keep the oil in the soil” and it seemed to offer an alternative to the “the resource curse” of the petro-state. The Yasuní-ITT initiative was a compromise. Rather than indefinitely forgo extraction of Yasuní’s oil reserves (as ecologists had demanded) President Correa agreed to support the initiative to keep “the oil in the soil” as long as it was financially supported as a strategy of “sustainable development.” Yasuní-ITT was contingent upon a financial mechanism by which Ecuador petitioned the “international community” (other nations, especially in the Global North, and philanthropic NGOs and individuals) to purchase \$350 million in credits per year, over ten years, to compensate Ecuador for lost oil revenues (at the time estimated to be worth \$14 billion in total). Modeled after carbon credits, they were intended to be valued in carbon markets as “net avoided emissions” (Correa, 2012) and environmental services. Anthropologist Laura Rival argued that “The Yasuní-ITT proposal was presented... as the articulation of a new economic logic: ‘in economic terms, what we would be doing is compensating for the generation of value.’ What was meant by ‘value’ was a multiple service, including the preservation of biodiversity, the protection of indigenous lives and ways of life, and mitigation of climate change through avoided pollution.” (Rival, 2010: 358).<sup>3</sup> This, in Correa’s words, “would transform Ecuador from an extractive economy to a service economy.” (Ibid, 359).

The ITT initiative seemed to offer an alternative to extraction similar to carbon credits markets and development aid financing, by which Ecuador would be compensated by the

---

<sup>3</sup> In an interview, a former government official who had worked on the Yasuní-ITT initiative, told me that one of the challenges posed by the initiative was that these credits were not easily integrated into international carbon credit markets as they had been intended to be.

international community for foregoing 20% of the nation's oil reserves in the name of the preservation of the biodiverse core of Yasuní National Park. Correa, an economist, argued that with Yasuní-ITT, "Ecuador seeks to transform old notions of economics and the concept of value." He claimed that Yasuní-ITT ushered in "a new economic logic for the 21st century." However, only five years later, in August 2013, President Correa cancelled the initiative, citing insufficient international financial support. He abandoned the Yasuní-ITT initiative in favor of "Plan B," drilling, and he blamed the Global North and the neo-colonial capitalist order, under which Ecuador had no choice but to more fully exploit its natural resources. Activists were unsurprised, and accused Correa of consistently favoring oil drilling.<sup>4</sup>

"The world has failed us," Correa declared in a televised address to the nation in August 2013: "It was not charity we sought from the international community... but co-responsibility in the face of climate change." In an interview with *New Left Review*, Correa (2012, 97) argued that drilling Yasuní was an inevitable symptom of an undemocratic, imperialist global order. "At the end of the day the problem is a political one," Correa argued, asking, "when there is a crisis, does one act in the interest of human beings or capital?" Correa decried the fact that "environmental goods are generated by the Third World and consumed for free by the First." Correa asked his reader to imagine the situation reversed: If "we were the ones polluting the world and... the Amazon Jungle were in US and Europe. They would invade us and demand compensation, in the name of justice, the principles of civilization, international law. But they are the strong ones with

---

<sup>4</sup> Indeed, the Guardian newspaper released documents indicating that the Correa has been simultaneously negotiating with the Chinese over for the oil in the ITT blocks as a "Plan B," a fact that supported the suspicions of activists (Hill, 2014). A source who had worked within the government on the initiative indicated to me that officials working on the ITT initiative were surprised by the cancellation, and at that time had still been hopeful that support was picking up; all that was needed was more time to ensure sufficient financial support for the initiative.

armies and missiles and so on. Why should they compensate us?” He denounced “enthusiasts” who optimistically hoped that the recent left turn in Latin American politics meant that “power relations will be changed from the south.” Correa claimed that these observers were mistaken saying: “We are a long way from being able to affect power relations on a global level. It is the citizens of the North who are going to change them.”

In this passage, Correa unsurprisingly frames the failure of Yasuní-ITT as an inevitable reality of the post-colonial capitalist global order; he implied that Yasuní’s fate was sealed by a continuing imperial legacy of resource extractivism. However, in doing so, Correa abdicated the possibility of Southern leadership on the question of climate or biodiversity preservation. “It is madness,” he claimed “to say no to natural resources, which is what part of the left is proposing—no to oil, no to mining, no to gas, no to hydroelectric power, no to roads.” Matching the patronizing rhetoric found in his infamous “sabatinas,” televised excoriations of his political opponents, Correa said, “This is an infantile left, which can only legitimate the right.”

Correa implied that post-colonial states in Latin America could not lead the way on climate action, however, his claim is contradicted by my findings that anti-extractivist movements across the Global South like Oilwatch have been leaders in the global climate justice movement. As discussed in the previous chapter, the campaign to “keep the oil in the soil” emerged not from campaigns in the Global North but rather from the resistance of peoples living in extractive zones in tropical oil-exporting countries across the Global South from Ecuador to Nigeria, who had witnessed and experienced the ecological assault of the oil industry first-hand. Correa’s claim that the neo-extractivist socialist petro-state is impotent in the face of climate change obscures three significant points: first, the implication of petro-state in the climate crisis; second, its neo-colonial expansion of extractive industries in indigenous territories, third, the

political agency of subaltern actors in post-colonial contexts.<sup>5</sup> Correa's inability to conceptualize the abolition of oil extraction is not because of the "curse" of the petro-state, but rather his lack of imagination or, more likely, from his calculated profiteering. For years, Correa strategically maintained two contradictory opinions: while he was initially skeptical of Yasuní-ITT<sup>6</sup> and the Rights of Nature, Correa seemed happy to court an environmentalist image of Ecuador abroad (at points, explicitly trying to cultivate a "Costa Rica"-like reputation<sup>7</sup>) while he was quite willing to violently suppress indigenous and environmental dissent with national police.

Although Ferguson (1994) suggests that development initiatives chronically end in failure, I suggest we view the Yasuní-ITT initiative not as a failure but as the result of a temporary compromise between an emergent "keep it in the ground" movement and a petro-state eager to commoditize Yasuní: either as carbon credits or oil. In a way, the Yasuní-ITT initiative of 2007-13 was at least a temporary success for the Oilwatch campaign (discussed in the previous chapter) which had sought to globalize the campaign to keep the oil in the soil. The failure of this initiative also marks a turning point the beginning to the YASunidos campaign and the effort to "Yasunizar el mundo" (Yasunize the world).

---

<sup>5</sup> Much as the most progressive French theorists of the "Rights of Man" were unable to imagine the political agency of enslaved Haitians even in the face of their revolution (Trouillot, 1997).

<sup>6</sup> (Martin, 2011)

<sup>7</sup> One of my Ecuadorian interlocutors showed me an advertisement filmed by Correa's government which depicted tourists who thought that they were flying to Costa Rica while they were actually taken to the Ecuadorian Amazon in an attempt to market Ecuador as an ecotourist destination like Costa Rica.



**Figure 19: YASunidos protest in front of the CNE.**

### **Protest at the National Electoral Council**

June 16, 2015: “*Democracia en Extinción: CNE, los estamos observando.*”  
 (“*Democracy in Extinction: CNE, we are watching them/CNE, we are watching you.*”)

It was around 3:30, when Eva popped her head into my office, “Hey, are you coming to the protest?” I looked up from my computer and nodded my assent. I quickly packed up my things and followed her to the street, where a school bus had been rented to carry us to the demonstration. A paper-mâché Jaguar was tied to the top of the bus, a stuffed-animal monkey rode the wing mirror and a toy parrot poked its head out of a window. The bus was draped with banners. One read, “Pueblos y Naturaleza, defeniendo el Yasuní” (Peoples and Nature, defending Yasuní). On the opposite side, a Jaguar roared the text, “Yasuní por ti, seguimos aquí (For you, Yasuní, we’re still here). The banner was



**Figure 20: A jaguar, parrot, and monkey adorn the YASunidos bus.**

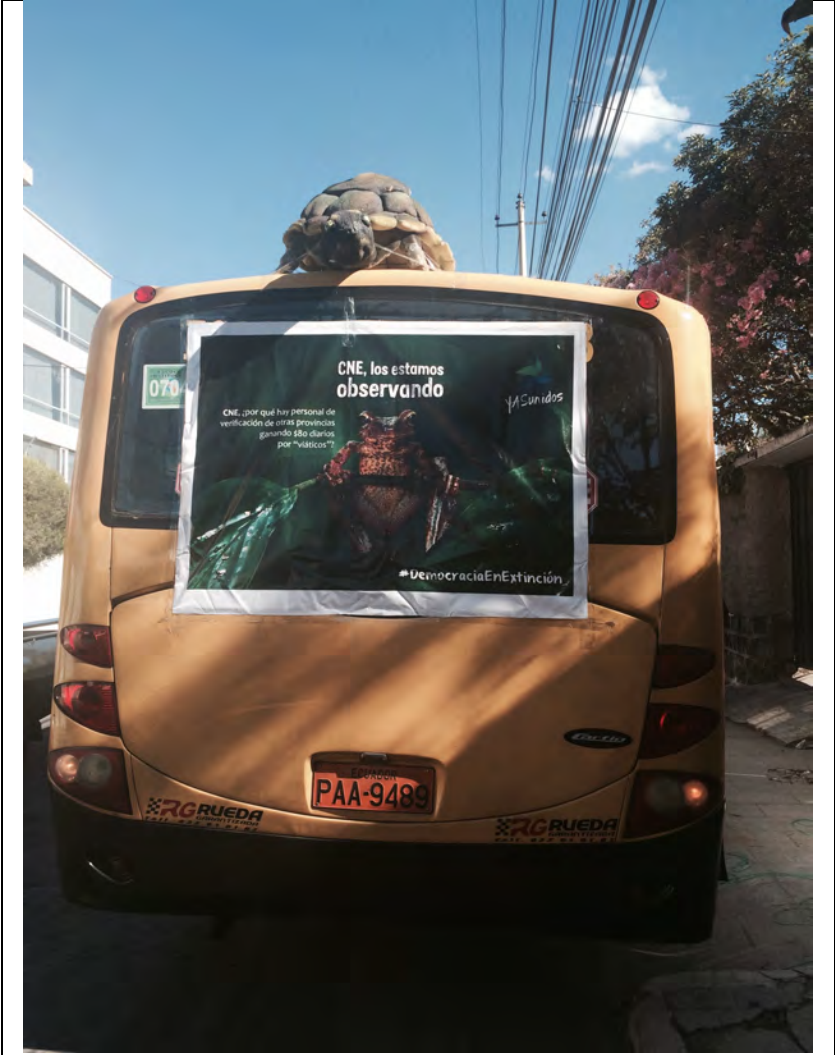
punctuated with the YASunidos logo. A sculpted turtle peered down from its perch atop the rear of the bus. Below it, a poison dart frog glared from a poster, its caption read, “CNE, los estamos observando” (which could be translated as either “CNE we are watching them” - or - “CNE, we are watching you”).

I asked Eva to explain this last slogan and the point of the demonstration. She said it was to remind the “Consejo Nacional Electoral” (National Electoral Council, or CNE), “that we are

watching them,” after they had disqualified a large number of YASunidos’ petition signatures under suspicious circumstances. The YASunidos movement was founded in 2013 to demand a “consulta popular” or national referendum on the issue of oil drilling in Yasuní. YASunidos had organized marches and events to gather petition-signatures over the previous year as part of their effort to call a popular referendum on the question of an oil moratorium in the ITT blocks of

Yasuní National Park. With much fanfare and anticipation, YASunidos had delivered the 756,291 signatures that they had collected within the requisite six months. But the CNE which had invalidated enough petitions to deny YASunidos' call for a popular referendum on the ITT initiative. YASunidos' effort to demand a popular referendum ultimately failed when the National Electoral Council (CNE) disqualified enough of their petition signatures.

YASunidos organizers said that the boxes containing the petitions had been tampered with. The credentials of a hundred petition-collectors were missing, and all the signatures without proper credentials had been disqualified: this meant that many petitions had been



**Figure 21: A turtle and frog on the rear of the YASunidos bus.**

invalidated. YASunidos organizers claimed that boxes had been opened by the military, the chain of custody was not secure, and the credentials of signature-collectors could have been removed. YASunidos organizers demanded that all boxes of ballots that had been disqualified on

these grounds be returned so that their veracity could be confirmed. Eva conceded, however, that this demand was likely to go unfulfilled. YASunidos thus expressed their outrage by creating bumper stickers depicting varied human and non-human inhabitants of Yasuní that declared “Democr cia en extinci3n” (Democracy in Extinction). While the effort to call a consulta popular was unsuccessful, organizers aimed to reframe the issue of oil in Yasun  from a question of development to a question of popular democracy, decrying the missed opportunity to resist the inevitability of the “resource curse” with a popular vote. This case is significant as an example of an attempt to put the future of the global hydrocarbon-based economy, extractivism, and climate change up to a democratic vote.

This was not the first time that environmentalists had faced repression by Correa’s government. His administration had recently been condemned by organizations like Human Rights Watch for shutting down the environmental NGO “Fundaci3n Pachamama” using Presidential Decree 16. This decree required foreign-funded NGOs to follow strict codes of conduct in the name of national security. In addition, his administration had threatened to shut down the environmental NGO Acci3n Ecol3gica multiple times, including the previous April. Furthermore, YASunidos organizers accused the state of starting two other “fake” campaigns that used similar designs to the YASunidos movement so as to generate confusion around the referendum. For example, after the cancellation of the ITT initiative, the Ecuadorian government had launched a campaign called “Yasun  Vive” (Yasun  Lives) that promised oil exploitation would only affect one percent of the park (a claim that was contested by the biologists that I interviewed with the Tiputini Biodiversity Station in part three).

While YASunidos’ CNE protest had strategically demanded the return of the disqualified signatures, the CNE’s refusal to return the signatures confirmed YASunidos organizers’

suspicious that their petitions had been disqualified improperly. This outcome supported YASunidos' assertion that the decision to drill in Yasuní-ITT was a case of "Democracy in Extinction." The petition signatures in question became emblematic of a crisis of democracy and social movement resistance. The YASunidos' petition had attempted to translate the question of oil drilling in Yasuní from a problem of development into a question of democracy. As such the disqualified signatures represented a crisis of democracy.

Sociologist Diana Rodríguez-Franco (2014) argues that the "consulta popular," or popular consultation or referendum has emerged across Latin America as a popular mode of resisting extractive industries at the local level. Historian Marc Becker (2011) argues that in Ecuador, the question of the "consulta popular" or right of consultation, understood as an ability to reject proposed extractive industry projects, was a contentious part of the negotiations surrounding the 2008 constitution. The constitution asserts the right of "consulta popular" to resist extractive industry, especially in "intangible" zones like Yasuní's "Zona Intangible." But it also articulates the ability of the President and Assembly to overrule these consultations. However, while popular consultations against extractivism normally take place at the local level,

YASunidos’ petition was unusual in that it demanded a popular referendum at the national level. Our bus, laden with its jungle menagerie, arrived at the bustling intersection of Avenida 6 de Diciembre and Elfof Alfaro around four in the afternoon and parked in the street in front of the CNE headquarters. This act blocked one of the avenue’s three lanes of traffic just as Quito’s transit arteries began to slow from congested to cardiac arrest. At rush hour,



**Figure 22: YASunidos drummers in front of the CNE.**

cars, buses, and motorbikes slid through Quito’s streets at a molasses pace, belching clouds of noxious fumes in their wake. The women and men of YASunidos began pulling marching drums out of the bus and started strapping them on, forming a circle at the front. The demonstration quickly got the attention of CNE officials and, almost immediately, uniformed police officers formed a line on the sidewalk to block the entrance of the CNE building. A squad car pulled up behind the bus. A few organizers chatted with the cops, apparently amicably; it seemed they

would let us stay. Motorists passing in cars and busses began to honk their support of the protest as they saw the YASunidos banner and heard the drums. Honking horns resonated with the drumming as six lanes of rush hour traffic began to fill the air with a cacophonous sound that echoed discordantly off of the solid surfaces in the concrete urban landscape.

During the CNE protest, YASunidos harnessed the sonic energies of the urban street. They tapped into the energy of Quito's urban milieu, turning an evening commute into a sonic weapon, a motorized precession of democratic discontent. The CNE protest exemplifies both YASunidos' attempts at translation and transduction. YASunidos translated oil development, biodiversity loss, and genocide into the register of democracy by harnessing and transducing human (and nonhuman) energies (totemic animals, drivers, car horns, traffic) into demonstrations of popular discontent. Calling for a popular referendum on behalf of Yasuní and protesting the disqualification of their consulta, YASunidos translated Yasuní's protection (and its people and biodiversity) from a question of "charity" by the international community or "co-responsibility for climate change," to a problem of Ecuadorian national politics and popular democratic resistance to the petro-state. YASunidos organizers often told me that "Correa always mentioned 'Plan B'" an observation supported by documents released by "The Guardian" news outlet which documented Correa's ongoing negotiation of the sale of Yasuní's oil to the Chinese during the period of the initiative. Their success derived from their successful galvanization of people in large demonstrations across the country; the transduction of human energy in large scale protests into noise, discord, and discontent to shame the state. YASunidos organizers faced and documented intimidating, often violent, gendered, and racialized violence in response.

YASunidos' protests are an example of a transduction of energy, political discontent into noise and obstruction. By physically filling the rush-hour motorway with the bus covered in reminders of Yasuní's many actors, as well as sonically filling the urban space with drumming, YASunidos amplified their energies as well as transducing the energies of the passing urban populace. Their protest demanding the return of their petitions focused this discontent on the failed transduction of their democratic energies into state policy.

YASunidos' slogan "Democracia en Extinción" expressed both the sentiment that Yasuní's preservation should be decided democratically, and frustration with the disqualification of their signatures. Their claim, that the question of Yasuní, biodiversity conservation, human rights, and climate change was fundamentally one of democracy reoriented the earlier debates concerned with questions of development, and the global neocolonial order to a question of democracy and territorial defense. Against the varied theses that explain climate inaction, Ecuadorians have organized a number of mass mobilizations to demand action on the issue, from the ITT initiative, to including the Rights of Nature into the 2008 Constitution, to the massive YASunidos movement that demanded a popular referendum and collected ballots. The failure of Yasuní was not a problem of popular complacency but rather a suppression of democratic expressions through the disqualification of signatures.

YASunidos' demonstration using a bus covered in animal totems (jaguar, monkey, parrot, turtle, frog) as well as drums and car horns invited "nature" into a political space to "make the cry of the jungle be heard in the capitol. Under the constitutional "rights of nature," these totems stand in for the nonhuman species residing in Yasuní that should be have a political voice. Like the planting of a tree in front of the presidential palace, YASunidos makes a claim to translate the voice of Yasuní through sonic transductions of drumming and traffic.



**Figure 23: The author holding the YASunidos banner.**  
“Yasuní por tí, seguimos aquí” (“For you, Yasuní, we are still here”).

### **YASunidos March, June 24, 2015**

A week after the CNE protest, everyone in the office began preparing to leave for another march, again around four in the afternoon. When I asked around what the march was about I was told that it was a general protest by the Left “*sobre todo*” (about everything). At this time there had been numerous marches and demonstrations against Correa’s administration that extended throughout the summer of 2015 and culminated in a general strike and indigenous “*levantamiento*” (uprising and march on the capital) in August. One colleague claimed that this protest had been prompted by the recently proposed inheritance tax, (an issue I’d seen in the news) but another said it was just a general demonstration of discontent.

The massive march departed from Parque el Ejido and extended as far as I could see, and was composed of all kinds of different organizations: labor unions, indigenous nations, student groups, anarchists waving black flags, and campesinos, each representing their own cause in a collective chaotic procession of democratic discontent. The YASunidos movement, I realized, had to be present so that their concerns would be heard amongst the cacophony of shouted slogans; if there was a march on, and they were not present, then their demands would be forgotten amongst the many other social movement demands and critiques of the administration. The march was marked by its diversity; even if the agendas were many, a general march offered a space to represent distinct causes in the same time and place. We assembled near the end of the march, between a labour union and a campesino organization. I was asked to carry a megaphone to the rally, but as soon as we arrived, someone grabbed it from me in exchange for one end of the YASunidos banner which depicted a Jaguar roaring: “Yasuní por tí, seguimos aquí” (For you Yasuní, we are still here). Fernando took hold of the other end. We stood at the front of the delegation as the women began strapping on their marching drums and practicing their rhythms behind us.

By the time we'd arrived, there was already a large crowd of onlookers taking pictures. I felt a bit conspicuous as the anthropologist standing at the head of our delegation. Sure enough, I quickly attracted attention. Shortly after being handed the banner, a woman stuck a digital voice recorder in my face asking me for an interview. While I appreciated the irony of this role reversal (it was usually I that was thrusting recorders in other peoples' faces) I declined the offer, not ready to speak on behalf of the YASunidos movement. Another woman became frustrated with me because I couldn't hold the banner high enough for her to get a good picture. While I had originally worried that I was not important enough to be standing at the front of the YASunidos

delegation, I quickly realized that my position in the march was determined not by my importance but rather my insignificance: “Here, anthropologist, make yourself useful by holding this banner...”

Pati passed out newly-printed posters of “Papa Francisco” (Pope Francis) that showed him holding a t-shirt that read: “El agua vale mas que el oro” (Water is worth more than gold). At the bottom of the poster was printed: “Los pueblos indigenas aislados no se asasina por la explotación” (Indigenous peoples living in isolation should not be killed for oil exploitation). Pati was flanked by her children who eagerly waved a



**Figure 24: “La bandera real del Ecuador.”**

rainbow flags that represented indigenous Ecuador. I overheard a passerby say: “la bandera *real* del Ecuador” (the true Ecuadorian flag).

Behind us, the women of YASunidos began drumming loudly, cycling through the various rhythm patterns the group had rehearsed. Marching drums consistently figured prominently in YASunidos protests and the drumming group was almost entirely composed of women. As in the CNE protest, the drums were *loud!* They filled the streets with noise as drumbeats echoed off skyscraper walls. This immediately created a sense of presence, quickly drew a crowd, and helped synchronize our chants and marching. The group knew a few different rhythms and the groups ahead of us began timing their chants to the beat of YASunidos’ marching drums. Synchronization was facilitated by the fact that many of YASunidos’ chants

seemed to be built upon slight variations on the chants of the labor movement chants of the union ahead of us.



**Figure 25: Marching with YASunidos.**

Marching and chanting to the drumbeat was a cathartic experience. While walking and carrying the banner quickly became tiring work, it was also a good bit of fun, involving some dancing. Fernando and I began to bob the banner up and down, swinging it back and forth, in efforts to counteract the tedium of holding it still. We gripped it tightly as strong gusts of wind threatened to blow it down the street, and the jaguar's face billowed erratically. The march felt satisfying; chanting at the top of my lungs offered a way of feeling like I was doing something about Yasuní and climate change. What else was there to do, other than march in the street and shout about it? Somewhere in the middle of the march, I had come to think of ourselves as some sort of ecological soldiers, marching to our drumbeat, proudly displaying our cause to the assembled onlookers standing on the sidewalk. The chants and drums of YASunidos gave

Yasuní a voice in the capitol. They made the “cry of the jungle” heard in Quito, where it echoed off of concrete skyscrapers and the white stucco walls of the historic colonial center.



**Figure 26: YASunidos batucada drumming.**

**“Batucada” Drumming and Transductions of Political Collectives**

At the end of the march, we found rest and refreshment in one of the many Canelazo<sup>8</sup> bars tucked away in la Ronda. I asked Ivonne about the significance of the drums. “The Batucada? The drums we’re playing?” Ivonne told me, that the “Batucada” drums held a few overlapping significations. First, the drumming had a gendered component, it provided a certain power to women’s organizing and gave force to their protests. “There are other collectives of

---

<sup>8</sup> A hot spiced Ecuadorian drink mixed with the fiery “aguardiente” liquor.

feminist women who play drums here in Quito,” and “while we were marching [in] the ecological protests for YASunidos,” the women of Yasunidos finally resolved, “we also have to play drums.” Thus they “decided to buy drums and the other [political collectives of] women, they started teaching us to play.” Thus, first, it was primarily women who led the drumming but not because men were excluded (indeed I had observed a few men drumming in solidarity, but the group was overwhelmingly composed of women). “We have become a group of women environmentalists who play drums,” she explained, it is “somehow a *vital* expression.” Second, Ivonne described the importance of Batucada as a collective exercise, one that helped to cultivate a sense of solidarity and teamwork, what she termed playing “all for one”: “When you think of an orchestra, or a football team, or a collective action... there is always a collective component ... an orchestra plays all for one.” She seemed to be saying that drumming reconciled an individual and collective politics.

The experience of playing the Batucada was described to me as both “a collective exercise in making art,” as well as a “tool of protest and of struggle to accompany social movements, to make noise, to make you listen.” Drums were not just an instrument but also a tool of protest that transduced human feelings of discontent into “noise.” In Ivonne’s interpretation, “noise” is not a waste product or form of entropy, rather it was useful, a way to “make you listen,” a mode of drawing attention and sending a message. Batucada drumming was also a way “to have fun,” part of the euphoria of collective effervescence that I had experienced at all YASunidos protests and marches. As a “tool of protest,” the drums’ ability “to make noise” disrupted closed-door politics and made others listen providing a cathartic experience for those engaged in public protest.

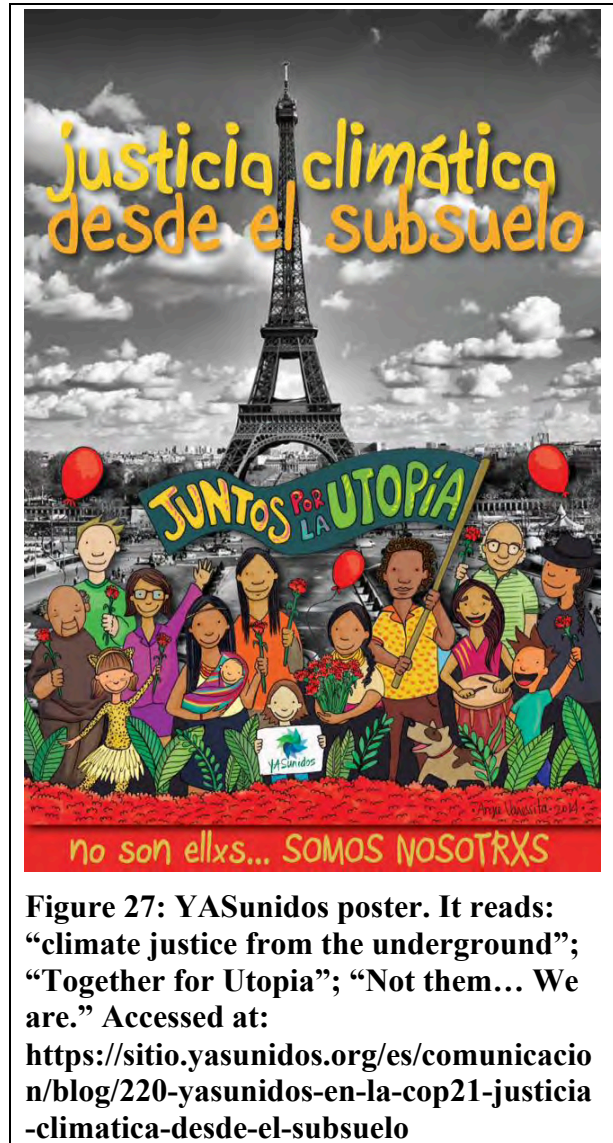
Interestingly, when we talked Ivonne identified the collective as particularly salient political form in Ecuadorian politics, connected to the question of Ecuador's shared mestizo identity as well as a question of community and organizational identity. She said that, "for me, the collective component is indispensable" since Ecuador is "30-40% indigenous" as well as "black and white and mestizo." She explained that "the collective, in Ecuador and Latin America, is the basis of society because," since "Ecuador is a society immersed in a 'capitalist society,' or a 'neoliberal globalized world,'" the "community here is indispensable." Similarly, she argued that Acción Ecológica functions both "individually" and as a "collective and a community," and "the same goes for the drums, it's another collective identity." Ivonne highlights the fact that YASunidos is a mestizo collective, embodying and uniting the Ecuadorian pluri-national community. Finally, the drums stand in for and help create these collectives themselves, as a form of solidarity and collective identity forged in exciting mass action. The "batucada" drums offer another entry point for considering a transductive analysis of the Yasunidos collective. From the drumming of political discord to the rhythmic resonance of the collectives, the drumming drew attention to the complex metabolisms between the carbon-fueled

metropolis and oil extraction, hidden in distant, peripheral jungles.

### Climate Justice from the Underground

“¿Por favor, Nico, podrías traducir algo en ingles?” (Nicholas, could you please translate something into English?). I looked up to see Antonia, an activist with YASunidos, standing in the doorway to my office at the NGO Acción Ecológica, with a friendly, hopeful expression on her face. I took a break from posting articles detailing the disastrous ecological consequences of mega-mining projects across Latin America onto Facebook and Twitter: a form of work that combined “popular education” with “re-tweet” generation. I asked Antonia what she needed translated. This time she only asked me to

translate one phrase: “¡Justicia Climática desde el Subsuelo!” a slogan for a relaunch of the YASunidos campaign in advance of the upcoming 2015 climate talks in Paris. Antonia said she wanted to express that change comes from *us* (the people), not *them* (our political leaders), so I translated the phrase as “Climate Justice from the Underground,” explaining that in English “underground” carried the multiple signification of subsoil, populism, and political nonconformity. Thus the phrase would *index* both the material struggle, “to keep the oil in the



soil,” a subterranean geological space, and the grassroots nature of the resistance, a “below” of marginality and critical resistance.

Translation was the primary way I made myself useful to the members of the various ecological collectives that populated the offices of Acción Ecológica in Quito. I was given projects of varied lengths (a short book, some articles, letters and pamphlets). As part of the build-up to the COP 21 talks in Paris, for example Mario asked me to translate a flyer he’d written to publicize his “Radio Forum” which would take place in Paris, and broadcast news from the climate talks.

Mario was my officemate, an independent journalist from Mexico who worked for an ecologist news agency. He produced the lion’s share of the content published by the agency, often by compiling footage and news from various affiliated groups. He found different ways to pay himself for his labor, he told me, and was always working on a grant proposal, to pitch the work of his agency to foundations around the globe. Usually, he sat silently at his desk behind a wall of computer monitors and audio/visual recording equipment, studio headphones on, his mouse quietly clicking as he edited audio and video clips.

Mario had secured funding for the radio forum event in Paris: a gathering of Indymedia digital radio stations from around the world. He and others would broadcast coverage of the events and protests at the climate talks in Paris to the rest of the world through this network of independent radio stations. The radio forum at the conference was focused on broadcasting the climate concerns of civil society actors, such as calling for stronger action on climate than what the Ecuadorian State had proposed, including reinstating protections for Yasuní. These independent, but coordinated, radio broadcasts were also described to me as a way to reach out to remote or marginal communities, as well as a form of popular education and political

mobilization around the COP21 deals, voicing the concerns and demands of the global environmental justice movement.

As a form of publicizing the upcoming Forum of Radios at COP 21 in Paris, Mario organized a live radio broadcast out of our office, in collaboration with “Anthropocene Radio” and a few other independent radio stations across Latin America and Europe. Mario had invited YASunidos activists like Antonia to talk about their campaign during the broadcast. While our office space, in a small outbuilding behind Acción Ecológica, was usually just the two of us working quietly, today it was filled with Yasunidos activists sitting on desks and leaning in through the doorway.

His headphones cocked to the side, one ear monitoring the live broadcast, and one ear listening to his colleagues, Mario interviewed each of the members of Yasunidos. He hosted the event energetically, introducing each speaker in turn, passing the mic, while also checking settings and cuing music, his hands intermittently twisting knobs to correct sound levels. YASunidos activists passed the mic among themselves, articulating the importance of protesting recent oil concessions that had been opened in Yasuní, emphasizing the need to “keep the oil in soil” and support the campaign to “Yasunizar el Mundo” (Yasunize the World) at the upcoming climate talks in Paris. As each person spoke, the dozen of us crowded into the small outbuilding listened intently to these impassioned speeches for climate justice. Suddenly, the lights went out and we lost sound; the power had gone out. The group collectively groaned. Without missing a beat, Mario pulled out his phone from his pocket, opened an app and enthusiastically shouted into the mic, “Sorry for the technical difficulties, we’ve lost power and internet, but we are continuing to broadcast over cellular!”

As this anecdote demonstrates, independent radio stations can broadcast over the radio waves, through internet infrastructures, and even across cellular networks. Broadcasts over radio wave frequencies, Mario told me, offer powerful ways to reach rural and isolated communities like those in the Ecuadorian Amazon, but broadcasting online allows global distribution of these messages to reach global publics in Latin America and across the world. He detailed to me the ways that independent radio stations have historically been integral to organizing the alter-globalization movement since the Zapatista uprising in Chiapas and the alter-globalization movement's Battle in Seattle in 1999. Mario told me that he had been working in Indymedia radio since that moment, both as a high school student in Mexico and a college student in Seattle. The alter-globalization movement has since evolved into a global ecological movement for climate justice. Mario's experience exemplifies the importance of radio and digital communications systems and radio in spreading movement messages around the globe. It also exemplified for me the ways in which the current "keep it in the ground" movement builds on earlier global social movements, from Chiapas and Seattle to the World Social Forums, and to the founding of global networks like Oilwatch, each laying the foundation and infrastructure for future iterations of transnational social movements.

Furthermore, the continuation of the YASunidos movement from street protests in Quito, to global radio messages that aim to "Yasunizar el mundo," exemplify that the campaign against oil drilling in Yasuní is not only a local, or even just national Ecuadorian struggle, but also a global effort in which Yasuní has become iconic of the anthropogenic crises of climate change and biodiversity loss. By transforming Yasuní into a verb "Yasunizar" (to Yasunize) the world, YASunidos activists aim to universalize the struggle of Yasuní around the martyr of the ITT

initiative, and to carry this slogan to future climate summits, in an effort to inspire the movement and shame the Ecuadorian and other states into action on fossil fuels.

### **Conclusion: YASunidos' Translations and Transductions**

In this chapter, I have explored the ways that the YASunidos movement harnessed diverse modes of transduction to translate the problem of oil drilling in Yasuní from a question of “development” into a crisis of “democracy.” The YASunidos movement protests the extraction of hydrocarbon energies from indigenous territories and biodiverse ecologies and their transduction into the fuel, money, and power of the petro-state. It does so by harnessing the embodied energies of street protests, the sonic energies of the urban environment the collective energies of marching drums, and the electronic energies of radio wave, cellular networks, and digital communications infrastructures to reconfigure the question of oil drilling in Yasuní from a question of development into demands for national and global democratic decision making. Transductive ethnography draws attention not only to the directions in which energy flows but also the mediums through which energy passes as well as moments of resistance, discord, and dissonance.

First, YASunidos' strategic demonstration at the presidential palace allows trees and plants to “speak for themselves” through the planting of an insurgent sapling in the colonial garden of Quito's “Centro Historico” and the dispersing of seedlings to the Sunday crowds translating the question of drilling and resistance to urban publics as an attempt to make “the cry of the jungle heard.” Second, YASunidos savvily pit government agencies against another through a protest in front of the Ministry of Environment to contest Correa's narrative of the cancellation of Yasuní-ITT. At the CNE, YASunidos demand the return of disqualified petitions for a “consulta popular” on the question of oil drilling in ITT. Petitions are the locus of a

particularly Ecuadorian and Latin American form of popular democracy, increasingly used as a mode of local resistance to incursions by extractive industries. They were used in this case to express discontent at the national level. Through street protests at the CNE and marches through the streets of Quito's historic center, YASunidos protests this failed democratic transduction of populism into policy by creating discordant sonic environments that transduce bodily and urban energies into "noise" directed at the state. Transductive analysis of these sensorial realities of YASunidos' street protests demonstrates the ways that noise (in the form of chants, dancing marches and batucada drumming) is not waste, but is a useful tool of protest, to draw attention to "make listen" and to construct political collectives. Noises like drumming both use the urban environments as a sonic weapon of political protest and create resonances that cultivate mestizo political collectives. In moments of public protest, defenders of the rights of nature mobilize, amplify and transduce human energies to make visible and contest the normalized flows and transductions of hydrocarbon energy. YASunidos organizers also generate turbulence against these flows at the global level in an attempt "Yasunizar el mundo" and prevent the global thermodynamic warming of the planet. Through the digital transductions of a global radio forum this Ecuadorian social movement has set its sights on mobilizing global communities and collectives of humans and non-humans, harnessing their energies to defend distant people, cultures, ecosystems, ontologies. Transductive analysis of these protests makes the multiple local, national and global scales of this struggle visible as well as the diverse methods and media deployed to transduce and translate the problem of oil drilling in Yasuní into a universal campaign against fossil fuels.

## **Part III: Jungle**



**Figure 28: Sign that reads: “Tiputini Biodiversity Station, University of San Francisco Quito”**

## **Chapter Four:**

### ***“A Huge Natural Laboratory”*: the Bio-Sovereignties of Tiputini**

#### **Introduction: “Ecuador’s Paradise Lost”**

I first heard about the Tiputini Biodiversity Station (TBS), a scientific laboratory located along the Tiputini River on the northern border of Yasuní National Park, while conducting research on the Yasuní-ITT initiative. Biologist Kelly Swing, the founder of TBS, was an outspoken advocate of conservation in the region, and a vocal opponent of expanding oil

operations into the nearby “mega-diverse” ITT region of Yasuní National Park (Bass et. al., 2010). Swing made global headlines as he advocated conservation and provided research to support the Yasuní-ITT initiative in both scientific and popular journals (Swing 2011, 2012, 2013a, 2013b). The fact that TBS biologists had demonstrated that the “Ishpingo - Tambococha - Tiputini” region of Yasuní National Park might be the “most bio-diverse place on Earth” became a primary justification for the national moratorium on oil drilling.<sup>1</sup>

However, I finally decided to conduct participant observation at TBS as an ethnographic field site in 2013, after reading an article about the laboratory published in *The Nation* after Correa’s cancellation of the Yasuni-ITT initiative. In “Ecuador’s Paradise Lost,” journalist Christian Parenti (2013) characterized the story of the Yasuní-ITT initiative in terms of Correa’s valiant effort to save the forest; he blamed the 2008 economic crash for the lack of financial support for the ITT initiative. “Like the Keystone XL pipeline,” Parenti claimed, Yasuní is “a global test case for the climate-activist rallying cry of ‘Leave the oil in the soil and the coal in the hole.’ If humanity cannot manage to refrain from drilling for oil beneath the most biologically diverse place on earth,” Parenti (2013, 25) argues, “then how can we expect any state or community not to drill for oil beneath barren desert, degraded farmland or on the ocean floor?”

However, Parenti’s article began with the story of a tapir that had been killed by people referred to only as “Indians,” whom he described as riding in a canoe bearing a “big new outboard engine,” and wearing “new clothes:” one man sported a “big watch” and a woman wore

---

<sup>1</sup> Kelly Swing told me that TBS and the Catholic university’s station “provided all the information to serve as the basis for arguments for making [the Yasuní-ITT initiative] work.” While he acknowledged that there is still much that biologists don’t know, he argued that they had documented enough to know that Yasuní-ITT is “not just another piece of rainforest” (Interview with Kelly Swing, August 2015).

“a bright yellow dress.” These were signs, Parenti (2013, 24) claimed, that these people were not, “local subsistence hunters,” but rather “outsiders” seeking to sell “illegal bush meat” in town. He wrote that these “Indians smirk condescendingly at the worried, conservation-minded scientists,” and concludes that “this is how jungles die... one tapir at a time... nibbled away by poachers” (Ibid, 25). Parenti’s caricature of these “poachers” prompted me to consider the social position of the laboratory not only as an advocate for biodiversity preservation but as a contentious site in a region of contested regimes of governance and an asymmetrical struggle between oil companies, biologists, and indigenous communities.

While my social movement interlocutors on the front-lines of the struggle to “Keep the Oil in the Soil” would likely be repelled by Parenti’s offensive characterization of indigenous hunters, and of Correa’s “heroic” role in the Yasuní-ITT initiative, on one point on they would likely agree with Parenti. For these activists, Yasuní represents a limit, a threshold: a way of visualizing the ecological crises posed by “extractivism.” The failure of the Yasuní-ITT initiative is an ill-omen, foreboding potentially imminent extinctions of non-humans and humans alike. Iconic of the “keep it in the ground” struggle, the case of Yasuní helps illuminate the forms of human agency driving, and resisting, global ecological crises.

Despite his cultural insensitivity, Parenti does acknowledge that, “the fight for Yasuní is not just about climate and biodiversity,” but also “cultural survival,” for both the Kichwa speaking Napo Runas who are “descendants of the traumatized survivors of the violence of the nineteenth century rubber boom,” as well as the Huaorani “4,000 people who speak a language unrelated to any other,” and “200-400 of whom live in voluntary isolation.” When the Shell corporation tried to begin prospecting for oil in the Ecuadorian Amazon in 1937, the Huaorani burned and looted oil camps, killing “evangelical Christians from the Summer Institute of

Linguistics with wooden spears.” In the 1970s, after some of the Huaorani were converted by Christian missionaries, the Tageri clan separated and “fled deep into the jungle.” When two Catholic missionaries working with local oil firms tried to meet the Tagaeri, they too were “found dead, full of spears” (Ibid, 25).

Parenti mentioned a community of “contacted” Huaorani that live near the TBS research station, along a road built by the Spanish oil company Repsol, who, in his estimation, were “far from... noble savages,” people that include “hard working mothers,” “progressive college kids” and “angry old quasi-bandits who resent the scientists as much as the oil company.” Diego Mosquera, a “manager of the Tiputini Biodiversity Station,” apparently told Parenti that he “knows these people well.” Mosquera’s job involves regular trips through this community to bring in supplies. Parenti writes that, a Huaorani men “associated with a tough old warrior named Nambea stop Mosquera on the road and demand tribute.” Mosquera explained to him that “Sometimes their demands are pretty outrageous, like ‘Give me a million dollars,’ ... I say, ‘I don’t have it.’ So they say, ‘OK give me a mattress and a watermelon.’” These demands, Parenti reports, also included threats on the research station. “On one trip they stopped Mosquera and gave him a detailed list of financial demands” that read “Dear Diego, this is to remind you of your obligation to pay us. If you should fail to pay, we will burn down your research station, kill all your monkeys and kill you. Thank you, and have a nice day” (Ibid, 26).

While in his sensationalist style Parenti describes these men as “bandits,” I became interested in the fact that the Huaorani claimed that the laboratory had an “obligation,” to pay them. This suggested to me not highway robbery but rather a more complicated political and economic situation of debt and obligation. In addition, I wondered, what did the Huaorani mean by their reference to “kill all *your* monkeys” as if the primates were the domesticated pets of the

research station? These demands seemed to be not only a manifestation of resentment or irrational economic desire, but rather contestations of sovereignty and competing visions of the relations between people and the forest.

This sensationally reported interchange between Parenti and Mosquera convinced me to research the TBS facility, not only as an anthropology of science inquiry into the nature of biodiversity in Ecuador, but also as an investigation of the political context of the TBS laboratory including its relations to the state, oil companies and nearby communities. While Parenti's descriptions of the indigenous peoples living along the Tiputini River oscillate between casual racism and sympathetic liberalism, his account reminds us that laboratories, like TBS, are often implicated in complex political relationships and are always constructed within significant cultural and historical contexts. Science studies scholar Karin Knorr-Cetina (1992) reminds us that "the social is not merely 'also there' in science. Rather, it is capitalized upon and upgraded to become an instrument of scientific work." Laboratory processes, "align the natural order with the social order by creating reconfigured, 'workable' objects in relation to agents of a given time and place." (Knorr-Cetina, 1992: 119). Thus the political and cultural context of TBS does not only exist in parallel to the activities of scientists, these contexts create the possibility of this laboratory of biodiversity.

In this chapter, I am concerned with the political, cultural, and ecological contexts of the TBS laboratory. In the first part, I examine the overlapping and competing bio-sovereignties in which TBS is contextually situated between the state, the oil company, the university, and local indigenous communities. In the second part, I consider two competing imaginations of Yasuní: first, as a "huge natural laboratory" constructed by biologists; and second, as an "anthropogenic forest," in the words of Laura Rival, an ethnographer of the Huaorani, who describes the forests

of Yasuní as the product of the Huaorani's intentional, and unintentional, historic domestications and cultivations over many generations.

### **Crossing Zones of State, Corporate, Indigenous, and Academic Bio-Sovereignty**

I packed my bags with excitement the evening before I travelled to the Tiputini Biodiversity Station to work as a volunteer intern. Run in collaboration between the Universidad de San Francisco, Quito and Boston University, the facility was the brainchild of Kelly Swing<sup>2</sup> a biologist, director and founder of TBS who scouted the site not far from the city of Coca and oversaw the construction of the facility in 1994-5.<sup>3</sup>

When I told my father on the phone that I would fly to Coca the next morning, he jokingly said that, "Claude Levi-Strauss would have taken the bus," implying that it would have offered more adventure. Having never found a good night's sleep while riding the overnight Andean buses as they roll down mountainous routes,<sup>4</sup> I opted for the approximately one-hour flight from Quito to Coca. As for Levi-Strauss, he declared at the opening of *Tristes Tropiques*, "I hate traveling and explorers. Adventure has no place in the anthropologist's profession; it is merely one of those avoidable drawbacks." Adventure, for Levi-Strauss, is simply wasted "effort

---

<sup>2</sup> Through an email exchange and an in person interview with Swing, I obtained permission to conduct research at the station during the month of September 2015 to investigate what Escobar terms the "biophysical referents" of Yasuní's biodiversity. Escobar argues that "although 'biodiversity' has concrete biophysical referents it must be seen as a discursive invention of recent origin. This discourse fosters a complex network of actors, from international organizations and northern NGOs to scientists, prospectors, and local communities and social movements. This network is composed of sites with diverging biocultural perspectives and political stakes" (Escobar, 1998: 53-55). I chose TBS as a good example of one node in this "biodiversity network" as well as an optimal site to study how biologists construct biodiversity as a scientific resource.

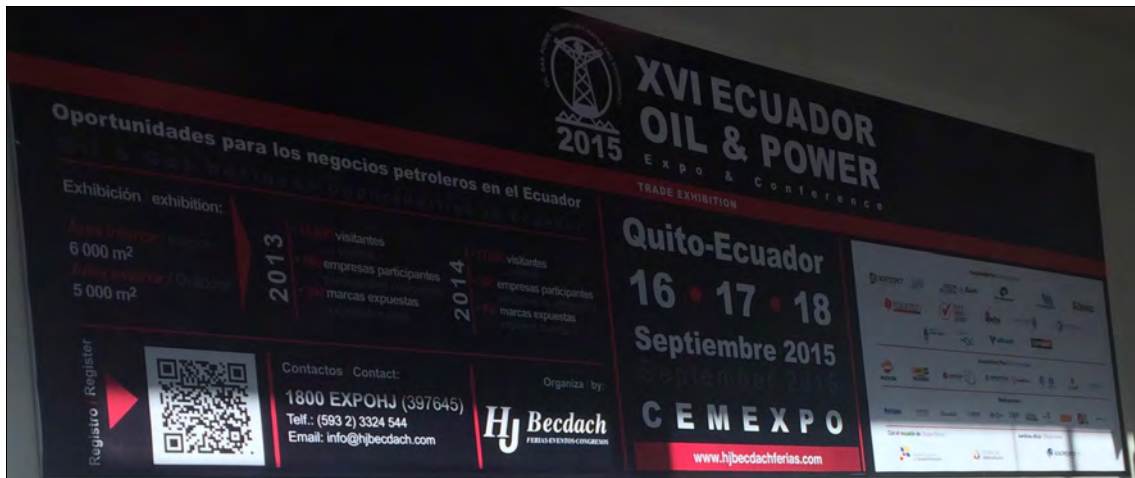
<sup>3</sup> For more information on the Tiputini Biodiversity Station visit:

[http://www.usfq.edu.ec/programas\\_academicos/Tiputini/Paginas/About-us.aspx](http://www.usfq.edu.ec/programas_academicos/Tiputini/Paginas/About-us.aspx)

<sup>4</sup> I also recalled Eduardo Kohn's (2013) traumatizing account of a near death experience on one similar bus ride as a particularly harrowing type of "adventure."

and expenditure” which “bestows no value.” The anthropologist often experiences “hours of inaction when the informant is not available; periods of hunger, exhaustion, sickness perhaps; and always the thousand and one dreary tasks which eat away the days to no purpose and reduce dangerous living in the heart of the virgin forest to an imitation of military service.” The fact that “so much effort and expenditure has to be wasted on reaching the object of our studies bestows no value on that aspect of our profession, and should be seen rather as their negative side.” The “truths” which we anthropologists “seek far afield *only become valid when they have been separated from this dross.*” (Levi-Strauss, 1992: 17 my emphasis). For Levi-Strauss, adventure is nothing more than “dross” or noise to be discarded in the search of truth, signal, and data.

Thus, in an effort to minimize adventure, I chose simplicity, speed, and a higher carbon footprint, and flew from Quito’s new Mariscal Sucre airport on the outskirts of the Cumbayá suburbs. When I arrived at my gate, an enormous advertisement loomed above it announcing the upcoming “XVI Ecuador Oil and Power Exposition.” I felt conspicuous dressed in jungle-hiking attire and sporting a large camping backpack as I boarded a plane packed with business commuters dressed in suits and carrying briefcases. When I landed in Coca, workers wearing overalls branded with the corporate logos of oil companies awaited the commuters dressed in pressed suits. Taking the plane was a distinct adventure from the process of pouring in and out of Quito’s overflowing bus terminals but perhaps an even more revealing glimpse of the hegemony of the oil industry in Ecuador’s Amazon.



**Figure 29: Airport Advertisement for the 16<sup>th</sup> Ecuador Oil and Power Exposition and Conference.**

In all my trips to the Ecuadorian Amazon, signs of eco-tourism have been dwarfed by the presence of oil companies. I departed Coca for the Napo river from a port that was familiar to me since I had visited a couple “eco-tourist” lodges during preliminary fieldwork. I rode in a long narrow motorboat piloted by a some boatmen that worked the docks. We passed barges loaded with oil barrels and construction equipment on our way down the river, and industrial operations were visible at intervals along the shore. At one site, orange flames flared above the forest canopy in stark contrast to the deep blue sky, white fluffy clouds, and verdant green leaves.



**Figure 30: Gas flares along the Rio Napo.**

On a previous research trip that I had made to an eco-tourist lodge, the omnipresent signs of industrial oil operations in sensitive Amazonian ecologies shocked the other tourists. One man working at the lodge, which was owned and managed by an indigenous community, explained to them that his community had founded the cooperative eco-tourist project with money that had been awarded to them as part of a financial settlement to compensate for the industrial contamination caused by a nearby oil company. He noted that other communities in the area had also received a monetary settlement but they hadn't, in his opinion, invested it wisely; rather, they had simply divided up the settlement into cash payments to individuals, which had been quickly spent. He said that his community, by contrast, had achieved a steady income stream that was independent of the oil industry by investing their financial settlement communally in the co-operative ecotourism project. The irony remained, however, that the ecotourist endeavor and the conservation area it supported had only been made possible in the wake of oil contamination.

After about an hour of boating downriver, we arrived at an oil company transfer station: a corporate checkpoint that guarded the entrance to a private road, which led to a different biodiversity station run by the Catholic University, and a boat launch where we would access the Tiputini River, which offered the only route to TBS. Our canoe bumped up against the rubber tires that lined a bright green metal dock as it bobbed up and down in the river's waves. I disembarked and followed a bright yellow handrail around a helipad to a small concrete room with a black steel door. Inside, the checkpoint resembled airport security: I passed through a metal detector, my bag went through an x-ray machine, and a security guard inspected my passport, typing my information into a computer. After my credentials were accepted, I was allowed to pass.

I proceeded to a waiting room filled with rows of chairs facing a television that was playing an action movie. I ate a sandwich and an apple from a bag lunch that the boatmen had given me. The waiting room was actually a helicopter hangar, and it opened onto a helipad. It provided shade from the fierce sun but no relief from the heat or humidity. Shortly, I



**Figure 31: The Catholic University's biodiversity station.**

heard a bus arrive in the parking lot outside and college students wearing disheveled clothing and flip flops filed into the waiting room, collapsing into chairs; they were visibly tired from their stay at TBS.

I exited to the parking lot and met Gabby, who introduced herself as one of the directors of TBS. We got in her white Toyota pickup truck and headed off down the road. We talked about the logistics of my stay as a volunteer at the station: She explained that there would be no telephone and very limited internet access; that directors live at the station in two-week rotational shifts to alleviate some of the isolation of living at the station. Student groups, like the one I had seen, passed through regularly and I would be expected to help prepare for and manage these groups.

The pickup bumped along the dirt road leading away from the oil company facility through the woods. Signage along the road at regular intervals warned of an underground petrol pipeline. We crossed a few bridges, and a number of houses: square open-sided wooden



**Figure 32: The TBS boat in the Tiputini River.**

structures on stilts. Women could be seen cooking over fires as their children ran and played. Laundry dried on clotheslines, blowing in the woodsmoke that filled the air. Gabby stopped to pick up some hitchhikers, who rode in the back of the pickup. Upon arriving at one house, our passengers knocked on the roof of the cab and jumped out of the

truck when it came to a stop. We passed a community center. After a long period of forest, we arrived at the Catholic University's biodiversity station.

Gabby parked in a sandy parking lot. As we exited the vehicle, she gestured to the station and explained that while their facility was on a road, TBS was accessible only by river and thus offered greater species diversity and faced fewer demands from the local community. I followed her down a ramp to a boat launch on the banks of the Tiputini River where a long, narrow motorboat awaited us. A truck filled with supplies arrived, a few men got out, and we helped them load everything into the boat. Two men dropped large plastic drums of gasoline off the truck and rolled the barrels down the ramp where another man caught them and put them onto the boat. I helped carry building materials - bags of concrete and bundles of tile - as well as large boxes of fruit and vegetables.

After the boat was loaded, we piled in and rode down the river for an hour and a half. Gabby explained that these regular movements ferrying students and supplies to and from TBS and the transfer station

happened every couple of weeks and that these trips would take up most of a day. The pilot of the boat pointed out a spot where he'd seen a jaguar each year for four years, except this one. He said that he had travelled through the area often, having worked for the oil company in the past,



**Figure 33: TBS staff members transfer barrels of gasoline from the truck to the boat.**



**Figure 34: On the TBS boat, laden with supplies.**

conducting seismic tests on the other side of the river, opposite the TBS grounds.

When I asked if the oil company had drilled on that opposite side of the river, Gabby told me that even if they'd found oil they probably wouldn't drill because that area was the territory of what she termed "Uncontacted Tribes." When I asked

if she had ever seen any of these "uncontacted" peoples she replied that she had once seen a

human footprint in the ITT area while working on a previous job for the government. She had been traveling with two national park guides, one of whom was Huaorani. She explained that he had gotten very scared saying that uncontacted people were nearby and they would kill them if they didn't leave right away. When I asked if she thought that was likely, she said that groups of uncontacted Huaorani people did tend to kill men and kidnap women that they encountered. Ecologists with Yasunidos had told me similar stories, mentioning killings of oil workers in Yasuní and ongoing conflicts between the “uncontacted” communities like the Tagaeri and Taromenani and settled “contacted” Huaorani communities like those that lived near TBS.

I asked her if she had heard of any communication between uncontacted and contacted communities and she said that an old woman of the community through which we had just passed through had claimed that uncontacted people would visit her when no one else is around, and ask questions like, “why do people wear clothes” and “why do they have cars,” but that she hadn't heard much more than that.

I asked about the oil company's activities and their relations with Huaorani communities. She explained that the people living in the community near the oil company were once “uncontacted” as well; a priest and a nun with the help of a Huaorani/Spanish translator converted them in the 1940s and 1950s, when the oil company had first arrived. Now, she said, this community lives between worlds, no longer living off of the jungle but also “not working,” not having a “consciousness” of what “work” means in the outside world. Gabby thought it was sad that these people had “lost their culture” and said it was probably the fault of someone, perhaps the oil company for giving them gifts in exchange for the use of the land. Yet, with some frustration, she claimed that “they demand things without working for them.” But she expressed worry for what would happen to the people in this community when the oil company leaves; she

estimated that the company would finish operations in about a decade and a half. With more frustration, she said they considered TBS “part of the oil company,” and made demands for gifts on station staff as well.

Gabby said that, on occasion, during her regular “movements,”



**Figure 35: TBS welcome sign.**

indigenous people would block the road, prevent her from passing, and demand payment. She said they referred to this practice as a “strike.” She explained that she usually gives them a little cash from her wallet but described the practice as tedious and frustrating. While she sympathized with their situation, she complained that she is just doing her job on behalf of the university, and explained these stoppages are especially inconvenient when she’s escorting a busload of college students. The previous Monday, she said, an older man had tied a rope across the road, preventing her from passing unless she gave him something. He had demanded ten dollars which she told him she didn’t have. When he threatened to call the community she said she had “rolled her eyes.” In contrast with Parenti’s categorization of the Huaorani as “bandits,” the fact that this man referred to this practice as a “strike” suggests that this claim is more likely to be an assertion of territorial sovereignty against the incursions of oil companies, academic institutions, and the state. However, the notion of “the strike” implies a subaltern position of workers, indicating that these claims to sovereignty are voiced from a position of vulnerability, including dependence on the basic services provided by corporate, university, and state institutions.

It is hard not to sympathize with both positions. On the one hand, Gabby is just trying to do her job and TBS is a small institution that lacks the resources of the oil company. In addition, both lease the land from the state which has no visible presence in the region and seems to provide few services. On the other hand, this community of people lived on the margins between the oil company facility and two research stations (TBS and Católica). It is understandable that they do not want to be ignored by those driving by them on the road. Gabby said she was concerned about the future of this community; when the oil company inevitably ceased operations and left, no one would be left to provide the basic services upon which they relied.<sup>5</sup>

When we arrived at TBS, Gabby gave me a tour of the facility. She showed me the dining hall, where I met the kitchen staff, the library, which I was expected to keep organized for student groups, the boot washing station, where I would spend time cleaning muddy rubber boots, the cabins for students and researchers, as well as a hammock house and a volley ball court.

---

<sup>5</sup> Services ranged from full-time and part-time jobs to food, basic necessities, health care, and access to education. I was told that the “university has a program where they can apply and get a free education. It’s a little hard for them because they come from... bad schools, and going to university is a huge challenge. This program is called the ethnic diversity program, not only [for] people from here [to] go [but also] people from indigenous groups all over Ecuador [to] go. It’s especially hard for people from the Amazon, because of their education levels, but if they want... they can apply [and] we give them uniforms, we pay their professor at the school, we help them [in] the best way [that] we can.”

So if, as Levi Strauss contends, “adventure has no place in the anthropologist’s profession” and is merely wasted effort and expenditure then why should I provide this “detailed account of so many trivial circumstances and insignificant happenings” (Levi-Strauss, 1992)? My journey from Quito to TBS, was however, far from trivial. Rather this detail helps illustrate the political, cultural, and ecological context of the TBS laboratory. I passed through four different, overlapping, contested regimes of bio-political governance: state, corporate, indigenous and academic. However, whereas Foucault conceptualized “bio-politics” as the



**Figure 36: Directions to the laboratory and the dining hall.**

“calculated management” (Foucault, 1990: 140) of the life of populations, replacing “an ancient right to *take* life or *let* live” with “a power to *foster* life or *disallow* it to the point of death” (Ibid, 138) the situation of this region is not easily characterized either by the rational calculation of modern bio-politics or the nor ancient forms of sovereignty. There did not seem to be any “calculated management” of human populations in this region, nor a clear

hierarchy of sovereign right. One TBS staff member used “feudalism” as a metaphor to describe the sovereignty in the corporate spaces of oil concessions saying: “each oil concession block was essentially like a feudal lordship but instead of having... a ‘king’ or a ‘knight’ or somebody running that, it was an oil company” and explaining that the underlying logic was that, “this group of indigenous people are inside [this] feudal system here,” so they, “work for us” with

offers like “here, you can operate a machete for us for a few hours a day if you want some money.”

However, despite this feudal analogy, sovereignty in these spaces is complex and contested, relations of dependence indeterminate and in flux. Upon leaving Coca, I left all visible signs of state presence. At the oil company’s checkpoint, I crossed a border into a zone of corporate governance that I did not leave until the end of my stay at TBS. However, despite this authority, it seems like the Huaorani community in the region still think of themselves as in some sense sovereign. Another TBS staff member later described the situation to me this way: “we are in a place that belongs to the

government: this is a lease, it’s not that the forest is *ours*, let’s say that we take care of the forest.” TBS was founded before the State had “granted all the land to the indigenous people,” and so “that’s why this [station] is not their territory. They believe that its part of their territory but it’s *not*.” TBS is situated in a space of overlapping sovereignties that are all in competition. The TBS grounds are managed by the university, which leases the land from the federal government. Their sovereignty ultimately depends upon the state, just as does



**Figure 37: Poster on TBS grounds. It reads: “Hunting Prohibited; Protected Area; You are being photographed by cameras.”**

that of the oil company with its concessions of certain oil blocks. However, some overlapping regions were recognized as the rightful territories of indigenous nations, including the Runa/Kichwa, the Huaorani, and the “uncontacted” “aislados,” (the Tagaeri and Taromenane groups of Huaorani peoples living in voluntary isolation in the so-called “Zona Intangible” that also overlaps a number of “oil block” concessions, including the ITT oil blocks).

Thus, I see TBS to be situated in a context of four competing “bio-sovereignties”: overlapping but contradictory regimes of bio-political governance that each define the management of human (and non-human) populations differently and which all claim sovereign rights over the territory. Huaorani “strikers” appear as bandits when viewed as subalterns in relation to corporate, state, or academic sovereignty, however, if they are conceptualized as sovereigns they are claiming justifiable “tribute” which corporate and academic dependents are obliged to pay in exchange for their use of the land. Hunting prohibitions on monkeys are justified when TBS is conceptualized as sovereign, but these monkeys may be viewed as domesticated pets if the bio-political governance of the laboratory grounds is seen as a space of exception within larger indigenous, corporate, or state sovereignties. Whether indigenous peoples are a dependent population or a sovereign power owed a tithe is an ontological problem; multiple contradictory worlds exist in conflict and tension; sovereignty exists as a constant negotiation at the intersection of performative road blockages, demands for tolls, and exasperated eye rolls.

The land leased to TBS was awarded before the legal recognition of indigenous territories, yet these indigenous land claims were granted on the presumption that they are ancestral, preceding even the state. Oil company concessions seem to pre-empt, in practice, all other land claims. Thus, the paradoxical assertion that indigenous peoples “believe the land is

part of their territory” even though, to TBS biologists, it quite obviously is not. Further complicating this situation is the fact that these communities are dependent on certain basic services provided by both the oil company<sup>6</sup> and the two academic “biodiversity” stations.

On the one hand, indigenous communities view basic service provision as a rightful reciprocation for use of their territory, fulfilling a duty of sharing abundance. Staff seemed ambivalent about this relationship and about what TBS, or oil companies for that matter, had to offer these communities. One of the directors said, “we don’t really have a relationship with them. We try to make our relationship *not like*, ‘we give them *everything*,’ but ‘we help them in as many ways as we can.’” Another director told me: “We do not want to make them think that we (TBS) are like ‘oil companies,’ that whenever they want something, they have to just not let us go on the road and then make a “strike” and we’ll give them those things. Because that’s the way that they ‘think’ it is, because of the oil companies.” In these analyses, TBS staff were concerned about becoming indistinguishable from oil companies who had to buy the support of local communities through service provision.

Anthropologists like Dinah Rajak have explored how corporations become basic service providers to nearby laboring populations, especially in extractive industries across the globe, while promoting these efforts as “corporate social responsibility” (Rajak 2011). In addition, Susan Sawyer has provided anthropologists with ethnographic evidence of the divide and conquer strategies that oil companies have historically used in Amazonian Ecuador.

---

<sup>6</sup> When I sought medical attention upon contracting a parasite, the oil company’s medical facility was the only close one available. I was helped by a friendly and competent doctor in the oil company’s private medical clinic. A mass of gleaming steel tubes of what appeared to be an oil refinery was the only thing visible from a guarded gate.

One TBS staff member described this situation to me this way: “A lot of people [ask], ‘Oh, but the oil companies have so much money, why don’t they [the oil companies] build them [indigenous peoples] a school?’ or ‘why don’t they give them a hospital.’... ‘They have so much money.’ But the truth is *that’s not their job*. The *government* is the one that is supposed to provide all those things. Oil companies, I mean they *could*, but it is not... their *obligation*. The government is always trying to make deals with [oil companies]: ‘Why don’t you build a school here; why don’t you build them this.’ And the oil company builds them things, but the only thing that it does is to make them more used to us<sup>7</sup>... If they had a house in the forest the oil company [would say], ‘we are going to build you a nicer house,’ [out of] cement.’ After the house they are going to want a *T.V.*, or a *motorcycle*, or *something*. So, its complicated.”

In this narrative, the consumer desires of indigenous peoples are problematized as examples of a form of feudal peonage under which consumer goods buy political consent for extractive activities. Particularly in doubt for TBS researchers, was the future of the community when the oil company inevitably decided to cease operations in the region. One director worried that, “I don’t think anyone gives a *damn* about the indigenous people in this area. It’s really hard to work with them and part of the *strategy*, the *oil strategy*, is to divide them.” The situation of nearby communities was described to me in terms of dependence: both on the oil company, and to a lesser extent, on university facilities.

---

<sup>7</sup> Interesting contraction of oil companies and academic facilities.



**Figure 38: Huaorani visitors in the TBS dining hall.**

Administrators told me that the university facilities were viewed as basic service providers: of food, to passing travelers for example, and as a source of temporary employment. During my month-long stay at the station, its Huaorani neighbors dropped by fairly regularly. Men, women, and children would fill the dining hall, chat with the kitchen staff and leave with extra supplies that were given away (bread, cereal, and other foodstuffs) particularly on days when a new shipment was due to arrive. The regular TBS staff were mostly from Coca, while temporary jobs (like construction) also drew workers from nearby Huaorani communities. I helped staff and temporary workers at the station carry boxes of food to the kitchen, barrels of gasoline to the shed and packages of building supplies to a construction site at the top of a hill with a beautiful view of the Tiputini River. On one day, I took a break from carrying concrete uphill to gaze at that view with two Huaorani workers. They asked me where I was from. When I said the United States, they told me that they had heard about 9/11 and said that the Huaorani send their condolences. In these moments of contradiction, the forest around TBS seemed to be

simultaneously the territory of the state, corporation, university, and indigenous nations; four overlapping zones of bio-sovereignty in competition.

### **A Huge Natural Laboratory: Yasuní as an Anthropogenic Forest**

Diego, one of the directors, told me the Tiputini Biodiversity Station is “a huge natural lab:” a laboratory where biologists can “study things the way they’ve been for thousands of years.” Diego said that while a lot of research stations are located in secondary forest, or next to a road, at TBS, biologists can conduct research, in a primary forest “that has no disturbances.”

He explained that the laboratory was called a “biodiversity station” for a few reasons. First, TBS is “in one of the most biodiverse places on Earth.” Second, the goal of the research station was to “encourage” biologists to study this biodiversity. The experience of Jenna, one of the lab workers on a primatology project at TBS, was an exemplary fulfillment of this vision. She told me that she had first come to Tiputini, as a study abroad student in college in 2014 saying “that was a turning point for me, when I realized that I really wanted to study wildlife biology.” She said that when she was leaving in the boat she, “saw a jaguar” and “took it as a personal sign.” She subsequently applied to a job at the TBS laboratory to work as a primatologist. Jenna said the most rewarding part of her work was “being able to live in the rainforest!” She enthusiastically declared “I’m constantly amazed and surprised by the incredible beauty of this place... it is so intricate.... There are so many little hidden details that... each day I see something new.”

However, Diego argued that, “the ultimate value” of the laboratory’s biodiversity, “lies in the knowledge of how the whole web of life hangs together.” While he cited the “many reasons why biodiversity is valuable,” including practical concerns like the fact that the huge forest could hold “the cure for many diseases” he argued that, “diversity is important at all levels, not only for

our own benefit, but, because we need to understand how everything works.” But he said with frustrations that, “it is hard to express this idea.” As I interpret Diego, while the biodiversity of the lab offers innumerable potentially valuable resources either to visiting researchers or in commercial applications, the opportunity presented by a laboratory located in such a biodiverse environment was its position to observe the functionings of a massively complex biological system.

If one considers the analogy of a computer, any number of individuals may find value in any specific program that the computer can run, however the true power of the computer is the fact that it is a complex system that is running innumerable programs simultaneously. Similarly, biologists come to the TBS laboratory looking for one part of the forest that is of interest to them. However the strength of the TBS lab stems from its position within a huge functioning ecological system many orders of magnitude more complex than the aim of any one study. However, it is this complexity of the whole system that makes possible observations of any one part.

Nati, one of the research assistants working on a transnational primatology project operating at the laboratory, tried to convey a similar idea to me while we were in the field. I was observing her taking notes on the fruiting season of some trees on which the monkeys she studied would feed. After peering into the canopy through her binoculars, she gestured to the ground, at the layers of brown and black leaves decomposing into mud. Nati pointed out how rapidly the leaves were falling all around us, like large brown snowflakes constantly cascading to the ground in all directions, explaining that they must be decomposing as quickly as they fell. This quick work of decomposition was done by microorganisms that remained invisible to us but, the decomposition process provided the nutrients needed to support the towering tree trunks

that surrounded us. Without the work of microorganisms, the gigantic trees wouldn't stand, and without those fruiting trees, the monkeys wouldn't eat. Nati explained that she'd seen a visible difference between the forest surrounding TBS and the secondary forest of another field station at which she'd worked in Colombia. That forest had been impacted by industries like cattle ranching, palm oil plantations, and illegal mining. There the forest was not able to support the large populations of monkeys found at TBS, which depended upon Yasuní's biodiverse ecology.

The importance of "biodiversity" at TBS was articulated to me by both Diego and Nati in wholistic terms: more important than the research opportunities, or the value of the biological resources located in the area, the power of this "laboratory of biodiversity" stemmed from its position within the complex functions of Yasuní itself. It provided innumerable perspectives from which to study the ecological system as a whole. Biodiversity played a critical role in this equation: the healthy functioning of the forest depended upon species diversity at all scales.

However, while the biologists argued that the value of the "natural" laboratory was its location in an "intact" forest, with "no disturbances," unchanged for "thousands of years," The forest surrounding the TBS laboratory is, in fact, not untouched, but rather, the result of numerous human cultivations and transformations. These ranged from the laboratory's prohibition on hunting within the TBS grounds, to the creation and maintenance of a network of trails, to systems of categorization and measurement including the tagging of trees, the observation of wildlife, and the tranquilizing and collaring of monkeys with radio transmitters, (who often became "habituated" in the process to the presence of lab workers who followed and closely observed them) as well as centuries of cultivations by the Huaorani.

When I first met Kelly Swing, the director and founder of the Tiputini Biodiversity Station, in person at his office at the Universidad de San Francisco Quito in August of 2015, he

pointed to some wooden spears that hung on the wall: he said they'd been made by Huaorani hunters. He told me, "I have done lots of interviews with press people over the years, and I have had some interviews that I thought were really just a waste of time, and I've had interviews that I thought were really opportunities to grow, because those people ask you questions that make you think in a different way.... That's what tells you that this person has actually done their homework." While I worried about which category I fell into, Swing told me about one reporter with whom he was "really impressed." "NBC's Anne Curry," he said had "covered Yasuní as a *human rights issue*," rather than focusing on the *"Nature"* part of it." "If you look at any of those other outlets, the vast majority talk about Yasuní as... 'this biodiversity hotspot'" and "why it should be protected for *'Nature'*," With frustration, he said that they rarely mention, "oh and by the way there are some uncontacted *people* living there." I was surprised by his reaction, since Swing's research on the region's unique "biodiversity" had been so consequential on the discourse surrounding the ITT initiative, but here he seemed frustrated with journalistic coverage and academic writing that had focused on Yasuní's *"biodiversity,"* and overlooked the people living there in voluntary isolation.

Swing made a good point. In the genre of writing that had emerged during the debate over Yasuní-ITT, most articles opened with hyperbolic, quantitative, and comparative measurements of Yasuní's "biodiversity" like: "the Ishpingo- Tambococha -Tiputini region of Yasuni contains more species in a hectare than all the wildlife in North America," (Watts, 2013). Many of these reports barely mentioned the presence of "uncontacted" indigenous peoples and generally entirely ignored the impacts of the oil industry on other "contacted" indigenous

communities<sup>8</sup> (Finer 2009, Bass, 2010; Martin 2011; for an exception that acknowledges this trend: Rival, Laura M. 2010<sup>9</sup>). At that moment, I was ashamed to admit that my inquiries also insufficiently engaged with the complicated question of the Tageri and Taromenani “aislados” that resided in the region.

My interlocutors with YASunidos had similarly expressed disappointment that the struggle over Yasuní was not recognized as a human rights issue, articulating frustration with the difficulty of translating the situation and rights of aislados living in the Zona Intangible to a wider audience. Despite the human cost of ecological destruction caused by Texaco’s drilling in the northern Ecuadorian Amazon, and notwithstanding the efforts of YASunidos to frame the oil industry’s continued expansion across Yasuní National Park in terms of genocide and democracy

---

<sup>8</sup> A Guardian journalist (Watts, 2013) mentions biodiversity and cites Kelly Swing, as well as the climate implications and the activism of celebrities but fails to mention indigenous peoples at all. Many mention biodiversity first then indigenous peoples afterward (Finer 2009, Bass, 2010; Martin 2011). Bass (et.al. 2010) seems to be one source of this hyperbolic species comparison “A single hectare of forest in Yasuní is projected to contain at least 100,000 insect species ... approximately the same number of insect species as is found throughout all of North America.” Laura Rival (2010) acknowledges the trend in the literature of mentioning biodiversity before indigenous peoples rights and also addresses the impact of oil and other extractive industries on contacted Huaorani communities and other indigenous groups in the region.

<sup>9</sup> Laura Rival, an anthropologist of the Huaorani argues that “most documents referring to the Yasuní-ITT Initiative, whether of an official, activist or scientific nature, start with statements about the that Yasuní is not only biologically megadiverse, but also home to various Huaorani and non-Huaorani groups living in voluntary isolation, and, as such, deserves integral preservation. Arguments are couched in superlative language, combining quantitative data on species diversity, information on geology, paleobiology and paleoclimate with statements about the unique qualities of its human inhabitants. Details of endemic and rare species saved from prehistoric times are given, as well as explanations of why this refuge zone will survive future climatic catastrophes. In contrast to European or North American forests, relatively poor in species, the Yasuní contains many. Species diversity is thus the measure of its unique biological wealth” (Rival 2010: 359). She continues, “the presence of non-contacted indigenous groups adds to the exceptional value of the region, not so much in numbers this time (they are comparatively few), but in terms of their unique qualities as extreme refugees from another era; they too deserve protection from extinction” (Ibid, 360).

(as discussed in chapter three), biodiversity remained the hegemonic category through which the consequences of oil development was understood in state, scientific, and social movement discourses. The Yasuní-ITT initiative's focus on biodiversity, YASunidos organizers told me, paradoxically seemed to normalize rather than resist the expansion of oil operations throughout the rest of Yasuní National Park, as oil companies slowly encircled and began to cross into the boundaries of the "Zona Intangible." However, I was somewhat surprised to hear such overlap between my social movement interlocutors and Kelly Swing, an expert in the study of "biodiversity," as he articulated similar frustrations with the discursive framework of "biodiversity." I had anticipated more dissonance between scientific and social movement discourses.

Swing told me that either reason should have been "independently sufficient to justify keeping Yasuní: *either the biodiversity or the fact that there are people who have no voice and no vote out there.*" In the wake of the failure of the Yasuní-ITT initiative, Swing seemed disillusioned by the rhetorical terms of the debate that his research had helped to shape. He had been most impressed by the reporting of a journalist who had gone against the grain, and had covered Yasuní not in terms of *Nature* but in terms of the *Human*.

Swing's critique posed the question: What is the significance of conceptualizing Yasuní national park in terms of "*Nature*" or the "*Human*"? More importantly, how might reconceptualizing biodiversity help anthropologists and biologists collapse distinctions between Human and Nature in a way attentive to the significance of both human *and* non-human life and diversity? Swing reminded me that the two are not unrelated; Yasuní's biodiversity is located at a point where human and nature intersect, and that biodiversity is integral to the lives of every human being no matter where on the globe she is located.

Swing explained that Yasuní's biodiversity was contingent not only on ecology and geology, but on human history as well. "Yasuní has been protected by some chance, more than other parts of eastern Ecuador," he told me, because of "the extremely territorial, violent indigenous people living there that kept everybody else out." Swing estimated that the area just north of Yasuní National Park had probably once held even higher levels of biodiversity given its position along the Equator<sup>10</sup>. However, he estimates that humans likely already "destroyed the most species-diverse place on the planet" because it was colonized "before scientists had much access." He noted morbidly that many of his colleagues had begun "forensic" analysis of "biodiversity," examining specimens of species collected in that region that had already gone extinct.

The indigenous peoples living north of the Napo River, Swing explained, had been more friendly and receptive to outsiders, and they were repaid for their kindness with the destruction of their ecosystems. "North of the Napo," people "were interactive" and had eventually allowed oil companies to come in. Oil companies "offered them this rosy picture" before they "destroyed everything, and left [people] standing there" thinking, "we had a life here before, and now we don't even have a forest." While these "interactive" peoples, north of the Napo river, were "overrun very quickly," the Huaorani had ferociously defended their territory.

---

<sup>10</sup> Swing told me "The distribution of diversity, ... tends to be concentrated really close to the Equator" and "in Ecuador, the Equator is actually north of the Napo." However, while there is "tremendous diversity in Yasuní, and we have documented that, we didn't get the chance to document that north of the Napo.... I'm guessing that we already destroyed the most species-diverse place on the planet because we never had a chance to look at it. It got impacted in a really big way before scientists had much access" (Interview with Kelly Swing, August, 2015).

Kelly Swing showed me satellite photos that depicted a visible difference in the forest between the northern and southern banks of the Napo river. He said that if it were not for the fierce defense by the Huaorani of their territory, Yasuní's biodiversity might have been lost much earlier. "The Huaorani killed everybody that came in," he said, so "they maintained this big piece of land." Now "we've had a chance to... document, at least some portion, of what's in Yasuní." But "we've had this chance only because of the "ferocity of the people who lived there." Swing argued that we "owe" the Huaorani for keeping Yasuní "relatively intact for a few thousand years." However, while Swing argues that we owe the Huaorani for defending the biodiversity of Yasuní, Swing didn't here consider the role that the Huaorani and other humans have played in the cultivation of Amazonian biodiversity. However, his insight reminds us of the social lives of forests, not only with regards to the contingency of their defense and preservation but also in their domestication and cultivation.

Numerous anthropologists and archaeologists have reminded us that the Amazon's biodiversity is not just "wild" or "natural" but the results of a long history of human and nonhuman relations (Rival 1998, 2002; Raffles, 2011; Erickson, 2014; Morrison et. al. 2014). "History is inscribed in the environment" argues Laura Rival, an ethnographer of the Huaorani, in "biocultural phenomena" like "anthropogenic forests" (Rival, 1998: 245). She argues that "Humans are at once socially organized and socially related to a number of living forms, this process is not limited to interactions between human groups. History, which is about the production and reproduction of collectivities, must therefore also be about the social relations that have developed between human collectivities and other living organisms" (Rival, 1998: 245). Laura Rival argues that we should conceptualize Yasuní as an "anthropogenic forest": it is the result of both intentional and unintentional human domestications and cultivations. She

argues that “forests of biocultural origin can be treated as objective records of past human interactions with plants, even if the local population does not have any social memory of such history and cannot differentiate old fallows from patches of undisturbed forest” (Rival 1998: 234).

While the history of the Huaorani is still poorly known, Rival argues that the Huaorani “have lived for centuries in the interstices between the great Zaparo, Shuar, and Tukanoan nations of the Upper Marañon, constituting nomadic and autarchic enclaves that fiercely refused contact, trade, or exchange with their powerful neighbors.” Rival writes that the Huaorani are “a very isolated group, whose language is not attached to any known phylum,” and she explains that the “core of their ancestral territory seems to have been the Tiputini River, from where they appear to have expanded east, west, and southward until occupying most of the hinterlands between the Napo and Curaray Rivers... in the aftermath of the rubber boom, which caused the disappearance of most Zaparo communities” (Ibid, 235). Now, the “last group of uncontacted Huaorani, the Tagaeri, still maintains a complete state of isolation.” Rival explains that these people live in voluntary isolation, “refuse all communication with outsiders, and with their relatives who have accepted peaceful contact and exchange with non-Huaorani. The Tagaeri live in hiding, with no cultivated crops, their fires burning only at night. They refuse marriage alliances outside their group.” Rival notes that, “Each year, despite the danger of being seen by the oil crews who are now occupying their land, they try to go back to their palm groves for the fruiting season” (Rival 1998: 235).

These palm groves are both culturally significant and an example of how Yasuní is an “anthropogenic” forest. Rival rejects categorizations of the Huaorani’s hunter-gathering practices as a “devolution” from agriculture. Rather, Rival demonstrates a few of the complex ways that

the Huaorani have shaped the forest landscape through analysis of a few of their plant cultivations. Huaorani foragers, she explains, survive on fruiting trees like palms, which are the “product of the activities of ancient populations.” Huaorani foragers “can survive without cultivated crops thanks to a few essential non-domesticated resources (palms and other fruit trees), which are in fact the product of the activities of ancient populations.” These “nomadic bands do not wander at random in the forest, but move their camps between palm forests, bamboo forests, or Brazil nut forests” all of which are “cultural forests” and “ancient dwelling sites.” She explains that “the existence of anthropogenic forests, the product of a close and long-term association between certain plant species and humans, is further supported by two observations: the wide occurrence of charcoal and numerous potsherds in the forest soil, and the greater concentration of palms, lianas, fruit trees, and other heavily used forest resources on archaeological sites” (Rival 1998: 233-4). Thus conceptualizing Yasuní as an anthropogenic forest requires understanding the ways in which it has been transformed over long timescales by intentional and unintentional cultivations.

The “ungurahua palm,” for example, is a species that “does not seem to be managed in any intentional way, but whose spatial distribution greatly influences the Huaorani’s movements and choice of residence.” Huaorani longhouses, Rival explains, are built on hilltops where the unguhua palms grow. She explains that unguhua palm “provides rich food, building materials, and raw materials for the making of a wide range of artifacts and remedies.” In addition, “the unguhua palm offers protection: Its wood makes good fire, even under the wettest conditions. The safest place to spend the night when lost in the forest is under an unguhua palm. People say that unguhua palms, which have deep roots and grow in fertile soils, can stop violent winds from felling emergent canopy trees” (Rival 1998: 238).

The growth and cultivation of forest species impact human cultural and political relations in complex ways. Rival notes that Huaorani house-groups “who rarely see each other during the rest of the year, spend the fruiting season together on the sites where their forebears lived and died, remembering them, enjoying one another’s company, chanting to the bounty of the forest, and celebrating... marriage” (Rival 1998: 239). Peach palm groves require inter-generational practices of care: they, “grow very slowly and continue to give fruit in the same place year after year as long as house-groups care for them.” This makes the peach palm a “slow-growing legacy from past generations.” Peach palms can grow into ancient groves tended by humans, but they would disappear if their human communities vanished. Rival argues that, while peach palm groves are not cultivated per se, “the groves would not endure without human intervention” because “forest regrowth would overtop the palms a few decades after the abandonment of a dwelling site.” Thus “these groves are in fact old dwelling sites” and they “exhibit scattered potsherds and broken stone axes, which are proudly excavated” by the Huaorani who view them as “signs that, ‘the grandparents lived there’” (Rival, 1998: 239). Thus palm groves are “maintained through activities of consumption,” and are recognized by the Huaorani to be the products of past generations: “the deceased grandparents or great-grandparents” of those who feed on the trees. Peach palms are, in this way, articulated to be “gifts from deceased relatives.”

Thus Rival argues that the Huaorani recognize the ways in which Yasuní is an anthropogenic forest. As the Huaorani “trek” through forest, she writes, they recognize signs of the influence of their ancestors in the bio-cultural landscape, for example, in the form of these historic palm groves that have been maintained by Huaorani communities across generations. For the Huaorani, Rival argues, “Trekking through the forest is like walking through a living book in which natural history and human history merge seamlessly” (Rival, 2012: 133). This

“anthropomorphization,” Rival argues, “is not metaphorical,” because, “the plants they manage in the wild” do indeed “result from the activities of previous generations.” (Rival 1998: 243). Peach palm groves exist as a material, living “link between successive human generations... a gift from the dead, an inherited heirloom.” (Rival 1998: 244) The “peach palm fruit” is simultaneously the product of “past life activities” of ancestors and grandparents and “food to the living” who, through their consumption, “ensure the feeding of the generations to come.” Peach palm groves are intergenerational legacies that live and die with the human groups that maintain them.<sup>11</sup>

Interestingly, while the Huaorani recognize the influence of their ancestors in some plants, like peach palms, they discount their ancestors’ influence elsewhere. Rival recalls one informant telling her, “We remain within the limits of the oonta [*Curarea tecunarium*] territory,” referring to a vine the Huaorani use as a hunting poison. Despite the possibility that humans may have influenced the growth and distribution of this plant, her informant was “adamant that the vine, which he gathered to prepare his hunting poison, just happened to be where we found it.” “Given the cultural importance of curare poison,” Rival speculates about “whether the *Curarea tecunarium* vine” has been “subjected to human management”<sup>12</sup> yet she emphasizes that this “denial of plant management is interesting in itself” (Rival, 1998: 238). While Rival ponders whether Huaorani hunters have inadvertently cultivated the vine, her interlocutor seems to view agency working in the opposite direction: the “oonta” vine determines the Huaorani territory. In

---

<sup>11</sup> Rival explains that “when social dynamics lead to the disappearance of a particular huaorani group, its peach palm grove, no longer maintained, disappears as well. Lasting longer than human lives, these groves are a source of pride, security, and rejoicing, the concrete and material sign of continuity” (Rival 1998: 240).

<sup>12</sup> Rival acknowledges that this question cannot be answered without thorough botanical research.

either case, the anthropogenic forest is a co-production of humans and non-humans; regardless of whether humans determine plant territory or plants determine human territory.

A prolific interdisciplinary literature has contested the division between “Nature” and “Culture,” and explored the role of humans in cultivating seemingly “natural” landscapes and ecosystems. Far from being spaces outside of, or on the margins of, human society, forests are “artifacts of human ideas about nature, expressions of economies, and places mediated by institutions and their materialized practices as much as they are habitats evolving in response to evolution and planetary processes” (Hect, et. al, 2014: 5). Even spaces we think of as prototypically “natural” such as Amazonia are the products of human/non-human co-productions and cultivations (Raffles, 2002; Erickson, 2014). As the arguments of Kelly Swing, Laura Rival and other authors demonstrate, “biodiversity,” in Yasuní National Park and greater Amazonia is likely contingent on a long and complex history “between human collectivities and other living organisms” a history that is literally “inscribed in the environment” (Rival, 1998: 245).

Yet, despite the fact that Yasuní’s biodiversity is a complex co-production of human and non-human collectivities, my social movement and scientific interlocutors agree that the hegemony of “biodiversity” discourse has problematically framed the struggle over oil extraction in Yasuní-ITT in terms of the value of nature and not the rights of humans. If biodiversity discourse cast Yasuní as natural rather than human then what are the consequences of this discursive framework? Would Yasuní have been easier to protect if it had been recognized early on as a human rights issue? Has characterizing Yasuní as “Nature” made it easier to sacrifice the zone to oil extraction? While it is impossible to exactly answer these questions, this dilemma might inform our theoretical understanding of the possibility for overcoming the Nature/Culture divide through a reconceptualization of problematic hybrids like “biodiversity.”

## Conclusion

The Tiputini Biodiversity Station (TBS) is situated within overlapping, complex, competing local and global regimes of bio-sovereignty and governance: within the borders of corporate sovereignty, indigenous actors reassert their sovereignty over space, and biologists establish regimes of scientific governance including hunting prohibitions and the mapping, tagging, and managing of ‘biodiverse’ space.

Despite the admirable work of scientific institutions like TBS in documenting the importance, significance and uniqueness of Yasuní’s species diversity, I suspect that conceptualization of the region in terms of “biodiversity” facilitated imaginations of the area as a *resource*, an object to be profitably exploited, not as a *subject* co-produced by Amazonian humans and non-humans. In the next chapter I argue that Yasuní’s conceptualization in terms of “biodiversity,” understood as an assemblage of genetic resources, has helped objectify the complex, human and nonhuman, ecosystemic assemblage as a pool of “resources” that could be exploited. I suspect that conceptualizing Yasuní in terms of resources, whether of genes or oil, has facilitated the exploitation of this region by concealing the human geographies within the biodiverse landscape. As I argue later, this is an example of the fact that the divide between Human and Nature is not merely arbitrary but productive, implicated in the profitable exploitation of subjects-as-objects.

In chapter six, I describe how the landscape of the Tiputini is at once a wild ecological assemblage of plants, insects, birds and monkeys (as well as parasites and diseases) as well as a human landscape, of researchers, of administrators, students, visiting professors, station staff, and the locals, members of neighboring Waorani communities who drop by for a meal, supplies, or a job. The forest is a techno-scientific landscape filled with demarcations, markers and signs

that refer to a complex configuration of machines carried through the forest by humans and non-humans alike. Our understanding of biodiversity is thus dependent on or composed of an ecological and technological assemblage: the relations between biological entities are tracked by human and mechanical instruments. Technological semiosis dissolves into a complex ecological solution of selves; monkeys flee the sounds of incoming researchers, slightly shifting the forest ecology.

## Chapter Five

### *“The Wealth of Species”*: Re-Imagining Biodiversity and its Loss



**Figure 39: The View from the TBS Canopy Tower.**

#### **Introduction: What is Biodiversity?**

What is biodiversity? Kelly Swing, the founder and director of the Tiputini Biodiversity Station (TBS) and a prominent theorist of biodiversity, addresses this question by recounting the opening exercise of a conference on biodiversity in Quito that was attended by conservationists of varied stripes. Participants were asked, “What is biodiversity?” and their responses ranged from the aesthetic to the philosophical, and from the legal to the biological. “Biodiversity is beauty,” said one participant. “Biodiversity is life,” said a supporter of the “Gaia” hypothesis

(Lovelock, 2016) who explained that “life begets life” and “all life is interconnected.” Another participant emphasized the forms of obligation and responsibility that the concept entailed, arguing that, “biodiversity is a legacy that was handed down to us under the condition that we would pass it along to future generations.” Finally, one participant answered that “biodiversity is the expressed compilation of millions of years of answers to all the challenges ever presented; it is the tangible product of all biotic trial and error” (Swing, 2016: 90-1). Interestingly, at this conference, these descriptions of biodiversity echo central themes of the “rights of nature” articles in Ecuador’s 2008 constitution (as described in the introduction): biodiversity is the site where life is reproduced; it is a patrimony owed to future generations; and it is an assemblage of national genetic assets. However, notably absent from these answers, and indeed most discourses of biodiversity, is the notion of political sovereignty, despite the centrality of this issue to the rights of nature and indigenous struggles for autonomy over biodiverse territories. Thus, in this chapter, I engage this absence, and critically examine discourses that describe biodiversity as information and resources (like encoded genetic assets), in ways that seem divorced from the ongoing political struggles over sovereignty in biodiverse ecologies. I hope to open a space in which we might begin to imagine the implication of sovereignty and biopolitical governance in biodiversity in the context of the reconstitutions of nature and nation taking place in Ecuador.

Biodiversity allows scientists and activists to make bold claims about the value of life itself at global and local scales. These range from scientific claims about the importance of ecological diversity and evolutionary processes, to moral claims about the importance of conservation and the meaning of life, to economic claims that value lifeforms as commodities. While numerous scholars have noted the amenability of biodiversity discourse to state and neoliberal development projects, (Takacs, 1996; Escobar, 1998; Bowker 2005) the increasing

commodification of the life sciences, (Sunder Rajan, 2006; Cooper, 2008) and changing role of the state in the global environmental governance of sustainable development (Hayden, 2003), “biodiversity” also seems to offer an ethical politics that aligns, in the Ecuadorian Constitution, with indigenous articulations of “sumak kawsay” (a mode of living in harmony with the natural world and an “alternative to development”) and of the rights of nature. Biodiversity discourse is premised upon the recognition of the inherent value of life and the importance of its conservation implying that the concept might contribute to an ethical politics that might align with other ethical discourses like sumak kawsay and the rights of nature. Indeed, the four articles of the “rights of nature” in the 2008 Ecuadorian Constitution bears the influence of biodiversity discourse including the idea of “national genetic patrimony,” which reflecting the state-centric model of biodiversity conservation as established under the Convention on Biological Diversity, the value of the “environmental services” provided by the work of biodiverse ecosystems, and the potential of market-driven “sustainable development” efforts. These influences demonstrate the ways in which “biodiversity discourse” (as well as the speculative “hype” surrounding of this techno-scientific valuation of life-as-commodity), have contributed to the reconstitution of the nature of the nation in Ecuador as well as the ways in which efforts at biodiversity conservation have been problematically rooted in the extractive logics of a history of colonial domination.

Biodiversity is thus a contradictory concept that appears as a form of scientific knowledge, a global regime of bio-governmentality, and a strategy of sustainable development that has created novel opportunities for the commercialization of biological resources and environmental services, and in turn, has transformed the role of the state, making Southern nations guardians of national genetic property, and indigenous communities owners of valuable “traditional knowledge” that can demand compensation. While it is partly mobilized in the

service of state and corporate efforts to commoditize life, the crisis of biodiversity loss opens a space for an ethical politics to defend the rights of non-humans, ecosystems, and life itself. Visualizing the violence driving biodiversity loss and extinctions as contingent political ecological relations between humans and non-humans may allow us to re-conceptualize these relations or even re-constitute them in other terms as well as untangle and identify the forms of Anthropogenic agency driving and resisting ecological crises.

First, I examine the genealogies of “biodiversity” discourse and inquire why this form of naming was invented in the wake of unprecedented ecological crisis. I trace three genealogies of biodiversity: first, the emergence of conservation biology and bio-diversity discourse in the 1980s and the 1990s, second, the emergence of a wide network of institutions that, in Ecuador, includes both TBS biologists and NGO ecologists and social movement activists concerned with “sustainable development;” and third, the capitalization of the life sciences and the commoditization of life forms as intellectual property in an emergent bio-economy. “Biodiversity” is a complex conceptual object that simultaneously indexes global ecologies under threat, the potentially valuable bio-commodities at risk, a mode of conservation that might protect these resources through their commoditization, and a mode of sustainable national development for nations rich in biodiversity, like Ecuador. Biodiversity, in each of these senses, embodies the zeitgeist of the “bio-economy:” a logic that sought to resolve ecological crisis through the novel commoditization and exploitation of ecologies’ living entities as bio-commodities and intellectual property - to be saved by the industrial corporations that originally put them at risk.

Second, I examine two theories of biodiversity as articulated by Kelly Swing. Swing is a prominent theorist of biodiversity and the founder of the Tiputini Biodiversity Station, a

laboratory on the northern border of Ecuador's Yasuní National Park. Swing's ideas are illustrative of larger trends in biodiversity discourse even as he a particular influential actor in Ecuador's biodiversity network. I critically examine two of his claims, that biodiversity is the "language of nature" and a "wealth of species." For Swing, like many others, the ultimate value of biodiversity is as information that must be documented and decoded. Thus, in the face of biodiversity loss, Swing argues that taxonomy offers an invaluable opportunity to document the "marvelous chemical warehouse": information encoded in the form of genetic material: a repository of answers to millenia of experimental trial and error. In this imagination, biodiversity is an informatic object in need of translation, from macroscopic ecosystemic assemblages of species, to the microscopic genetic material that might be extracted from ecologies and organisms.

Third, I consider Swing's theories of biodiversity at the intersection of anthropological discussions of the bioeconomy and ecology. In some ways, Swing's arguments exemplify what anthropologists have characterized as the amenability of "biodiversity discourse" to efforts to capitalize the life sciences. For example his valuations of biodiversity as genetic resources and commodifiable information echoes what anthropologist Cori Hayden (2003) terms the imagination of biodiversity as a "storehouse of genetic resources." In this conception, biodiversity's secret to survival is the promise that it will pay for itself. Like other natural resources, genetic texts must be extracted from biodiverse ecological contexts to be re-contextualized elsewhere in the bioeconomy (Cooper, 2008) either through biotechnologies like genetic engineering, or bio-prospected "therapeutic molecules" sought by pharmaceutical companies as novel forms of biocapital (Sunder Rajan, 2006). In other ways, Swing's notion of biodiversity as the living language of nature has unexpected resonances with Eduardo Kohn's

(2013) notion of the “ecology of selves” offering a possible point of conjuncture between the idea of biodiversity and perspectivist approaches that recognize the selves of non-human subjects.

Finally, I examine the work of theorists who argue that the ecological crisis of biodiversity loss poses unique problems of representation from the discursive politics of conservation and development to the ethical-political crisis posed by “biodiversity loss.” I examine claims that ecological problems might be better understood not in terms of “loss” but rather in terms of “violence.” Building upon these analyses that re-conceptualizing biodiversity “loss” in political terms, I re-imagine biodiversity as a complex set of biopolitical relations between humans and nonhumans. Biodiversity is not only a mode of conceptualizing nature, a way to commensurate species and value, or a principle of classification, collection, and taxonomy; rather biodiversity is, fundamentally, an assemblage of bio-political relations and contingent regimes of sovereignty. By recognizing biodiversity discourse as a peculiar logic of bio-political governance and imagining the possibility of recognizing biodiverse ecologies, like Yasuní National Park, as self-sovereign spaces through frameworks like the rights of nature, I argue that we might not only identify the forms of violence threatening biodiversity but also reimagine and reconfigure human/non-human relations in ways that better protect biodiversity.

### **Genealogies of the “Biodiversity Network”**

Biologists assert that “biodiversity is, in essence, the full array of life on Earth,” representing not only “the number and diversity of species” but also, “the processes - both ecological and evolutionary - that allow life on Earth to continue adapting and evolving” (Stein et al. 2000; cited in Swing, 2016: 90). Biodiversity, shorthand for “biological diversity,” became a hegemonic discourse of sustainable development in the early 1980s, emerging from concerns in

conservation biology over global ecological crises and the “loss” of biological diversity. However, conservation and molecular biologists often define species and ecosystem diversity in different ways (Williams et. al., 1994). “Biodiversity” thus is alternately used to refer to genetics, species, specific populations within a species, or even the diversity of ecosystems and geology in a region (Takacs, 1996). Thus “biodiversity” functions as a “boundary object” (Star and Griesemer, 1989) a source of interest to diverse scientific communities even as it has different definitions. Biodiversity discourse represented a departure from earlier concerns with “ecological diversity” which were organized not around conservation efforts but rather attempts to quantify the relation of species diversity to the “stability” of ecosystems (Sarkar, 2016). By contrast, “biodiversity” was, at its origin, conceived of as a normative concept, which demanded conservation efforts, although it has incorporated some assumptions from this earlier work on “ecological diversity,” like the importance of diversity for “ecosystem health” and “stability” (Sarkar, 2016). Biodiversity was invented to identify a scientific object in need of study, conservation, and preservation (Takacs, 1996; Wilson, 1985).

David Takacs, in his history of biodiversity, argues that the concept was, since its invention in the field of conservation biology in the 1980s, a form of scientific inquiry implicated in both an ethical politics and the imperatives of political economy. Conservation biology was premised on the presumption that “biodiversity” was valuable, under threat, and in need of preservation (Takacs, 1996). Biodiversity discourse offered a mode of advocacy to conservation biologists who had felt that they needed to keep their biophilia, or compassion and love for the natural world, in the closet and out of their scientific work (Takacs, 38). “Biodiversity” thus facilitated a practical politics by which scientists attached ‘value’ (ambiguously moral and economic) to “nature” in an effort to halt extinctions and ecosystemic degradation. By inventing

“biodiversity,” conservation biologists mobilized their scientific authority in the service of morally guided advocacy (Ibid, 4).

In his essay, “Whose Knowledge, Whose Nature: Biodiversity, Conservation, and the Political Ecology of Social Movements” Arturo Escobar (1998) asks: “Why has this new way of naming been invented at the end of a century that has seen untold levels of ecological destruction?” (1998: 55). Escobar argues that the “textual origins” of biodiversity “can be identified with precision: the publication of Global Biodiversity Strategy (WRI/ IUCN/UNEP 1992); and the Convention on Biological Diversity (CBD), signed at the Earth Summit in Rio de Janeiro in 1992” (Escobar, 54). The discursive emergence of “biodiversity” produced a global institutional apparatus concerned with its defense and preservation including international accords and a network of NGOs and academic institutions constructed around the discourse, of which TBS can be seen as an example.

The decade before the signing of the Convention on Biological Diversity had presented an historic moment of ecological crisis and economic opportunity. Anthropologist Melinda Cooper (2008) argues that the 1980s saw the recognition of ecological crises like “biodiversity loss,” which was largely caused by the ecological effects of petrochemical and extractive industries. This realization produced fears of the ecological “limits to growth” and the acknowledgement of the global scale of ecological crises, which were driven by the pollutants created by corporate activities (like pesticides in industrial agriculture, carbon emissions from the use of fossil fuels and the enduring byproducts of other petrochemical industries). These fears, Cooper argues, catalyzed the emergence of the “bio-economy,” as multinational corporations refocused their industries from Fordist modes of production to the exploitation of “clean” biotechnologies, and an interest in “biodiversity” both as an object of conservation and a

new bio-commodity, efforts which were encouraged by neoliberal reorganizations of state and society. “Biodiversity” offered a novel conceptualization of “nature” that was simultaneously imagined as a biological object in need of conservation, and a novel commodity that could be spent in an emergent bio-economy.

Biodiversity, as a novel imagination of nature, was thus imagined as both a valuable commodity and a strategy through which conservation initiatives might pay for themselves. Anthropologist of biodiversity in Mexico Cori Hayden (2003) argues, for example, that biodiversity conservation promised to be its own reward. Biodiversity seemed to offer novel opportunities for conservation because its “secret to survival” was “its promise to ‘pay for itself’” (Hayden, 2003: 54). Thus, biodiversity discourse emerged in the 1980s within a “market-mediated approach to development,” in which nature was valued as a “storehouse of valuable genetic resources” (Ibid, 49). The marketing of biodiversity was an explicit strategy of the conservation biologists who coined the term. These biologists sought to fit “biodiversity” into attempts to capitalize the life sciences in the emergent bio-economy and the discourse became central to development projects that hyped the value of these “genetic resources” and “environmental services” to developing nations.

These findings support Escobar’s persuasive claim that, “biodiversity” is best understood not as a “true object that science progressively uncovers,” but rather as an “historically produced discourse” that enables a vast apparatus of “sustainable development” that includes states, global governance institutions, universities, pharmaceutical companies, NGOs, and scientists (Escobar 1998: 54). Escobar contends that “biodiversity does not exist in an absolute sense,” rather it “anchors a discourse that articulates a new relation between nature and society in global contexts of science, cultures, and economies” (Ibid, 55). As a scientific discourse “biodiversity can be

seen as a prime instance of the coproduction of technoscience and society” (Ibid, 55). Thus, while “biodiversity” does indeed have “biophysical referents,” Escobar insists that “it must be seen as a discursive invention of recent origin”: a discourse which “fosters a complex network of actors, from international organizations and northern NGOs to scientists, prospectors, and local communities and social movements.”

In addition, Escobar notes that the diverse nodes of the biodiversity network each have “diverging biocultural perspectives and political stakes” (Ibid: 53). Escobar considers biodiversity conservation from the perspective of the social movements that he studies in Colombia, which have emerged from “biodiversity-rich regions such as tropical rainforests” and that think of “biodiversity as linked to cultural and territorial defense,” (Ibid, 54). However, Escobar laments the fact that the “distance between dominant discourses of biodiversity conservation and the political ecology of social movements is great, and perhaps growing” (Ibid, 76). Escobar’s critical analysis of biodiversity from the perspective of social movements opens an opportunity to interrogate biodiversity not only as a mode of scientific analysis but also as a question of sovereignty.

The movements that I study in Ecuador also articulate biodiversity conservation to be a question of cultural and territorial defense; these claims imply that sovereignty is always at stake when discussing biodiversity. In designing my ethnographic research project, I sought to create what Escobar terms, a “space of encounter and debate” within “the biodiversity network” that allows for “academics, scientists, NGOs and intellectuals to reflect seriously on, and support, the alternative frameworks that... Third World social movements are crafting.” While the first chapters of my dissertation examined the political struggles of ecologist NGOs, like Acción Ecológica, and social movements, like Yasunidos, I also wanted to engage biologists at the

Tiputini Biodiversity Station on the border of Yasuní National Park in an attempt to bridge the gap between scientific discourses of biodiversity and the alternative political ecology of the Ecuadorian social movements.

### **The “Language of Nature” and the “Wealth of Species”**

When I first met the founder and director of TBS, Kelly Swing, he told me how excited he had been by the decision to include the “rights of nature” in Ecuador’s constitution. He also noted that he was disappointed that the concept had not yet had much of an impact on legal cases. This presented an interesting ethnographic reality, that in the mind of someone like Kelly Swing (one of the most influential actors in the biodiversity network in Ecuador and the debate around the Yasuní-ITT initiative) biodiversity and the rights of nature were more complementary than they were distinct. In this section, I take seriously two of Kelly Swing’s theories of biodiversity in an attempt to put them into conversation with my social movement interlocutors ideas about the rights of nature as discussed elsewhere in this dissertation. In the next section, I place Swing’s theories of biodiversity at the intersection of anthropological discussions of the bioeconomy and ecology. While in some ways, Swing’s arguments exemplify what anthropologists have characterized as the amenability of “biodiversity discourse” to efforts to capitalize the life sciences, in other ways, Swing’s notion of biodiversity as the language of nature has unexpected resonances with Kohn’s (2013) notion of the “ecology of selves” offering a possible point of conjuncture between the idea of biodiversity and perspectivist approaches that recognize the selves of non-human subjects.

Kelly Swing describes biodiversity through a linguistic metaphor. “Nature expresses herself,” Swing (2016) writes, through a “vocabulary” that includes an array of ecosystems and “countless species.” He explains that “it is precisely this vocabulary that we wish to catalog,

categorize, understand, exploit, and manage on a long-term basis.” Just “as a writer hitches words together” to “masterfully construct a story, so nature weaves species, along with their terrestrial and aquatic arenas into a tapestry of infinite functionality.” Much like an author chooses a word based on “its particular meaning, its sound, its history, and its connotations” Swing argues that “Nature has likewise produced combinations of species meshing poetically together to compose the wondrous and seamless ecosystems that make our planet live and breathe” (Swing 2016: vii). In addition to this metaphor of macroscopic-ecosystems-as-language, Swing continues his semiotic metaphor at the microscopic level to theorize biodiversity as genetically encoded, evolutionary information. For Swing, “every species is an accumulation of information about survival across millennia” (Ibid, 91). He continues, “we are merely observing the current winners in an ongoing process that is always sorting out successful forms and strategies from those that are less successful.” He writes that all of the “information about life, the product of infinite experimentation, is stored in a marvelous chemical warehouse known as the genetic code” (Ibid, 91). Swing argues that the mapping of the genome of organisms was a “great achievement” toward “deciphering the connections between molecular composition and coded meanings” but he laments that “we have not yet discovered a Rosetta Stone that would allow us to interpret directly individual ‘words’ or ‘phrases’ from this language or to convert them into functioning systems or beings.” Despite “our inability to read this language,” Swing insists it “does not in any way diminish” the “potential value of that information” (Swing, 2016: 91).<sup>1</sup> Swing’s metaphor of biodiversity-as-language ranges from the macroscopic level in which

---

<sup>1</sup> Swing writes: “What if a shaman, who is the sole repository for handed-down information related to a cure for any of the maladies that humans suffer on a regular basis, only speaks an obscure indigenous language and belongs to an uncontacted culture that has no writing? ... Our

ecosystems are “poems” composed of species-words, to the microscopic scale in which individual genomic sequences are encoded genetic texts.

Biodiversity loss, he emphasizes, threatens our ability to understand the “language of nature.” If species and ecosystems can be read as words and texts, as Swing contends, then each component must be properly understood in ecological context. The fact that “humankind is beset upon the task of eradicating the vocabulary of Nature” by “extinguishing species” threatens “Nature’s poetry” which “cannot be sustained without all her words” since “without all the fibers in their proper places, the tapestry becomes threadbare and begins to fall into tatters, becoming irreparable even for the most capable weaver, the last remnants serving essentially no function whatsoever” (Swing 2016: vii). In these passages, Swing argues that the loss of biodiversity makes the comprehension or translation of nature’s texts impossible; species loss renders ecosystemic texts incomplete and incoherent. To allow this information to “disappear through extinction, represents an unthinkable tragedy” (Ibid, vii). At both macroscopic and microscopic levels the living language of biodiversity is in urgent need of documentation, interpretation, decoding, and translation.

Taxonomy, Swing argues, thus plays a critical role in documenting and decoding what he terms the “wealth of species on our planet” (Swing, 2016: 5). Just as Adam Smith identified the fundamental human propensity to “truck, barter, and exchange one thing for another” (Smith, 1999 [1776]: 117) Swing posits that collecting and categorizing is a similarly “primordial

---

not knowing undoubtedly represents a loss to ... all of humanity. The same is true for all the untapped genetic information accumulated in millions of species over millions of years. We cannot possibly know its value until we have interpreted it, but it would be utterly foolish to discount its potential” (Swing 2016: 92).

purpose” inherent to human nature, an activity driven both by simple curiosity and economic interests. While “only recently, has biodiversity in and of itself come to be regarded as a valuable resource” he contends that since “every species plays a role in nature” then each “has potential to provide humankind rewards at some level” (Swing, 2016: 5).

Taxonomy of the world’s biodiversity poses significant challenges that he acknowledges will require substantial interest and motivation to overcome. “When humans go out into nature anywhere” Swing argues “we readily notice certain species and tend to ignore others altogether.” This problem is, “mostly a matter of scale, based primarily on the fact that we are ourselves rather large as compared to most life forms.” Swing argues that, “we have done a reasonable job documenting the existence of organisms that exceed 10 cm or 10g” but that it appears “we basically could not care less about small organisms and ignore the fact that this is precisely where the real diversity of the planet lies” (Ibid, 95). Despite Lamarck’s two hundred-year-old insight that “we should chiefly devote our attention to the invertebrate animals” because of their multiplicity, Swing argues that we still know almost nothing about the diversity of microscopic organisms. While “there are several million species left to discover and describe,” (five times the total number of species discovered in the last two hundred and fifty years), “for microscopic organisms,” he asserts “we have only just begun” (Ibid, 98).

This crisis of taxonomy, he argues, is rooted in a lack of interest and funding.<sup>2</sup>

Furthermore, the number of unknown species is daunting, defying the limits of imagination.

“Human brains are not especially good at dealing with truly large numbers,” Swing explains,

“past a few thousand, our grasp becomes... tenuous.... Our ability to comprehend huge numbers

— millions, billions, trillions — in

an absolute way is probably simply

beyond most of us.... The average

person may well not care

whatsoever that there could be

millions of species of beetles

(Farrell 1998) in the world’s

rainforests or that 80% of them

still have not been cataloged”

(Swing, 2016: 93-94).



**Figure 40: Butterfly collection in the TBS library.**

In conversation, Swing told

me how rapidly estimates of the diversity of species on Earth have grown in his lifetime.

“When I was a university student,” Swing said, biologists had catalogued “about a million

species for the planet.” This was a moment where estimates were, “leveling off” because

biologists “hadn’t looked at the tropics very much.” However species estimates changed

dramatically in the 1980s when Terry Erwin, an entomologist of the new world tropics, posited

---

<sup>2</sup> “Fervently searching the deep blue sea in order to apply names to dozens of species of tiny crustaceans or the jungles of darkest Peru to catalog even thousands of beetle species 2–3 mm in length does not sound exciting to the masses, so funding will continue to be limiting.” (Swing, 2016: 95-96)

that there might be “30 million species of beetles just in Amazonia.” Erwin pioneered a method of insect collection called “canopy fogging.” Swing explained that Erwin would send a plume of a short duration insecticide into the tree canopy, wait for insects to fall out, sweep up all of the specimens, and

send them around the world to specialists. Erwin then made extrapolations based upon the numbers of unknown insects specimens that he had collecting, their distribution in tree species and diversity of trees in the forest to make estimates of the



**Figure 41: Terry Erwin “fogging” for insects by spraying pesticides into the forest canopy in 2014. Photo credit: Terry Erwin, originally published in Rice, 2015.**

number of species that might be found across Amazonia.

Biodiversity does not exist simply as abstract information to be easily decoded. Rather it consists, much like language and other semiotic forms, in material, tangible, and embodied texts (in Erwin’s case, insect species) which require complex practices of translation through cultural and technological processes of “uptake.” Translations of biodiversity, like taxonomy, require motivation. Swing notes that human “curiosity is driven by the promise of some substantial reward.” Linguistic Anthropologist Susan Gal (2015) likewise argues that translation is a “productive or generative process” requiring “uptake” by an “interpretant” who has interest in the translation. She notes that, “Latour (1988) also makes a similar point: ‘An idea [or practice]

never moves of its own accord. It requires a force to fetch it.” Translation, or de-coding, is a difficult process, requiring motivation, reward, or force (in Gal’s Peircean vocabulary, “uptake” by an “interpretant”). Translations are accomplished by human and non-human “interpretants” with diverse interests for gathering and decoding these texts. As discussed earlier, translation is not just the “movement” of meaning but rather it is a generative practice that produces novel objects and meanings.

Thus a significant challenge to the preservation of biodiversity has been the translation of the potential value of biodiversity-as-resource since biodiversity’s potential value is difficult to quantify and compare with other “natural resources” like oil. “Potential value is very abstract” Swing told me, “so when we’re balancing potential value of medicinal plants in Yasuní versus the real market value that we know about today for oil, then you ... get the big elbow in the face if you’re talking about saving some plants.” The problem with biodiversity’s potential value is that it is unknown. In order to bring “more material into the hands of taxonomists” Swing argues we will need to apply more money and physical effort to explore places that most people have no intention of visiting because of their inaccessibility. (Swing, 2016: 95-6) While the “majority of species live in the tropics, but most biologists do not.” Swing (2016: 98) writes, “In a way that is very parallel to oil or gold extraction... it looks like the phase of easy finds has passed. Those remaining valuable deposits are typically more remote or difficult to access” (Ibid, 96). While this challenge stymies taxonomic efforts, Swing notes that in the case of extractive industries inaccessibility “does not stop us from going to the ends of the Earth” and “Just as we keep pushing to find more oil and gold, the same should be true of the species of our planet” (Ibid, 96). Swing laments “no country, university, or institution of any kind has taxonomists on staff who can deal with all the diversity of their region” (Ibid, 98). The most significant

challenge, according to Swing, is generating the interest and motivation to properly fund and support taxonomic efforts.

“Pharmaceuticals” Swing argues, “represent one realm of possibilities that could change public opinion” (Ibid, 94-5). He notes that “every estimate available suggests that well over half of all clinically available drugs are derived, directly or indirectly, from wild plants,” he explains, reasoning that “instead of having to work from zero to develop molecules that can treat or cure specific ailments and diseases, it would be, in all probability, more efficacious for laboratory technicians to take hints from naturally occurring substances that have already been evaluated in nature over huge expanses of time” (Swing, 2016: 109-110). Indeed, in some of the earliest writing on the importance of biodiversity, the potential that bioprospecting held for nascent biotech industries was posited as one of the primary reasons for conserving biodiverse ecosystems. As Hayden and Cooper have documented, biodiversity was originally conceptualized both as ecologies threatened by industrial activity as well as the bio-commodities they contained: an extractible resource for biotechnology industry. Extracting the wealth hidden within the genetic code of biodiverse ecosystems through activities like bio-prospecting was thought to encourage innovations in conservation and economic development. The 1992 Convention on Biological Diversity and similar initiatives seemed to offer win-win situations for transnational corporations seeking profits, state governments seeking “development,” conservation biologists seeking to preserve threatened natural resources, and indigenous communities seeking compensation for their traditional knowledges-as-bio-commodities.

### **Valuing Biodiversity: From the Paradoxes of the Bio-economy to the Ecology of Selves**

However, despite Kelly Swing’s hope that biodiversity might offer a treasure trove of medicinal chemicals, after thirty years of hype about the potential value of biodiversity, there

still seems to be a distinct lack of interest, investment, and manpower to document species in biodiverse forests. While Swing, like many others, contends that since most drugs derive from natural compounds (the evolutionary answers to innumerable solved problems) and it would seem to be very efficient to capitalize on the information hidden within biodiverse ecologies, the bio-economy seems not yet to have capitalized on biodiversity-as-resource. One potential reason is that, while Swing is concerned with accumulating taxonomic information and scientific knowledge, it seems like the industrial corporations of the bio-economy are more concerned with producing profitable intellectual property and these two “interests” do not seem to have overlapped as anticipated.

Rather than fund expeditions to complete taxonomic surveys of the planet’s undiscovered resources of “biodiversity,” as Swing advocates, pharmaceutical companies’ bio-prospecting activities have faced numerous accusations of “bio-piracy” since they have attempted to privatize already existing indigenous knowledges by creating intellectual property rights out of plants already known to be traditional medicines like ayahuasca, sangre del drago, and the cactus of the San people, with many of these “benefit-sharing initiatives” ending in bankruptcy. (Heeren, 2016; Reyes, 2015; Heckler 2008; Tedlock, 2006; Svarstad 2004; Dorsey, 2003; Moran, 2001; Peterson, 2001; Martínez Alier 2000, McAfee, 1999). This has led at least one commentator to describe plans for development based upon biodiversity as “dysfunctional” (Heeren, 2016: 95).

However, the persistent “hype” surrounding the potential value of biocommodities that might be extracted from biodiverse ecosystems is characteristic of what Kaushik Sunder Rajan (2006) terms “biocapital.” Sunder Rajan argues that “understanding biocapital involves analyzing the relationship between materiality and modes of abstraction that underlie the coemergences of new forms of life science with market regimes for the conduct of such science.”

He insists that “one can understand emergent biotechnologies such as genomics only by simultaneously analyzing the market frameworks within which they emerge” (Sunder Rajan, 2006: 33). As Sunder Rajan (2006: 44-46) has documented, drug development is very capital intensive. He explains that the drug development industry is roughly divided into “upstream” biotech companies which do the work of drug discovery, developing “small therapeutic molecules through organic chemical synthesis,” and “downstream” pharmaceutical companies which license promising therapeutic molecules, taking them through the capital intensive process of clinical trials. He describes that, in the US, small biotech companies tend to “work on upstream drug discovery projects,” and then license potential therapeutic molecules out to pharmaceutical companies. He notes that, “in spite of some moves toward biopharmaceutical development,” big pharmaceutical companies “still tend to rely for the most part on the development of small therapeutic molecules through organic chemical synthesis” (Ibid, 23). As I read Sunder Rajan, the focus of both small biotech companies and large pharmaceuticals is the rapid development and production of profitable “therapeutic molecules.” Since this process is so capital intensive, market pressures compel both large and small companies to focus on developing, marketing and synthesizing a short list of molecules with the highest degree of profitability; not as Kelly Swing hopes, funding expeditions of scientists to document undiscovered and untested genetic material of species in inaccessible locations. Much like the paradox that anthropologist of science Joseph Dumit (2012) identifies, pharmaceutical companies have more interest in developing and producing “drugs for life,” (profitable medicines that both probabilistically extend “life expectancy” and need to be taken “for life,” like heart medications) rather than attempt to discover new cures for diseases (which are simultaneously expensive to develop, likely only need to be taken once, and often aid populations without much purchasing power). Despite the

promise of “biodiversity” to pay for its own conservation, it seems like the interests of scientific discovery and capitalistic profitability are not aligned but opposed.

In the imagination of biodiversity as a commodity, it is a chemical warehouse of genetic code, a storehouse of genetic resources, and a database of genetic texts requiring translation, decoding and interpretation. Much like linguistic texts, these genetic texts can be extracted and reinserted elsewhere; thanks to advances in “gene therapy” and “genetic engineering and splicing,” genetic texts can be extracted and recontextualized (Swing, 2016: 91). However, Swing is quick to note that these processes are not based in an understanding of this genetic “language.” Genetic texts that are “extracted” from their biological context, Swing explains are re-contextualized elsewhere “in the hopes that they might work the same way,” in novel “nuclear or cellular” contexts; a form of genetic-semiotic inter-citational guesswork. Swing notes, “Sometimes there are great successes, but the challenges are enormous and failures are frequent.” Linguistic anthropologist Susan Gal (2003: 96) encourages anthropologists to be critical of such processes of “recontextualization” explaining that: “When texts move, both text and context are transformed” (Ibid, 94). Thus when genetic “texts” are extracted and recontextualized from one cellular setting to another, we must be conscious of the ways in which both genetic texts and contexts are transformed. Genetic material that functions in one biological context, may or may not function similarly when re-contextualized elsewhere.

For example, when bio-commodities are extracted from complex ecologies, they can enter the bio-economy as biological orphans (like the therapeutic molecules that Sunder Rajan (2007) describes), or patented organisms (like the Onco-mouse that Haraway (1997) explores). These bio-commodities are divorced from their eco-systemic contexts and the biodiverse ecological collectives in which their evolution took place. Their ecology is the sterile laboratory,

the corporation, and the market in which they are isolated, sequenced, engineered, and sold. These bio-commodities exist in contexts quite distinct from the sites of collective evolutionary problem-solving that Swing argues takes place in biodiverse ecosystems under numerous pressures of natural selection within an ecology of selves (Kohn, 2013).

In Amazonian forests, like Yasuní, the ecological collectives of diverse species in biodiverse ecosystems encourage divergent evolutionary innovations under intense selective pressures. In the corporate laboratory, the development of novel bio-commodities is driven not by evolution of species in ecological context, nor even their use-value to humans, but by the logic of bio-capital, the potential for profitable extraction and commodification. The laboratory of the bio-commodity in which genetic texts are extracted and recontextualized is a much different space of bio-sovereignty than the biodiverse environments in which genetic material stores solutions to ongoing evolutionary challenges. So how can we conceptualize biodiversity not just as a representational problem of information in need of appropriate translation, but also as a political problem of sovereignty?

Eduardo Kohn's (2013) semiotic theory of life as an "ecology of selves" holds the potential to reconcile conceptualizations of biodiversity-as-information with these questions of ecological sovereignty. While Swing's idea that biodiversity is the "language of nature" conceptualizes nature in wholistic terms, with species as the "words" that compose larger ecological texts, the promise of biodiversity as resource depends upon the discovery, objectification, and extractability of specific genetic texts from organisms and ecologies and the ability to recontextualize them into market economies. In the former conception, genes are part of a dynamic ongoing evolutionary process, in the latter they are static exploitable data sets.

Eduardo Kohn (2013) argues that that all life is semiotic, however, unlike Swing, Kohn eschews the metaphor of *language*. In his theorization, Kohn argues that while all life forms make use of *signs* (in one form or other) only humans use *language*, which is a semiotic form that is peculiar to the homo sapiens. Kohn thus encourages anthropologists to “provincialize” language, recognizing it as only one, distinctly human, form of sign production, reception, and interpretation. By provincializing language, Kohn argues that we can better imagine other living beings as semiotic selves that “think” without presuming they think in the same way that humans do, through forms of symbolic representation like language (Kohn, 2013: 38-42). While humans share a *semiotic* commonality with all lifeforms, to imagine non-human semiosis in terms of “language” would misrepresent the lived experience of the diverse array of the world’s non-human organisms: distinct living *selves* which produce, detect, and interpret ecologies of signs in diverse ways.

According to Kohn, biodiverse Amazonian forests are particularly dense “ecologies of selves,” in organisms must navigate complex sign ecologies and intense evolutionary pressures. Organisms must recognize signs of predators and prey, danger and food, reproduction and reciprocity, and often develop novel evolutionary innovations, like poison, that aren’t found in less competitive environments. Biodiverse environments are filled with a great density of signs in need of interpretation and uptake. Through semiotic practices, organismal “selves” navigate the world through the specific signs that they are attuned to perceive and interpret. Their “uptake” of sign ecologies guides how they react and relate to their environmental surroundings. Kohn’s notion of the ecology of selves reminds anthropologists to be attentive to the ways in which our modes of knowledge production come into being through reciprocal semiotic communications across radical difference. When we acknowledge that our terrain of semiotic

interlocutors includes non-human entities and agents, our understanding of both translation and advocacy is fundamentally transformed.

At both macroscopic and microscopic levels Kohn (2013: 21) argues that non-humans and ecological collectivities, like trees and forests can “*think*.” From this proposition, Kohn forces anthropologists and biologists to radically reconsider what it means to think by destabilizing hegemonic assumptions of “the self” and the universality of language. Selves, he asserts, are not *things* that exist; but are rather “waypoints in a semiotic process” (Kohn, 2013: 34). By this, I interpret Kohn to mean that selves are nodes of sign production, transmission, and interpretation. Kohn’s framework is useful because it boldly asserts the possibility of communication across radical differences. It both recognizes the difference of non-human life and worlds, while also embracing a fundamental continuity across living beings. Semiotic translation across radical difference is both significant and politically urgent. Semiosis across the human/non-human semiotic divide takes place all the time; the sciences of ecological crises like climate change and biodiversity depend upon ecological translations. When Kohn suggests that non-human organisms “speak” this is to say that, “trans-species communication” is possible even though it takes place through non-language semiosis.

Kohn’s focus on the ecology of selves and the possibility that forests “think” complicates the simplistic conceptualization of biodiversity as a static database of information and supports a conceptualization of biodiversity as a dynamic set of bio-political relations between human and non-human species as well as opening the possibility of imagining the sovereignty of agents like forests themselves. Conceptualizing biodiversity as an ecology of selves foregrounds the agency of non-human subjects and the ways in which life-as-semiosis is a process of self-making and resists imaginations of biodiversity as a resource composed of genetic assets.

## **Visualizing Violence: Biodiversity Loss as a Bio-political Problem of Representation**

Given the difficulty of imagining and translating “biodiversity,” how can we come to terms with, and appropriately represent, the global ecological crisis of biodiversity loss?

Theorists of the Anthropocene, Christophe Bonneuil and Jean Baptiste Fressoz (2017) argue that “the collapse of biodiversity” is the second most significant global ecological crisis after with climate change, and is characterized by the simplification, fragmentation, and destruction of global ecosystems. They argue that in the time “since the Convention on Biological Diversity in 1992, the pace of extinction has in no way slowed down,” and they note that the “mass of humans,” along with our domestic animals, currently “makes up 97 percent of the total biomass of land vertebrates” (Bonneuil and Fressoz, 2017: 7). As Kelly Swing put it, “humankind is beset upon the task of eradicating the vocabulary of Nature herself by extinguishing species” (Kelly Swing in foreward to Furze, Swing et al. 2016: vii). These kinds of assessments can lead to a kind of fatalistic desperation, exemplified by philosopher of science Geoffrey Bowker’s comment that, “biodiversity is the feel-bad word for the new millennium. We all know that we want it, and that there is a lot less of it around than there used to be” (Bowker, 2005: 108). Bowker’s characterization of biodiversity as a “feel-bad word,” acknowledges a feeling of guilt but fails to critically diagnose the causes of this crisis, an example of what feminist earth scientist Jill Schniederman (2012: 90) terms “environmental degradation that masquerades as inevitable.” Interestingly, Bowker critiques the biodiversity framework through the figures of “the coin” and “the list” explaining that the biodiversity concept oscillates between attempts to commensurate the value of different species, and taxonomic efforts to catalogue every species. However, his analysis unfortunately circumvents the central question that he poses: what it is that we should “feel bad” about? Crucially, these analyses lack a diagnosis of the nature of the

political relations, or forms of violence, that are driving the ecological crisis of extinctions and biodiversity loss.

This difficulty to visualize the violence driving biodiversity loss is an example of what environmental humanist Rob Nixon (2011: 2) has characterized as the representational problem posed by the “slow violence” of ecological crises: “a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all” (Nixon, 2011: 2). Forms of slow violence like environmental catastrophes pose “representational, narrative and strategic challenges” due to their “relative invisibility.” Nixon argues that, “violence, above all environmental violence, needs to be seen - and deeply considered - as a contest not only over space, or bodies, or labor, or resources, but also over time” (Nixon, 8). Because of the delayed effects of slow violence, “both the causes and memory of catastrophe fade from view,” while the “casualties incurred” remain “untallied and unremembered.” Nixon argues that, “to intervene representationally entails devising iconic symbols that embody amorphous calamities as well as narrative forms that infuse those symbols with dramatic urgency” (Ibid, 10). The struggle over oil drilling in Yasuni National Park might be seen as an icon both of the crisis of biodiversity loss and the movement against climate change. The struggle over Yasuni helps make visible the threats that ecological crises pose to human existence, as exemplified by the case of the Huaorani and other indigenous peoples threatened by the expansion of extractive industries in the region. A central paradox of the problem of slow violence, Nixon argues, is the fact that ethical politics are often grounded in modes of visibility. Thus, if ecological crisis like climate change and biodiversity loss pose representational problems, then the challenge of (re)solving these crises might lie in their

(in)visibility. Nixon asks, “how do we both make slow violence visible, yet also challenge the privileging of the visible?” (Ibid, 15).

Like Nixon, geographer Kathryn Yusoff (2011) similarly argues that the crisis of biodiversity “loss” poses a representational challenge and she is also skeptical of the hegemony of modes of visibility. She asks “As either mourning or forgetting, loss involves violence to self or other, or both. What does it mean, then, to lose a species or population?” (Yusoff, 2011: 579). Like Nixon, Yusoff contends that biodiversity loss poses a problem of representation, and argues that “the challenge has been to ‘make present’ those barely visible sites of life and death that characterise this extinction event. In this act of making present is the question of how non-human beings come into being through representational acts” (Yusoff, 578). She argues that while, “the representational ideologies of conservationists seem to imply that “if we can make something more present” and “account for it” or “register it as a subject” then we can “extend care for it.” Yusoff argues that we are told by conservationists that the form of attention that images and appearances solicit is critical to the survival of species and ecosystems, under this representational ideology the “conservation of megafauna provides an umbrella” within which “the less visibly fit” or less charismatic species can shelter. This, she claims is a transmutation of “the survival of the fittest” into “the survival of the most charismatic.”

While extinctions and crises of biodiversity are often described in terms of “loss,” Yusoff, like Nixon, argues that these relations might more productively be conceptualized in terms of violence. Violence, she claims, might offer a more productive analytic framework for conceptualizing the relations between humans and biodiverse ecosystems. She suggests that an engagement with “violence” as a mode of conceptualizing biodiversity loss, enables “identification with a realm of sensibility that can often be precluded in ontologies that are

configured around meetings, reciprocity, and relatings” (Ibid, 580). The violences that Yusoff imagines include, the “targeted violence of habitat destruction,” the “banal violence of configuring spaces exclusively around human proclivities (or the proclivities of capital)” as well as the “making of subjects” around which “conservation worlds can be built” (Ibid, 580-1). Conceptualizing biodiversity loss as violence opens the possibility of alternatives to reconstitute these human-nonhuman relations in less violent ways.

Yusoff notes that biodiversity in particular poses two interrelated challenges of representation that make it difficult to overcome the problem of visibility. On the one hand, ironically, the problem of (in)visibility stems from the fact that biodiversity is conceptualized in terms of *excess*. The “imperceptibility” of biodiversity is due to its “profusion” and “abundance”; its excessiveness makes it unknowable, challenging conservation efforts organized around on modes of visibility. Yusoff explains, “Biodiversity stresses the many, the profusion of life rather than the particular, and thus conjoins the perceptible and imperceptible in an approach to life configured around abundance, not scarcity, plurality not singularity” (Yusoff, 2011: 579). Yusoff makes two significant claims: first she notes the paradox that since biodiversity represents life’s “profusion” the concept necessarily conjoins the perceptible with the imperceptible and biodiversity paradoxically always includes the unknown (and unknowable) along with the known and particular. On the other hand, Yusoff implies that since “biodiversity” is an imagination of life that presumes abundance this formulation makes it difficult to represent scarcity. This observation highlights the paradox of the formulation of ecological crisis as “biodiversity loss;” implying that the term is a non-sequitur that attempts to convey the “scarcity of abundance.”

A second paradox inherent within the framing of the problem of “biodiversity loss” is the the fact that many species go extinct before they are ever discovered, or truly “exist” in a

representational sense. Yusoff argues that these “invisible” extinctions are difficult to conceptualize since, “more often than not, the absence has no mark,” because “that which existed and then ceased to exist” has never entered “the ledgers of classification and nomenclature.” (Ibid, 579). Yusoff continues: “so many of the beings that are lost (in both an archival and ontological sense) never come into being in a way that is sensible to us” (Ibid, 580). Kelly Swing told me that this is a particular concern for endemic species “organisms [that] occupy very tiny geographical ranges,” which means that “they are extremely vulnerable to environmental impacts.” The problem of endemism, Swing told me is, “all about probabilities.”<sup>3</sup> If, for example, “a plant has a range that’s the size of Brazil” then “we are probably not going to wipe it out” before learning something about it. However, by contrast, “if it lives on one mountaintop in southeastern Ecuador,” in, “one of those places that they’re getting ready to extract copper and gold ore, [referring to the Cordillera del Condor] then its done, and we probably will never notice.”

However this problem is not just a question of the difficulty of identifying endemic species but also the terms in which the violence of “loss” is understood. Yusoff notes that often this “loss is *never construed as a loss* at all,” but “rather as an *achievement of eradication or control*” (Yusoff, 2011: 580) The representational problem of biodiversity loss is thus not just a problem of conservationists’ representational ideologies or the visibility of species or the modes by which we conceptualize their loss as forms of violence. Rather, “biodiversity” is a

---

<sup>3</sup> Swing also told me: “In Ecuador in the 1700s and 1800s there were ... botanical collections made in places ... [then] considered ... remote and difficult to access. [Now] ... somebody looks ... at the localities on the collection record ... notices ... “that’s part of Quito now.” ... They notice that these things were never collected anywhere else and we’ve never seen one again in 200 years. ... This was an organism that occupied one little valley, didn’t exist anywhere else in the world, and we eliminated it before we even noticed anything about it.”

problematic framework for understanding “loss,” as its configuration around both “excess” (those species that are unknown or unknowable) and the profusion and abundance of life, make it a paradoxical framework for representing scarcity and extinction. The representational challenges of biodiversity are twofold including both the problem of categorizing species (Bowker, Swing) as well as how to conceptualized the violences driving biodiversity “loss”: as “extinction” (of a valuable species), “eradication” (of a pest), or simply “development” (including either the dramatic habitat destruction caused by a copper mine, or the banal violence of the expansion of Quito’s suburbs into a valley that was the only home to an endemic plant species).

Biodiversity is not only a mode of conceptualizing nature, commensurating species and value, or classifying and taxonomizing species; rather biodiversity is, fundamentally, a problem of sovereignty and bio-political relations. In order to theorize the bio-political relations of biodiversity, I build upon Michel Foucault’s (1990) insight regarding the modern state’s concern with bio-politics. These modes of governmentality manage humans at the level of the population and seek to “make live and let die,” as opposed to pre-modern state ideologies which “let live” and “made die.” Modern of state bio-political practices sought to control the conditions necessary to cultivate populations. Unlike earlier forms of governance, which intervened only to end life in punishment and assumed that humans would sustain themselves in the absence of intervention, the modern state’s abdication of bio-political responsibility “sacrifices” populations through neglect. While biodiverse ecosystems are obviously distinct from the human populations which state institutions and technologies sought to govern and maximize, they are similar in the fact that the health and death of the individuals and populations that compose biodiversity are managed by complex political ecological assemblages; webs of life composed of tangled and

overlapping friend/enemy and predator/prey relations that are increasingly ultimately determined by the bio-political logics of state, corporate, and transnational forms of sovereignty and governmentality. Biodiversity discourse can be seen as a kind of transnational biopolitical logic of governing the non-human, and human, populations that live within biodiverse ecologies. This logic might be productively compared to other ways of managing human relations with the forest like that of the Huaorani discussed in the previous chapter. In addition, conceptualizing biodiverse ecologies as complex “ecologies of selves” highlights the multiple political agencies of non-humans and the sovereignty of large scale ecological assemblages, like forests, which can “think” and act in complicated, if enigmatic, ways.

My conceptualization of the bio-political relations of biodiversity seeks to imagine the political contingency of the ecological relations that underlie the ecological crises like extinctions and biodiversity “loss.” Conceptualizing biodiversity not only in terms of the biological but also the political helps us imagine the implication of sovereignty in the discourse and visualize the violence(s) driving the ecological crisis of “biodiversity loss” in a manner that is critically attentive both to the modes of visibility inherent in representing the manifestations of this crisis as well as the diverse contingency of humans’ relations to biodiverse environments.

Conceptualizing “biodiversity” as an assemblage of bio-political relations holds the potential to enrich each of the imaginations of biodiversity which I have outlined in this chapter: from scientific conceptions of “biodiversity” as a way to understand species, genetic, and ecosystem diversity; the taxonomic practices by which ‘biodiversity’ is made knowable; post-structuralist critiques of biodiversity as a discourse of conservation biology and “sustainable” development in the face of its imminent, ongoing and dramatic loss used to

commodifying genetic texts bio-commodities endangered by industry; and the problem of visualizing the violence posed by biodiversity's "loss."

The anthropogenic agencies driving human and non-human extinctions in Yasuní and the globe are not the inevitable results of some "human nature" but are rather contextual, historical, institutional and systemic: the consequence of neo-colonial extractive industries driven by multinational corporate interests. In addition to critically analyzing biodiversity, we also must develop a more nuanced analysis of human agency which not only considers the multiple ways in which humans not only drive species extinctions but can also cultivate biodiversity.

Theorizing "biodiversity" as an assemblage of bio-political-ecological relations also holds the potential to reconcile biodiversity discourse with the discourse of the rights of nature to recognize the rights of species rich ecosystems, like Yasuní, as self-sovereign political subjects with rights. This effort may seem easy when considering monkeys, our fellow primates (as discussed in the next chapter), but may require more imagination when conceptualizing the rights of other lifeforms like insects and microbes. Miniature or microscopic organisms consistently go unimagined in the design and funding of scientific research projects, as Kelly Swing explains, and in the construction of the charismatic subjects of conservation initiatives as Kathryn Yusoff notes: the rights of miniature non-human persons might be the hardest to protect. Wholistic ecological understandings seem to exemplify the best of what the concept of 'biodiversity' has to offer: the idea that nature's rights must be imagined in collective terms. Imagining the rights of ecological collectives composed of humans and non-humans cultivated through co-productive political ecological practices require novel exercises of compassion and imagination.



**Figure 42: A Titi monkey wearing a radio collar near the Tipitini Biodiversity Station.**

## **Chapter Six**

### ***“Eyes in the Forest”*: an Ethnography of Biodiversity**

#### **Introduction: Ira’s Ear and the Duets of the Titi Monkeys**

“*Oh no*, they can’t be awake *already*, its too *early*, not even close to *dawn* yet!” Ira’s shout startled me awake from dreaming. I opened my eyes to see Ira, a researcher on a transnational primatology project and my cabin-mate at the Tipitini Biodiversity Station (TBS), was sitting upright on his bed, head ducked under the top bunk, dressing even more hurriedly

than usual.<sup>1</sup> I couldn't identify which sound had woken him out of the noisy sonic tapestry of insect hums, bird calls, and monkey chirps that wove through the Amazonian soundscape. However, I knew that it must have been the morning call of the Titi monkeys, the species that Ira studied at TBS. The Titis are adorable, small monkeys that begin each day with the same romantic ritual. Every morning, mating pairs of the monogamous Titis greet the day, and each other, by singing a duet. Each morning duet is unique to the pair: Ira told me that the songs were so distinct that he could distinguish which pair of Titis he was hearing. His sleeping ear had plucked the sunrise serenade of the Titis out of the sonic symphony of Tiputini, waking him before his alarm. He had left the pair outside of camp the night before and knew that, once awake, they would soon be on the move.

In this chapter, I investigate the work of biologists at TBS, like Ira, as “caretakers” of the forest laboratory and “translators” of Tiputini’s biodiversity. Specifically, I examine the technologies and techniques that these biologists used to extract signs of species from dense and noisy Amazonian ecologies, much like Ira’s unconscious ear could identify the courtship call of the Titi monkeys coming out of the morning mosaic of sound in the jungle. However, as biologists seek to extract the signs of specific species from the density of the forest, their scientific practices consistently relegate the “biophysical referents” of biodiversity to a position of noise. However, while scholars have theorized “noise” as a sign without signification<sup>2</sup>, noise in Yasuní is the product of what Eduardo Kohn terms a dense “ecology of selves.” The noise of

---

<sup>1</sup> The Tiputini Biodiversity Station (TBS) is a scientific outpost located in the remote Tiputini region of the Ecuadorian Amazon, along the Tiputini River on the northern border of Yasuní National Park.

<sup>2</sup> Friedrich Kittler, for example, argues that noise is the “the sound or product of the ‘physical channels’ along which data travel” (Kittler, 1999: 45).

biodiversity is sound in need of uptake and an interpretant; the Titi's calls were "signals" to Ira but "noise" to me. Thus, the "noise" of biodiversity is not sound without signification but rather signs in need of translation. This chapter is not just an ethnography of a laboratory and an anthropology of the work of scientists, it is also an ethnography of "biodiversity." Biodiversity, as a scientific object, can only be understood partially; in this chapter I argue that it should also be examined ethnographically. Ethnographic analysis of biodiversity helps bring into view the experiential realities of biodiverse ecologies that can be overlooked in the scientific pursuit of specific signals.

Dressed in his hiking apparel, Ira launched himself out of the door, pulled on his knee-high rubber boots, and barreled down the boardwalk path to the laboratory to gather his equipment for the day including: telemetry equipment, a collapsible antenna and a hand-held receiver that he used to detect radio-collared monkeys; binoculars, to spot the primates in the canopy and identify differences between individuals; a "dictaphone," an audio recorder that hung on a lanyard around his neck which he used to record his observations on the behaviors of the Titis; as well as a GPS device, that both displayed an interactive map (that was used to help biologists navigate the network of trails surrounding the station) and produced maps that depicted the movements of researchers and monkeys.

Ira ran down memorized trails to find the Titi monkeys in their sleep tree before they woke and moved in search of food. I hurried to keep up but jogging the treacherous trails in the pre-dawn twilight was a tricky proposition: deep mud, thick logs, and tangled roots could easily trip a hiker with imprecise footing.

Ira used his telemetry antennae to determine the location of the Titi monkeys. The antennae detected radio signals emitted by a collar worn by one of the Titis. Each collar transmitted a different radio frequency so researchers could find any collared individual by tuning their receiver to the



**Figure 43: Ira uses a telemetry antenna to find a radio-collared Titi monkey.**

appropriate frequency. As researchers approached the target individual or group, the device would emit beeps; while researchers would swivel the telemetry antennae to determine in which direction the signal was the strongest. Beeps would grow in intensity whenever the antennae was pointed in the correct direction and whenever the device neared the collar. Despite the apparent simplicity of this task, there was an art to reading these signals. While it might be clear which direction was *incorrect*, identifying the *correct* direction was still a challenge. Within a range of 100 degrees right or left the instrument might beep at about the same intensity. The telemetry antennae would, at best, determine a general direction to travel and indicate whether or not one was getting close.

The practice of determining the direction of the monkeys looked like witchcraft with an electric divining rod. Ira circled with his antennae in all directions. He faithfully followed the faint beeping of the receiver, as our eyes searched the canopy for movement. When Ira's radio

receiver began to beep intensely, indicating that we were within ten meters of the pair, we started to search the canopy with our binoculars.

We found the Titis in their sleep tree near the lake trail and spotted them before six. When they woke and started moving, I found that pursuing the monkeys was even harder than following Ira because the monkeys heeded neither the trails nor the humans chasing them. We left the lake trail and hiked through thick jungle. After tromping through bushes, vines, and swamps, we ended up with a great view of the Titis feeding in a tree.

Ira, who was from the US, worked with Nati, a research assistant from Colombia, on the “monogamy project” which was investigating two potentially monogamous species of monkey found at TBS: Titi monkeys and Saki monkeys. We spent the day tracking a little “nuclear family:” a father “Lucius” a mother “Lucy” and a baby *informally* named “Louis” by Ira. “Technically offspring aren’t named until they are juvenile/sub-adult,” Ira told me, so the “official name” of the individual was: L14a. This designation indicated the first born to group L in 2014; Ira speculated that a high infant mortality rate had likely determined the age threshold for naming.

These Titi monkeys, I was told, were well “habituated” and were virtually undeterred by our presence; they were willing to climb along the vines immediately overhead us and were unfazed by our talking and following them. A pair of Saki monkeys, to which Ira was also assigned, were not nearly as “habituated.” The day before, he explained, the Sakis had fled from him all day, sun-up to sun-down. He had hiked back and forth through the jungle for miles, the whole day, without seeing much of anything.

We followed the monkeys as they searched for food for about an hour until they crossed a wide river. This posed a challenge, because while the monkeys had quickly crossed through the

canopy overhead, we were forced to run across the nearest bridge before attempting to catch up with them on the other side. We re-encountered them on the opposite river bank, which was precariously steep and muddy. Also, it was a giant nest of ants.

The monkeys had stopped to eat the ants, who were, in turn, biting us. The monkeys lazily ate the ants, picking them off one by one, as they climbed upward in a line. Ants viciously attacked the legs of our trousers as we stood in the midst of their colony peering into the branches through our binoculars. I brushed them off; little decapitated mandibles clung to my trousers; undead heads still mercilessly biting the cloth. Later, Nati explained that “to be a primatologist is a question of love, loving being in the field. It doesn’t matter that you are going to get wet, that you are going to get bitten.”<sup>3</sup>

Ira began to do a “*focal*” on Lucy excitedly saying that it was the best view he had gotten of her all morning. Ira dictated his notes into a dictaphone, a digital voice recorder. On it he recorded detailed descriptions of his target monkey’s behavior (scratching, eating flowers, eating insects, etc.) every two minutes, on the minute, over a period of twenty minutes. His dictations included his estimations of the target monkey’s “nearest neighbor,” which monkey was closest to the individual of interest, as part of a study of group interactions.

We followed the Titis back towards the river where we saw the infant eat a bright red flower, dropping its beautiful petals to the forest floor. The Titis moved across the river again, so we sprinted back to the bridge, then, following the pinging signal of the radio receiver, we found them in a “rest tree.” They lay on a branch cooling off; the parents cuddled while the baby wandered about on its own.

---

<sup>3</sup> “Para ser primatologa; es... amour. Amorada a puede estar en el campo que no te importa que te vas a mojar que te van a picar.” Interview with Nati, September 2015.

Ira did another focal, and we had lunch; it was about noon and getting really hot. After lunch, we followed the Titis into a brambly swamp that was difficult to clamber through. With a bit less tree cover, we stood in the heat of the afternoon sun. Following Ira, I moved aside a vine only to discover that it had an ant on the underside: my finger was stung. Ira saw the monkeys eat a



**Figure 44: Titi monkey eating a flower.**

flower that he did not recognize and he collected a sample. He waited for the monkeys to defecate then collected a sample for genetic testing. Taking samples from each family member, he explained, could be used to determine parentage, a method of measuring monogamy genetically.

Ira collected his samples, and the monkeys crossed the river for a third time, now they moved into a clearing with big tall trees. This grove was cooler but since the canopy was higher, it was harder to see the monkeys hidden amongst the leaves. I spotted the Titis and we watched them eat a long yellow flower that looked like a powdery peeled banana. After an hour or so, they moved to a palm where Lucius was eating some kind of nut. Ira noted that the monkeys had not visited this tree before so he took out a piece of bright pink tape and labelled it as a “feeding tree.” He also nailed a metal marker into the trunk and tagged the tree’s coordinates into his GPS device, explaining to me that the previous trees in which the monkeys had been feeding and sleeping had already been tagged.

After we had lost sight of the Titis in the canopy for over an hour, I returned to the station to write. When I saw Ira that evening at dinner he told me that the Titis had finally re-emerged that evening at about 5:30, only to promptly find a sleep tree and pack it in for the night. “At its core, the reason I’m here” Ira told me, “is because I love monkeys,” and spending so much time with them. “You see little things” like, one time in the morning, when a family of Titi monkeys were waking up Ira found “two parents in the high branch snuggled right next to each other, their tails are wrapped in each other in a tail twine” as “the sun was coming up” and “their offspring runs up to them and sits down, right next to the father, and wraps her tail with all of theirs” Ira said with some awe, “it is just amazing to watch them socialize like that.”

### **The Caretakers of the Laboratory**

During my month-long stay at TBS, I investigated the research practices of biologists stationed at the lab, documenting their work on scientific projects. My research focused on two research projects taking place at TBS: a transnational primatology project, and two “camera trap” projects. I conducted participant observation with the five research assistants who worked on a transnational primatology project (two from Colombia and three from the US) and two TBS directors who managed the camera trap projects at the station. These lab workers are good research subjects for examining the study of biodiversity at TBS because primatologist researchers and directors are the biologists that spend the most time living at the station: primatology project lab workers lived at the station for at least six months, exploring, mapping, and marking much of the diverse terrain, while directors, like Kelly Swing, can be stationed at the facility for years, cycling through in two-week rotations, maintaining and monitoring the camera traps positioned around the station’s grounds. I conducted participant observation while working at TBS as a volunteer intern, aiding scientists with their research projects in the

laboratory and the field, learning regulatory procedures, assisting with the station's educational, ecotourism programs for college students and helping members of the station's kitchen and housekeeping staff carry provisions into the facility, serve student groups, and work on a construction project along with temporary workers to the station. I draw on conversations with the staff scientists working and studying at the TBS station. At TBS, I observed diverse scientific objects and practices: monkeys, camera traps, presentations to student groups, and the collection and transmission of digital and genetic material collected from the ecosystem to be sent to labs abroad. My biologist interlocutors spent much more time at the station and in the forest than other visitors to TBS: Student groups would stay no more than a week and hike few trails; I was told that most researchers stayed no longer than a month; I met a handful of visiting researchers who visited the station very briefly, they collected data and samples over a long weekend and I do not include them in the purview of this investigation.

My biologist interlocutors might be productively conceptualized as examples of what Karin Knorr-Cetina (1992: 128) terms the "caretakers of the laboratory." When a "laboratory becomes a permanent facility," she argues, "experiments can be conducted continuously and in parallel, and begin to blend into each other. Thus experiments dissolve into experimental work," which becomes "continuous with laboratory-level work." The transnational primatology project and the camera trap studies both seem to be good examples of experimental work that becomes constitutive of the laboratory itself. Both experiments reveal the ways in which the forest-as-laboratory was continually constructed through the scientific practices of these biologists.

I was told that the primatology project had operated continuously for over ten years, administered by faculty in both the US and in Colombia. Primatologist research assistants

worked long hours to collect data and used standardized practices like the “ethogram” to achieve “objectivity.” They documented primate behaviors; collected samples of food and feces; and physically marked and digitally mapped the environs of the gigantic 650 hectare laboratory. The camera trap project was also an ongoing project for such a long duration that its activities have become co-productive of the TBS laboratory environment. TBS directors placed camera traps at multiple sites, including a salt lick (to document the diversity of species that fed off the mineral-rich clay) and throughout the forest (to photograph elusive species like jaguars that stalk the station’s grounds). One director, Diego, had published his research that estimated the jaguar populations in the region seemed definitive of the importance of the laboratory’s work both for the academy and the conservation significance of Yasuní National Park (Blake et. al. 2014).

Lab workers on the primatology project were volunteer research assistants, primarily recent graduates (one was still in the final undergraduate semester) who had found a calling in biology that had led them to apply for a job at TBS to follow their passion studying monkeys. Research assistants were between 21 and 24, each was assigned to a slightly different research project and they worked both as individuals and in pairs. All contributed to an overarching ongoing primate study project that operated out of TBS and at least one other field station in Colombia, I was told both stations advocated for the conservation of their primates’ ecosystems. Lab work on this kind of research project was seen to be a prerequisite experience for biology students seeking to apply to graduate school. The lab workers told me that they hoped one day to be independent researchers like the principal investigators (PIs) running the projects on which they were working as research assistants. The researchers were in email contact with PIs who I was told only visited TBS a couple times a year during the summer and winter breaks. Most of the time lab workers continued the research, regularly submitting data to PIs.

Primatologist researchers worked in five day rotations. They spent three days in the field followed by two “office days” transcribing recorded observation and entering data in the laboratory. Field work days were grueling twelve hour marathons. Becky told me, “I was expecting it to be hard but you can’t really know how hard it is until you experience it.” Researchers woke at five in the morning to find the monkeys (some tagged with radio collars) in their



**Figure 45: Primatologists researchers document fruiting trees.**

sleep trees before they woke up at around six in the morning and pursued their research subjects until nightfall about six in the evening. “The forest can be really dense.” Becky said. If “I didn’t have the drive to do it [or] the physical stamina to do it [then] I could not do my work. If I couldn’t keep up with the monkeys, I couldn’t do my work.” Lab workers on the primate project claimed, perhaps with some bias, that their field research was more intense than other visiting researchers who rarely stayed longer than a month. After spending a month trying to keep up with them, I believe it.

I am concerned with the ways in which, as Knorr-Cetina (1992: 128) notes, “laboratories are objects of work and attention over and above experiments” and how “scientists are not only researchers” but also, “caretakers of the laboratory.” While Knorr Cetina’s conceptualization of the “caretakers of the laboratory” focuses on the “laboratory leaders who tend to spend much of their time representing, promoting, and recruiting for ‘their’ laboratory,” my usage is a bit

broader and includes the ways in which other lab workers, like primatologist research assistants, marked, shaped, mapped, and constructed the forest-as-laboratory.

Directors' role as laboratory caretakers included hosting groups of college students that toured the TBS facility as part of study abroad programs that visited both Yasuní and Galapagos. In addition as “caretakers of the laboratory,” directors' responsibilities included the

ambivalent role of “political leader” of the station in relation to nearby indigenous communities who viewed the station as a political institution, a provider of basic services, and an employment center. These roles complicated the status of TBS as “merely” a scientific laboratory. In addition, I consider the research assistant lab workers as a kind of “caretaker” since their everyday practices transformed the laboratory space: including hiking and maintaining trails, tagging trees (both physically with ties and metal markers and digitally into GPS) and documenting fruiting seasons throughout the region. Primatologist researchers labelled “feeding” and “sleeping” trees of

**Figure 46: Record of fruiting trees organized according to species and trail.**

monkey species with either plastic tape or metal tags that permanently marked significant trees corresponding GPS coordinates, and continually monitored and documented the fruiting and flowering of significant plants. These efforts marked, shaped, measured, documented and transformed the forest laboratory landscape over time.

Laboratories are powerful places. “Give me a laboratory and I will raise the world,” Bruno Latour (1983) brazenly declares, arguing that the strength of the



**Figure 47: Tree marked with metal tag and plastic ribbon.**

laboratory lies in its ability invert hierarchies of power and transcend scale. In addition, laboratories are nodes through which other actors and data need to pass, and in this way laboratories are able to transform society. “Laboratories are among the few places where the differences of scale are made irrelevant and where the very content of the trials made within the walls of the laboratory can alter the composition of society” (Latour, 159).

Louis Pasteur, for example, was able to control growth, strength and virulence of the anthrax virus, because he was able to isolate it in a laboratory (Latour, 1983: 164). In his essay Latour follows the movements of Pasteur between the farm and the lab. Pasteur harnessed farmers’ interest to cure the disease that plagued their animals and, by recruiting them, he brought the farm conditions into the laboratory. There, Pasteur isolated the Anthrax microbe and

modified its strains and virulence. Through the combination of expert knowledge and experimentation, “the micro-organism” was designated to be “the living and pertinent cause,” of anthrax disease. While in “Nature” and on “the farm,” the anthrax virus was stronger than humans and livestock, in the laboratory, the scientist was stronger than the virus. Then, by reproducing the laboratory conditions on the farm (i.e. disseminating his vaccine), the laboratory transcends both scale and boundary, and deriving its strength from these “*translations*.” Pasteur could then assert to farmers and public health officials alike, “if you wish to solve your anthrax problem you have to pass through my laboratory first” (Latour, 1983: 146).

The power of the laboratory lies in its capacity to collapse levels of scale and translate materials and information across distance. Latour explains that Pasteur’s “translation” of “the anthrax disease to his laboratory in Paris” is not “a literal, word-for-word translation.” Rather “he takes only one element with him, the micro-organism, and not the whole farm, the smell, the cows, the willows along the pond or the farmer’s pretty daughter.” However with the anthrax microbe he “draws along with him the now interested agricultural societies.” Identifying the microbe as the cause of the disease, allowed Pasteur to “reformulate farmers’ interests,” so that if they wanted “to go straight at anthrax,” they needed to “make a detour through Pasteur’s lab” (Ibid, 146). The laboratory is a place where power relations can be inverted, through translations between the world and the laboratory, a scientist is able to transform society. In this chapter, I consider these lab workers both as caretakers of this forest laboratory as well as translators of biodiversity, transforming both spaces within and without of the lab.

Laboratories have arguably become even more powerful in the digital age. Knorr-Cetina (1992: 118) argues that through processes of digitization, “objects of investigation become detached from their natural environment and are made to be continually present and available for

inquiry in the laboratory; through digitalization and computer networks, the availability of the same data is extended to potentially the whole of the scientific community.” In their search for monkeys, jaguars, and other species, biologists at TBS translated the signs that they observed into codes, recordings, reports and digitized data.

As the story of Ira and the Titi monkeys demonstrates, “biodiversity” becomes knowable as a form of scientific knowledge through a systematized techno-scientific apparatus that researchers use to observe species and translate the forests of Tiputini. Specific technological instruments are incorporated into a ritualized set of systems and customs, bodies and senses are disciplined by protocols, timers, instruments, and other forms of mediation. I examine the relation of biodiversity to research at TBS through technologies that “fill in” knowledge about biodiversity in Tiputini.

In this chapter, I examine three examples of this apparatus or “tools of translation”; within each of these, I identify a dynamic in which scientists’ search for “signal” overlooks the “noise” of biodiversity. First, I examine primatologist research assistants technologies and techniques of observation and encoding, including binoculars, the dictaphone, focals, and the ethogram. These technologies also shape the production of “objective” data, the disciplining of scientific selves, and the excesses of un-scientific “subjectivities.” The triangulation of lab workers’ observations through codes like the ethogram and GPS render researchers’ observations “objective,” impartial, accountable. However, while During the daytime, these lab workers perform a subjectivity of the “objective” scientists, while in the evening, they recount the subjective excesses of their daily experiences with the monkeys by telling “primate tales” in which they discuss the personalities of their monkeys through dramatic stories. Second, I examine the “camera traps” as passive technologies of indiscriminate recording; technologies of

seeing that act as “eyes in the forest” to document the movements of species in times and places where humans are not present. Cameras visualize the movements of jaguars and other species to show their “real” or “objective” positions as well as estimate their population density. The photographs collected are used to represent and “stage” biodiversity to visiting audiences of student groups and global publics concerned with conservation. Third, I examine technologies of mapping and digitizing data, like GPS and other computer technologies. I follow the extensions of the technological apparatus of lab workers from telemetry antennas, to global telecommunications networks. The movements of monkeys are evidenced by digital maps produced through data collected by GPS devices to visualize the territorial ranges of the monkeys over time. These maps smooth out and erase the *density* of the forest landscape losing the experiential reality of traversing the biodiverse forest. Each of these technologies glosses over dense thickets, deep swamps, and precarious river-crossings made along slippery logs. They erase a world thick with the herbaceous taste and smell of fruit and flower, filled with spider webs and biting ants, ancient vines that hang from high canopy and quickly-growing thickets that conceal the trail. In these scientific observations, biodiversity consistently occupies a space of “excess” in the production of “objective” scientific truths extracted from the biodiverse ecosystem.

### **Jenna and the Woolly Monkeys I: “Group D,” September 19**

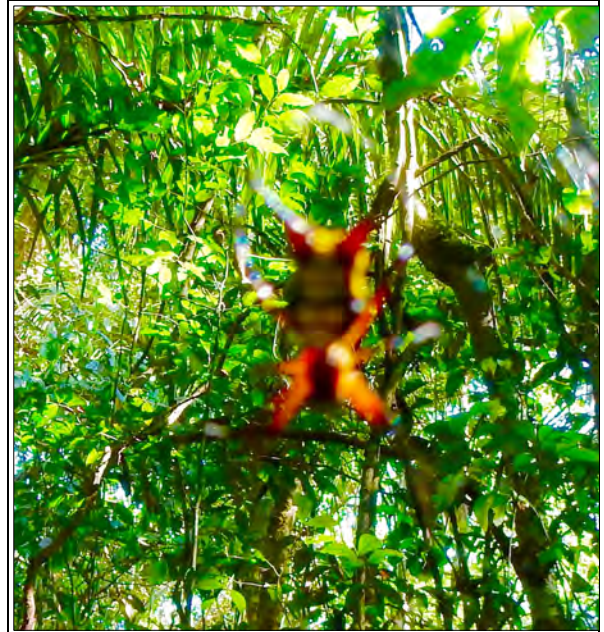
At half past five, Jenna and I pulled on our knee-high rubber boots outside of the library. Jenna was a researcher from the US who offered to lead me on an observation of a troop of woolly monkeys labelled “Group D.” We had gathered our gear from dryboxes in the laboratory: binoculars, camera, notepad and voice recorder. Outside of the drybox, humidity hangs in the air, corroding electronics and rotting leather. We packed a lunch, two litres of water, a rain jacket,

and rain hat. I wrapped my head with a bandanna, to keep off persistent sweat bees, gnats, and mosquitos.

The two of us leaned on the railing of the porch outside the lab, taking bites of fruit as we looked up at the grey cloudy sky, trying to read the coming weather, smelling the air and sensing the wind. A steady breeze blew out of the north-east with a cool, damp feel to it. Rain was coming, that was certain, the question was when. Jenna said that if it was raining first thing in the morning, with no sign of letting up, the monkeys will not leave their sleep trees, preferring to stay resting in their shelter rather than risk getting wet in search of food.

Howler monkeys bellowed from the south-east, across the Tiputini River, out of Yasuní National Park. Their roar is an ominous and awesome sound, somewhere between a deep growl and slow sucking sound, that floats and echoes high in the sky: like giant jet engine consuming the horizon. While we both admired the sound, the howlers were not the monkey species that we were searching for, their call was part of the excess sound of the forest. So we hiked up the Matapalo trail, away from the howling monkeys, and into the forest, towards the rumbling thunder of the storm that approached us from the north-east. We hiked quickly up the trail in the darkness. My headlamp gently illuminated the path with red light. Jenna cursed as she collided with the sticky spiderweb of a “Thorny Weaver” which scurried off of the trail. Although not poisonous, these demonic-looking, neon-horned spiders crafted giant webs across the trails posing perennial obstacles for hiking researchers, especially in the early-morning twilight hours when their face-height webs were nearly invisible.

We waded across a river and hiked up the hilly Harpia trail into the highlands. At about six, we arrived at the monkeys' sleep area where Jenna had left the pack the previous night. Our half-hour hike from the station was mostly uphill. At our current elevation, the ground-level vegetation had changed from that of the bushy lowlands of the Matapalo trail. In place of a tangled mass of bushes and vines growing in the swamp near the river (which often flooded in the rainy seasons) the vegetation along the hilly Harpia trail primarily consisted of large-leafed ground plants and towering tree trunks. This left the middle of the canopy relatively open, allowing for a clearer view of the treetops and the monkeys, which moved among the trees' branches as they searched for food. Hikes around the station often quickly crossed through a diversity of ecosystems and terrain found within grounds of TBS.



**Figure 48: A bright red and orange “Thorny Weaver” seems to float in mid-air as it hangs in its almost-invisible web spread across the trail.**

We waited for “Group D,” a pack of wooly monkeys, to wake up and emerge. The primate research project used a naming protocol, Jenna explained, to categorize monkeys into groups. Individual members were given names that began with their group’s moniker, but primatologists also had informal ways of identifying and characterizing the monkeys. “Group D,” included individuals like “Duke” who Jenna described as “handsome” and “Docket” who Jenna thought looked “Neanderthal-like.” Systems of formal and informal categorization, Jenna

explained, allowed the researchers to monitor the fission and fusion dynamics of the groups as individuals divided into sub-groups or moved from one group to another.



**Figure 49: Jenna peers through her binoculars at Woolly Monkeys hidden in the canopy.**

This day, we were following two individuals, “Olivia” and her male son named “Oliver,” that were an exception to this rule (their names began with “O,” not “D”), but were an example of another naming custom: offspring were named with the first two letters of their mother’s name to track parentage. Name outliers were the result of a few possible factors. In this case, Olivia had been radio-collared by a previous research project before the current system of group categorization had been instituted. In other cases, an individual might be mislabelled if it was

tranquilized and collared while outside their customary group, or before moving from one group to another.

The group woke and began to vocalize, moving northward towards the sound of the thunder. Jenna noticed that a squirrel monkey was following in the wake of the wooly monkeys.

The squirrel monkey

was smaller, nimbler

and faster than the

woolies, but kept a

conservative distance

behind the group.

“The woolies stir up a

lot of bugs,” Jenna

said, speculating that

the squirrel monkey

was likely looking to

eat the insects

disturbed by the

bustling movement of the larger and burlier wooly monkeys.



**Figure 50: A wooly monkey hangs by its tail from a branch in the canopy.**

About half past seven, Group D arrived at a tree which, Jenna noted, they had fed in before. The tree was marked with a bright fluorescent-pink ribbon, a tag which the researchers tied to trees throughout the TBS reserve to indicate that they were used by monkeys for sleeping or feeding. The tree in question had been tagged in 2012. I read out the number on the tag as Jenna checked her notes; she confirmed that they had fed in the same tree the previous day.

“They are heading in the opposite direction as yesterday,” Jenna observed, noting that the monkey troops will often retrace their paths and re-visit trees that they know are fruiting. Thus their trails often follow habituated loops. Anticipating these routes was a tactic that she and other researchers used when trying to track groups of quickly-moving monkeys, especially whilst following groups without radio-collared individuals.

Suddenly, we heard squeals from overhead. “Distress calls,” Jenna identified, explaining that the woolies use these calls to alert the group to potential dangers like predators or falling trees. In this case, a juvenile was simply expressing frustration with a larger male who was harassing him in order to steal food. As the woolies ate, the storm rolled in; rain started with a few drops but quickly became a downpour. The monkeys overhead sought cover in the tangle of the canopy and we hurriedly unpacked our rain gear from our backpacks. We took care to cover ourselves as well as our binoculars, cameras, and digital recorders.

During the rain, the monkeys hid under cover, only occasionally coming out for a quick bite to eat, vocalizing their displeasure at the feeling of getting their fur matted and wet, before retreating back into the shelter of the “tangle,” what Jenna called the mass of vegetation in the canopy. Hiding from the rain, the monkeys were out of sight; Jenna noted this, some frustration in her voice, into her recorder since she was unable to accurately describe their feeding and grooming behaviors.

Thoroughly drenched, I asked Jenna whether she would ever head back to camp because of a rainstorm. “Not usually,” she said, “but, it depends upon the severity of the storm, the distance from camp, and the time left in the day;” occasionally, retreat might be an option. If the monkeys were positioned right outside of camp, then the temptation to wait out the rain under shelter with a hot cup of coffee in the dining hall might be too much to pass up especially, if one

could find one's monkeys sitting in the same spot when the rain subsided. However, considering that we were far from camp, over a half hour hike over rugged hilly terrain, and it was still early in the morning, we stuck it out, doing the best we could to enjoy the refreshing rain shower after a week-long dry spell: oppressively hot days during which the river's water level had dropped over a meter.<sup>4</sup> However, after four hours of non-stop downpour without a single monkey sighting, I caved in and retreated to camp for a hot meal and cup of coffee, curling up in the dry, cozy library for an afternoon of writing. Jenna, on the other hand, stood in the rain with her monkeys for another five hours until dinner.

### **Jenna and the Woolly Monkeys II: "Group G" September 25**

"Day *three*, I'm fucking *tired*!" Jenna grunted in response to my morning salutation at the start of another day in which she'd invited me to join her on an observation of a different troop of woolly monkeys, "Group G." As Jenna's exclamation indicates, waking up at five am and running through the forest, off-trail, for twelve hours, three days in a row is really tiring work. By this point, I had been doing regular half-days with the researchers, retreating to the library in the afternoons to write, and I was still exhausted by the exertion of chasing the researchers and primates.

I followed Jenna away from the lab again down the Matapalo trail but soon she diverged from this familiar well-trodden path down what she called a "researcher trail:" one of an informal set of paths that the primatologist research assistants used to navigate the large expanses of forest not accessible from the station's "official" trail system. The beginning of the "researcher trail" was easy enough to follow but soon the path vanished under a tangle of

---

<sup>4</sup> One of my responsibilities at TBS was to monitor the depth of the river, so I noticed this.

overgrown bushes, vines and saplings, giving me the impression that it had not been maintained in a long time. Soon, following this “trail” felt more like blazing a new path through the swamp; a form of backcountry hiking to which I had become accustomed following the primatologist lab workers at TBS. This improvisatory hiking was made harder by the fact that we were walking in the dark. Twenty minutes before dawn, everything in the forest was a hazy shade of grey. I used the red-light function on my headlamp to dimly illuminate obstacles while trying to maintain my night vision. Through the murky, pre-dawn haze we tromped through thick vegetation and watery mud. Our boots slipped, slid, and stuck in mud for a half hour before we finally encountered the Murcielago trail, a swampy region close to the river.

We emerged from the wetland onto higher ground and spotted the welcome sight of a path worn by human, and non-human, feet; the large prints of a Tapir reminded us that humans are not the only animals to use these trails to navigate the impenetrable vegetation. Butterflies also glide down trails, threading the tubular openings carved

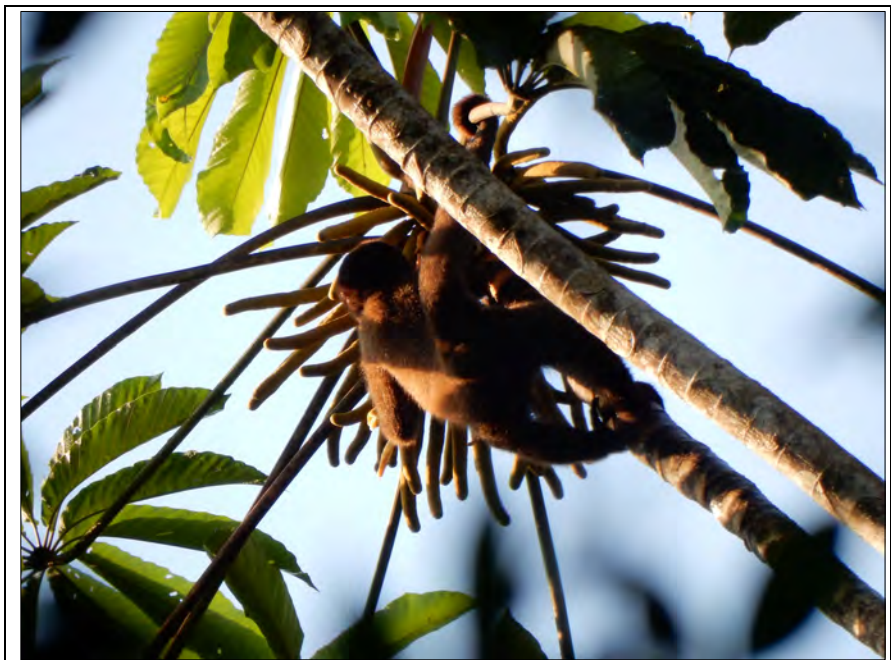


**Figure 51: Jenna uses her telemetry antenna to locate radio-collared woolly monkeys.**

through the forest. Spiders, like the Thorny Weavers, place their webs across trails to interrupt these insect flight-paths, snaring bugs and researchers alike.

We arrived at a clearing where Jenna said she had left the sleeping monkeys the night before, just as the light of dawn finally began to illuminate the sky. Although the monkeys were out of sight, her telemetry readings confirmed a strong signal coming from the radio collar of her target monkey, a member

of “Group G” named “Greyson.” We saw “Gipmunk,” the largest male in the group, perched atop a tall Cecropia (Sciadophylla) tree. Since its smooth, widely extended branches were clear of vegetation, Jenna easily identified the



**Figure 52: A woolly monkey climbs a Cecropia (Sciadophylla) tree.**

individual crawling toward the radial, palm-like leaves splayed at the branch’s end, to feed on the fruit underneath. His large orange body was silhouetted in stark contrast to the blue sky as he lay on the branch lounging and nibbling his breakfast. Jenna noted that the woolly monkeys liked to run along the branches of this tree species, and lie on them for a rest in the sun.

Here in the swampy lowlands of Murcielago it was easier to observe the woolly monkeys than in the tops of the dense canopied trees in the highest elevations of the Harpia trail where

they had easily concealed themselves in the tangle of vines and other botanical growth which covered the towering trees. There, one had difficulty peering upward through binoculars to spot the monkeys hidden amongst the knotted branches and leaves.

Jenna began taking notes, including the time that she had found the group, the weather (no rain, partly cloudy), and the GPS location which she obtained from a metal tag with an embossed serial number that was nailed into a nearby tree. These tagged trees, she explained, had more accurate GPS coordinates than her hand-held device since they had been triangulated many times over years, an example of the ongoing work of researchers that Knorr-Cetina terms, “caretakers of the laboratory.” The metal tags lasted a long time, they held up against the elements better than the neon plastic tape researchers also used to mark trees. On the other side of the trail, for example, an orange plastic tape marker hung precariously, looking torn and fragile in comparison to the shiny steel tag. The culprits of this vandalism scurried up and down the tree: bullet ants. Bullet ants were hidden dangers: one wrong handhold on a narrow branch, like a desperate grab to avoid sinking into the mud, could mean the painful sting of a bullet ant: inch-long ants that were larger than some of the frogs I saw in the forest. Jenna said its bite was so painful that it had sent her into shock for hours; she had been bitten while resting her hand on a log during a lunch break.

Earlier, Ira had shown me a video that he had filmed of these giant ants tearing apart a pink tape label that he had tied to a tree. In the video, the bullet ants mercilessly attacked the lifeless pink intruder, tearing the plastic ribbon off of the tree with terrifying speed and efficiency. In a bit of irony, the ripped tag read: “Warning Bullet Ant Guarded Tree.” The label referred to the symbiotic relationship between the ants and the tree; Ira explained that the insects dutifully attack and remove all intruders and potential parasites from the tree since it provides a

home to the ant colony. As I watched bullet ants scurry up and down the tree with a mix of intrigue and fear, Jenna cried out that she was being attacked by a swarm of “sweat bees”: infuriating insects that swarm to any sign of perspiration and leaving itchy bites if not dissuaded from lingering.

About half past six, the group began to stir, as monkeys woke in the surrounding trees. Jenna and I searched the area for Greyson, an adult male marked with a purple tag. Group G was one of the largest groups, with twenty to thirty members. Overhead, monkeys moved in every direction, swinging, jumping, and climbing between trees. Trying to find, let alone track, one individual in the ensuing melee was a dizzying prospect. Our binoculars were trained into the canopy as we circled, wandered, and climbed through the undergrowth. I alternated between looking through my binoculars, taking photos with my camera, and writing notes, as I struggled to keep pace with Jenna and record, or even hear, her various observations. These tasks were made more difficult by the limited visibility offered by the surrounding vegetation. At ten meters, Jenna was completely obscured, her bright yellow backpack and neon bandana had

completely vanished into the thicket. She trained me in a call-and-response technique that she employed with her research partner, Becky, so that I could follow her quick, nimble, progress through the forest. Seven-o-clock passed and we had still seen neither hide nor hair of Greyson.

Jenna complained that no matter where she looked, the same figure haunted her binoculars. “Gaby,

*again!*” A young female, or “the ditziest monkey,” as Jenna characterized her, swung and climbed playfully through the canopy, moving in a kind of lopsided pendulum motion, often popping into view,



**Figure 53: Greyson, is that you?**

and continually tricking Jenna into thinking that she had spotted a new individual.

By quarter past seven, the group began to disperse across a larger area. We encountered a female courting a disinterested male who was lying lazily on a branch. Jenna dictated into her recorder that the female presented a “solicitation face” and began grooming the male. In response to his lack of reciprocation, she wandered off again into the canopy. We continued down a slope, crossed a river and then reached a steep hill. This place was particularly thick, and

we waded through plants, vines and spider webs as we climbed. By half past seven, Jenna was convinced that Greyson was nearby. “Its super strong,” she said of the signal, which pulsed persistently out of the receiver as she swiveled the telemetry antenna overhead. By this point Jenna estimated the group had spread to a diameter of 150 meters, while visibility at ground level was still only about ten meters. “I know he’s in the group its just *where?*” Jenna sighed with exasperation.

“*There he IS!*” Jenna shouted. Quickly, she grabbed her dictaphone while peering through her binoculars rapidly saying that she was “starting a focal”: an extended examination of one individual that consisted of regular observations. I was still trying to keep up, fumbling with my own recorder, to document her observations and jot down notes in each moment of respite. Greyson’s nearest neighbor was Gus, another male with whom, Jenna mentioned, he would often hang out. Within ten minutes we had climbed uphill to a different part of the Harpia trail and observed the two friends<sup>5</sup> moving and feeding in the trees of a clearing. Around eight, Gaby popped up again just as Greyson vanished; we scrambled to find him and encountered him feeding, ten minutes and a few other monkey sightings later. Following the movement of the group, we crossed another river at half past eight, lost sight of Greyson, then climbed a hill only to find Gipmunk instead: the first monkey that we had spotted that morning. He was again resting in a tree, but began making “intimidating displays” at us; Jenna suspected that it was perhaps because he wasn’t used to seeing a human male, like myself. Gipmunk was truly a fearsome creature, almost twice as large as many of the other woolly monkeys, and he had an enormous tail, strong enough to hold his hulking figure while hanging on a branch.

---

<sup>5</sup> My own subjective categorization.

After a quick bite to eat, we circled back, following the telemetry signal, and bumped into a copulating couple that was being pestered by a juvenile. Finally, we ended up back at the river. Looking across, we found that half the group hadn't crossed yet; Jenna dictated she estimated that the group was spread about 200 meters wide at this point. We crossed back, and climbed uphill until we hit the Harpia trail for a third time. When I reached the trail (by now about a quarter past ten) I looked up and spotted Greyson hanging from a branch by his tail, peering intently down at me. Seeing his purple radio collar glinting in the sun, gave me the confidence to call Jenna over, who sighed with relief. He was in a group that looked like it was not going to cross the river, in fact, they had begun to head in the opposite direction. "Damn, they are spread out" Jenna commented on the fact that we had crossed at least 200 meters since spotting Gipmunk at the other extreme end of "Group G."

"They might be sub-grouping," Jenna reasoned, and since she was focused on Greyson, we continued to follow his sub-group away from the river. Greyson was joined by Gael, an aggressive male who twice that day had knocked branches off of trees to display his prowess, Gazpacho, a cute, nimble, juvenile male as well as others: Gin, Gillian and her son Gizmo. By this point in the day, at half past ten, it had begun to warm up and the wooly monkeys had begun to slow down. Two monkeys cuddled up with each other on a branch, while Greyson rested nearby, occasionally nibbling on a leaf or two. The sound of some "little ones playing"<sup>6</sup> filled the canopy.

At eleven, a water droplet, or some bit of filth, fell from the canopy into Jenna's eye while she was craning her neck to gaze up at the monkeys. She rubbed her eye to dislodge the

---

<sup>6</sup> Jenna's words.

dirt, but lost her contact lens in the process. I offered to run to camp to fetch her another, since I figured that at this point near the Harpia trail, we were only a fifteen minute hike from camp. Greyson rested contentedly in the shade, and with high noon approaching we doubted he would leave but Jenna didn't want to risk losing him again. In a half hour, I had returned with the contacts, Greyson was still in the same tree and Jenna could now continue to observe him clearly. I hiked back for lunch and afternoon write-up as well as to complete few chores around the camp before a student group returned from an expedition. On the hike back, I bumped into a deer on the path. We both froze, equally startled to see each other, before the deer bolted back into the forest, vanishing as quickly as it had appeared.

### **Tools of Translation I: “Focals” and “Ethogram”**

Binoculars and dictaphones formed the foundation of the primatologist researchers tools of translation. While persistence and discipline were required for the lab workers to follow and peer into the lives of the primates they studied, binoculars, they told me, were essential for all observations. Becky said: “Without my binoculars, I couldn't do my work.... I couldn't function without them, because you can't see anything without them.... That's my most important piece of field gear, hands down... my binoculars.” Jenna argued that the combination of binoculars and dictaphone allows the primatologists to collect richer and more detailed data than if they only had pen and paper. Using binoculars, in tandem with the dictaphone, allowed researchers, simultaneously observe and record tiny details of monkey behaviors without putting their binoculars down or losing sight of their subjects.

Through the magnification provided by the binocular's lenses, primatologists were able to gaze up into the treetop canopy and peer into the worlds of their monkeys observing the intimate details of their lives. Binoculars combined the “mechanical objectivity” of the telescope

and the microscope. On the one hand, binoculars acted telescopically, allowing primatologists to gaze into the canopy and observe monkeys from a distance. On the other hand, like a microscope, binoculars permitted primatologists to peer into the worlds of monkeys at an intimate level of detail.

Identifying monkeys was the hardest part Becky told me. “You have to learn to pick up on the tiny differences between the monkeys,” details which are not always visible, especially when monkeys are hidden within the leaves. Observing the four groups to which she and Jenna were assigned required identifying the specific signs of eighty individual woolly monkeys. “To learn how to identify all 80 of them,” Becky explained “took me about a month and a half” however she conceded that she only knew them “in the context of their group” noting that, “if all 80 of them were together,... it would be almost impossible to identify most of them.” However, “when they are in their separate groups,... you can tell who’s who,” by process of elimination: “There’s no one else in this group that has this [or that] feature. There’s no one else in this group with a kid, that age, of that sex.”

Observations made with the binoculars were microscopic in their ability to spot details, including the differences between individuals as well as the minute actions of monkeys over time and with each other. “The tiny differences between the monkeys,” for which Becky and Jenna searched were often the primates’ mantels or genitals. Since, at a distance, all the woolly monkeys looked about the same, and were often about the same size, genitals made sex quickly identifiable. Small differences in mantel and genital color could be used to quickly tell individual males and females apart from others in the group. Formal and informal naming and identification protocols were important for identifying and tracking individuals over time. Thus primatologist research assistants maintained, memorized and passed along ‘cheat sheets’ that described the

monkeys found in each group and the characteristics of individuals including the small identifiable details by which each could be differentiated from others in the group.

Becky told me another difficult aspect of the job was learning to be “really observant, and noting everything that happens.” Here, she referred to training herself to simultaneously dictate all of a target monkey’s behaviors into her dictaphone during a “focal,” as soon as she observed them. “A monkey would chirp, and I’m supposed to say when they vocalize” however, she explained, “they’re always chirping.” She had to learn to continually remind herself, “Oh, they chirped, *I have to say that they chirped.*” This practice of “remembering to say,” eventually became “muscle memory, *to say what they do, when they do it.*”

However, rendering observations “objective” was not as simple as “seeing and saying.” Primatologist lab workers were trained to translate the behaviors they observed into a code called the “ethogram,” a method of documenting animal behavior used in ethology. The ethogram also became a technique for the researchers to perform a kind of scientific selfhood. “We follow a protocol,” Becky told me, known as “an ethogram” which she explained was a standardized list compiled by the primary researcher of all the monkey behaviors that had been observed. Thus, for each action the lab workers witnessed they translated their observation into the code that was most appropriate to describe that behavior. Lab workers dictated these coded behaviors into their digital recorder while in the field and transcribed these recording during data entry days in the laboratory.

The ethogram maintained “a level of objectivity because its a standard,” Becky explained. For each possible action, there was a coded “definition for what the behavior is;” if the action you observe, “doesn’t fit in that definition, then that’s not the behavior.” For example, the behavior “Ritual Scratching” was defined as “scratching that takes place after a monkey

wakes up, and it's done for a long time," so one would not dictate that code "every time they scratch." Becky noted that while lab workers "try to keep [their observations] objective, based off of the ethogram," sometimes "there are grey areas." Becky said one researcher might dictate, "*resting vigilantly*" while another might choose, "*resting while actively looking at the environment*" and a third, "*resting passively, eyes open*"; she gestured to demonstrate to me the differences between each coded behavior. Needless to say, it seemed like there was room for a fair amount of interpretation. While she acknowledged it is an "imperfect system" she noted the ethogram was good for collective quantitative data on different behaviors.

With the ethogram Becky explained one could mark "behaviors as numerical values" researchers could track "trends within that [data]." She provided the example of measuring "*nearest neighbors*;" researchers collected binary, one-or-zero records of monkeys' proximity to one another. Becky explained, "One, yes they were near this *person*," she laughed, saying "see I just did *that*," recognizing her slip of the tongue, common to the lab workers, in referring to the monkeys as "persons," and not "individuals." She corrected herself: "one, they were near this individual [or] zero, they were not near this individual." Over the course of a year, researchers could quantitatively measure if a monkey was near "*this* individual a lot more than they were next to *that* individual." This aggregated data compiled across groups over long periods of time produced records not only of the monkey's movements through the forest but also within their groups.

The "ethogram" Ira explained, is "the set of behavioral codes for everything [the monkeys] do," conceding that if one forgets "the code" for a behavior, one simply says what the monkeys did: "Kong moved trees; kong ate a fruit; kong went next to kata; kong groomed kata." He qualified that one should *not* say, "*why* they did it." Ira provided an example of what one

should *not* say: “Kong *wants* to be groomed by Kata,” rather one should say, “Kong *is presenting himself* to be groomed,” indicating that this passive construction was another behavioral code.

Ira admitted that he had made this kind of mistake in his first written report on the Titi monkeys. Ira had noticed over time that, “Lucius” took more time caring for his infant “Louis,” than Louis’ mother “Lucy.” Ira explained that, “Lucy wouldn’t let the infant eat at [her] flowers” noting that “she might even hit him or be aggressive in some way.” Thus Ira wrote in his first monthly report that, “Lucy *doesn’t like* to eat with Louie.” However, “*that right there,*” Ira snapped his fingers, “*that was subjectivity* without us even realizing it; *because we can’t infer what she likes or does not like,*” we can only, “say what *is*: ‘often she does not allow the infant to eat with her.’” Ira told me that he had received a comment from his supervisor, noting his slip into “subjectivity.” He was reminded to remain “objective” in the future: to simply state the facts and not import motive.

Ira’s story is evidence of the fact that “objectivity” is, as historians of science Daston and Galison argue, fundamentally a question of the self, of self-discipline. Specifically, “objectivity is the suppression of some aspect of the self, the countering of subjectivity” (Daston and Galison, 2009: 36-7). Through problematization and repression of a “subjective self,” one cultivates and disciplines an “objective” or “scientific” self. Furthermore, “objectivity,” they note, is historically contextual: “Starting in the mid-nineteenth century, men of science begin to fret openly about a new kind of obstacle to knowledge: themselves. Their fear was that the subjective self was prone to prettify, idealize, and, in the worst case, regularize observations to fit theoretical expectations: to see what it hoped to see” (Ibid, 34). A scientific self had to be cultivated through the regulation of one’s own “subjectivity.” They insisted upon the importance of “effacing their own personalities” and “developed techniques” to produce an “objective view”

(Ibid, 35). “To be objective,” Daston and Gallison argue, “is to aspire to knowledge that bears no trace of the knower - knowledge unmarked by prejudice or skill, fantasy or judgement, wishing or striving” (Ibid, 17).

Ira articulated a similar impulse to make himself into an “objective” scientist, that manifested in a self-censorship aimed at “avoiding anthropomorphization” so as to remain “objective.” He explained, “as a scientist you have to be *objective*, you have to look at the world *objectively*... when you are collecting data you always have to be *objective* and *it can be hard to do that* because you can *make assumptions so easily* before you even realize that you are assuming anything.” This observation exemplifies Daston and Galison’s point that, the “scientific self of objectivity” was “realized and reinforced by specialized techniques of the self” such as “the keeping of a lab notebook with real-time entries, the discipline of grid guided drawing, the artificial division of the self into active experimenter and passive observer,” and “the introspective sorting of one’s own sensations into objective and subjective” (Ibid, 38). Thus “a will-based scientific self was articulated - built up, reinforced through concrete acts, repeated thousands of times in a myriad of fields which observers struggled to act record draw trace and photograph their way to minimize the impact of their will” (Ibid, 38).

In addition to techniques of the self, Daston and Galison note that the automation and mechanical objectivity made possible by new technologies contributed to novel conceptions of scientific objectivity. Whereas earlier technologies like “truth-to-nature drawings” had tried to capture the “universality” of a plant specimen, a photograph could capture the peculiarities of each individual specimen. “Objectivity preserves the artifact or variation that would have been erased in the name of truth; it scruples to filter out the noise that undermines certainty” (Daston

and Galison, 17). Thus they note, “objectivity is distinct from “truth” and “certainty” and “is younger than both.”

Primatologist lab workers rendered their observations “objective” through a combination of technologies of “mechanical objectivity,” protocols of coding and naming, and techniques of disciplining the self to avoid attributing agency and desire to their research subjects. Binoculars brought “the remote and inaccessible closer” (Daston and Galison 36), eyes were trained to detect small differences, tongues were trained to dictate observations in real-time. The translation and encoding of these observations effaced subjective interpretations or the imagined interests of the monkeys they observed. Primatologist lab workers were trained to cultivate the “blind sight” of objectivity to produce a “knowledge that bears no trace of the knower.”

### **Primate Tales**

Ironically, the intense observations made by lab workers often produced feelings of intimacy that could not be translated into “objective” codes and reports. These, “unscientific” experiences of ‘personality’ exceeded official observations and spilled into stories that left the lab and became ongoing dramas recounted over dinnertime. After long days in the field, or hours spent typing notes and conducting data entry in the forest, dinnertime provided for the primatologists the main daily ritual of social interaction with other humans for the primatologists, who often woke before dawn and ate breakfast and lunch in the forest in the company of the primates they studied. “We share our stories at dinner,” Becky explained, like the time when “This one big adult male grabbed another male’s head. Just grabbed him, and looked him in the eyes, and started chirping at him! Their interactions are so complex, and they are really *reminiscent of yourself*. And I dunno, that really *speaks to me*.”

Dinnertime conversation generally revolved around the primary activities of the researchers, recording the behaviors of their monkeys. However, these dinnertime discussions of their research subjects generally took place in a different register than the dry, emotionless, collection of observations in the field. As the researchers digested the events of their day, their observations were rendered coherent through stories, in which their monkey subjects came alive as characters with distinct personalities, whose behaviors differed both as individuals and as groups. “By following the monkeys” Becky explained, the researchers “develop relationships with them” admitting “we love them, to us they are more than monkeys.” She acknowledged the disparity between subjective and scientific selves saying, “when we have our scientists’ hats on we are not thinking ‘oh, Gaby, the monkey that I love,’” rather, “when we have our scientists hats on, we are looking at what the data says, not what our hearts say.” She said that, “all scientists are scientists and people,” explaining that “people have hearts and they think of creatures as cute little furry animals” noting “most primatologists get into primatology because they love animals,” in support of Takacs’ hypothesis that “biophilia” inspires the work of many biologists. However, she assured me that, “the data, since we gather it objectively based off the ethogram, its not going to have our feelings in it.”

Jenna described her observation of Gwen’s pregnancy as one such experience of intimacy. “In the month of July, I spent *eighty-two* hours, *just focal hours*,” with a monkey named “Gwen” in total “probably somewhere around *one hundred hours with this monkey*.” Jenna explained that “when you watch an animal for that long” you form “some kind of attachment to them” getting to know “their habits and the way that they move through the forest” and “the things that they *prefer to do or not do*.” During this time Gwen was “pregnant and had a baby.” It was “an incredible thing for me” to observe her “up through the end of her pregnancy.”

After Jenna left her one night, another researcher that observed Gwen the next day excitedly returned with the news that, “Gwen has a baby now!” Jenna explained that following Gwen up to “within twelve hours of her giving birth” was “a personal and intimate experience with this one individual.” As I interpret Jenna, the close observation of one individual monkey at such a significant time was an intimate and emotional experience that could not be fully translated into practices of “objective” scientific reporting.

Dinnertime offered an opportunity for speech about monkeys in a different register, providing a break from the performance of the “scientific self” and embrace of the “subjective self.” Becky explained that, “when we are talking to each other,” researchers will use, ““people, person, somebody, someone,” because we express “our own little sentiments about how we feel about them” but was quick to emphasize that, “it doesn’t mean anything *scientifically*.” Since researchers daily observations often focused on one individual, that evening’s stories would detail the individual’s quirky behaviors, cohering into a distinct “personality.” As their research shifted between different groups of monkeys, groups were also described to have distinct characteristics and personalities that included how quickly they climbed through the canopy, their preferred places to feed and rest, and the migratory paths that these movements formed.

Researchers noted which groups were easier to find and track, which moved too quickly (causing researchers difficulty) and which were more relaxed (lazily hanging about the station’s immediate grounds). Individual and group personalities became knowable over time through ongoing stories that the lab workers told each other over dinners. Particular individuals were also described to be more relaxed or aggressive: when a large male broke a branch above us, Jenna told me that he “was often like that.” Ira told me that, “individuals certainly have individual characteristics just like we have personalities.” For example “the infant in group one is not

frightened by me and is interested in what I am. [He] often comes down close to me and looks at me like he's trying to figure it out." Maca " a sub adult Saki monkey is not so curious about me" rather "she seems more curious about the world and is a really excited young individual." Ira found her to be "a hard follow because she's constantly running up and down the canopy" but also to be "more curious" than her compatriots. While two adults in her group, "bundled up, like monkeys usually do when it is raining" he saw "Maca just went along with the rain" explaining that "the rain was still pouring on her but *she didn't care at all.*" Ira was quick to qualify that these kinds of comments have, "some subjectivity to [them] though so I can't record that." The quirky proclivities of different monkey groups shaped the researchers' ideas of which days I should accompany them. While they told me that they liked having my company, the researchers would dissuade me from following them if they thought a group was particularly shy and would be scared by my presence, or warning me if a group was a "hard follow": difficult to find and track and keep pace with if they tended to move quickly through difficult terrain.

Individuals' friendships, familial relations and sexual proclivities also made dramatic dinnertime conversation, as family or romantic dramas played out episodically across dinnertime conversations. Jenna described to me the relationship between Olivia, "an adult female," and her son Oliver, "a juvenile male" The two, she explained "have an interesting relationship" since he was "on the verge of becoming a sub-adult" yet "he still nurses from his mother which other monkeys of his age don't necessarily do" she took this as a sign "he is really attached to her" noting "he will groom her a lot and sleeps in contact with her." Together these signs and "subtleties that you notice when you are spending 12 hours a day following the same monkey" demonstrated to Jenna that, "he loves his mom and he really wants to be around her all the time. I found it hard not to interpret these behaviors as signs of "love."

The excesses of repressed primate personalities spilled out at the end of the day each night at dinner in ongoing “primate tales.” Becky described this practice with the admission that she creates “soap operas with the monkeys.” She too qualified that “of course I don’t truly believe that” both because “there’s no way to prove it, its not *scientific*,” and “because they are not humans and they don’t think like humans, as far as we know.”

I interpret these “primate tales” by lab workers to be less about the realities of monkeys and more as a comment on their own human condition; imaginations on what it means to be human, to see “humanity” in monkeys and to recognize oneself as “primate.” As Nati described to me<sup>7</sup>, “For the most part, you believe that because we are human, that we are the only ones that have these behaviors,” however when you see these behaviors in the monkeys, “It is very cool to be able to see the behaviors that you know that you [also] do.” This is a realization that “you resemble them, that you are also a primate.”

Moments of storytelling seemed to be important, cathartic moments for the researchers to share and make sense of the primate worlds in which they spent so much time; stories stood in for realities that remained inaccessible to them. This divide was both physical and ontological. On the one hand, monkeys were out of sight for much of the time; when they were hidden in thickets their actions remained unknown. On the other hand, their actions and behaviors which were visible remained fundamentally unknowable: what was the significance of these behaviors? how could one truly know the meanings of monkey relationships like friendship or enmity, love or jealousy? The dramas that unfolded at dinnertime filled in these unknowable gaps of

---

<sup>7</sup> “Por lo general crees que lo por que nosotros somos humanos, entonces somos los unicos que tenemos des comportamientos pero tu los ves en ellos... Es muy chevere poder ver comportamientos que tu, sabes que tu haces. y darte cuenta que... tu tambien perteneces, que tu también eres un primate” (Interview with Nati, September 2015).

meaning. “Anthropomorphizing,” Ira said, “has to be a personal tool,” explaining it can help to keep you “interested or focused on an individual, or it can just be a mental break, from being ‘objective’ and taking data all the time, it can be like a kind of comic relief.” What can we know of monkeys’ love, lust, and jealousy other than the stories that humans tell through our own anthropomorphized dramas?

In one such story, Jenna told me about the death of one of the woolly monkeys. As we crossed the Matapalo trail, she showed me the spot where two researchers had come across a dead woolly monkey in the woods, pointing out to me the spot on where it had been found lying lifeless. Finding a dead woolly monkey was unusual, she explained, because it was killed by a fall from the canopy, likely the result of a leap gone wrong, Jenna speculated a branch might have broken unexpectedly under the weight of the monkey. She noted that it must have happened recently; if the corpse had been lying there long then a scavenging predator would have taken it away to eat it. The primatologists quickly identified the body as a named individual which they could distinguish by its appearance. The death was a somber moment for the researchers who, understandably, become emotionally attached to their subjects. They conducted a funeral for the unfortunate primate, burying its body in a grave. She explained optimistically that they had buried the corpse in a bag so that after the body had decomposed it might be possible to recover the bones and re-assemble them into a full skeleton which could be used as a teaching tool in the laboratory library.

While a bit morbid, I interpreted this idea not as a desecration but as a form of tribute; a way to give meaning to a senseless loss, from a hope that some good might come out of the tragedy. Jenna recognized that it might be difficult to recover and assemble the bones, but it seemed to me like the imagined ritual of burial, resurrection, and reconstruction helped the

researchers to mourn and comprehend their loss, and find meaning in the random accident. In my view, the researchers were affected not only by the loss of a monkey, but a *person* whom they had come to know through regular, intimate observation, personality recognized through particular and peculiar habits and behaviors. The tragedy represented the loss of a person with a personality defined by a particular set of habits, behaviors, and experiences.

In my observations, these primatologist lab workers reflexively, instinctually, and imaginatively constructed their monkeys as subjects, and only conceptualized them as objects through scientific practices of self-discipline and self-censorship. This evidence extends the hypothesis of Daston and Galison that “objectivity” is fundamentally a question of self-making; the cultivation, discipline, and production of an objective scientific self. How it is interesting that non-indigenous researchers articulated descriptions of their primate research subjects that seem to echo Amazonian theories of “perspectivism:” Amerindian narratives that presume non-human “others” are “subjects” and not objects; the idea that other creatures see themselves as “human” from their own perspective in a world different, but analogous to our own. This suggests that the division of “Nature” and “Culture” may not just be a problem of the modern ontology, “culture” or “worldview” but rather a practice created and reinforced through practices of “objectification” like those deployed in search of “objectivity” and the “disciplining” of “objective” and “scientific” selves. The “excess” narratives determined to be “unscientific” during research and discussed at dinnertime were an example of the kinds of truth discarded as “noise” in the search for “signal.” Thus the complexities of biodiversity seem lost in the background of noise, as scientist are trained to hone-in on “signals” through, binoculars, dictaphones, camera traps and GPS.

## **Tools of Translation II “Eyes in the Forest”: Camera Traps**

Diego, one of the TBS directors, stood at the head of the classroom adjacent to the library, and waited to begin his slideshow presentation as a visiting group of students noisily filed in after finishing their dinner. Student groups usually stayed no longer than a weekend. They might hike a few of the trails during the day, go boating in the early morning, visit the salt lick and see hordes of parrots, and at dusk go to a lagoon to spot reptilian cayman by using flashlights that reflecting off of their glowing eyes. On a canoe trip along the Tiputini River to reach the trailhead for a hike with one of these groups, we spotted pink river dolphins gliding in and out of the water, swimming playfully around our canoes.

For those unlucky enough to miss such miraculous moments, Diego’s slideshow represented the “biodiversity” of the jungle laboratory to the visiting students. In response to the slideshow, one student exclaimed “where are all these animals hiding?” Halfway through each presentation, Diego would warn the class that “this next video has been sped up.” The obviously accelerated footage had been captured by one of the camera traps positioned near the salt lick: a sloth slowly crawled across the screen at a painfully lethargic pace. The classroom erupted in laughter.

Diego worked on a study that used camera traps to document all of the different individual jaguars that passed through the laboratory’s network of trails (Blake et. al, 2014). He described his research to visiting students, showing the assembled students beautiful images of the elusive cats. Some of the most extraordinary images had come from a National Geographic camera crew that had visited the station to support his research. He explained that the crew had brought with them some very fancy equipment. With some luck, they had captured a high quality shot of a black jaguar, a rare phenotype of the already elusive species. His camera trap study had

captured many more images of the cats, but of lower quality and resolution. In his study, Diego drew upon thousands of images collected by the camera traps that were spread out along the trails of the TBS grounds to document the frequency of individual jaguars passing by. Diego told the students the ways that they tried to attract passing jaguars to trip the camera traps by using bait: the most effective, Chanel #5 perfume.

While Diego qualified that TBS grounds were too small a sample area to accurately estimate the population density of jaguars he concluded that “we know that we have a high density of jaguars because in the last ten years we have identified twenty-one different individuals.” He explained that, “considering that one single jaguar [occupies] a hundred square kilometers,” he noted that, “having twenty-one is pretty interesting,” calmly understating his impressive findings.

Diego and Gabby told me that most of the work with the camera trap projects involves sorting through the digital archive they have collected: organizing the thousands of images which the camera traps have captured according to the species depicted, or, in the case of jaguars, the individual spotted; individuals are identified by recognizing their unique spot patterns. Camera traps help to capture photographs of elusive animals that humans are unable to spot. They monitor eco-systemic space continuously over time, recording all movements: except for interruptions caused by flooding, damage, or other malfunction. The “objective view” of the stationary lens, triggered by motion sensors, captures images of all passers-by. Camera traps are a silent “modest witness” (Haraway) of hikers, jaguars, and peccaries (groups of wild pigs that Diego said could drain the battery of camera traps if they clustered in front of the lens,

wallowing in the mud, for long periods of time). “Having camera traps in the forest is like having eyes in the forest” Diego told his audience.

The images captured by the



**Figure 54: A herd of Peccaries swim across the Tiputini river.**

camera traps and displayed in the slideshows “staged” the “biodiversity” of the laboratory for visiting audiences of students. Diego’s slideshows showed students all of the diverse and exotic creatures that passed through spaces that were, by now, recognizable to them, and acted as a visual record of the often elusive species that composed the station’s “biodiversity.” While it was often impossible to spot these animals in the wild, camera traps conveyed a truth and reality of biodiversity that remained invisible to most passing human observers. Given that a picture is worth a thousand words, Diego told me that “a picture is always giving us more information. It is telling us “what kind of *habitat*” in which species live, “the *time* of the *day*” when species appear, “the time of the *year*” that species migrate and “many other things.” Camera traps transposed images of animals on their own terms, carrying these digitized imprints of light waves to human eyes as records of animal activity to create imaginations of “species richness” in the minds of visiting students even if they had only directly observed a fraction of multiplicity of lifeforms living in Tiputini.

Many of the images shown in Diego's slideshow were captured by cameras placed around the salt lick; a geological feature that attracted a diverse array of species. One day, Gabby showed me her work reviewing the photographs and videos that had been collected by the station's camera traps. She invited me to join her on a motorboat trip to check on the camera traps that were positioned at a salt lick a short way downriver, and to reload their batteries and memory cards. We left with a couple members of the station staff who piloted the boat and brought a ladder.

I had previously visited the salt lick a couple times with student groups during my month-long stay at the facility. On my first trip to the salt lick, I left early with the student group led by a professor named Leo; after a 45 minute ride we arrived at an exposed clay cliff, an anomaly in the otherwise uninterrupted forest. The pilot parked the boat along the opposite shore with a clear view of a few parrots congregating noisily around the cliff. Professor Leo instructed his students to stay very quiet so that the parrots would emerge and approach the exposed reddish clay of the cliff. The salt lick, he explained, was a site where many animals would gather to eat the mineral-rich soil. Leo explained that the parrots would consume the clay after eating a meal of leaves to aid with their digestion.

Trips to the salt lick were, like Diego's slideshows, a way of staging, or making visible, the "biodiversity" of the laboratory to visiting student groups. While most of the parrots remained in the trees, feeding and making noise, a few parrots pecked at the clay, lifting their heads occasionally to squawk at a neighbor. We lay in wait watching for about an hour, as some of the students fell asleep.

All at once, a cacophony of parrots, easily numbering in the thousands, descended out of the sky, landing first into the canopy and then moving toward the salt lick. All at once, parrots began flocking to the cliffside to nibble little bits of the clay. The sonambulous students rushed to ready their cameras, leaning lenses over the edge of the boat, aimed across the river. Amidst the deafening noise

we spotted at least four different species of parrot. Almost all were green but some had blue heads, some had black heads, and some were large, while others were small. For the



**Figure 55: Several species of parrots gather around the salt lick.**

most part parrots formed groups according to their type. When too many of the birds gathered together, their calls crescendoed, then, abruptly, a bunch of birds would take flight all at once, circling the cliff and the canopy before settling back down into the trees and the clay. After about a half an hour, in which I observed this pattern repeat about three or four times, the volume of the birds calls reached a fever pitch. Suddenly, all the parrots simultaneously took flight together; a tornado of birds rose in unison, the air filled with their sounds of squawking. The cloud of parrots circled high above the canopy a few times in wider and wider arcs, before the

birds began to divide up into a handful of groups, masses composed of hundreds of parrots. These flocks began to fly back into the jungle, their calls drifted away into the wind. The roar of the parrots faded, and was replaced by the chirps of some stragglers that remained: the salt lick was as serene as when we had arrived.

Now with Gabby, we returned to the salt lick not in the morning but in the heat of the mid-afternoon once the animals had abandoned the cliff face that baked in the sun. The pilot docked the boat alongside the cliff; we disembarked and climbed the steeply rising muddy embankment by walking up a fallen tree trunk. Gabby carried replacement batteries and memory cards in her backpack, and the pilot positioned the ladder beneath each of the camera traps: I carried my own camera, snapping photos. Gabby scaled the ladder up to each camera trap positioned around the red cliff of the salt lick I noticed where the



**Figure 56: Gabby changes the memory card and batteries in a camera trap.**

camera traps were hidden within: small green boxes facing towards the center of the clay hollow. One camera was carefully positioned in the nook of a tree branch, another was attached to a rusted steel beam driven into the rocky clay. A third was hidden in the foliage at some distance. All three were carefully concealed, hidden from view of the river. Gabby carefully opened each

of the green metal boxes, unlatching and opening the front panels, which swung open on hinges like small doors. Two of the camera traps were positioned a bit further from the salt lick, one strapped to a wooden pole, the other high up in a tree, attached to its trunk, its green casing camouflaging it against the lichens growing on the bark.



**Figure 57: Camera Trap.**

After checking on the cameras at that salt lick she proceeded to another salt lick that I hadn't even noticed on the first trip,



**Figure 58: Inside of a Camera Trap.**

changing out the batteries and memory card of the camera there and permitting me to snap a picture of the inside of the open camera. On one side was a small LCD display that showed the date, time and the camera's status, a power switch, some toggle buttons, and an opening for the memory card. On the other side eight AA batteries were strapped in along with a moisture control pad to keep the inside of the camera dry. After replacing all the batteries and memory cards, Gabby carefully closed and

latched each of the cameras and we descended down the muddy embankment to return to the

boat. On the boat ride back, Gabby told me that she and the other director, Diego, check on the camera traps every few weeks. She said that the camera traps are hidden and camouflaged so as not to attract the attention of passers-by like the Huaorani.

She mentioned that another salt lick further downriver was used by the Huaorani as a hunting ground and explained that while they had considered placing a camera there they were worried that someone might see the camera and take it, thinking that it was valuable.

“Camera traps” are a passive technology of indiscriminate recording. Friedrich Kittler (1999, xxvi) argues in *Gramophone, Film, Typewriter*, that the gramophone, phonograph, and film were novel technologies in that they “recorded indiscriminately what was in range of the microphones or camera lenses.” While the “Gramophone recorded on a cylinder covered with wax” and “film recorded on celluloid,” the indiscriminate recording of both technologies “shifted the boundaries that distinguished *noise* from meaningful *sounds*, random visual data from meaningful picture sequences, unconscious unintentional inscriptions, from their conscious and intentional counterparts.” Ever since the “epochal change” of Edison’s invention of the phonograph in 1877, Kittler argues that, “we have been in possession of storage technologies that can record and reproduce the very time flow of acoustic and optical data.” Echoing Diego’s comment that the camera traps are “like having eyes in the forest,” Kittler (3) claims that these technologies mean that “eyes and ears have become autonomous.” What audio and video recording were “able to store was time: time as a mixture of audio frequencies in the acoustic realm and as the movement of single image sequences in the optical. Time determines the limit of all art, which first has to arrest the daily data flow in order to turn it into images or signs.” Kittler (85) declares that “thanks to the phonograph, science is for the first time in possession of a machine that records noises regardless of so-called meaning.”

As opposed to technologies of indiscriminate encoding, Kittler argues, writing (or for that matter the “ethogram”) is “a technology of symbolic encoding” that was “subverted by new technologies of storing physical effects in the shape of light and sound waves” (Kittler, xxv). While “words were nothing but marks against a background that allowed meaning to occur on the basis of difference,” indiscriminate recording technologies like “the phonograph stored indices rather than poems.” Kittler explains that while in earlier epochs, “for sights, sounds and other data outside the traditional purview of language to be recorded, they had to be squeezed through the symbolic bottleneck of letters and to be processed in meaningful ways, they had to rely on the eyes and ears of hermeneutically conditioned readers. Reading was an exercise in “verbal hallucinations,” whereby linguistic signs were commuted into sounds and images (Ibid, xxiv). While writing, Kittler claims, is based upon “scriptographically or typographically induced verbal hallucinations,” indiscriminate recording purports to have greater authority and a claim to “objective truth.” We might consider the “focals” of the primatologist research assistants as an example of these kinds of “verbal hallucinations” or “poems” that translate primate behavior into stories and symbolic data while the photographs captured by camera traps purport to reproduce objective reality, like the actual presence of a jaguar or the slow-motion of a sloth.

Whereas “signals” are only meaningful as signs much like the “symbols” of the written word, “noise” is sound without any meaning. “Technological media operate against a *background of noise*,” Kittler argues (45) because “*data travel along physical channels*.” Noise is thus a byproduct, “emitted by the channels media have to cross;” noise is the sound of the

“physical channels” along which data travel.<sup>8</sup> Blurry footage and needle scratches are examples of noise, effects of semiotic materiality recording technologies.

Because of their ability to record indiscriminately, Kittler argues that these technologies came to be seen as an “unimpeachable witness” based on the logic that the “the sound of the voice can never lie” (83). These “*indices* speak precisely to the extent that their *sender cannot manipulate them*” (Ibid, xxvi). Thus the signal-to-noise ratio defines what is a ‘fact’ in that the ‘objective reality’ of background noise and the very materiality of recording technologies determines the clarity and quality of the sign and its “truth” reference to reality. Thus, in the contemporary “age of media,” Kittler (162)<sup>9</sup> argues, truth or “facts are generally defined by their signal-to-noise ratio. The chaos of the surrounding impressions is organized into a real cosmos of experience by our selection... either voluntary or involuntary.” By this Kittler argues that “truth” is determined by the ratio between “noise,” (by which he means sound without sense) and “signal” (sound as a recognizable sign; a sign with “uptake” and an “interpretant” (Peirce, 1960; Gal, 2015)). Kittler explains that the relation between sound and noise is one of “alternation, between foreground and background” an “oscillation between sense and nonsense” the conscious

---

<sup>8</sup> Kittler provides his readers with a morbid example of “noise” at its most extreme limit: the sound of a phonograph needle tracing the coronal suture of a skull. He describes, “What the coronal suture yields upon replay is a *primal sound without a name*, a *music without notation*, a sound even more strange than any incantation for the dead for which the skull could have been used. Deprived of its shellac, the duped needle produces sounds that... are an absolute transfer that is a metaphor” (Kittler, 45). The “primal sound” of a needle scratching a skull, is a “white noise no writing can store.” It represents the limit of the symbolic as “an absolute transfer that is a metaphor.” The gramophone thus makes possible the recording of a fundamentally “non-symbolic sound.”

<sup>9</sup> See also: Bolz, Norbert. 1986. “Die Shrift des films.” In *Diskursanalysen I: Medien*: 26-34 (cited in Kittler, 1999: 162).

and the unconscious. Much like Claude Levi-Strauss (1992 [1955]) once argued that “truth” must be separated from the “dross” of “adventure,” Kittler (1999) claims that in the contemporary moment “truth” is a “signal” that must be extracted from “noise.”



**Figure 59: Bridge crossing a river; part of the TBS trail system.**

### **Tools of Translation III “Lost in the Laboratory”: Digital Mapping and Systems of Global Positioning**

I was lost. The realization hit me with a sense of panic. I retraced my steps twice, searching for where the trail continued. Ever since the Parahuaco trail had entered a boggy marsh about a kilometer back, it had become difficult to recognize the signs of the trail amidst the dense undergrowth, fallen trees, and knee-deep mud. In the name of “trail maintenance,” a form of

volunteer work by which I incorporated myself as a “caretaker” of the TBS laboratory, I hiked almost all of the trails around the facility’s grounds in an attempt to affectively experience all of the diverse ecological regions of the station’s “biodiversity.”

As a volunteer at the laboratory, I cleaned muddy boots after student group excursions into the forest, and hung them to dry upside-down on wooden racks. I kept the library on first floor of the laboratory tidy and worked on the construction project of a new



**Figure 60: Map of the trails that surround the TBS laboratory.**

building. I even discovered that it takes one anthropologist most of a morning to replace all the faulty light bulbs in the student cabins. Over my month-long stay at TBS, I managed to explore almost all of the diverse ecologies that facility had to offer. Trails like Harpia led up into the steeply rising hills along forested ridges; on this occasion, the Parahuaco trail proceeded through the swampy lowlands and was only hikeable in the drier seasons,<sup>10</sup> otherwise, this trail was totally underwater, submerged by the rising river. Primatologist lab workers showed me photos of themselves standing waist-deep on

<sup>10</sup> I visited in September 2015.

inundated bridges, which I had only ever seen in the dry season crossing high over trickling streams.

Since the Parahuaco trail was submerged for much of the year, many parts of it were unclear. I was in one of these lowest elevations and had gotten off track; I found my way blocked by dense undergrowth in all directions except the one from which I had come. I turned around and



**Figure 61: Jenna indicates how high the water rises above this bridge during rainy seasons.**

retraced my footsteps, attempting to find the point at which my path had diverged from the trail. Retracing my footsteps, I found an alternate path, but it brought me back, in a loop, to the same dead end. A large tree trunk blocked the trail in one directions, to the sides was nothing but dense bushes growing out of a thick soupy mud.

Resisting a shiver of panic running down my spine, I now consulted the LCD display of a hand-held GPS device that one of my researcher colleagues had lent me for just such an emergency. I slowly retraced my steps once more, closely examining the dim display of the device. My position was marked by a triangle which indicated that I was only a short distance from the trail: indicated by a black line. On the screen, my path looked so clear: a distinct black line was sharply defined against a white background. From my perspective in the bog however, the “trail” was anything but clear; it slid through knee-deep pools of watery mud, around bushes and over the thick trunks of fallen trees.

When the GPS device indicated that I had returned to the trail, I followed its directions closely, and soon noticed an abrupt right turn which I had missed, a narrow opening between two trees. The digital display clearly marked the turn while the dense foliage of the jungle had almost completely concealed the path. I cleared some foliage that had obscured the trail to more clearly mark the way for the next hiker, likely one of the researchers that studied spider monkeys in the area, and I hiked home easily thanks to the clarity of vision provided by the GPS device.

Later, I sat down with Ira, the researcher who had lent me the GPS device. I asked him to demonstrate to me how the data that the machine had collected on his movements following the the Titi monkeys was imported into the computer database. On the computer, he showed me a digital map compiled by the data of his movements. Thus, the GPS was not only useful for navigating while hiking in the jungle, but also for collecting spatial data on our movements over time. The device recorded data as we had followed the monkeys; it collected information on their movements as well as the locations of the trees in which they fed and slept. The movements of monkeys was overlaid on the map of the trails that crisscrossed the TBS grounds. Upon each return to the office, the computer created maps from the data the GPS device collected of Ira's movements following the monkeys. Thin, winding, erratically-circling lines on a white background represented the movements of the device, as well as human and monkey bodies.

Ira then showed me how these daily maps could be compiled and superimposed upon one another to reveal the complex movements, migrations and circulations of the monkeys over time, revealing complex patterns of primate feeding and sleeping cycles. "There you go," he said, showing me a map produced by the computer; after it had compiled all the GPS data on his movements following one group of Titi monkeys over the last month. Irregular, wavy, circular formations appeared on a white background. While I had once been relieved by the clarity of the

GPS device, happy to see it erase the dark density of the forest and replace it with the clear line of the trail, I now felt uneasy about the simplicity of these images: they appeared to me as a digital erasure of ecological density.

The GPS clearly depicted one kind of truth: the movements of a device hanging from a human pursuing monkeys, stored as a series of geographical coordinates across time, through a digital call-and-response with global telecommunications satellites. However, these GPS maps also erased and obscured other forms of truth: the complex contours of the landscape, the diversity of ecosystems through which the monkeys had passed, and the nature of their travels swinging through a canopy of diverse tree species. The GPS also erased the specificities of our movements in chasing the monkeys, running up and down hills, wading through rivers, pushing through bushes, getting stuck in swamps, being bitten by ants. Though the maps were signs of the monkeys' movements, migrations, and behaviors, these maps seemed emptied of the material, biological, and semiotic density of the forest, as well as the affective and experiential reality of traversing these ecosystems. The maps didn't describe sliding down a steep muddy incline off the Harpia trail, or the pricklers in a dense thicket near the lake trail, or the mountain-sized anthill found on the Guacamayo trail. Gone were the sights, sounds, and smells of the jungle, its heat and humidity, the hours of rain, and hordes of ants biting our trouser legs, the bullet ants guarding trees, the sweat bees swarming around perspiring necks, the bird calls, insect hums, and monkey chirps and the rest of the "noise" of "biodiversity."

While lab workers did collect and document material, sensorial, and experiential data through other means (like expository reports and collection of biological samples to study food, foliage, and fecal samples) GPS maps reduced the contingencies of complex biodiverse ecologies into a series of coordinates in time, a flat depiction of signal that erased all other noise.

This two-dimensional line, a simple vector of movement through time and space, divorced the data of “signal” from the “noise” of its ecological context, the embodied experience of moving through the landscape. This “bird’s eye” view, or rather “satellite’s-eye” view of terrain was unable to capture the rich density of the landscape and the multitude of diverse creatures inhabiting it. After my experience hiking through this forest, the map looked shallow to me, inauthentic to my affective experience of the space.

The digital maps produced by Ira’s computer can be considered in one of two ways. On the one hand, digital mapping seems like a fundamental revolution in technology, the “atomization” of the distinctions between different media as all data are rendered into series’ of numbers. On the other hand, the systems of mapping enabled by global systems of positioning from the view of satellites are prefigured by colonial modes of visualizing space. Kittler would have us believe that the computer, and digital telecommunications infrastructures, based upon fiber optic cables and satellites, constitute even more of a revolution in recording than the “indiscriminate” recording of “indices” by the gramophone, phonograph, and film. He explains that, “the general digitization of channels and information *erases the differences among individual media*” (Kittler, 1). “Inside the computer everything becomes a number: Quantity without image, sound, or voice. And once the optical fiber networks turn formerly distinct data flows into a standardized series of digitized numbers, any medium can be translated into any other. With numbers everything goes. Modulation, transformation, synchronization; delay, storage, transposition; scrambling, scanning, mapping, - a total media link on a digital basis will erase the very concept of medium.” The general digitization of all media in global

networked-computing like GPS and the Internet not only records indiscriminately, it also “atomizes” all differences between media.<sup>11</sup>

Benedict Anderson, however, might urge us to consider the ways in which global positioning systems have historical continuity with earlier technologies that facilitated the colonial gaze; GPS is an extension of the project of “filling in.” In *Imagined Communities*, Anderson explores the ways in which colonial projects of control were facilitated by the production of new technologies of mapping space like birds-eye view maps that allowed for the homogenization of landscapes into gridded quadrants and coordinates and allowed for novel forms of surveillance and control of space and people. As Conrad’s famous passage argues, the colonial process was imagined as a project of “filling in,” turning enticing blank spaces into places of darkness, filling empty squares of space with a density of detail, geographical and geological features with names, inserted into geometrical grid which squared off empty seas and unexplored regions in measured boxes.<sup>12</sup>

---

<sup>11</sup> Kittler elaborates that after the “storage capacities for optics, acoustics, and writing had been separated, mechanized and extensively utilized, their distinct data flows could also be reunited.” He notes that “since everything from sound to light is a wave or a frequency in a quantifiable nonhuman time, signal processing is independent of any one single medium” (Kittler, 170).

<sup>12</sup> Conrad wrote: “Now when I was a little chap I had a passion for maps. I would look for hours at South America, or Africa, or Australia, and lose myself in all the glories of exploration. At that time there were many blank spaces on the earth, and when I saw one that looked particularly inviting on a map (but they all look that) I would put my finger on it and say, ‘When I grow up I will go there.’ . . . But there was one yet—the biggest, the most blank, so to speak—that I had a hankering after. True, by this time it was not a blank space any more. It had got filled since my boyhood with rivers and lakes and names. It had ceased to be a blank space of delightful mystery—a white patch for a boy to dream gloriously over. It had become a place of darkness. But there was in it one river especially, a mighty big river, that you could see on the map, resembling an immense snake uncoiled, with its head in the sea, its body at rest curving afar over a vast country, and its tail lost in the depths of the land.” Conrad, Joseph. *Heart of Darkness*.

GPS realizes a colonial ambition that Benedict Anderson traces to “John Harrison’s 1761 invention of the chronometer,” to assign every place on Earth a unique coordinate. Since then “the entire planet’s curved surface had been subjected to a geometrical grid which squared off empty seas and unexplored regions in measured boxes” (Anderson, 177).<sup>13</sup> GPS navigation is now taken for granted: it is integrated into phones and cars; without GPS-based mapping software, many people would be unable to navigate the complex system of highways, roads, bike paths, and public transit systems in urban environments. In Ecuador’s rainforest, I safely navigated trails through the dense jungle with relative ease thanks to this technology. The electromagnetic triangulation between the device I carried and satellites orbiting the Earth cut through the dense botanical “noise” that surrounded me, revealing the clear signal of a trail that was nearly invisible in a biodiverse jungle environment. But, as both Conrad and Anderson remind us, the ambitions driving nationalist and imperial projects to “fill in the boxes” are never simply neutral or objective. Rather they unfold through dynamic relations of knowledge and power; driven by aims of conquest. In both instances, “filling in” is always a question of both knowledge and power; the accumulation of knowledge is translated into the control of territories, populations, resources, and ecosystems.

---

<sup>13</sup> Benedict Anderson writes: “Like censuses, European-style maps worked on the basis of a totalizing classification, and led their bureaucratic producers and consumers towards policies with revolutionary consequences. Ever since John Harrison’s 1761 invention of the chronometer, which made possible the precise calculation of longitudes, the entire planet’s curved surface had been subjected to a geometrical grid which squared off empty seas and unexplored regions in measured boxes. The task of, as it were, ‘filling in’ the boxes was to be accomplished by explorers surveyors and military forces.... They were on the march to put space under the same surveillance which the census-makers were trying to impose on persons. Triangulation by triangulation, war by war treaty by treaty, the alignment of map and power proceeded.” (Anderson, 2006: 177).

These two perspectives on the implications of digital mapping technologies can be reconciled with Macarena Gomez-Barris' conceptualization of the "extractive view." For her, the satellite mapping technologies (like GPS) that enable extractivism's "digital phase" have amplified the consequences of the "colonial visual regime" by normalizing an extractive planetary view. In addition to helping wayward researchers find their way in dense forests, these "reconnaissance systems" allow extractive industries and states "to collect large data sets, acquire surface readings of the earth, and produce high resolution maps that are deployed to build extractive infrastructures on the ground" (Ibid, 7). Thus, Kittler and Anderson are correct; the power of digitization constitutes a novel moment that holds consequences for our theorization of the neo-colonial gaze. Gómez-Barris (8) contends that "digital technologies contribute to the diminishment of regional national sovereignty over natural resources by enabling a grand-scale view from above; satellites photograph large areas of the planet to convert them into commodities." The power of GPS stems from the fact that it is embedded in global telecommunications infrastructures and mobilized by extractive industries. As researchers observe, hear, collect, record, and transmit data their voices, coordinates and written accounts of the primates are all reduced to binary ones and zeros which are atomized and transmitted globally through fiber optic cables and satellite transmissions. The truth is the *signal* that gets through; what *noise* is lost?

Rendering the movements of monkeys and jaguars "knowable" through digital mapping, occludes the context of "biodiversity" which the researchers told me was a condition of possibility of their research in the first place. While searching for a "signal," like the sounds or movements of monkeys through space and time, the "noise" of the forest always exceeds observations. Through digital mapping, a dense living space was emptied, infinite diverse truths

lost in the pursuit of one objective truth which seemed to clearly stand in for all the others. The complex and dense interaction of living selves piled on top of each other, moving through each other, a complex process of production and consumption, of feeding and decomposing, of becoming and unbecoming. A layering of plants, insects and microbes, humans and monkeys and many other creatures sharing space and time. The production of GPS maps demonstrates how practices of objective measurement are also processes of erasure, deleting infinite alternate truths of “biodiversity”; so much “noise” lost in search of “signals.” If “the task of the ethnographer is not to determine ‘the truth’ but to reveal the multiple truths apparent in others’ lives” (Emerson et. al. 1995) then ethnography holds a unique methodological potential to reveal the multiple truths that compose “biodiversity.” How might we theorize “biodiversity” as affectively experienced from innumerable embodied perspectives immersed in a complex web of biological relations, yet always experienced from a partial and contingent perspective, either human or non-human?

## **Conclusion**

Biodiversity, as a scientific object, can only ever be understood partially; in this chapter, I argue that it must be studied ethnographically. Just as cultural immersion can reveal the dense webs of cultural signification in human worlds (Geertz 1973), ethnographic ecological immersion in the biodiverse forests of Yasuní National Park makes “biodiversity” visible as *density* and as *noise* (of organisms, ecologies, contours and boundaries), realities that are often occluded by studies that focus on the extraction of specific signals. In this chapter, I have observed the messy movement of human bodies running through tangled plants, over rivers and hills, chasing groups of monkeys and pursuing particular individuals, peering through binoculars and carefully discerning the coloration of mantle and genital, body size and movement. I listened

to monkey chirps, morning duets, and distant howls along the horizon, learning to differentiate between these calls and communications: cries of excitement, joy, fear, and warning. I witnessed territorial demarcations and disputes; observed the intimacies of mating, raising young, grooming and feeding, on fruits, flowers, leaves, and insects. I observed researcher protocols and the encoded entry of this data. Data collection was systematized; quantified, measured and compared; coded, quantified and digitized into camera trap recordings and GPS coordinates, uploaded into global digitized networks of global communications.

The TBS laboratory is a novel kind of “anthropogenic forest” (Rival, 1998: 245) mapped and marked by trails and demarcations both official and unofficial. Trees are tagged with bright pink ribbons and steel metal markers. Monkeys bear radio collars that emit radio frequencies into the forest, detected by antennae-wielding researchers. The rugged terrain is demarcated by grids of steel rods driven into the soil, their tops emerging out of botanical thickets at regular intervals. Digital maps smooth out and erase this complex wild “tangle” of the jungle. On computer screens, space appears as white and flat; marred only by the smooth outline of trails and the colorful tracks made by researchers as they methodically follow groups of primates. These maps are the result of rituals of call-and-response both between humans shouting to each other through the dense botanical thickets and between machines: digitized devices that quietly hang from human bodies and satellites that silently orbit in the atmospheric void.

Human bodies are trained to stalk the signs of primates and the signal of their radio collars and disciplined to make their observations “objective”. Eyes seek signs of movement in the canopy, peering through binocular lenses to make closer examinations as camera traps act as passive mechanical “eyes in the forest”. Hands wave beeping antennas that detect radio-collared primates. Ears listen closely, to distinguish soft chirps and the rustle of leaves, soft sounds

nestled within the cacophony of jungle noise. The static of insect buzz and bird calls obscures the sounds of primates. The noise of species, collectives, couples, and individuals with diverse habits, personalities, and customs, assemble to form physical and digital territories demarcated by primates, human observers, and mapping technologies.

“Biodiversity” thus becomes partially knowable as a form of scientific knowledge through a systematized techno-scientific social apparatus, mediated by human and non-human actors. Primatologist lab workers translate the signs of monkey that they observe through binoculars, through ethogram codes, through GPS coordinates. These technologies are incorporated into a ritualized set of cultural systems and customs, bodies are disciplined by protocols, timers, instruments, senses, and other forms of mediation. Camera traps produce thousands of photographs, hours of footage, through which biologists patiently sort in the laboratory, separating photos of jaguars from pictures of peccaries. Triangulation by satellites, gadgets, and bodies renders the observations of lab workers objective, impartial, and accountable. Researchers movements are evidenced by the digitally rendered maps GPS records, and the photographs of camera traps they have triggered. These technologies purport to show “*real*,” “objective” positions of humans, monkeys, and jaguars. They promise to extract “signal” from “noise,” and “truth,” from “adventure.”

However, we must be critical of the fact that these mapping technologies erase and smooth-out the complex subjective realities of the bio-diverse worlds that these organisms inhabit. They gloss over dense thickets, deep swamps, and precarious river crossings along a log. They ignore a world of webs and parasites, of canopy and vines, air filled with the herbaceous taste and smell of fruit and flower. The funky stench of peccaries, wild pigs, which if encountered in large hoards, might send a researcher up a tree for cover.

Lab workers document trees, fruits, and leaves with markers and photographs; collect fecal samples which are packaged in plastic to be sent sterily abroad to be processed and genetically tested in US labs. Unfortunately, human accounts can never fully capture the full reality of monkeys' daily lives, their nights sleeping in the tree tops, or life in the canopy swinging and jumping between branches, far above the swampy, bushy ground. In the rare moment when a monkey falls, misjudging the strength of a branch and realizing only too late when the branch breaks, lab workers mourn a loss in human worlds that monkeys cannot begin to understand. Despite the incredible insights that digital technologies and global telecommunications systems provide, these techniques and technologies are unable to capture the realities of these worlds, they still cannot bridge the human/non-human divide nor cannot capture the full, complex reality of "biodiversity" as a living ecology of selves. Part of the production of "*objectivity*," through the discipline and management of an *impartial self*, includes the erasure of the subjectivity of the landscapes and its multiple invisible complex selves: the lived daily experiences of both researchers' and monkeys' worlds that share this forest. What translations can occur between Ira and an infant Titi monkey as they peer at each other; two curious primates pondering each others' imponderable existence.

If objective scientific observation seeks to distinguish "signal" from "noise," a primatologist research assistant isolating the woolly monkey chirp from the wall of sound in the forest, then "biodiversity" might be best imagined in terms of "noise" in its full and un-adulterated richness. "Noise" in all semiotic forms: sonic, visual, olfactory, tactile, embodied, and affective. The biodiversity of Yasuní is composed of innumerable perspectives, living at drastically different scales, both physically and temporally, in irreconcilable worlds. Small short-lived insects and frogs live generations within ancient trees whose age predates the arrival

of European colonizers; some species predate all of human evolution. The intense biodiversity of Yasuní straddles the complex intersection of these genetic, spatial, and temporal scales. The elaborate techno-scientific assemblages of humans trace only mere threads, carefully selected and extracted, from the richly-layered textile of Yasuní's tightly woven web of life.

## **Part IV. River**



**Figure 62: The Yakuchaski Warmikuna delegation holding banners.**

## **Chapter Seven**

### **“Yakuchaski Warmikuna”: Women Carrying Messages of Resistance through the Extractive Zone**

In this chapter, I examine “Yakuchaski Warmikuna” (the Women River Messengers) a plurinational movement of indigenous Andean and Amazonian women, who travelled the length of the Curaray river basin to mobilize communities for a march of indigenous women on Puyo against the expansion of the oil frontier in Pastaza (described in chapter one). In early 2016, Ecuador opened oil concessions along the Curaray river, the southern border of Yasuní National Park, with little fanfare. This was in spite of the fact that these concessions impacted numerous indigenous territories as well as the “Zona Intangible” a region where Ecuadorian state had acknowledged the presence of “aislados:” indigenous peoples living in voluntary isolation, like

the Tagaeri and Taromenane. These concessions went relatively unnoticed by the international community, especially in comparison with the global outrage at the legacy of Texaco/Chevron's twenty-eight years of oil operations in the Northern Ecuadorian Amazon and President Correa's cancellation of the Yasuní-ITT initiative in 2013. Beginning in the 1970s, Texaco left open waste-pits, burned off crude creating "black rain," and spilled almost 17 million gallons of oil: one and a half times the size of the Exxon Valdez spill (Sawyer, 2002: 101). These recent concessions also failed to arouse the same national outcry as when President Rafael Correa cancelled the Yasuní-ITT initiative in 2013 (the pioneering plan that had blocked oil drilling in the Ishpingo, Tambococha, Tiputini region of Yasuní National Park, considered the most biodiverse place on Earth), giving birth to the nation-wide "YASunidos" movement that I detailed in chapter two.

This chapter proceeds in three parts. First, I situate the story of the Yakuchaski River Messengers at the intersection of plurinational indigenous movements and "eco-resistant" NGOs in Ecuador. Second, I examine the messages that these women carried, to explore how narratives like "slow violence," the "resource curse," "sacrifice zones," and the climate crisis are visualized and translated into Amazonian contexts. I analyze the form and content of their messages, to investigate their representations of the spacio-temporalities of extractive violence. Finally, I explore my interlocutors' concerns with the gendered violences of extractivism, to examine both the political and quotidian registers in which these messages were collected, transmitted and translated as well as the significant political agency of women in local, national, and global struggles to "Keep it in the Ground."



**Figure 63: A spiral of fruits and flowers representing Pachamama.**

### **Opening Ceremony**

“Yakuchaski” began with an opening ceremony: two Andean women in long dresses assembled a spiral of fruits and flowers that radiated out from a centerpiece of seeds and a jug of water. Next, a dozen wooden “barras” (or staves) were placed around the spiral. The elegant walking sticks bore a raised design that spiral around the shaft from hilt to point. All participants formed a circle around the spiral. Each received a small piece of wood which was lit. Neighbors were instructed to share their flames by holding the twigs together. The kindling was collected in a clay pot, forming a communal fire. The flaming pot was placed in the center of the circle and

began billowing a fragrant smoke.

Each participant was cleansed with smoke, as were the barras, which were then sprayed with aguardiente (a strong liquor) from the lips. In this manner, all barras were distributed, in turn, to each of the “river messengers.”

This ceremony seemed significant for a few reasons. First,



**Figure 64: Walking sticks are arranged around the spiral.**

the spiral, seeds, water and plants represented “Pacha Mama,” a conceptualization of space, time, and nature as a political subject. The joining of flames symbolized the unity of those assembled. The barras symbolized the women’s leadership, commitment and responsibility. The fact that Andean women led this ceremony in the Amazon represented the plurinational resistance against extractivism. The ceremony was situated as a struggle in defense of Pacha Mama as part of a five hundred yearlong history of anti-colonial struggle against extractivism.

### **Yakuchaski: the Women River Messengers**

I joined the “Yakuchaski Warmikuna” river messengers while working as a translator at the offices of Acción Ecológica, an Ecuadorian environmental NGO. Ivonne Ramos, a coordinator with Saramanta Warmikuna (Daughters of Maize), an NGO that supported the Yakuchaski trip, asked me for help with a translation project. The document she gave me detailed the itinerary for “Yakuchaski Warmikuna” or the “Women River Messengers” a trip to

“Keep the Oil Underground.” It outlined a two-week itinerary: a riverine journey along the southern border of Yasuni National Park, through the “Zona Intangible.” The document read: “In the face of the 11th oil round concessions currently threatening the south-central Ecuadorian Amazon, Amazonian women (organized since 2013) are kicking-off a march to defend south-central Amazonian territories and the Yasuni National Park.” The document indicated that this was the second “Yakuchaski” trip, stating that, “In 2015 women of the Curaray and Bobonaza river basins organized ourselves (including Kichwa, Waorani, Shiwiar, and Zapara nationalities) to work together in defense of Pacha Mama, currently threatened by oil exploration.”



**Figure 65: A communal fire is lit in a small ceramic pot.**

The second “Yakuchaski” had been organized in reaction to the State’s recent expansion of the oil frontier in January 2016. The Ecuadorian State had signed two contracts with the Andes Petroleum consortium, a collaboration between “the Chinese National Petroleum Corporation (CNPC) and Chinese Petrochemical Corporation (Sinopec),” that allowed, exploration and exploitation of Blocks 79 and 83 located in south-central Ecuadorian Amazon, and would affect, the Curaray and Bobonasa river basins. The document noted that, “Block 83” included protected areas including the Zona Intangible, an area designated “untouchable” to

industry, to protect the indigenous peoples living in voluntary isolation that dwell the core of Yasuní National Park.

The agenda indicated three interrelated aims of the Yakuchaski trip: first, to protect the rights of indigenous peoples; second, to assert the “self-determination” of Amazonians’ nationality, identity, and culture; and third, “to keep oil underground as the real solution to climate change.”<sup>1</sup> A table depicted a two-week timeline of travel through twelve communities, along three river basins, with estimated dates of arrival and expected numbers of participants at each “workshop.” In each community, the document explained, five topics would be discussed:

1. Education on the environmental and social problems of oil development
2. Experiences of the impacts of oil development on people.
3. Photographic and video presentation.
4. Education on the causes and solutions of climate change.
5. Integration of indigenous knowledges and cultures.

The document was written in two genres: first, demands written in the first person plural, “nos organizamos las mujeres amazonicas” (we Amazonian women organize ourselves) proclaiming a collective, feminine, amazonian indigenous subject, and second, an NGO project agenda, a detailed list of workshop presentations by both indigenous organizers and NGO support staff.

Ivonne, a coordinator with “Yakuchaski,” argued that the movement began in 2013 (the year Correa ended the Yasuní-ITT initiative) with a march of Amazonian women to Quito, protesting the expanding oil frontier in Amazonia. Blanquita, an Andean indigenous organizer, described Yakuchaski as “a way to carry and to bring messages; to collect and gather messages;

---

<sup>1</sup> “Amazonian women are organizing the YAKUCHASQUI WARMIKUNA for the Curaray basin from February 14 to March 2, to discuss the rights of indigenous peoples, including our right to self-determination as Amazonian peoples and nationalities with our own identity and culture and above all TO KEEP OIL UNDERGROUND AS THE REAL SOLUTION TO CLIMATE CHANGE. (Caps in original).

to reconsider and re-articulate messages. It is a form of consultation:... to reach... communities,... so that the message is carried:... our worries regarding extractivist oil politics; ... pollution caused by oil extractivism, and the health conditions that cut ... through communities.” Ivonne and Blanquita articulate two intertwined messages of the Yakuchaski. Ivonne voiced an anti-extractivist message aimed at the State by a collective of indigenous women. Blanquita claimed that Yakuchaski was a form of consultation between indigenous women and communities. Both the form and content of the “messages” were plural: Yakuchaski was to *carry and bring* (llevar/traer) messages to communities, and to *collect and re-articulate* (recoger/replantear) the messages of these communities. The messages both critiqued extractive politics and articulated health concerns about pollution.

The Yakuchaski delegation was composed of two dozen women including an elder generation, some of whom had been organizing for decades, and the next generation of activists taking the struggle online through digital social media. Some were new mothers, traveling with infants cradled in blankets or children anxiously fidgeting in the canoe.

I was part of a documentary film crew composed of NGO volunteers. Our goal was to produce a documentary video to publicize the work of the women’s movement online. The documentary crew included a visual anthropologist from Mexico, a social psychologist from Spain (researching the psycho-social impact of extractive development projects on impacted communities) and an indigenous activist from Sarayaku who acted as a social media consultant, drawing on her experience creating similar documentary videos with an international environmental NGO. Thus, the “Yakuchaski” trip is a good example of the articulation between anti-extractivist indigenous movements and “eco-resistant” NGOs.

Ecuador boasts some of the strongest indigenous movements on the continent. After being disenfranchised by literacy requirements until 1979, indigenous peoples led unprecedented mobilizations in the 1990s including four major “levantamientos:” or marches on Quito, the capital, that led to a rewrite of the constitution and ousted president Jamil Mahuad in 2000 (Sawyer, 2004; Becker, 2012: 67-76). Sociologist Tammy Lewis (2016: 51) terms NGOs like those with which I conducted research in Ecuador, “eco-resistant” NGOs: independent of international funding and aiding local anti-extractivist efforts through workshops that “teach communities how to monitor their environment, grab media attention and pressure the government.” While many anthropologists are critical of NGOs, arguing they facilitate insidious forms of governmentality and “anti-politics” (Ferguson, 1994) by “gluing globalization” (Schuller, 2009) and reflecting neoliberal logics, as the “network inside-out”(Riles, 2001), these critiques often ignore the material and symbolic gains made by NGOs (Kelly, 2002) and the ways they are important mobilizing structures (Tarrow, 2005) for social movements that use the networking logics (Juris, 2008) of neoliberalism to subvert global capitalism. While conducting participant observation at the offices of Acción Ecológica I witnessed examples of eco-resistant NGOs’ support for environmental movements (like DECOIN’s defense of Intag’s cloud forests from open-pit copper mining, the YASunidos movement’s demonstrations against oil drilling in Yasuní National park, and “Oilwatch,” the global South-South network of women-led movements resisting oil extractivism in tropical nations across the Global South).

I had first met the organizers of “Yakuchaski” at a university lecture on “environmental services” in Quito organized by some of these ecologists. I listened to the women explain extractivism and the realities of living in Andean and Amazonian ecologies to Quito’s college students. “The forest is our supermarket,” Zoila told the assembled students, “where we find our

food and medicine.” In these exchanges, Zoila and other women used this space to translate the lived realities of amazonian “ecosystem peoples” to urban Quiteño college students. Throughout this chapter, I examine how the Yakuchaski messengers, address what environmental humanist Rob Nixon (2011) terms the representational problems posed by the “slow violence,” of ecological contamination: the fact that it is “difficult to visualize ecological violence that occurs gradually over long temporalities.” While the public that Nixon imagines seems Northern, I am concerned with representational strategies between and among Southern, subaltern and indigenous publics. While, in chapter two, I examined how YASunidos addressed urban and state actors, in this chapter, I explore the representational strategies of indigenous actors in “extractive sacrifice zones.” How are anti-extractivist messages converted “into image and narrative” (Nixon, 2011: 3)? How are the “long emergencies of slow violence” turned into “stories dramatic enough to rouse” the sentiments of indigenous publics on the front lines of the oil frontier? Specifically, I examine four modes of representation used by the Yakuchaski river messengers to visualize the spacio-temporalities of the ecological violence of oil in the Ecuadorian amazon.

First, I examine the mapping and traversing of extractive zones including the challenges of travelling through multiple overlapping bio-sovereignties: the biodiverse ecosystems of the Curaray river basin, indigenous territories, state boundaries (like Yasuni National Park and the Zona Intangible) and oil blocks (concessions to multi-national corporations that are overlaid upon human, non-human and state geographies). Second, I examine the messengers’ “chronotopic” visualizations of the “slow violence” of oil contamination on Amazonian ecologies. Specifically, I examine how images, iconic of past tragedy, are redeployed through narratives of past-as-future to index imaginations of unseen future contaminations through the

discursive articulation of generational temporalities. Third, I explore the ways in which the women articulated extractivism to be a problem of *gendered* violence in the context of *Mingas* (communal, gendered, forms of work, and artistic production that engendered spaces of female solidarity) in which messages were collected, considered and re-articulated. On the one hand, I consider the (a)political registers in which the embodied and other lived effects of oil development can be considered and discussed. On the other, I analyze my interlocutors claims about Sumak Kawsay, or “good living” and its translation from a kichwa slogan of anti-extractivist resistance into “Buen Vivir,” the State’s program of 21<sup>st</sup> Century Socialist development. Fourth, I consider narratives of resistance to extractive logics like the “resource curse,” and “sacrifice zones.” I examine the ways in which these “ecosystem peoples” (Guha, 1997; Nixon, 2011) resist being rendered disposable, by state and corporate logics of extractivism. In the context of these four representational modes, I analyze the gendered politics of resistance, specifically through analysis of a ritual gifting of ceremonial “barras” (staves) to women committing to defend their territory against incursions by extractive industries. My account roughly follows the trajectory of our trip down the Curaray, as well as the daily rhythms and routines of the Yakuchaski messengers: including daily presentations and workshops, early

morning Guayusa tea, afternoon “Mingas,” and evening film screenings.



**Figure 66: Ivonne addresses an audience in a schoolhouse.**

**I. Mapping and Traversing the Extractive Zone**

After daily ceremonies, presentations would begin in front of assembled audiences in communal houses and spaces. In each village, Ivonne pointed with her “barra,” toward a map entitled, “Bloque Petroleros y Territorios Indígenas,” that hung from a wooden cross-beam of the communal house. *“The recently concessioned blocks are going to directly affect these territories; directly effect the Curaray river,”* Ivonne said, demonstrating how recent oil concessions would impact all the communities along the Curaray river basin.

The map depicted the southern Ecuadorian Amazon, from three different gazes: blue lines indicated rivers systems, black and yellow lines outlined indigenous territories, and red lines marked “oil blocks.”

The enormous oil blocks indiscriminately cut across river systems and



**Figure 67: Ivonne points to a map that depicts how oil block overlap with indigenous territories.**



**Figure 68: Nancy points to a map that depicts the ancestral territories of the Curaray River basin.**

multiple indigenous territories. Ivonne pointed to Blocks 79 and 83 on the map, explaining that in January 2016, these two large tracts of land had been leased to Chinese oil companies. Oil operations, Ivonne noted, would affect all indigenous

territories in the Curaray river basin, since the waste entering the water upstream would accumulate downstream.

As discussed in the last chapter, maps are never neutral objects facilitating the surveillance and control of people and space. However, maps were used as sites of resistance for the Yakuchaski River Messengers. In one village, the map was laid on the floor, as community members pointed out the locations of oil company activities like seismic testing in the nearby “Zona Intangible,” and the locations and movements of “aislados” communities. In this way, the use of maps acted as a resource for counter surveillance by those living in extractive zones,



**Figure 69: The map is laid out on the floor and a community member points out locations of aislados communities.**

providing a way for the Yakuchaski messengers to collect information from local communities.

These maps also illustrate overlapping competing regimes of governance or bio-sovereignties, as state and corporate gazes of the forest-as-resources are superimposed upon human geographies and landscapes. In this section, I seek to unravel these overlapping layers of bio-sovereignty as we passed through the ecosystems, territories, state boundaries and corporate concessions of Pastaza.

The women carried their messages down the Curaray river basin by canoe; in the

villages, much

of our work

involved

physically

carrying and

displaying the

“messages:” a

large bundle

of maps,

charts and

photographs,



**Figure 70: The canoes used by the Yakuchaski delegation.**

the documentary crew’s electronic equipment, and a projector used to screen films. Canoe travel

was a form of transportation that posed no small amount of risk. As linguistic anthropologist

Webb Keane (1997) reminds us, representations are never merely symbolic but also material,

subject to hazards and happenstance. While globalization and digital communications may cause

us to forget the materiality of the “flows” of people and ideas, carrying messages often posed logistical challenges.

River travel was often treacherous, especially for women who travelled with young children and infants. Our canoes threaded a maze of logs and sandbars; we lost one canoe on the first day when it split open after hitting a submerged tree trunk. Our voyage ended at a military

base and we left the jungle in a cargo plane that was delayed by inclement weather. Flight in the Amazon is also dangerous; we passed a downed plane during our trip: its tail fin jutted ominously out of the river. After



**Figure 71: The promise of roads is often appealing to remote Amazonian communities considering oil development.**

our return, newspapers reported that a similar military cargo plane had crashed in the forest. Transportation is so difficult that roads are a large part of the appeal of oil development for remote Amazonian communities.



**Figure 72: One of the boatmen reads the river to avoid hitting a fallen tree.**

Halfway through the trip, we left San José, the last village before entering the Zona Intangible, home of the Tagaeri and Taromenane Huaorani peoples living in voluntary isolation. Laura Rival (1998: 235) tells us that the Tagaeri maintain “a complete state of isolation.” She notes the Tagaeri “refuse all communication with outsiders,” as well as “with their relatives who have accepted peaceful contact and exchange with non-Huaorani. The Tagaeri live in hiding, with no cultivated crops, their fires burning only at night. They refuse marriage alliances outside their group.” The Tagaeri return each year, “to their palm groves for the fruiting season,” Rival describes, “despite the danger of being seen by the oil crews who are now occupying their land.”

These palm groves are culturally significant and an example of the ways in which Yasuní is an anthropogenic forest. These peach palm groves are the “product of the activities of ancient populations,” and Rival contends that the Huaorani recognize the influence of their ancestors on the landscape in the form of historic palm groves maintained across generations. Thus the migrations of Huaorani peoples choosing to live in voluntary isolation is both culturally important as well as a trek fraught with danger as these people pass through the oil frontier.

In August 2015, a killing had taken place in the Zona Intangible between a group of “aislados” and other Huaorani. I had attended a press conference held at the Acción Ecológica office where two Huaorani women sat alongside of members of Acción



**Figure 73: Press conference held in response to attack by Aislados on the border of the Zona Intangible in Yasuní National Park**

Ecológica and YASunidos, to recount the story to a dense cluster of journalists and television cameras.

A Huaorani family of three traveling by canoe down a river near the Zona Intangible had encountered a passing group of “aislados” and had been attacked. The father was killed by a spear thrown from the riverside; the mother and child escaped by swimming to the opposite

bank. The women said that the man’s family and compatriots called for revenge and they worried that this attack

would lead to more killing: retaliation against “aislados” communities in the Zona Intangible. The attack raised already high tensions in the region between the Tagaeri and



**Figure 74: A photograph of the spear used in the attack**

Taromenane and sedentary Huaorani communities who live and work near the operations of the oil and logging industry. Activists feared reprisals and more bloodshed on both sides.

Over the years conducting research in Ecuador, my interlocutors have told me awful stories of the attacks and reprisals between “aislados,” and groups of Huaorani men who have entered the forest with guns to seek revenge, resulting in horrific massacres. In one case, the massacre of an entire village of women and children was publicized on social media by its perpetrators as a justified act of revenge. Revenge massacres often did not even target the perpetrators of the original killings.

Huaorani advocates wanted the government to prosecute under traditional modes of Huaorani law and jurisprudence. However, I was told the massacres were difficult for the justice department to regulate. Since “aislados” victims had no identifying documents and no official record; those killed did not “exist” in a legal sense from the perspective of the state. State agencies seemed reluctant to intervene, labelling these acts of violence “ethnic disputes.”<sup>2</sup> However, to my interlocuters, this was far from an “ethnic” conflict. Members of Acción Ecológica and YASunidos blamed these violent eruptions on encroaching oil industry operations (including seismic testing, road construction, logging, poaching and colonization) that disrupted the lifeways and movements of people living in isolation.

At the press conference, ecologists projected a map that demonstrated that this recent attack was no isolated incident. Red dots (that marked the sites of attacks and revenge killings), and black dots (that indicated peaceful sitings of aislados) were clustered around both existing and proposed oil operations: the industry was operating in close proximity to territories of aislados. Activists argued that people living in voluntary isolation were facing pressures on all sides of the Zona Intangible from colonization and industrial operations. New road-building and drilling in areas no longer protected under the Yasuní-ITT initiative had created novel pressures in the Northeast of the park while the oil industry’s recent incursions along the southern border had created pressures from the opposite side. YASunidos organizers argued that oil operations posed an existential threat to communities of aislados communities. They claimed that extractive

---

<sup>2</sup> Rob Nixon (2011: 115) cites Nigerian anti-Shell activist Ken Saro Wiwa as saying: “Skin color is not strong enough to stop the oppression of one group by another. Sometimes it reinforces oppression because it makes it less obvious. White people oppressing blacks in SouthAfrica draws instant condemnation because it is seen to be racism. But black on black oppression merely makes people shrug and say, ‘Well, it’s their business, isn’t it?’”

industry was prohibited in these sensitive areas under international human rights law, and that the continued expansion of oil concessions was an act tantamount to genocide.

Upon departing from San José for a full day eight-hour canoe ride through the Zona Intangible, the villagers warned us not to leave the canoe on the northern side of the river so as not to appear threatening as if we were an invading party coming to raid the Zona Intangible. This echoed concerns of other communities along the Curaray who had warned us that oil companies had been engaging in large scale seismic testing on the edge of the Zona Intangible. This practice involves exploding dynamite along kilometers-long corridors in search for oil deposits: scaring and displacing animals and people alike. A canoe filled with the food and supplies had left first, and I left in the middle canoe with most of the women, and third canoe travelled about an hour behind us, as some of our compatriots had stopped to upload data of our progress using an internet connection they'd found in San Jose.

At about noon, half-way through the Zona Intangible, and four-hours from the next village, the engine suddenly exploded. Flames billowed three feet high as the pilot frantically splashed river water on the motor to quench the blaze. Panic swept across the canoe as the women, realizing what was going on, began to move away from the fire. The droning sound of the motor was replaced with frantic cries, shouting, and the chaotic cackling of the rooster which had woken from its nap. I readied myself to jump overboard but saw that the motorist had quickly quenched the flames. The sounds of panic were replaced with an eerie quiet stillness. Our canoe was adrift, silently floating down the tranquil river, the only sounds were the steady hum of insects, the cries of tropical birds, and the low murmur of the women. We drifted silently down the river, waiting for the boatmen to bring the canoe ashore and to evaluate and repair the damaged engine. As we approached the next curve in the river, we saw

that the beach was on the northern side. Heeding their instructions to exit the river only on the southern side, the pilots steered the canoe around the following curve to a beach on the southern bank.

As we rounded the northern beach, we heard a loud crack, as if a large animal had stepped on a branch. Heads turned and murmurs spread across the canoe. I concluded the sound must be peccaries, wild pigs that noisily crash through the underbrush in large groups. However, as the murmurs died down, a second crack sounded, much louder, from the same grove of trees as the first noise: a dense thicket at the head of the beach. The women began talking animatedly, and the boatmen looked around nervously. I asked Magdalena what the fuss was about. “Aislados” she said, explaining this was the way they signaled their presence: as a warning. The second “crack” indicated a sign of intentionality; they had alerted us to their presence without giving away their position.

Once around the corner, the boatmen pushed the canoe onto the southern beach, and got to work on the engine. The women clustered on the beach, and passing around some bug spray as gnats descended. The boatmen fixed the problem, pulled the cord and restarted the engine. We piled into the canoe and pushed off, motoring down the river, leaving the source of the sounds behind us. When we arrived in the next village that evening after dusk, my companions excitedly shared our story with their compatriots in the other boats. All concluded, along with the local inhabitants of the tiny hamlet, that the sounds were a sign of the presence of aislados. Locals said that groups of aislados regularly pass by, taking a bit of food here or there but generally keeping out of sight. This consensus seemed to confirm the fears of the River Messengers, that oil concessions would impact the territories of people living in isolation and would cause further conflict over the territories and resources of the region.



**Figure 75: Children stand next to a photographic display of animals covered in oil.**

## II. Visualizing the Temporalities of Slow Violence

While violence is usually imagined as “explosive and spectacular,” like flames flaring out of an exploding engine, environmental humanist Rob Nixon (2011: 2) argues that ecological catastrophes like oil pollution and climate change constitute a form of “slow violence... that occurs gradually and out of sight.” This “delayed destruction” is “dispersed across time and space” Nixon argues, posing “unique problems of representation” since it is difficult to visualize ecological violence that occurs gradually over long temporalities. For the Yakuchaski River Messengers, the representational problem of “slow violence,” was simultaneously urgent, practical, strategic, and emotional.



**Figure 76: Ivonne says “This bird cannot fly when it is covered in oil. What is going to happen to the bird?”**

Enlarged photographic images were displayed to visualize the slow temporalities of ecological violence. Images depicted the consequences of Texaco’s twenty-eight years of contamination of Lago Agrio. Photographs showed oil pooled into lakes, flares burning over open waste pits. Children were often the intended audiences for these photographs which depicted frogs, birds and dogs covered in oil. “What does this picture show?” Ivonne asked. “A bird,” the children shouted. “Why is the bird black?” “Because it is covered in *oil*.” “This bird cannot fly when it is covered in oil. What is going to happen to the bird?”

Workshops that addressed children also had another audience. As children learned about ecology and toxicity, the tableau of children posing with images of crude-coated animals was witnessed by their parents, who were seated in the audience. As Magdalena put it, “I don’t want,

in the time of my children, my grandchildren, I don't want them to suffer this way, like in Coca.” In this way, the long temporalities of slow violence were conceptualized through the imagination of future generations.

The juxtaposition of children with photos of oil pollution re-contextualized the meaning of images, iconic of a “past tragedy” (Texaco’s pollution in Lago Agrio) to index imagined futures, the impact of current contaminations on younger generations. The familiarity of ecosystems and animals allowed viewers to transpose these images of “past-as-future” into their own environments. In the tableaux created by these photographic images next to children, the ecological tragedy of Lago Agrio haunted the future of the Curaray River basin. These representations can be understood as occupying a temporality between the invisible crisis of “slow violence” and the hypervisible “afterlives” of colonial capitalism. While for Nixon, ecological contamination creeps in slowly, rendering violence unseen, theorist of extractivism Macarena Gomez-Barris (2017: xviii) argues that “large scale extractivism *assaults* peripheral spaces.” These photographic images can be conceptualized as having been taken from a space-time that she calls, “the other side of colonial catastrophe” (Ibid, 5). These images accelerate the temporalities of slow violence by visualizing the brutality of ecological assault. Destruction on the horizon, but still out of sight, becomes visible and imagined through this projection of the past-as-future.

I conceptualize the narratives constructed by these tableaux and the photographic displays through what Russian literary theorist Mikhail Bakhtin (1981: 84) terms a “chronotope,” that signifies, “the intrinsic connectedness of temporal and spatial relationships” in literary narratives and expresses the “inseparability of space and time” in aesthetics. “In the literary artistic chronotope,” Bakhtin argues, “Time, as it were thickens, takes on flesh, becomes artistically

visible; likewise space becomes charged and responsive to the movements of time, plot and history.” In these tableaux where Lago Agrio’s past contamination acts as a spectre haunting the future of the Curaray, I argue that time is similarly thickened, compressed and made visible, as space is charged with historical potential, the participants in these presentations are made aware of their place as historical actors in the movement of time and the plots of extractive industries. Presentations concluded with films that we screened on the back of the oil block map from a projector powered by a generator. First, was a film about the 2013 women’s march in Quito, that demonstrated how the Yakuchaski women were defending Amazonian territories in the capital. Second, was a documentary about Texaco’s pollution in Lago Agrio. Footage showed flares burning over open waste pits, trucks dripping oil onto the road. These images were interspersed with the testimonies of people living within this ecological wreckage. Women recounted walking barefoot through the black sludge and described how their animals had died after drinking contaminated water. They were unaware of any danger, they said, until they’d been diagnosed with malignant cancers.

This footage silenced the audience. Carmen began to speak, wiping tears from her eyes, explaining that the video still makes her emotional. It depicted her friends who had died, she said, activists in Lago Agrio who she’d watched succumb to cancer. Her tears made visible the emotional toll of the decades she’d worked for environmental justice: then, in Lago Agrio, and now, along the Curaray.

“Haven’t presidents always extracted oil?” a man asked. Carmen conceded his point but argued, “Costa Rica and Uruguay never extracted oil... they are better off than Ecuador. Oil is a curse of poor countries. Oil did not bring wealth, it brought poverty. Lago Agrio and Coca are the poorest regions in Ecuador.” She asked: “Who is going to pay to clean it up?” insisting: “*We*

*cannot continue to sacrifice more zones!*” Carmen described her experience bearing witness to the embodied slow violence of ecological contamination on her compatriots over time, over decades. In addition she tried to make this reality visible to the communities of the Curaray the next oil frontier.

This situation constitutes a form of what cultural studies theorist Lauren Berlant (2007: 754) terms “Slow Death”: the “physical wearing out of a population and the deterioration of people...” through “a defining condition of their experience and historical existence.” While Berlant’s example is the obesity epidemic, the irony of “slow death” is the fact that consumption intended to nourish instead kills. In Lago Agrio, the consumption of water, produce and livestock in the oil-contaminated ecosystem threatened human life. Slow death is a “zone of temporality” of “ongoingness, getting by, and living on,” even as the conditions of existence threaten existence itself.<sup>3</sup>

Furthermore, the calculus that discounts the lives of sacrificial populations, while denying them compensation, is an example of what Adriana Petryna (2002) calls “biological citizenship,” defined as “a massive demand for, but selective access to..., social welfare...” determined as compensation for “biological injury.” While in Petryna’s postsocialist case, Ukrainians receive benefits based on their level of exposure to Chernobyl’s radiation, in

---

<sup>3</sup> Lauren Berlant writes: “Slow death prospers not in traumatic events, as discrete time-framed phenomena like military encounters and genocides can appear to do, but in temporal environments whose qualities and whose contours in time and space are often identified with the presentness of ordinariness itself, that domain of living on, in which everyday activity; memory, needs, and desires; diverse temporalities and horizons of the taken-for-granted are brought into proximity. I distinguish environment from event here not to choose a model of space over time but precisely to describe space temporally, as a back-formation from practices” (Berlant, 2007: 758-9).

Ecuador's post-colonial situation, populations are simply denied the compensation owed them by the multinational that injured them.

Novel forms of “biological citizenship” are emerging in the new frontiers of oil extraction, in Ecuador, since oil's appeal is rooted in the promise of receiving citizenship benefits: like education, healthcare, and infrastructure. Yet those living in peripheral extractivist frontiers are often the last to reap the benefits of the State's “Buen Vivir” development that has provided radical reforms to urban centers like Quito. This is in spite of the fact that these services are funded by unprecedented expansion of mining in the Andes and oil in the Amazon. Thus, for the communities of the Curaray, the calculus of accepting oil is based on a logic of “anticipatory biological citizenship” in which neoliberal subjects weigh the potential costs of toxic exposure against the promised receipt of citizenship benefits. Corporate biological citizenship comes both with cost of contamination, and the inevitable threat, that companies will leave communities behind once they have depleted the resources of the region.

Carmen's narrative was local and global explaining the geopolitical ramifications of the “resource curse,” of oil, and the “disposability” of people living in “sacrifice zones.” Her narrative required her audience to simultaneously inhabit and reject a subjectivity of “sacrificial disposability.” She concluded with the historic challenge presented by climate change. Carmen declared, “We are living now in a very important moment in the history of humanity, ... the whole world knows that we cannot continue extracting fossil fuels. What are we going to do in ten years when you can't extract oil and we don't have water... when papaya doesn't grow, what are we going to eat?” Here, Carmen critiques the forces driving climate change from the perspective of “ecosystem peoples.”

Carmen's analysis of extractivism is a theory from the South. Her narrative contrasts with simplistic Northern solutions of "sustainable consumption." While Northern narratives of climate change adopt the perspective of "resource omnivores" and problematizing environmental crisis in terms of pathological or corrective consumption, for Carmen and her compatriots, resisting climate change is also resisting slow death, and the "sacrificial" logics of biological citizenship.<sup>4</sup> The Yakuchaski river messengers voice themselves and their communities not as disposable, but as essential world-historical actors leading a global struggle to "keep it in the ground" and halt climate change. Against logics of "sacrifice" these women creatively organize resistance and defense.

### **III. Mingas: "Environmental Pollution has a Women's Face"**

Aside from formal presentations, the Yakuchaski river messengers participated in "*Mingas*:" daily forms of gendered communal work. These spaces of gendered labor often provided a time to talk about and consider the violences of extractivism. Women woke early

---

<sup>4</sup> I argue that considering the perspective of "ecosystem peoples" makes visible both the ways all humans are dependent upon global ecosystems, as well as the logics of extractive capitalism that are rendering humans disposable in the South and North. As global ecological catastrophe unfolds, it is increasingly clear that the modes of consumption that encourage "omnivorous appetites" make the situation of all people, including "resource omnivores," increasingly precarious.

in the morning, around four, to begin building a fire to make Guayusa tea. Nancy told me that drinking Guayusa is a daily custom of men as well as women. However, on the river messenger trip, the early morning preparation of tea mostly seemed to be a gendered space: a private moment for women to converse. While sipping tea, stirring cauldrons, and stoking smoldering fires, women would talk about interpretations of their dreams from the previous night.

My female colleagues told me that when men were not present, women would talk about “intimate”

issues including the effects of oil contamination on women’s bodies, like miscarriages. I was also told that other sensitive topics, like



**Figure 77: Women mind their children and tend to a fire.**

domestic violence, could be discussed in these spaces. These stories attuned me to womens’ conceptualization of extractivism as a problem of gendered violence(s). I’d been aware of Correa’s misogynistic comments about deriding the ecologists of Accion Ecológica and indigenous activists “for putting their women on the front lines of protests” and I’d heard of the threats they’d received. However, during Yakuchaski, women spoke of the effects of pollution

on women's bodies, and other dispersed impacts of oil development (including alcohol abuse, domestic violence and sex work). Blanquita said:

“Environmental pollution... has... a woman's face. The woman is in the house... with the children; in the estuaries, for water to wash and to cook, and to prepare food; it is all related. And when the kid gets sick; if the river is polluted... oil spilling impacts women more.”



**Figure 78: Women making chicha**

During the day, women made Chicha, a fermented beverage made and consumed communally. In the evening they cooked, plucking birds, and grilling pork, fish and gusanos: large grubs. In one village, women cleared weeds with machetes while men cleared overgrowth by spraying pesticides.

In another, women painted pottery with beautiful patterns while the men collected papayas for an upcoming feast. Women also taught each other how to paint their faces with intricate designs.

Nancy showed me beehives she maintained behind her house. She said it was important for the river messengers to participate in the Mingas, to be involved in communal activities. “As women leaders, we are in *los bases*<sup>5</sup>, we are with the people in the communities, participating in assemblies, in mingas, in parties, helping people with their chores.”

---

<sup>5</sup> Latin American term roughly translated as “the grassroots.”

Guayusa tea and Mingas communal labor created an “apolitical” space to gossip and talk of politics. In these conversations the River Messengers could learn what was going on in the community, including the oil company’s negotiations with men, and “gifts” like gasoline, generators and satellite television.

Anthropologist Susana Sawyer (2004) notes oil companies divide Ecuador’s indigenous nations by offering gifts to individual communities. Dinah Rajak (2011), an ethnographer of Corporate Social Responsibility (CSR) notes, these “gifts” demonstrate “the company’s generosity and ensures the power over recipients.” While these “gifts” purport to cast corporations as good citizens and legitimate providers of social services, the river messengers were aware of these temptations and were skeptical of the company’s claims.



**Figure 79: Women painting pottery**

Magdalena said, “The company will win over the people with little gifts, like a bag of candies. They say that men want more than they need... this motive I don’t understand. We in Sarayaku are well organized we don’t want the company to come in, we don’t want anything from the company.” For Magdalena and others women I spoke with, the problem of gifts was also a gendered one, with men more susceptible to these offers than women. While women also expressed concern for their children’s education and opportunities, Zoila said with frustration that the “oil companies don’t provide anything substantial like schools, communal houses and roads” which “are provided by the municipal and

prefectural governments.” Even as corporations promised to fill the service provision responsibilities of the state, both government and companies seemed often to abdicate this role. One morning, I woke to the sound of a TV loudly blaring, “There’s Something About Mary:” men were watching the 90s Hollywood film, powered by a generators droning in the distance, both gifts from the oil company. The sound contrasted with the sounds of the women preparing for the day: cooking, and washing laundry.

One evening, before dinner I sat with the documentary crew to interview Blanquita in a communal house. Gesturing to our surroundings, Blanquita said, “this is ‘Sumak Kawsay’ (good living).” Blanquita’s reference to Sumak Kawsay was remarkable in that she didn’t engage the politicized debate over Sumak Kawsay’s translation into “Buen Vivir” the state’s development program. For her, Sumak Kawsay was a way of life, a habitus, intimately connected to place: an ecology. It included the way we’d been welcomed into homes and villages, and the Mingas in which the women had participated. We were immersed in Sumak Kawsay both in the material and symbolic practices of Amazonian Runa, and the Amazonian ecology. Sumak Kawsay was culturally and ecosystemically contextual. For example, many of the Andean women, like Blanquita, faced novel nuisances in the Amazon, like the ubiquitous biting flies not found in the dry Andes.

However, Sumak Kawsay/Buen Vivir was not isolated from the politics of extractivism. It also manifested as a politics of self-determination and stemmed from shared sense of plurinational resistance to extractivism, which had united Andeans fighting large scale open-pit mining and Amazonian’s resisting oil. Sumak Kawsay was a rallying cry of anti-extractivism even as its translation, Buen Vivir, had ironically become the slogan of extractivism-driven development. For instance, Blanquita’s interpretation differed from that of a couple of men with

whom I spoke during the trip. One man told me that the government had “mis-translated” Sumak Kawsay in its provision of “Buen Vivir,” a plan of “21st century Socialist development.” His compatriot quickly interjected to disagree, assuring me that there was no “mis-translation.” Buen Vivir and Sumak Kawsay did “mean the same thing” both signifying “Good Living.” However, even he conceded that Sumak Kawsay and Buen Vivir were “not the same thing,” but stressed that the difference between the two was *not* a question of translation.

I want to engage this paradox of “mis-translation” by exploring the dissonance between two things that are “not the same” even as they appear to “mean the same thing.” Here I am neither concerned with “translation” in the sense of “correct” calibration of meaning between two languages, nor the Silverstein-ian sense of “transduction” (in which a certain “energy” is carried across linguistic distance) nor in the sense of “recruitment” as used in STS & ANT methodologies. Rather, I seek to explore the consequences of translating a social movement slogan (“Sumak Kawsay,” used by indigenous movements to demand an alternative to “development,”) into a state development paradigm: the 21<sup>st</sup> Century State Socialism of “Buen Vivir”.

Seemingly analogous linguistic signifiers, the two terms represent distinct political projects. From Cesar, an indigenous activist in Puyo, I learned that Sumak Kawsay is contingent on imagination, self-determination, and sovereignty. During a drive from Puyo to Arajuno he showed me how non-indigenous “Colonos” had transformed the Amazonian landscape by felling trees for lumber, planting farms and raising livestock. In a few years, he tells me, the land would cease to produce, adding that indigenous peoples “don’t cultivate this way, we grow produce *within* the forest environment.” Nevertheless, he added that the “colonos” deride indigenous farmers as “lazy” because they don’t clear land. As an example, Cesar stopped at pile of wood

resting beside a system of pulleys and ropes extending out of sight through a corridor of felled trees. He told me this was an illegal logging operation taking place in the open, indicating lackluster regulation by the state. When we arrived in Arajuno, the city was undergoing major re-development: construction vehicles were building a grid of streets and concrete apartment blocks. A new, brightly-colored playground stood in the city square surrounded by astroturf. Without trees, the park baked in the sun. “This all used to be forest,” Cesar told me, until they “developed” it.

Caesar gave me a book entitled “Sumak Kawsay” that outlined his community’s proposal for “nuestro” (our) Sumak Kawsay: a plan for self-government, education and healthcare, interspersed with beautiful photographs of the forest. He had submitted this plan to the government, but he told me that the state had never replied. This document helped me decode the paradox of Sumak Kawsay’s “mis-translation” into “Buen Vivir.” The disconnect between these two projects was not only a question of the availability or quality of development’s “deliverables” but rather the ability to bring one’s own “imagination” into being (what Mario Blaser (2010) terms “corpo-reality”). The aspirational document outlined how the community would do their part helping the state achieve their vision of “good living.” Caesar described his imagination of what Arajuno could have looked like: cool, verdant, tree-lined streets instead of sun-baked concrete and astroturf playgrounds.

The debate over development in Ecuador often oscillates between the achievements of the “Citizens Revolution” and the irony that extractivism continues along racialized and gendered lines. However, in my interlocutors’ diagnoses, what seems lost in the (mis)-translation of Sumak Kawsay to Buen Vivir, is the ability to imagine and create one’s own unique vision of “good living.” For Mario Blaser (2010) translation “is the process by which new imaginations

come into being.” Imaginations are given “corpo-reality” a productive process, by which something new emerges at the intersection of varied actors’ demands and often at the intersection of different worlds. If Sumak Kawsay’s imaginative potential (as an alternative to “development”) stems from a cosmovision in which “development” is not aspired to, then its “mis-translation” is its inscription into a paradigm of “development.” Following my interlocutors, “good living” must be understood locally, plurally, as culturally contextual and ecologically situated, and in terms of sovereignty, existing at the intersection of imagination and materiality. What is lost in translation when a bio-centric, anti-development cosmology is translated into a state development program that paradoxically reproduces colonial logics even as it seeks to disrupt and deracinate them?

#### **IV. Avatars of Extractivism and Strategies of Resistance in the Sacrifice Zone**

Evenings with the River Messengers ended with *Avatar* and the film was always a hit. The science fiction fable depicts indigenous resistance to a militarized, corporate mega-mining mission to extract “unobtainium,” a valuable mineral found at the roots of the tree of life. In the story, a human soldier infiltrates the alien Na’vi using an “Avatar” (a kind of military human-terrain technology) that allows his consciousness to inhabit a Na’vi body and assimilate into the community. Avatars are objects of power and desire, embodying manifestations of our inner selves’ desires in virtual worlds: the ascent of a mortal mind into the digital incarnation of an alternate self in a virtual world. In the film, the paralyzed protagonist, uses his Avatar to walk and fulfill his fantasies of physicality. While the film seems to invert the avatar dynamic, (his mind enters a “real” body), the pleasure of the avatar is the fantasy that the virtual is the real: a “true self” that cannot be inhabited in the material world. However, this inversion is yet another

illusion: the film itself is a virtual world, vicariously inhabited by the viewer. An avatar of extractive struggles on Earth.

The Na'vi are exoticized avatars of indigenous resistance, their lush planet stands in for Earth's biodiversity. Neither analogy was lost on Amazonians. In fact "Avatar in the Amazon" has become a kind of genre in itself. James Cameron screened his blockbuster film with indigenous communities resisting Brazil's Belo Monte dam saying that their struggle was "the same" as that of his aliens. In 2010, Public Radio International interviewed Ecuadorian indigenous leaders viewing the film for the first time. The men all concurred with James Cameron: the struggle is the same, and if it comes to it, they are willing to fight. However, re-watching the film almost every night, I became increasingly disillusioned by the violence and destruction depicted in the film. The "happy ending" jarred with the devastation unleashed, as the "slow violence" of ecological sacrifice is dramatized in spectacular and explosive fashion. Resisting eco-systemic sacrifice, it seems, comes at a high cost. In that 2010 interview, Blanquita shares these sentiments and disagrees with her male counterparts. She says, "in the movie it doesn't show dialogue. It shows war. It's as if the only solution is war and to begin with we see that the conflict is not resolved because everything is left destroyed. And at the same time human lives were lost so I believe there should be another message."

The alternate message carried by the river messengers is best symbolized by the ceremonial "Barras" carried by the messengers and awarded to women pledging to defend their territories against extractivism. Resisting pollution and climate change were folded together in the notion of territorial defense. In one ceremony I witnessed, this promise was articulated to be analogous to a marriage vow. The male president of the community declared to a female initiate: "This staff..., you receive as if it were a marriage. With the same promise... as you promise with

your spouse, before all the community.... You have to stay strong, because problems are going to come,... you have to know to confront them... it will not be easy. You must be prepared.”

Ana agreed. Upon pledging her support to the River Messengers, Ana said, “I told the women of Yakuchaski, let’s all get to work.” I’ll go wherever, “for a march, we will all be together” and “in everything I will help.” She said, “I took the barra” and declared “I’m going to give all that they say... I have to fight for my territory.”



**Figure 80: Ana Pledges to defend her territory**

I identify two kinds of significance in this ritual, while remaining critically aware of the gendered dynamics and phallic symbolism of a woman receiving a staff from a man while pledging a commitment analogous to marriage. On the one hand, there is a practical motive by movement organizers to instill commitment and increase turnout at rallies like the Women’s March. However, messengers also articulated a desire to improve the status of women in these

communities: to “valorize” their role in male-dominated negotiations with oil companies. Magdalena hoped that “with this workshop that we have done,” these leaders “will be valorized as women and will continue to fight for our land” emphasizing a gendered political struggle within a territorial struggle. “All these women presidents,” she continued, “leaving with these barritas... I want them to fight,” to “turn out if we have a workshop in a big city.” Magdalena cites a practical concern, turnout in demonstrations, then makes an oblique comment that, “These women can... defend in time if an oil company enters forcibly.” I interpret this latter comment as referring to both the commitment of women and their status as political agents whose roles and responsibilities as territorial defenders is recognized and respected by their male peers.



**Figure 81: Ceremonial "Barras"**

Thus, the potentially problematic gender dynamics of this ritual, marriage-like promise/ Yakuchaski-pledge might be equally significant for female participants and male observers. As linguistic anthropologists of performance and metapragmatics have long argued, utterances not only “describe or report” but also “do actions” and create social relations (Austin, 1975; Silverstein, 1993). The success of the Yakuchaski barra ritual may be contingent upon the novel social and gender relations produced by this pledge, uttered “just like” a marriage vow, in view of the whole community. Perhaps, as Blanquita notes, the potential for peaceful resistance lies in dialogue within communities, across gendered lines.

### **Conclusion: Reconstituting the Nature of the Nation in Ecuador**

Yakuchaski Warmikuna culminated in a massive demonstration in Puyo, the capital of Pastaza on International Women’s Day, March 8, 2016. Hundreds of indigenous women marched through the streets of Puyo to protest recent oil concessions in Pastaza. The women of the Curaray river marched in a delegation alongside their compatriots from the communities of Allishungo, Arajuno, Montalvo, Pacayacu, Sarayaku, other Ecuadorian indigenous nations including the Achuar, the Huaorani, the Sapara, the Shivia, the Shuar, and international activists like a delegate from the Ponca nation in Oklahoma. The Women’s March ended in a rally that filled Puyo’s central market. One of the organizers told me turnout had been overwhelming: while 100 women were expected, 500 women had assembled for the march. While this might speak to the efficacy of initiatives like Yakuchaski and the forms of commitment it engendered, this march is only one example of anti-extractivist movements that are Re-Constituting the Nature of the Nation in Ecuador.

On the one hand, “Nature” has been reconstituted in two consequential ways: first, the writing of the Rights of Nature in the 2008 Constitution by ecologists and indigenous

intellectuals defines “Pachamama” as a subject of rights. On the other hand, Nature is conceptualized in the constitution as “biodiversity,” a storehouse of “genetic resources” and part of the national patrimony, thanks to the advocacy of the biologists that founded Tiputini Biodiversity Station. On the other hand, the Nation is also being contested in two significant ways. Indigenous movements demanded and won recognition of Ecuador’s plurinationality defying a singular notion of the nation-state. Ecologists call for an end to the petro-state, an Ecuador “post-petrolero.”

Importantly, these transformations of Nature and Nation overlap: both the Rights of Nature and Plurinationality are strategies used by indigenous peoples to defend the self-determination of their territories and ecologies. On the other hand, Ecuador’s “biodiversity” is offered as an alternate resource to be harnessed in the “post-oil” future. Furthermore, as feminist and post-colonial scholars have argued, Nature is not static but is historically constituted: it is a threshold by which humanity is offered or denied, to women, indigenous peoples, and the enslaved. Ecuadorian scholar Alberto Acosta argues that the Rights of Nature is significant not only for its recognition of indigenous cosmology but also as part of a centuries-long expansion of rights to subjects previously denied them. Finally, “Nature” often stands in for (or erases) human ecologies, so as Acosta concludes, to recognize the Rights of Nature is fundamentally to recognize the right of existence of humans ourselves. Viewed individually, the gains made by environmentalists, movements, biologists, and indigenous peoples, seem significant, but when viewed in concert, the re-constitutions of Nature and Nation underway in Ecuador are profound, and herald possibilities for imagining another world.

## Bibliography

- Acosta, Alberto, Esperanza Martínez, William Sacher. 2013. “Salir del Extractivismo: una Condición para el *Sumak Kawsay*; Propuestas sobre petróleo, minería y energía en el Ecuador.” En *Alternativas al Capitalismo del Siglo XXI*. Grupo Permanente de Trabajo sobre Alternativas al Desarrollo. Editorial Abya Yala. Universidad Politécnica Salesiana. Quito.
- Acosta, Alberto y Esperanza Martínez. 2011. “La Naturaleza Con Derechos.” *De La Filosofía a La Política*. Editorial ABYA-YALA. Universidad Politécnica Salesiana. Quito.
- Acosta, Alberto. 2010a. “Hacia La Declaración Universal De Los Derechos De La Naturaleza.” *AFESE 54*: 11–32. Translation by the Global Alliance for the Rights of Nature, “Toward the Universal Declaration of Rights of Nature,” (n.p.). Accessed at: <https://therightsofnature.org/wp-content/uploads/pdfs/Toward-the-Universal-Declaration-of-Rights-of-Nature-Alberto-Acosta.pdf>
- \_\_\_\_\_. 2010b. “El Buen Vivir en El Camino Del Post-Desarrollo: Una Lectura Desde La Constitución De Montecristi.” *Fundación Friedrich Ebert, FES-ILDIS, Policy Paper 9* (October).
- \_\_\_\_\_. 2003. “En La Encrucijada De La Glocalización.” *Polis 4* (October): 1–14. doi:10.4000/polis.7039.
- Agamben, Giorgio. 1998. *Homo Sacer: Sovereign Power and Bare Life*. Stanford, Calif: Stanford University Press.
- Altmann, Philipp. 2013. “Good Life as a Social Movement Proposal for Natural Resource Use: the Indigenous Movement in Ecuador.” *Consilience: the Journal of Sustainable Development 10* (1): 59–71.
- Alvare, Bretton. 2010. “Babylon Makes the Rules”: Compliance, Fear, and Self-Discipline in the Quest for Official NGO Status. *PoLAR: Political and Legal Anthropology Review 33*.
- Amazon Watch. 2017. “Stop Fueling Amazon Destruction: How Corporate Leaders Can Eliminate Their Use Of Amazon Crude.” June, 2017.
- \_\_\_\_\_. 2016. “Press Release: Ecuador Moves To Close Leading Environmental Organization as Part of Crackdown on Civil Society: Reprisal comes after the group's public defense of Shuar indigenous peoples in conflict over Chinese copper mine” Wed. Dec. 21.

- Anderson, Benedict. 2006. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Verso Books.
- Anheier, Helmut, Marlies Glasius and Mary Kaldor. 2002. "Introducing Global Civil Society." In *Global Civil Society*. London: Sage Publications, pp. 3-22.
- Austin, J L. 1975. *How to Do Things with Words*. Cambridge, MA: Harvard University Press.
- Bakan, Joel. 2005. *The Corporation: The Pathological Pursuit of Profit and Power*. Free Press.
- Bakhtin, M.M. 1981. *The Dialogic Imagination: Four Essays*. Austin: University of Texas Press.
- Balmer AJ. 2013. "Why we don't need pandas.", *Scientific American*, <http://news.yahoo.com/why-don-t-pandas-113100956.html>. Accessed 9 August 2015. cited in Swing, Kelly 2016. "Introduction to Biodiversity" in Furze, James et. al. *Mathematical Advances Towards Sustainable Environmental Systems*. Springer International Publishing, Switzerland.
- Bass, Margot S, Matt Finer, Clinton N Jenkins, Holger Kreft, Diego F Cisneros-Heredia, Shawn F McCracken, Nigel C A Pitman, et al. 2010. "Global Conservation Significance of Ecuador's Yasuní National Park." Edited by Andy Hector. *PLoS ONE* 5 (1).
- BBC. 2018. "Chevron wins Ecuador rainforest 'oil dumping' case," *BBC News, Latin America*. 8 September 2018.
- Becker, Marc. 2012. *Pachakutik: Indigenous Movements and Electoral Politics in Ecuador*. Lanham, Md.; Toronto: Rowman & Littlefield Publishers.
- \_\_\_\_\_. 2011. "Correa, Indigenous Movements, and the Writing of a New Constitution in Ecuador." *Latin American Perspectives* 38 (176), 47–62.
- \_\_\_\_\_. 2008. *Indians and Leftists in the Making of Ecuador's Modern Indigenous Movements*. Durham: Duke University Press Books.
- Berlant, Lauren. 2007. "Slow Death (Sovereignty, Obesity, Lateral Agency)," *Critical Inquiry* 33. August, 754–80.
- Biehl, João. 2007. *Will to Live: AIDS Therapies and the Politics of Survival*. Princeton University Press.
- Blake, John G, Diego Mosquera, Jaime Guerra, Bette A Loiselle, David Romo, and Kelly Swing. 2014. "Yasuní – a Hotspot for Jaguars *Panthera Onca* (Carnivora: Felidae)? Camera-Traps and Jaguar Activity at Tiputini Biodiversity Station, Ecuador ." *Rev. Biol. Trop.* Vol. 62 (2): 689–98.

- Bland, Archie. 2016. "Should We Wipe Mosquitoes Off the Face of the Earth?." *The Guardian*, February, 1–6.
- Blaser, Mario. 2010. *Storytelling Globalization from the Chaco and Beyond*. Durham, NC: Duke University Press Books.
- \_\_\_\_\_. 2009. "Political Ontology." *Cultural Studies* 23 (5-6): 873–96.
- Bonneuil, Christophe, and Jean-Baptiste Frescoz. 2017. *The Shock of the Anthropocene: The Earth, History and Us*. London New York, NY: Verso.
- Bowker, Geoffrey C. 2005. "Time, Money and Biodiversity." In *Global Assemblages: Technology, Politics and Ethics as Anthropological Problems*, edited by Aihwa Ong and Stephen Collier, Oxford: Blackwell Publishing. 107–83.
- de la Cadena, Marisol. 2010. "Indigenous Cosmopolitics in the Andes: Conceptual Reflections beyond 'Politics.'" *Cultural Anthropology*, 25 (2): 334–370.
- Cameron, James. 2009. *Avatar*. Lightstorm Entertainment.
- Cepek, Michael L. 2012. *A Future for Amazonia: Randy Borman and Cofán Environmental Politics*. Austin: University of Texas Press.
- Chakrabarty, Dipesh. 2009. "The Climate of History: Four Theses." *Critical Inquiry* 35 (2): 197–222.
- Chandhoke, Neera. 2002. *The Limits of Global Civil Society*. In Helmut Anheier, Marlies Glasius and Mary Kaldor, eds. *The Global Civil Society Yearbook 2002*. Oxford: Oxford University Press, pp. 35-54.
- Choy, Timothy. 2011. *Ecologies of Comparison: An Ethnography of Endangerment in Hong Kong*. Durham NC: Duke University Press Books.
- Colectivo de Investigación y Acción Psicosocial - Ecuador. 2015. *Estrategias de represión y control social del estado Ecuatoriano: ¿Dónde quedó la constitución? Caso Yasunidos*. Quito, Ecuador.
- Collins, Dan. 2018. "Peru's brutal murders renew focus on tourist boom for hallucinogenic brew." *The Guardian*. April 29.
- Conrad, Joseph. 2016. [1902] *Heart of Darkness*. New York: W.W. Norton & Co.
- Comaroff, John L., and Jean Comaroff. 2009. *Ethnicity, Inc.* Chicago: University Of Chicago Press.

- Cooper, Melinda E. 2008. *Life as Surplus*. University of Washington Press.
- Coronil, Fernando. 1997. *The Magical State: Nature, Money, and Modernity in Venezuela*. Chicago: University Of Chicago Press.
- Coriolis Gaspard-Gustave. 1829. *Du Calcul de l'Éffet des Machines*. Carilian-Goeury, Librairie, Paris.
- Correa, Rafael. 2012. "Ecuador's Path." *New Left Review* 77 (November): 89–104.
- Daston, Lorraine, and Peter Galison. 2009. "Epistemologies of the Eye." *Foucault Studies*.
- Daston, Lorraine, and Peter Galison. 2009. *Objectivity* (Cambridge, MA: Zone Books, 2007).
- Dorsey, Michael K. 2003. "The Political Ecology of Bioprospecting in Amazonian Ecuador: History, Political Economy, and Knowledge." In *Contested Nature: Promoting International Biodiversity Conservation with Social Justice in the Twenty-First Century*, edited by Steven R Brechin, Peter R Wilshusen, Crystal L Fortwangler, and Patrick C West, 137–55. State University of New York Press.
- Duffield, Mark. 2001. *Global Governance and the New Wars: The Merging of Development and Security*. New York: Zed Books.
- Dumit, Joseph. 2012. *Drugs for Life: How Pharmaceutical Companies Define Our Health*. Durham: Duke University Press Books.
- Dunn, Elizabeth C. 2004. *Privatizing Poland: Baby Food, Big Business, and the Remaking Of Labor*. Cornell University Press.
- Dyer, Gwynne. 2013. "DYER: Another Defeat for the Environment — and Us." September 4.
- Ebrahim, Alnoor. 2007. "Beyond Dependence: Conceptualizing Information and Accountability in NGO-Funder Relations." in Paul. Tvedt Opoku-Mensah et. al. eds. *Reconceptualising NGOs and Their Roles in Development: NGOs, Civil Society and the International Aid System*. Aalborg, Denmark: Aalborg University Press.
- Elyachar, Julia 2002. "Empowerment Money: The World Bank, Non-Governmental Organizations, and the Value of Culture in Egypt." *Public Culture* 14(3): 493-513.
- Emerson, Robert M., Rachel I. Fretz, and Linda L. Shaw. 2011. *Writing Ethnographic Fieldnotes*. Chicago: University Of Chicago Press.

- Erickson, Clark. 2014 “Amazonia: the Historical Ecology of a Domesticated Landscape” in Morrison, Kathleen D. et al. *The Social Lives of Forests: Past, Present, and Future of Woodland Resurgence*. Chicago ; London: University Of Chicago Press.
- Erwin, T L. 1982. “Tropical Forests: Their Richness in Coleoptera and Other Arthropod Species..” *Coleopterists Bulletin*.
- Escobar, Arturo. 2008. *Territories of Difference: Place, Movements, Life, Redes*. Durham: Duke University Press Books.
- \_\_\_\_\_. 1998. “Whose Knowledge, Whose Nature?.” *Journal of Political Ecology* 5 (1): 53–82.
- \_\_\_\_\_. 1995. *Encountering Development: The Making and Unmaking of the Third World*. Princeton: Princeton University Press.
- Fanon, Frantz. 2008. *Black Skin, White Masks*. New York; Berkeley: Grove Press.
- Ferguson, James. 1994. *The Anti-Politics Machine: Development Depoliticization and Bureaucratic Power in Lesotho*. Minneapolis: University of Minnesota Press.
- Finer, Matt, Varsha Vijay, Fernando Ponce, Clinton N Jenkins, and Ted R Kahn. 2009. “Ecuador’s Yasuní Biosphere Reserve: a Brief Modern History and Conservation Challenges.” *Environmental Research Letters* 4 (3).
- Fisher, William F. 1997. “Doing Good? The Politics and Antipolitics of NGO Practices,” *Annual Review of Anthropology* 26: 439-464.
- Foucault, Michel. 2003. “Society Must Be Defended”: *Lectures at the Collège de France, 1975-1976*. New York: Picador. pp. 239-64.
- \_\_\_\_\_. 1991. “Governmentality.” In *The Foucault Effect: Studies in Governmentality*, edited by G Burchell, C Gordon, and Peter Miller, 87–104. Chicago: The University of Chicago Press.
- \_\_\_\_\_. 1990. *The History of Sexuality Vol. 1: An Introduction*. New York: Vintage Books.
- Fujimora, Joan H. 1992. “Crafting Science: Standardized packages, Boundary Objects, and ‘Translation’.” In Pickering, *Science as Practice and Culture*, pp. 168-211. University of Chicago.
- Gal, Susan. 2015. “Politics of Translation.” *Annual Review of Anthropology* 44 (1): 225–40.

- \_\_\_\_\_. 2003. "Movements of Feminism: the Circulation of Discourses About Women." In *Recognition Struggles and Social Movements: Contested Identities, Agency and Power*, edited by Barbara Hobson, 1–17. Cambridge University Press.
- \_\_\_\_\_. 2002. "The Semiotics of the Public/Private Distinction," April, 1–19.
- Geertz, Clifford. 1973. *The Interpretation of Cultures*. New York: Basic Books.
- Goffman, E. 1989. "On Fieldwork." L H Lofland ed. *Journal of Contemporary Ethnography*.
- Gómez-Barris, Macarena. 2017. *The Extractive Zone: Social Ecologies and Decolonial Perspectives*. Durham ; London: Duke University Press Books.
- Greene, Natalia, José Rivadeneira Serrano, Líder Góngora Farías, Cecilia Chérrez Muirragui, and Gabriela Ruales Jurado. 2015. *Agenda Nacional Ambiental*. Asamblea Nacional Ambiental. Accessed at <https://www.ppd-ecuador.org/wp-content/uploads/2017/11/AGENDA-NACIONAL-AMBIENTAL-2015.pdf>
- Grove, Richard H. 1996. *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860*. Cambridge; New York: Cambridge University Press.
- Gualinga, Carlos Viteri. 2002. "Visión Indígena Del Desarrollo en La Amazonía." *Polis* 3: 1–6.
- Gudynas, Eduardo. 2011. "Sentidos, Opciones Y Ámbitos De Las Transiciones Al Postextractivismo." In *Más Allá Del Desarrollo*, Editado Por 265-98., edited by Dunia Mokrani and Miriam Lang, 1–36. Quito: Abya-Yala y Fundación Rosa Luxemburgo.
- \_\_\_\_\_. 2010. "Tesis Sobre Un Viejo Problema Bajo Nuevas Expresiones el Nuevo Extractivismo Progresista," February, 1–16.
- Guha, Ramachandra. 1997. "The Environmentalism of the Poor." In *Between Resistance and Revolution: Cultural Politics and Social Protest*, edited by Richard G Fox and Orin Starn, 17–39. Rutgers University Press.
- Gunter, Michael M. 2004. *Building the Next Ark: How NGOs Work to Protect Biodiversity*. Dartmouth, NH: University Press of New England.
- Habermas, Jürgen. 1991. *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. The MIT Press.
- Hall, Stuart. 1980. "Race, Articulation, and Societies Structured in Dominance." In *Sociological Theories: Race and Colonialism*, 305–45. UNESCO.

- Haraway, Donna. 1991. "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late 20th Century." In *Simians, Cyborgs and Women: the Reinvention of Nature*, 149–81. New York: Routledge.
- \_\_\_\_\_. 1997. *Modest\_Witness@Second\_Millennium. FemaleMan\_Meets\_OncoMouse: Feminism and Technoscience*. New York: Routledge.
- Harvey, David. 2007. *A Brief History of Neoliberalism*. Oxford University Press.
- \_\_\_\_\_. 2003. *The New Imperialism*. Oxford University Press.
- Hayden, Cori. 2003. *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico*. Princeton University Press.
- Hecht, Susan B. Kathleen Morrison, Christine Padoch. 2014 "From Fragmentation to Forest Resurgence: Paradigms, Representations, and Practices." In Morrison, Kathleen D. *The Social Lives of Forests: Past, Present, and Future of Woodland Resurgence*. Chicago ; London: University Of Chicago Press.
- Heckler, S. 2008. "Ethnobotany of the Shuar of Eastern Ecuador." *Tipiti: Journal of the Society for the Anthropology of Lowland South America* 6 (1): 132-135
- Heeren, Anne. 2016. "Commercialization of Biodiversity: the Regulation of Bioprospecting in Ecuador." *Fiar: Forum for Inter-American Research* 9 (2): 94–117.
- Helmreich, Stefan. 2015. "Transductions" in *Keywords in Sound*. David Novak and Mat Sakakeeny eds. Duke University Press.
- \_\_\_\_\_. 2008. "An Anthropologist Underwater: Immersive Soundscapes, Submarine Cyborgs, and Transductive Ethnography." *American Ethnologist* 34 (4): 621–41.
- Hildyard, Nicholas, Larry Lohmann, and Sarah Sexton. 2012. "Energy Security: for What? For Whom?" Sturminster Newton: the Corner House., February, 1–100.
- Hilhorst, Dorothea. 2007. "The Art of NGO-ing: Everyday Practices as Key to Understanding Development NGOs." in Paul. Tvedt Opoku-Mensah, *Reconceptualising NGOs and Their Roles in Development: NGOs, Civil Society and the International Aid System*. Aalborg, Denmark: Aalborg University Press.
- \_\_\_\_\_. 2003 *The Real World of NGOs: Discourses, Diversity and Development*. London: Zed.

- Hill, David. 2014. "Ecuador Pursued China Oil Deal While Pledging to Protect Yasuni, Papers Show: Negotiations Sought Funds to Forgo Oil Exploitation in Pristine Forest Under the Yasuni-ITT Scheme." *The Guardian*, February, 1–5.
- Ho, Karen. 2009. *Liquidated: An Ethnography of Wall Street*. Durham: Duke University Press.
- Hughes, David McDermott. 2017. *Energy without Conscience: Oil, Climate Change, and Complicity*. Durham: Duke University Press Books.
- Iriye, Akira. 2004. *Global Community: The Role of International Organizations in the Making of the Contemporary World*. Berkeley: University of California Press.
- Jarrín, Sofia. 2014. "Ecuador: ¡Lo Logramos! Despite All Odds, Activists Present Signatures Needed to Save Yasuní," April, 1–3.
- Jasanoff, Sheila. 2012. "Taking Life: Private Rights in Public Nature" in Sunder Rajan, Kaushik ed. *Lively Capital: Biotechnologies, Ethics, and Governance in Global Markets*. Durham: Duke University Press Books. 155-183.
- James, Erica Caple. 2004. "'The Political Economy of 'Trauma' in Haiti in the Democratic Era of Insecurity," *Culture, Medicine and Psychiatry*, 28: 127-149.
- Juris, Jeffrey S. 2008. *Networking Futures: The Movements Against Corporate Globalization*. Duke University Press.
- Keck, Margaret E., and Kathryn Sikkink. 1998. *Activists Beyond Borders: Advocacy Networks in International Politics*. Ithaca, N.Y.: Cornell University Press.
- Kelly, John D. 2006. "Who Counts? Imperial and Corporate Structures of Governance, Decolonization and Limited Liability." In C. Calhoun, et al., eds., *Lessons of Empire*. New Press, 157-174.
- \_\_\_\_\_. 2002. "The Network Inside Out." *American Ethnologist*.
- Kittler, Friedrich. 1999. *Gramophone, Film Type Writer*. (Winthrop-Young, Geoffrey and Michael Wutz. Translators). Stanford.
- Klein, Naomi. 2015. *This Changes Everything: Capitalism vs. The Climate*. Simon & Schuster.
- Knorr-Cetina, Karin. 1992. "The Couch, the Cathedral, and the Laboratory: On the Relationship between Experiment and Laboratory in Science." 113-138.
- Kohn, Eduardo. 2013. *How Forests Think: Toward an Anthropology Beyond the Human*. Berkeley: University of California Press.

- Kosek, Jake. 2006. *Understories: The Political Life of Forests in Northern New Mexico*. Durham: Duke University Press Books.
- Latour, B. 2007. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- \_\_\_\_\_. 1993. *We Have Never Been Modern*. Cambridge, Mass.: Harvard University Press.
- \_\_\_\_\_. 1988. *The Pasteurization of France*. Cambridge, MA: Harvard Univ. Press.  
Cited in Gal, Susan. 2015. "Politics of Translation." *Annual Review of Anthropology* 44 (1): 225–40.
- \_\_\_\_\_. 1983. "Give Me a Laboratory and I Will Raise the World." In *Science Observed*. Sage Publications.
- Lewis, Tammy L. 2016. *Ecuador's Environmental Revolutions: Ecoimperialists, Ecodependents, and Ecoresisters*. Cambridge, MA: The MIT Press.
- Levi-Strauss, Claude. 1992. *Tristes Tropiques*. Translated by John Weightman and Doreen Weightman. New York, N.Y., U.S.A: Penguin.
- Lovelock, James. 2016. *Gaia: A New Look at Life on Earth*. Oxford, United Kingdom: Oxford University Press.
- Mackenzie, Adrian. 2006. *Transductions: Bodies and Machines at Speed*. Continuum. New York, London.
- Martin, Pamela L. 2011. *Oil in the Soil: The Politics of Paying to Preserve the Amazon*. Rowman & Littlefield Publishers.
- Martínez Alier, Joan. 2000. "International Biopiracy Versus the Value of Local Knowledge." *Capitalism Nature Socialism* 11 (2): 59–66.
- \_\_\_\_\_. 1990. "Ecology and the Poor: a Neglected Dimension of Latin American History." *Journal of Latin American Studies* 28 (3): 621-639.
- Martínez Yanez, Esperanza. 2015. Interview on June 24, 2015.
- \_\_\_\_\_. 2014. *La Naturaleza Entre La Cultura, La Biología Y El Derecho*. Editorial ABYA-YALA. Universidad Politécnica Salesiana. Quito.
- Marx, Karl. 1967 [1867]. *Capital Vol. I: A Critical Analysis of Capitalist Production*. International Publishers. New York.

- Masco, Joseph. 2006. *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Princeton, N.J: Princeton University Press.
- McAdam, Doug, Sidney Tarrow, and Charles Tilly. 2001. *Dynamics of Contention*. Cambridge, England: Cambridge University Press.
- McAdam, Doug, John D. McCarthy, and Mayer N. Zald, eds. 1996. *Comparative Perspectives on Social Movements: Political Opportunities, Mobilizing Structures, and Cultural Framings*. Cambridge, England: Cambridge University Press.
- McAfee, Kathleen. 1999. "Selling Nature to Save It? Biodiversity and Green Developmentalism." *Environment and Planning* 17: 133–54.
- McNeil, J.R., Peter Engelke. 2014. *The Great Acceleration: An Environmental History of the Anthropocene since 1945*.
- McKibben, Bill. 2011. *Eaarth: Making a Life on a Tough New Planet*. New York: St. Martin's Griffin.
- Mertes, Tom, ed. 2004. *A Movement of Movements: Is Another World Really Possible?* Verso.
- Miller, Peter, and Nikolas Rose. 1990. "Governing Economic Life." *Economy and Society* 19 no. 1: 1–31.
- \_\_\_\_\_. 1995. "Production, Identity, and Democracy." *Theory and Society* 24 (3):427-467.
- Mintz, Sidney W. 1986. *Sweetness and Power: The Place of Sugar in Modern History*. New York: Penguin Books.
- Mitchell, Timothy. 2013. *Carbon Democracy: Political Power in the Age of Oil*. London: Verso.
- Moran, Katy, Steven R King, and Thomas J Carlson. 2001. "Biodiversity Prospecting: Lessons and Prospects." *Annual Review of Anthropology*. JSTOR, 505–26.
- Morrison, Kathleen D. 2014. *The Social Lives of Forests: Past, Present, and Future of Woodland Resurgence*. Chicago ; London: University Of Chicago Press.
- Najam, Adil. 1996. "Understanding the Third Sector: Revisiting the Prince, the Merchant, and the Citizen." *Nonprofit Management & Leadership* 7 (2): 203–19.
- Nixon, Rob. 2011. *Slow Violence and the Environmentalism of the Poor*. Cambridge, Mass: Harvard University Press.

- Oliveira, Agamenon R E. 2014. "The Metamorphosis of the Work Concept and Its Incorporation Into Economic Thought." In *A History of the Work Concept: From Physics to Economics*: 181–218. Dordrecht: Springer Netherlands.
- Ong, Aihwa. 1988. "The Production of Possession: Spirits and the Multinational Corporation in Malaysia." *American Ethnologist* 15(1):28-42.
- Pandolfi, M. 2008. "Laboratory of Intervention: The Humanitarian Governance of the Postcommunist Balkan Territories." In M.-J. D. Good, et. al. (eds.), *Postcolonial Disorders* (pp. 157–186). Berkeley: University of California Press.
- Parenti, Christian. 2013. "Ecuador's Paradise Lost." *The Nation*, September 16, 1–8.
- Patel, Raj and Jason W. Moore. 2018. *A History of the World in Seven Cheap Things*. University of California Press.
- Peirce, Charles S. 1960. "Division of Signs." in *Collected Papers of Charles Sanders Peirce*. Cambridge: Harvard University Press. 134–73.
- Peterson, Kristin. 2001. "Benefit Sharing for All?: Bioprospecting NGOs, Intellectual Property Rights, New Governmentalities." *PoLAR: Political and Legal Anthropology Review* 24 (1). Wiley Online Library: 78–91.
- Petryna, Adriana. 2002. *Life Exposed: Biological Citizens after Chernobyl*. Princeton University Press.
- Plan V. 2015. "Cinco Mujeres Denuncian Al Gobierno." *Plan V: Política Historias*, October 19th, 1–17.
- Public Radio International. 2010. "Avatar in the Amazon." Accessed on Youtube at: [https://www.youtube.com/watch?v=Qh\\_dFfoE6wo](https://www.youtube.com/watch?v=Qh_dFfoE6wo)
- Radcliffe, Sarah A. 2011. "Development for a Postneoliberal Era? Sumak Kawsay, Living Well and the Limits to Decolonisation in Ecuador." *Geoforum*, October. Elsevier Ltd, 1–10.
- Raffles, Hugh. 2011. *Insectopedia*. Vintage.
- Rajak, Dinah. 2011. *In Good Company: An Anatomy of Corporate Social Responsibility*. Stanford: Stanford University Press.
- Ramírez Gallegos, René. 2010. "Socialismo Del Sumak Kawsay O Biosocialismo Republicano." *SENPLADES*.

- Republic of Ecuador, Constitution of 2008. accessed at *Political Database of the Americas*.  
<http://pdba.georgetown.edu/Constitutions/Ecuador/english08.html>
- Reyes, Viki. 2015. "Sangre De Drago: La Comercialización De Una Obra Maestra De La Naturaleza." *Ecología Política*, October, 1–9.
- Riles, Annelise. 2001. *The Network Inside Out*. University of Michigan Press.
- Rice, M E. 2015. "Terry L. Erwin: She Had a Black Eye and in Her Arm She Held a Skunk." *American Entomologist*.
- Rival, Laura M. 2012. "The Materiality of Life: Revisiting the Anthropology of Nature in Amazonia." *Indiana*, 127–43.
- \_\_\_\_\_. 2010. "Ecuador's Yasuní-ITT Initiative: the Old and New Values of Petroleum." *Ecological Economics* 70 (2). Elsevier B.V.: 358–65.
- \_\_\_\_\_. 2002. *Trekking Through History: The Huaorani of Amazonian Ecuador*. Columbia University Press.
- \_\_\_\_\_. 1998. "Domestication as a Historical and Symbolic Process: Wild Gardens and Cultivated Forests in the Ecuadorian Amazon." In Balee, William L. *Advances in Historical Ecology*. Perseus Books.
- Rodríguez-Franco, Diana. 2014. "The Rise of Popular Consultations." *Americas Quarterly*, Spring, 1–5.
- Sacher, William. 2015. "Megaminería Y Desposesión en El Sur: Un Análisis Comparativo." *Íconos - Revista De Ciencias Sociales* 19 (51).
- Salamon, Lester. 1994. "The Rise of the Nonprofit Sector." *Foreign Affairs* 73.
- Sampson, Steven. 2005. "The Social Life of Projects: Importing Civil Society Into Albania." In *Civil Society: Challenging Western Models*, edited by Elizabeth Dunn and Chris Hann, 121–42. New York: Routledge.
- Sarkar, Sahotra. 2016 "From Ecological Diversity to Biodiversity." In *The Cambridge Companion to the Philosophy of Biology*, 388–409. Cambridge.
- Sawyer, Suzana. 2004. *Crude Chronicles: Indigenous Politics, Multinational Oil, and Neoliberalism in Ecuador*. Duke University Press.
- Scheper-Hughes, Nancy. 1995. "The Primacy of the Ethical." *Current Anthropology* 36 (3): 24.

- Schuller, Mark. 2012. *Killing with Kindness: Haiti, International Aid and NGOs*. New Brunswick: Rutgers University Press.
- \_\_\_\_\_. 2009. "Gluing Globalization: NGOs as Intermediaries in Haiti." *PoLAR: Political and Legal Anthropology Review*, 32 (1), 84–104.
- Sennett, Richard. 2006. "Bureaucracy." in, *The Culture of the New Capitalism*. 15-82. New Haven: Yale University Press.
- SENPLADES. 2009. "National Plan for Good Living 2009-13." Adrián López ed. *The Republic of Ecuador. National Development Plan*, November, 1–120.
- Seuss, Dr. 1971. *The Lorax*. New York: Random House Books for Young Readers.
- Silverstein, Michael. 2003. "Translation, Transduction, Transformation: Skating on Thin Semiotic Ice." In *Translating Cultures: Perspectives on Translation and Anthropology*, edited by Paul Rubel and Abraham Rosman, 75. Oxford: Berg Publishers.
- \_\_\_\_\_. 1993. "Metapragmatic Discourse and Metapragmatic Function," April, 1–15.
- Simondon, Gilbert. 1992. "The Genesis of the Individual," in *Incorporations* (J Crary and SK Winter eds.). Zone Books.
- Simondon, Gilbert. 2009. Gregory Flanders (Trans.) "The Position of the Problem of Ontogenesis," November, 1–13.
- Simondon, Gilbert. 2011. Ninian Mellamphy (Trans.). "On the Mode of Existence of Technical Objects." *Deleuze Studies* 5 (3): 407–24.
- Smith, Adam. 1999 [1776]. *The Wealth of Nations*. New York: Penguin Classics.
- Star, S, & J.R. Griesemer, J., & Leigh. (1989). "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology," 1907-39. *Social Studies of Science*, 19(3), 387–420.
- Stein BA, Kutner LS, Adams JS eds. 2000. *Precious heritage: the status of biodiversity in the United States*. Oxford University Press, Oxford.
- Sunder Rajan, Kaushik. 2012. *Lively Capital: Biotechnologies, Ethics, and Governance in Global Markets*. Durham: Duke University Press.
- \_\_\_\_\_. 2006. *Biocapital: The Constitution of Postgenomic Life*. Durham, NC: Duke University Press.

- Svarstad, Hanne. 2004. "A Global Political Ecology of Bioprospecting." In *Political Ecology Across Spaces, Scales and Social Groups*, 239–56. New Brunswick, NJ: Rutgers University Press.
- Swing, Kelly 2016. "Foreward" and "Introduction to Biodiversity" in Furze, James et. al. *Mathematical Advances Towards Sustainable Environmental Systems*. Springer International Publishing, Switzerland.
- \_\_\_\_\_. 2015. Interview with the author.
- \_\_\_\_\_. 2013a. "Ecuador's Yasuni-ITT Initiative Failed, What's Next?." *Ensn-Newswire.com/2013/08/23/Ecuadors-Yasuni-Itt-Initiative-Failed-Whats-Next* /. August 23.
- \_\_\_\_\_. 2013b. "If Ecuador Must Drill for Yasuní Oil, Let's Encourage the Least Damaging Methods." *The Guardian*, September 4.
- \_\_\_\_\_, et. al. 2012. "Oil Development on Traditional Lands of Indigenous Peoples: Coinciding Perceptions on Two Continents." *Journal of Developing Societies* 28 (2): 257–80.
- \_\_\_\_\_. 2011. "Day of Reckoning for Ecuador's Biodiversity." *Nature* 469 (7330): 267–67.
- \_\_\_\_\_. 2010. "Global Conservation Significance of Ecuador's Yasuní National Park." [Bass, Margot S, Matt Finer, Clinton N Jenkins, Holger Kreft, Diego F Cisneros-Heredia, Shawn F McCracken, Nigel C A Pitman, Peter H. English, et al.] Andy Hector, Ed. *PLoS ONE* 5 (1).
- Takacs, David. 1996. *The Idea of Biodiversity: Philosophies of Paradise*. Baltimore: Johns Hopkins Press.
- Tarrow, Sidney. 2005. *The New Transnational Activism*. New York: Cambridge University Press.
- Tedlock, Barbara. 2006. "Indigenous Heritage and Biopiracy in the Age of Intellectual Property Rights." *Explore: the Journal of Science and Healing*.
- Trouillot, Michel-Rolph. 1997. *Silencing the Past*. Beacon Press.
- Walsh, Catherine E. 2001. The Ecuadorian Political Irruption: Uprisings, Coups, Rebellions, and Democracy. *Nepantla: Views From South*, 2 (1), 173–205.
- Watts, Jonathan. 2013. "Ecuador Approves Yasuni National Park Oil Drilling in Amazon Rainforest." *The Guardian*, August 16.

- Watts, Michael. 2001. "Petro-Violence: Community, Extraction, and Political Ecology of a Mythic Commodity." In *Violent Environments*, edited by Nancy L Peluso and Michael Watts, 189–212. Cornell University Press.
- Watts, Michael. 2004. "Resource Curse? Governmentality, Oil and Power in the Niger Delta, Nigeria." *Geopolitics* 9 (1): 50–80.
- Weber, Max. 1946. "Politics as a Vocation." In *From Max Weber: Essays in Sociology*, edited by H H Gerth and C Wright Mills, 57. New York: Oxford University Press.
- Williams, Paul H, Kevin J Gaston, and Chris J Humphries. 1994. "Do Conservationists and Molecular Biologists Value Differences Between Organisms in the Same Way?." *Biodiversity Letters* 2 (3): 67–78.
- Wilson, E O. 1985. "The Biological Diversity Crisis: a Challenge to Science." *Issues in Science and Technology*.
- Wright, Christopher, and Daniel Nyberg. 2015. *Climate Change, Capitalism and Corporations: Processes of Creative Self Destruction*. Cambridge University Press.
- Wulf, Andrea. 2016. *The Invention of Nature: Alexander von Humboldt's New World*. New York: Vintage.
- Yanez, Ivonne. President of Acción Ecológica: Interview with the author, July 2015.
- Yong, Ed. 2016. *I Contain Multitudes: The Microbes Within Us and a Grander View of Life*. New York, NY: Ecco.
- Yusoff, Kathryn. 2011. "Aesthetics of Loss: Biodiversity, Banal Violence and Biotic Subjects." *Transactions of the Institute of British Geographers* 37 (4). 578–92.